ANNEX B to ATTACHMENT F

COMPARISON OF 2003 UPDATE DATA TO TWBIR REVISION 2

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Table of Contents

List of Tables

DATA-F-B-1.0 VOLUME DATA

DATA-F-B-1.1 Waste Inventory Volume Comparison

This explanation applies to Tables DATA-F-B-1 through DATA-F-B-3. Tables DATA-F-B-1 and DATA-F-B-2 contain the volume data comparisons for contact handled- (CH-) and remote handled- (RH-) TRU waste, respectively. Table DATA-F-B-3 contains the volume data comparisons for the total CH TRU -, total RH- TRU, and emplaced waste. The current data for the 2003 Update Report are stored in the Transuranic Waste Baseline Inventory Database Revision 2.1 (TWBID Revision 2.1, LANL 2003). The previous data are from the Transuranic Waste Baseline Inventory Report, Revision 2 (TWBIR Revision 2, DOE 1995). The site name is given in the first column of the table. Data for the 2003 Update Report, the TWBIR Revision 2, and for the difference between the 2003 Update Report and TWBIR Revision 2 stored volumes for each site are given in the next three columns, respectively (columns 2, 3, and 4). Data for the 2003 Update Report, TWBIR Revision 2, and for the difference between the 2003 Update Report and TWBIR Revision 2 projected volumes for each site are given in columns 5, 6, and 7, respectively. Finally, data for the 2003 Update Report, TWBIR Revision 2, and for the difference between the 2003 Update and TWBIR Revision 2 anticipated volumes for each site are given in the last three columns, respectively (columns 8, 9, and 10). The total volumes for columns 2-10 are then given near the bottom of Table DATA-F-B-1. Table DATA-F-B-1 then gives the emplaced waste volumes, with the WIPP identified as the site, for the 2003 Update Report and TWBIR Revision 2 inventory, and the difference between the two for stored, projected, and anticipated CH-TRU wastes.

Table DATA-F-B-2 is similar to Table DATA-F-B-1 except that it contains data for the comparison of stored (columns 2–4), projected (columns 5–7), and anticipated (columns 8–10) RH-TRU waste volumes by site (column 1) and gives the total volumes of RH-TRU waste. There was no RH-TRU waste emplaced as of the inventory date, September 30, 2002. Table DATA-F-B-3 has the same column structure as Tables DATA-F-B-1 and DATA-F-B-2, but contains the total volumes for the comparison of stored, projected, and anticipated CH-TRU and RH-TRU waste volumes and provides the total waste volume. The emplaced CH-TRU waste volume, 7.72×10^3 m^3, is added to the anticipated volumes for a current total TRU waste volume of 1.58×10^5 m^3. This is an increase from the TWBIR Revision 2 total volume of 1.39×10^5 m^3.

The 2003 Update Report and TWBIR Revision 2 data in Tables DATA-F-B-1 through DATA-F-B-3 were analyzed for differences in stored, projected, and anticipated volumes. The CH-TRU waste volume data will be discussed first (Section DATA-F-B-1.3), followed by a discussion of the RH-TRU waste volume data (Section DATA-F-B-1.5).

Table DATA-F-B-1. Comparison of Stored, Projected, and Anticipated CH-TRU Waste Volumes Between the 2003 Update and TWBIR Revision 2 (m^3)[1]

TRU Waste Site	2003 Update Stored	TWBIR Rev. 2 Stored	Difference in Stored	2003 Update Projected	TWBIR Rev. 2 Projected	Difference in Projected	2003 Update Anticipated	TWBIR Rev. 2 Anticipated	Difference in Anticipated
Argonne National Laboratory - East	1.10×10^{2}	1.10×10^{1}	9.90×10^{1}	7.95×10^{1}	1.30×10^{2}	-5.05×10^{1}	1.89×10^{2}	1.40×10^{2}	4.95×10^{1}
Argonne National Laboratory - West	6.03×10^{0}	6.50×10^{0}	-4.68×10^{-1}	3.81×10^{1}	7.40×10^{2}	-7.02×10^{2}	4.41×10^{1}	7.50×10^{2}	-7.06×10^{2}
Battelle Columbus Laboratories	5.24×10^{0}	0.00×10^{0}	5.24×10^{0}	0.00×10^{0}	0.00×10^{0}	0.00×10^{0}	5.24×10^{0}	0.00×10^{0}	5.24×10^{0}
Bettis Atomic Power Laboratory	1.86×10^{1}	0.00×10^{0}	1.86×10^{1}	0.00×10^{0}	1.20×10^{2}	-1.20×10^{2}	1.86×10^{1}	1.20×10^{2}	-1.01×10^{2}
Energy Technology Engineering Center	2.30×10^{0}	1.70×10^{0}	5.96×10^{-1}	0.00×10^{0}	0.00×10^{0}	0.00×10^{0}	2.30×10^{0}	1.70×10^{0}	5.96×10^{-1}
Hanford (Richland-RL)	1.30×10^{4}	1.20×10^{4}	1.00×10^{3}	1.28×10^{4}	3.30×10^{4}	-2.02×10^{4}	2.58×10^{4}	4.60×10^{4}	-2.02×10^{4}
Hanford (River Protection-RP)	3.93×10^{3}	0.00×10^{0}	3.93×10^{3}	0.00×10^{0}	0.00×10^{0}	0.00×10^{0}	3.93×10^{3}	0.00×10^{0}	3.93×10^{3}
Idaho National Engineering and Environmental Laboratory	6.10×10^{4}	2.90×10^{4}	3.20×10^{4}	1.20×10^{2}	0.00×10^{0}	1.20×10^{2}	6.11×10^{4}	2.90×10^{4}	3.21×10^{4}
Knolls Atomic Power Laboratory - Nuclear Fuel Services	5.49×10^{1}	0.00×10^{0}	5.49×10^{1}	1.70×10^{2}	0.00×10^{0}	1.70×10^{2}	2.25×10^{2}	0.00×10^{0}	2.25×10^{2}
Lawrence Livermore National Laboratory	3.50×10^{2}	2.30×10^{2}	1.20×10^{2}	2.10×10^{3}	7.10×10^{2}	1.39×10^{3}	2.45×10^{3}	9.40×10^{2}	1.51×10^{3}
Los Alamos National Laboratory	1.20×10^{4}	1.10×10^{4}	1.00×10^{3}	3.29×10^{3}	7.40×10^{3}	-4.11×10^{3}	1.53×10^{4}	1.80×10^{4}	-2.71×10^{3}
Nevada Test Site	6.19×10^{2}	6.20×10^{2}	-1.07×10^{0}	4.63×10^{2}	9.00×10^{0}	4.54×10^{2}	1.08×10^{3}	6.30×10^{2}	4.52×10^{2}
Oak Ridge National Laboratory	0.00×10^{0}	1.30×10^{3}	-1.30×10^{3}	4.49×10^{2}	2.60×10^{2}	1.89×10^{2}	4.49×10^{2}	1.60×10^{3}	-1.15×10^{3}
Paducah Gaseous Diffusion Plant	5.70×10^{0}	0.00×10^{0}	5.70×10^{0}	5.70×10^{0}	1.90×10^{0}	3.80×10^{0}	1.14×10^{1}	1.90×10^{0}	9.50×10^{0}
Rocky Flats Environmental Technology Site	5.35×10^{3}	7.10×10^{2}	4.64×10^{3}	2.75×10^{3}	4.40×10^{3}	-1.65×10^{3}	8.10×10^{3}	5.10×10^{3}	3.00×10^{3}
Sandia National Laboratories - Albuquerque	2.35×10^{1}	6.70×10^{0}	1.68×10^{1}	0.00×10^{0}	7.50×10^{0}	-7.50×10^{0}	2.35×10^{1}	1.40×10^{1}	9.50×10^{0}
Savannah River Site/Mound	1.30×10^{4}	3.20×10^{3}	9.80×10^{3}	2.44×10^{3}	6.80×10^{3}	-4.36×10^{3}	1.54×10^{4}	9.87×10^{3}	5.57×10^{3}
U.S. Army Material Command	2.50×10^{0}	2.50×10^{0}	-4.00×10^{-3}	0.00×10^{0}	0.00×10^{0}	0.00×10^{0}	2.50×10^{0}	2.50×10^{0}	-4.00×10^{-3}
University of Missouri Research Reactor	1.46×10^{0}	2.10×10^{-1}	1.25×10^{0}	0.00×10^{0}	8.30×10^{-1}	-8.30×10^{-1}	1.46×10^{0}	1.00×10^{0}	4.56×10^{-1}
Totals	1.09×10^{5}	5.81×10^{4}	5.14×10^{4}	2.47×10^{4}	5.36×10^{4}	-2.89×10^{4}	1.34×10^{5}	1.12×10^{5}	2.20×10^{4}

[1] See Pages 1, 5 and 6 for discussion.

Table DATA-F-B-2. Comparison of Stored, Projected, and Anticipated RH-TRU Waste Volumes Between the 2003 Update and TWBIR Revision 2 (m^3)[1]

TRU Waste Site	2003 Update Stored	TWBIR Rev. 2 Stored	Difference in Stored	2003 Update Projected	TWBIR Rev. 2 Projected	Difference in Projected	2003 Update Anticipated	TWBIR Rev. 2 Anticipated	Difference in Anticipated
Argonne National Laboratory - East	1.50×10^{1}	0.00×10^{0}	1.50×10^{1}	1.00×10^{2}	0.00×10^{0}	1.00×10^{2}	1.15×10^{2}	0.00×10^{0}	1.15×10^{2}
Argonne National Laboratory - West	2.40×10^{1}	1.90×10^{1}	5.00×10^{0}	6.90×10^{1}	1.30×10^{3}	-1.23×10^{3}	9.30×10^{1}	1.30×10^{3}	-1.21×10^{3}
Battelle Columbus Laboratories	4.40×10^{1}	5.80×10^{2}	-5.36×10^{2}	1.80×10^{0}	0.00×10^{0}	1.80×10^{0}	4.58×10^{1}	5.80×10^{2}	-5.34×10^{2}
Bettis Atomic Power Laboratory	2.00×10^{0}	0.00×10^{0}	2.00×10^{0}	0.00×10^{0}	6.70×10^{0}	-6.70×10^{0}	2.00×10^{0}	6.70×10^{0}	-4.70×10^{0}
Energy Technology Engineering Center	5.00×10^{0}	8.90×10^{-1}	4.11×10^{0}	0.00×10^{0}	0.00×10^{0}	0.00×10^{0}	5.00×10^{0}	8.90×10^{-1}	4.11×10^{0}
Hanford (Richland-RL)	3.80×10^{2}	2.00×10^{2}	1.80×10^{2}	9.40×10^{3}	2.20×10^{4}	-1.26×10^{4}	9.78×10^{3}	2.20×10^{4}	-1.22×10^{4}
Hanford (River Protection-RP)	4.50×10^{3}	0.00×10^{0}	4.50×10^{3}	0.00×10^{0}	0.00×10^{0}	0.00×10^{0}	4.50×10^{3}	0.00×10^{0}	4.50×10^{3}
Idaho National Engineering and Environmental Laboratory	2.20×10^{2}	2.20×10^{2}	0.00×10^{0}	0.00×10^{0}	0.00×10^{0}	0.00×10^{0}	2.20×10^{2}	2.20×10^{2}	0.00×10^{0}
Knolls Atomic Power Laboratory - Nuclear Fuel Services	0.00×10^{0}	0.00×10^{0}	0.00×10^{0}	1.40×10^{2}	0.00×10^{0}	1.40×10^{2}	1.40×10^{2}	0.00×10^{0}	1.40×10^{2}
Los Alamos National Laboratory	1.20×10^{2}	9.40×10^{1}	2.60×10^{1}	0.00×10^{0}	9.90×10^{1}	-9.90×10^{1}	1.20×10^{2}	1.90×10^{2}	-7.00×10^{1}
Oak Ridge National Laboratory	0.00×10^{0}	2.50×10^{3}	-2.50×10^{3}	6.60×10^{2}	4.50×10^{2}	2.10×10^{2}	6.60×10^{2}	2.90×10^{3}	-2.24×10^{3}
Sandia National Laboratories - Albuquerque	4.58×10^{0}	0.00×10^{0}	4.58×10^{0}	0.00×10^{0}	0.00×10^{0}	0.00×10^{0}	4.58×10^{0}	0.00×10^{0}	4.58×10^{0}
Savannah River Site/Mound	0.00×10^{0}	0.00×10^{0}	0.00×10^{0}	2.26×10^{1}	0.00×10^{0}	2.26×10^{1}	2.26×10^{1}	0.00×10^{0}	2.26×10^{1}
Totals	5.31×10^{3}	3.61×10^{3}	1.70×10^{3}	1.04×10^{4}	2.39×10^{4}	-1.35×10^{4}	1.57×10^{4}	2.72×10^{4}	-1.15×10^{4}

[1] See Pages 1 and 28 for discussion.

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Table DATA-F-B-3. Comparison of Stored, Projected, and Anticipated Total TRU Waste Volumes Between the 2003 Update and TWBIR Revision 2 (m^3)[1]

TRU Waste Site	2003 Update Stored	TWBIR Rev. 2 Stored	Difference in Stored	2003 Update Projected	TWBIR Rev. 2 Projected	Difference in Projected	2003 Update Anticipated	TWBIR Rev. 2 Anticipated	Difference in Anticipated
CH TRU Waste Volumes	1.09×10^5	5.81×10^4	5.14×10^4	2.47×10^4	5.36×10^4	-2.89×10^4	1.34×10^5	1.12×10^5	2.20×10^4
CH Emplaced TRU Waste Volumes	7.72×10^3	0.00×10^0	7.72×10^3	0.00×10^0	0.00×10^0	0.00×10^0	7.72×10^3	0.00×10^0	7.72×10^3
Total CH TRU Waste Volumes	1.17×10^5	5.81×10^4	5.91×10^4	2.47×10^4	5.36×10^4	-2.89×10^4	1.42×10^5	1.12×10^5	2.97×10^4
Total RH TRU Waste Volumes	5.31×10^3	3.61×10^3	1.70×10^3	1.04×10^4	2.30×10^4	-1.35×10^4	1.57×10^4	2.72×10^4	-1.15×10^4
Total TRU Waste Volumes	1.23×10^5	6.17×10^4	6.08×10^4	3.51×10^4	7.74×10^4	-4.23×10^4	1.58×10^5	1.39×10^5	1.82×10^4

[1] See Pages 1, 5, 6 and 28 for discussion.

DATA-F-B-1.2 Waste Inventory Comparison by Final Waste Form

Tables DATA-F-B-4 through DATA-F-B-23 contain two parts. The top portion of each table shows the volume data, and the lower portion of each table shows the waste material parameter (WMP) data. These tables compare the 2003 Update Report and TWBIR Revision 2 volume and WMP data for the roll-ups by final waste form. There is one table for each final waste form for each CH-TRU or RH-TRU waste type.

The first part of Tables DATA-F-B-4 through DATA-F-B-23 contains rolled up final waste form volume data by site, and were compiled using the TWBID Revision 2.1 (LANL 2003). In the upper portion of each table, there are eight columns. The first column contains the site identification. Column 2 contains the volume of emplaced waste for the sites listed. Columns 3 and 4 contain the 2003 Update Report and TWBIR Revision 2 stored volumes, respectively. Columns 5 and 6 contain the 2003 Update Report and TWBIR Revision 2 projected volumes, respectively. Columns 7 and 8 contain the 2003 Update Report and TWBIR Revision 2 total volumes, respectively. The 9th and last column contains the volume difference between the total (anticipated) 2003 Update Report and TWBIR Revision 2 volumes (columns 7 and 8, respectively). This volume difference is the result of subtracting TWBIR Revision 2 volumes from 2003 Update volumes. The sum of each column is shown in the "TRU Waste Site Total" row.

The 2003 Update Report and TWBIR Revision 2 stored and projected waste volumes by site which contributed to the final waste form are given for the applicable sites and for emplaced waste. No waste was emplaced at the time of the TWBIR Revision 2 (DOE 1995), resulting in zero values for those columns (2, 4, and 6) for the WIPP. Sections DATA-F-B-1.4 and DATA-F-B-1.6 explain the volume data in these tables.

The second part of Tables DATA-F-B-4 through DATA-F-B-23, contains the WMP average densities in units of kilograms per cubic meter (kg/m^3) and shows the comparison of the 2003 Update Report and TWBIR Revision 2 WMP data for the roll-ups by final waste form. The last column of the WMP data table gives the result of subtracting the TWBIR Revision 2 average density from the 2003 Update Report average density. The 2003 Update Report WMP data were compiled using TWBID Revision 2.1 (LANL 2003). Sections DATA-F-B-2.1 and DATA-F-B-2.2 explain the WMP data in these tables. Section DATA-F-B-2.3 discusses the waste container (packaging) materials.

DATA-F-B-1.3 Analysis of CH-TRU Waste Volume Differences by Site

Table DATA-F-B-1 compares the stored, projected, and anticipated CH-TRU waste volumes between the TWBIR Revision 2 (DOE 1995) and 2003 Update Report inventories by site and gives the total CH-TRU waste and emplaced waste volumes.

The total difference in stored CH-TRU waste at the sites is 5.14×10^4 m^3, or an 88 percent increase from the TWBIR Revision 2 inventory. The bulk of this additional stored volume came from the Idaho National Engineering and Environmental Laboratory (INEEL; 3.20×10^4 m^3), the Savannah River Site (SRS; 9.80×10^3 m^3), Los Alamos National Laboratory (LANL; 1.00×10^3 m^3), and the Rocky Flats Environmental Technology Site (RFETS); (4.64 ×

10^3 m^3). The sites adjusted their existing inventory data based on new information (since the TWBIR Revision 2 inventory) about the waste and/or increased accessibility to the waste. The Hanford River Protection (RP) stored waste (3.93×10^3 m^3) is a new addition to the inventory. Several small-quantity generator sites have also added small volumes of CH-TRU stored waste to the inventory that were not previously reported (Battelle Columbus Laboratories (BCL), Bettis Atomic Power Laboratory (BAPL), Knolls Atomic Power Laboratory Nuclear Fuels Services (KAPL-NFS), and Paducah Gaseous Diffusion Plant (PGDP)).

The total projected CH-TRU waste volume has decreased by 2.89×10^4 m^3, or a 54 percent decrease from the TWBIR Revision 2 inventory. The largest decrease in projected CH-TRU waste volume is 2.02×10^4 m^3 reported by Hanford Richland (RL). This was most likely prompted by changes in future forecast planning volumes based on better knowledge about the waste by on-site burial of non-TRU waste or by redesignation into the stored waste category as a result of waste operations.

The anticipated CH-TRU waste is simply the sum of the stored and projected wastes. It follows that the overall change is an increase of 2.20×10^4 m^3, or a 20 percent increase for the anticipated volumes.

The emplaced waste volume as of the inventory date (September 30, 2002) is 7.72×10^3 m^3. As of the inventory date, only CH-TRU waste has been emplaced. Table DATA-F-B-3 shows the sum of the current anticipated and emplaced CH-TRU waste volumes as 1.42×10^5 m^3. The total CH-TRU waste volume from the TWBIR Revision 2 was 1.12×10^5 m^3, giving a difference of 2.97×10^4 m^3.

DATA-F-B-1.4 CH-TRU Waste Volumes by Final Waste Form by Site

Tables DATA-F-B-4 through DATA-F-B-14 show that 5 of the 11 CH-TRU waste final waste form total volumes increased (filter material, heterogeneous debris, inorganic non-metal, solidified inorganic material, and solidified organic material). These increases were all greater than 800 m^3. Of these, the heterogeneous debris and solidified inorganic material volumes had the largest increases of 2.9×10^4 m^3 and 2.2×10^4 m^3, respectively. The solidified organic material increased by 4.6×10^3 m^3 and the inorganic non-metal increased by 7.2×10^3 m^3. The filter material and final waste form volumes increased by 8.5×10^2 m^3. (See Section DATA-F-3.2.1.4 for additional information regarding solidified inorganic material and solidified organic material received after TWBID Revision 2.1 Version 3.12, Data Version 4.09 was configured for performance assessment calculation.)

Six of the 11 CH-TRU waste final waste form total volumes decreased (combustible material, graphite, lead/cadmium metal, salt, soil, and uncategorized metal). These decreases ranged from less than 5.0×10^2 m^3 for graphite, lead/cadmium metal, salt, and soil, to 4.2×10^3 m^3 for combustible and 2.7×10^4 m^3 for uncategorized metal.

Table DATA-F-B-4. WIPP CH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update Report — Combustible Material[1]

Final Waste Form: ***Combustible Material***

TRU Waste Site Volumes (m^3)								
Site	***Emplaced Waste Volume***	***2003 Stored***	***Rev. 2 Stored***	***2003 Proj.***	***Rev. 2 Proj.***	***2003 Total***	***Rev. 2 Total***	***Total Diff.***
Argonne National Laboratory - East	0.0×10^{0}	9.0×10^{1}	0.0×10^{0}	6.6×10^{1}	0.0×10^{0}	1.6×10^{2}	0.0×10^{0}	1.6×10^{2}
Argonne National Laboratory - West	0.0×10^{0}	5.4×10^{0}	0.0×10^{0}	4.4×10^{0}	1.0×10^{2}	9.8×10^{0}	1.0×10^{2}	-9.2×10^{1}
Battelle Columbus Laboratories	0.0×10^{0}	5.2×10^{0}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	5.2×10^{0}	0.0×10^{0}	5.2×10^{0}
Hanford (Richland-RL)	0.0×10^{0}	9.8×10^{1}	4.6×10^{2}	0.0×10^{0}	1.2×10^{3}	9.8×10^{1}	1.7×10^{3}	-1.6×10^{3}
Idaho National Engineering and Environmental Laboratory	6.2×10^{1}	0.0×10^{0}	3.3×10^{3}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	3.3×10^{3}	-3.3×10^{3}
Los Alamos National Laboratory	5.9×10^{0}	2.9×10^{3}	1.8×10^{3}	1.4×10^{3}	2.4×10^{3}	4.3×10^{3}	4.2×10^{3}	6.5×10^{1}
Mound Plant	6.2×10^{1}	0.0×10^{0}	7.1×10^{0}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	7.1×10^{0}	-7.1×10^{0}
Rocky Flats Environmental Technology Site	4.8×10^{2}	1.2×10^{3}	1.9×10^{2}	4.5×10^{2}	8.6×10^{2}	1.6×10^{3}	1.0×10^{3}	6.0×10^{2}
TRU Waste Site Total	6.1×10^{2}	4.3×10^{3}	5.8×10^{3}	1.9×10^{3}	4.6×10^{3}	6.2×10^{3}	1.0×10^{4}	-4.2×10^{3}

Waste Material Parameters	***2003 Update Average Density (kg/m^3)***	***TWBIR Rev. 2 Average Density (kg/m^3)***	***Difference (kg/m^3)***
Fe-Base Metal/Alloys	1.5×10^{1}	1.1×10^{2}	-9.4×10^{1}
Al-Base Metal/Alloys	8.4×10^{-1}	2.0×10^{-1}	6.4×10^{-1}
Other Metal/Alloys	7.9×10^{0}	1.0×10^{1}	-2.5×10^{0}
Other Inorganic Material	1.0×10^{1}	8.7×10^{0}	1.3×10^{0}
Cellulosic Material	2.0×10^{1}	1.9×10^{2}	-1.7×10^{2}
Rubber Material	1.3×10^{1}	3.0×10^{1}	-1.7×10^{1}
Plastic Material	4.9×10^{1}	6.0×10^{1}	-1.1×10^{1}
Solidified Inorganic Material	9.4×10^{-1}	0.0×10^{0}	9.4×10^{-1}
Cement (Solidified)	4.8×10^{-2}	0.0×10^{0}	4.8×10^{-2}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	1.2×10^{1}	0.0×10^{0}	1.2×10^{1}
Soil	8.8×10^{-1}	0.0×10^{0}	8.8×10^{-1}

[1] *See Page 6, 27, and 28 for discussion.*

Table DATA-F-B-5. WIPP CH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Filter Material[1]

Final Waste Form: *Filter Material*

TRU Waste Site Volumes (m^3)								
Site	Emplaced Waste Volume	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Hanford (Richland-RL)	0.0×10^{0}	2.2×10^{1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	2.2×10^{1}	0.0×10^{0}	2.2×10^{1}
Idaho National Engineering and Environmental Laboratory	2.9×10^{2}	0.0×10^{0}	1.3×10^{2}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	1.3×10^{2}	-1.3×10^{2}
Lawrence Livermore National Laboratory	0.0×10^{0}	1.9×10^{2}	1.6×10^{1}	4.5×10^{2}	3.2×10^{1}	6.4×10^{2}	4.8×10^{1}	6.0×10^{2}
Los Alamos National Laboratory	0.0×10^{0}	3.3×10^{2}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	3.3×10^{2}	0.0×10^{0}	3.3×10^{2}
Mound Plant	0.0×10^{0}	0.0×10^{0}	8.3×10^{-1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	8.3×10^{-1}	-8.3×10^{-1}
Rocky Flats Environmental Technology Site	5.6×10^{1}	4.5×10^{2}	7.2×10^{1}	1.4×10^{2}	4.8×10^{2}	5.8×10^{2}	5.5×10^{2}	3.4×10^{1}
TRU Waste Site Total	3.4×10^{2}	9.9×10^{2}	2.2×10^{2}	5.9×10^{2}	5.1×10^{2}	1.6×10^{3}	7.3×10^{2}	8.5×10^{2}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	4.5×10^{1}	5.3×10^{0}	4.0×10^{1}
Al-Base Metal/Alloys	1.8×10^{1}	1.3×10^{1}	5.3×10^{0}
Other Metal/Alloys	5.7×10^{0}	8.0×10^{-1}	4.9×10^{0}
Other Inorganic Material	1.6×10^{1}	1.5×10^{1}	8.9×10^{-1}
Cellulosic Material	4.6×10^{1}	5.6×10^{1}	-9.8×10^{0}
Rubber Material	6.2×10^{0}	3.3×10^{0}	2.9×10^{0}
Plastic Material	1.6×10^{1}	4.6×10^{0}	1.1×10^{1}
Solidified Inorganic Material	6.0×10^{-1}	0.0×10^{0}	6.0×10^{-1}
Cement (Solidified)	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	3.5×10^{-1}	0.0×10^{0}	3.5×10^{-1}
Soil	4.8×10^{0}	0.0×10^{0}	4.8×10^{0}

[1] See Page 6, 27, and 28 for discussion.

Table DATA-F-B-6. WIPP CH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Graphite[1]

Final Waste Form: ***Graphite***

TRU Waste Site Volumes (m^3)							
Site	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Idaho National Engineering and Environmental Laboratory	0.0×10^0	5.0×10^2	0.0×10^0	0.0×10^0	0.0×10^0	5.0×10^2	-5.0×10^2
Rocky Flats Environmental Technology Site	1.2×10^2	1.4×10^1	1.3×10^0	4.8×10^1	1.3×10^2	6.1×10^1	6.4×10^1
TRU Waste Site Total	1.2×10^2	5.1×10^2	1.3×10^0	4.8×10^1	1.3×10^2	5.6×10^2	-4.3×10^2

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	1.9×10^1	1.4×10^0	1.8×10^1
Al-Base Metal/Alloys	0.0×10^0	0.0×10^0	0.0×10^0
Other Metal/Alloys	0.0×10^0	0.0×10^0	0.0×10^0
Other Inorganic Material	1.7×10^2	3.0×10^2	-1.3×10^2
Cellulosic Material	8.6×10^1	4.8×10^0	8.2×10^1
Rubber Material	0.0×10^0	0.0×10^0	0.0×10^0
Plastic Material	2.3×10^1	5.6×10^0	1.8×10^1
Solidified Inorganic Material	7.1×10^0	0.0×10^0	7.1×10^0
Cement (Solidified)	0.0×10^0	0.0×10^0	0.0×10^0
Vitrified Material	0.0×10^0	0.0×10^0	0.0×10^0
Solidified Organic Material	0.0×10^0	0.0×10^0	0.0×10^0
Soil	0.0×10^0	0.0×10^0	0.0×10^0

[1] *See Page 6, 27, and 28 for discussion.*

Table DATA-F-B-7. WIPP CH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Heterogeneous Debris[1]

Final Waste Form: ***Heterogeneous Debris***

TRU Waste Site Volumes (m^3)								
Site	*Emplaced Waste Volume*	*2003 Stored*	*Rev. 2 Stored*	*2003 Proj.*	*Rev. 2 Proj.*	*2003 Total*	*Rev. 2 Total*	*Total Diff.*
Argonne National Laboratory - West	0.0×10^{0}	6.2×10^{-1}	6.5×10^{0}	3.4×10^{1}	3.5×10^{2}	3.4×10^{1}	3.5×10^{2}	-3.2×10^{2}
Bettis Atomic Power Laboratory	0.0×10^{0}	1.9×10^{1}	0.0×10^{0}	0.0×10^{0}	1.2×10^{2}	1.9×10^{1}	1.2×10^{2}	-1.0×10^{2}
Energy Technology Engineering Center	0.0×10^{0}	1.5×10^{0}	1.7×10^{0}	0.0×10^{0}	0.0×10^{0}	1.5×10^{0}	1.7×10^{0}	-2.2×10^{-1}
Framatome	0.0×10^{0}	7.3×10^{0}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	7.3×10^{0}	0.0×10^{0}	7.3×10^{0}
Hanford (Richland-RL)	9.8×10^{1}	1.2×10^{4}	1.1×10^{4}	2.1×10^{3}	6.3×10^{3}	1.4×10^{4}	1.7×10^{4}	-3.3×10^{3}
Idaho National Engineering and Environmental Laboratory	0.0×10^{0}	2.0×10^{4}	1.1×10^{4}	2.3×10^{1}	0.0×10^{0}	2.0×10^{4}	1.7×10^{0}	2.0×10^{4}
Knolls Atomic Power Laboratory - Nuclear Fuel Services	0.0×10^{0}	5.5×10^{1}	0.0×10^{0}	1.7×10^{2}	0.0×10^{0}	2.3×10^{2}	0.0×10^{0}	2.3×10^{2}
Lawrence Livermore National Laboratory	0.0×10^{0}	1.3×10^{2}	2.0×10^{2}	1.4×10^{3}	6.6×10^{2}	1.6×10^{3}	8.6×10^{2}	7.1×10^{2}
Los Alamos National Laboratory	2.7×10^{2}	2.1×10^{3}	1.6×10^{1}	1.4×10^{3}	2.9×10^{1}	3.5×10^{3}	4.5×10^{1}	3.5×10^{3}
Mound Plant	0.0×10^{0}	0.0×10^{0}	6.2×10^{-1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	6.2×10^{-1}	-6.2×10^{-1}
Nevada Test Site	0.0×10^{0}	6.1×10^{2}	6.1×10^{2}	4.6×10^{2}	9.0×10^{0}	1.1×10^{3}	6.2×10^{2}	4.5×10^{2}
Oak Ridge National Laboratory	0.0×10^{0}	0.0×10^{0}	1.3×10^{3}	4.5×10^{2}	2.6×10^{2}	4.5×10^{2}	1.6×10^{3}	-1.1×10^{3}
Pantex Plant	0.0×10^{0}	0.0×10^{0}	6.2×10^{-1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	6.2×10^{-1}	-6.2×10^{-1}
Rocky Flats Environmental Technology Site	6.8×10^{1}	1.0×10^{3}	3.9×10^{0}	1.2×10^{3}	0.0×10^{0}	2.2×10^{3}	3.9×10^{0}	2.2×10^{3}
Sandia National Laboratories - Albuquerque	0.0×10^{0}	2.4×10^{1}	6.7×10^{0}	0.0×10^{0}	7.5×10^{0}	2.4×10^{1}	1.4×10^{1}	9.4×10^{0}
Savannah River Site	1.4×10^{2}	1.3×10^{4}	2.6×10^{3}	2.4×10^{3}	5.5×10^{3}	1.5×10^{4}	8.1×10^{3}	7.3×10^{3}
U.S. Army Material Command	0.0×10^{0}	2.5×10^{0}	2.5×10^{0}	0.0×10^{0}	0.0×10^{0}	2.5×10^{0}	2.5×10^{0}	-4.0×10^{-3}
University of Missouri Research Reactor	0.0×10^{0}	1.5×10^{0}	2.1×10^{-1}	0.0×10^{0}	8.3×10^{-1}	1.5×10^{0}	1.0×10^{0}	4.2×10^{-1}
TRU Waste Site Total	5.7×10^{2}	4.9×10^{4}	2.7×10^{4}	9.7×10^{3}	1.3×10^{4}	5.9×10^{4}	2.9×10^{4}	2.9×10^{4}

Waste Material Parameters	*2003 Update Average Density (kg/m^3)*	*TWBIR Rev. 2 Average Density (kg/m^3)*	*Difference (kg/m^3)*
Fe-Base Metal/Alloys	2.4×10^{2}	2.5×10^{2}	-2.9×10^{0}
Al-Base Metal/Alloys	3.3×10^{1}	4.6×10^{1}	-1.3×10^{1}
Other Metal/Alloys	5.7×10^{1}	5.7×10^{0}	5.1×10^{1}
Other Inorganic Material	5.6×10^{1}	2.6×10^{1}	2.9×10^{1}
Cellulosic Material	1.2×10^{2}	8.6×10^{1}	3.5×10^{1}
Rubber Material	3.2×10^{1}	1.9×10^{1}	1.3×10^{1}
Plastic Material	9.0×10^{1}	7.2×10^{1}	1.8×10^{1}
Solidified Inorganic Material	3.6×10^{0}	3.8×10^{0}	-2.0×10^{-1}
Cement (Solidified)	1.8×10^{-2}	0.0×10^{0}	1.8×10^{-2}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	1.8×10^{0}	4.0×10^{-1}	1.4×10^{0}
Soil	4.2×10^{0}	2.9×10^{0}	1.3×10^{0}

[1] *See Page 6, 27, and 28 for discussion.*

Table DATA-F-B-8. WIPP CH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Inorganic Non-Metal[1]

Final Waste Form: **Inorganic Non-Metal**

TRU Waste Site Volumes (m^3)								
Site	Emplaced Waste Volume	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Hanford (Richland-RL)	0.0×10^{0}	1.1×10^{1}	3.5×10^{1}	3.0×10^{1}	6.9×10^{1}	4.2×10^{1}	1.0×10^{2}	-6.2×10^{1}
Idaho National Engineering and Environmental Laboratory	4.3×10^{2}	1.1×10^{4}	3.0×10^{3}	0.0×10^{0}	0.0×10^{0}	1.1×10^{4}	3.0×10^{3}	7.5×10^{3}
Paducah Gaseous Diffusion Plant	0.0×10^{0}	5.7×10^{0}	0.0×10^{0}	5.7×10^{0}	1.9×10^{0}	1.1×10^{1}	1.9×10^{0}	9.5×10^{0}
Rocky Flats Environmental Technology Site	5.4×10^{2}	6.5×10^{2}	5.8×10^{1}	3.2×10^{1}	8.7×10^{2}	6.8×10^{2}	9.3×10^{2}	-2.5×10^{2}
Teledyne Brown Engineering	0.0×10^{0}	0.0×10^{0}	2.1×10^{-1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	2.1×10^{-1}	-2.1×10^{-1}
TRU Waste Site Total	9.7×10^{2}	1.1×10^{4}	3.1×10^{3}	6.8×10^{1}	9.4×10^{2}	1.1×10^{4}	4.1×10^{3}	7.2×10^{3}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	4.2×10^{0}	2.8×10^{0}	1.4×10^{0}
Al-Base Metal/Alloys	1.2×10^{-2}	0.0×10^{0}	1.2×10^{-2}
Other Metal/Alloys	5.0×10^{0}	2.0×10^{-1}	4.8×10^{0}
Other Inorganic Material	5.5×10^{1}	1.0×10^{2}	-4.5×10^{1}
Cellulosic Material	1.9×10^{1}	1.6×10^{1}	3.2×10^{0}
Rubber Material	1.1×10^{-1}	4.0×10^{-1}	-2.9×10^{-1}
Plastic Material	2.7×10^{0}	6.7×10^{0}	-4.0×10^{0}
Solidified Inorganic Material	9.0×10^{-1}	1.4×10^{0}	-5.0×10^{-1}
Cement (Solidified)	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Vitrified Material	7.1×10^{1}	1.4×10^{3}	-1.3×10^{3}
Solidified Organic Material	2.7×10^{-5}	0.0×10^{0}	2.7×10^{-5}
Soil	1.8×10^{-3}	0.0×10^{0}	1.8×10^{-3}

[1] See Page 6, 27, and 28 for discussion.

Table DATA-F-B-9. WIPP CH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Lead/Cadmium Metal[1]

Final Waste Form: *Lead/Cadmium Metal*

TRU Waste Site Volumes (m^3)								
Site	Emplaced Waste Volume	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Argonne National Laboratory - East	0.0×10^{0}	0.0×10^{0}	1.1×10^{0}	0.0×10^{0}	1.3×10^{0}	0.0×10^{0}	2.4×10^{0}	-2.4×10^{0}
Hanford (Richland-RL)	0.0×10^{0}	1.7×10^{1}	1.4×10^{1}	1.4×10^{1}	3.5×10^{1}	3.1×10^{1}	4.9×10^{1}	-1.8×10^{1}
Idaho National Engineering and Environmental Laboratory	8.1×10^{1}	0.0×10^{0}	1.4×10^{1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	1.4×10^{1}	-1.4×10^{1}
Los Alamos National Laboratory	0.0×10^{0}	3.7×10^{0}	1.9×10^{0}	0.0×10^{0}	0.0×10^{0}	3.7×10^{0}	1.9×10^{0}	1.9×10^{0}
Rocky Flats Environmental Technology Site	0.0×10^{0}	1.2×10^{2}	4.0×10^{0}	1.8×10^{1}	3.0×10^{2}	1.4×10^{2}	3.0×10^{2}	-1.6×10^{2}
TRU Waste Site Total	8.1×10^{1}	1.4×10^{2}	3.5×10^{1}	3.2×10^{1}	3.3×10^{2}	1.8×10^{2}	3.7×10^{2}	-1.9×10^{2}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	9.2×10^{2}	1.3×10^{2}	7.9×10^{2}
Al-Base Metal/Alloys	1.8×10^{1}	1.7×10^{1}	1.5×10^{0}
Other Metal/Alloys	1.5×10^{2}	5.2×10^{1}	1.0×10^{2}
Other Inorganic Material	1.8×10^{1}	1.2×10^{1}	6.2×10^{0}
Cellulosic Material	5.0×10^{0}	4.0×10^{0}	1.0×10^{0}
Rubber Material	3.3×10^{0}	1.6×10^{1}	-1.2×10^{1}
Plastic Material	9.3×10^{0}	2.2×10^{1}	-1.3×10^{1}
Solidified Inorganic Material	8.2×10^{-1}	0.0×10^{0}	8.2×10^{-1}
Cement (Solidified)	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	1.1×10^{-2}	0.0×10^{0}	1.1×10^{-2}
Soil	1.6×10^{-1}	0.0×10^{0}	1.6×10^{-1}

[1] *See Page 6, 27, and 28 for discussion.*

Table DATA-F-B-10. WIPP CH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Salt[1]

Final Waste Form: ***Salt***

TRU Waste Site Volumes (m^3)								
Site	**Emplaced Waste Volume**	**2003 Stored**	**Rev. 2 Stored**	**2003 Proj.**	**Rev. 2 Proj.**	**2003 Total**	**Rev. 2 Total**	**Total Diff.**
Idaho National Engineering and Environmental Laboratory	0.0×10^{0}	0.0×10^{0}	2.1×10^{1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	2.1×10^{1}	-2.1×10^{1}
Lawrence Livermore National Laboratory	0.0×10^{0}	1.2×10^{0}	6.2×10^{-1}	1.5×10^{1}	3.0×10^{0}	1.6×10^{1}	3.6×10^{0}	1.2×10^{1}
Los Alamos National Laboratory	0.0×10^{0}	1.3×10^{2}	0.0×10^{0}	1.7×10^{2}	0.0×10^{0}	3.0×10^{2}	0.0×10^{0}	3.0×10^{2}
Rocky Flats Environmental Technology Site	1.5×10^{3}	2.5×10^{1}	0.0×10^{0}	0.0×10^{0}	3.3×10^{2}	2.5×10^{1}	3.3×10^{2}	-3.0×10^{2}
TRU Waste Site Total	1.5×10^{3}	1.5×10^{2}	2.1×10^{1}	1.9×10^{2}	3.3×10^{2}	3.4×10^{2}	3.5×10^{2}	-1.2×10^{1}

Waste Material Parameters	**2003 Update Average Density (kg/m^3)**	**TWBIR Rev. 2 Average Density (kg/m^3)**	**Difference (kg/m^3)**
Fe-Base Metal/Alloys	9.3×10^{0}	1.8×10^{2}	-1.7×10^{2}
Al-Base Metal/Alloys	5.7×10^{-2}	1.0×10^{-1}	-4.3×10^{-2}
Other Metal/Alloys	3.1×10^{0}	2.3×10^{0}	8.1×10^{-1}
Other Inorganic Material	2.1×10^{2}	1.7×10^{2}	4.1×10^{1}
Cellulosic Material	1.4×10^{2}	1.6×10^{2}	-2.6×10^{1}
Rubber Material	4.1×10^{-2}	0.0×10^{0}	4.1×10^{-2}
Plastic Material	8.9×10^{-1}	6.0×10^{-1}	2.9×10^{-1}
Solidified Inorganic Material	1.3×10^{1}	0.0×10^{0}	1.3×10^{1}
Cement (Solidified)	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	1.2×10^{1}	0.0×10^{0}	1.2×10^{1}
Soil	1.5×10^{0}	0.0×10^{0}	1.5×10^{0}

[1] See Page 6, 27, and 28 for discussion.

Table DATA-F-B-11. WIPP CH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Soil[1]

Final Waste Form: ***Soil***

TRU Waste Site Volumes (m^3)							
Site	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Hanford (Richland-RL)	1.1×10^{2}	1.2×10^{2}	5.9×10^{3}	6.0×10^{3}	6.0×10^{3}	6.1×10^{3}	-3.5×10^{1}
Idaho National Engineering and Environmental Laboratory	0.0×10^{0}	0.0×10^{0}	9.7×10^{1}	0.0×10^{0}	9.7×10^{1}	0.0×10^{0}	9.7×10^{1}
Los Alamos National Laboratory	1.9×10^{2}	1.1×10^{2}	0.0×10^{0}	2.9×10^{1}	1.9×10^{2}	1.4×10^{2}	4.8×10^{1}
Mound Plant	0.0×10^{0}	1.8×10^{2}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	1.8×10^{2}	-1.8×10^{2}
TRU Waste Site Total	3.0×10^{2}	4.1×10^{2}	6.0×10^{3}	6.0×10^{3}	6.3×10^{3}	6.4×10^{3}	-6.7×10^{1}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	2.4×10^{-2}	1.7×10^{0}	-1.7×10^{0}
Al-Base Metal/Alloys	9.1×10^{-3}	0.0×10^{0}	9.1×10^{-3}
Other Metal/Alloys	6.4×10^{-2}	0.0×10^{0}	6.4×10^{-2}
Other Inorganic Material	9.1×10^{-1}	1.0×10^{0}	-8.6×10^{-2}
Cellulosic Material	1.5×10^{-1}	3.7×10^{0}	-3.5×10^{0}
Rubber Material	2.7×10^{-2}	1.7×10^{0}	-1.7×10^{0}
Plastic Material	1.4×10^{-1}	3.2×10^{0}	-3.1×10^{0}
Solidified Inorganic Material	1.8×10^{0}	0.0×10^{0}	1.8×10^{0}
Cement (Solidified)	1.8×10^{0}	0.0×10^{0}	1.8×10^{0}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	5.0×10^{0}	1.0×10^{-1}	4.9×10^{0}
Soil	3.2×10^{2}	7.6×10^{2}	-4.3×10^{2}

[1] See Page 6, 27, and 28 for discussion.

Table DATA-F-B-12. WIPP CH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Solidified Inorganic Material[1]

Final Waste Form: *Solidified Inorganic Material*

TRU Waste Site Volumes (m^3)								
Site	Emplaced Waste Volume	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Ames Laboratory - Iowa State University	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	4.2×10^{-1}	0.0×10^{0}	4.2×10^{-1}	-4.2×10^{-1}
Argonne National Laboratory - East	0.0×10^{0}	2.4×10^{1}	5.2×10^{0}	1.3×10^{1}	0.0×10^{0}	3.7×10^{1}	5.2×10^{0}	3.2×10^{1}
Hanford (Richland-RL)	0.0×10^{0}	1.9×10^{2}	1.3×10^{1}	3.0×10^{1}	7.1×10^{0}	2.2×10^{2}	2.0×10^{1}	2.0×10^{2}
Hanford (River Protection-RP)	0.0×10^{0}	3.9×10^{3}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	3.9×10^{3}	0.0×10^{0}	3.9×10^{3}
Idaho National Engineering and Environmental Laboratory	2.0×10^{3}	2.9×10^{4}	4.3×10^{3}	0.0×10^{0}	0.0×10^{0}	2.9×10^{4}	4.3×10^{3}	2.5×10^{4}
Lawrence Livermore National Laboratory	0.0×10^{0}	1.4×10^{1}	1.4×10^{1}	1.8×10^{2}	5.8×10^{0}	1.9×10^{2}	2.0×10^{1}	1.7×10^{2}
Los Alamos National Laboratory	0.0×10^{0}	6.5×10^{2}	4.9×10^{3}	2.4×10^{2}	2.0×10^{3}	8.9×10^{2}	6.9×10^{3}	-6.0×10^{3}
Mound Plant	0.0×10^{0}	0.0×10^{0}	6.0×10^{0}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	6.0×10^{0}	-6.0×10^{0}
Nevada Test Site	0.0×10^{0}	5.7×10^{0}	5.7×10^{0}	0.0×10^{0}	0.0×10^{0}	5.7×10^{0}	5.7×10^{0}	7.6×10^{-8}
Rocky Flats Environmental Technology Site	1.3×10^{3}	8.1×10^{2}	1.7×10^{2}	2.7×10^{2}	1.3×10^{3}	1.1×10^{3}	1.4×10^{3}	-3.5×10^{2}
Savannah River Site	0.0×10^{0}	2.4×10^{1}	2.0×10^{2}	0.0×10^{0}	1.2×10^{3}	2.4×10^{1}	1.4×10^{3}	-1.3×10^{3}
TRU Waste Site Total	3.3×10^{3}	3.5×10^{4}	9.6×10^{3}	7.3×10^{2}	4.5×10^{3}	3.6×10^{4}	1.4×10^{4}	2.2×10^{4}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	9.5×10^{-1}	1.8×10^{2}	-1.8×10^{2}
Al-Base Metal/Alloys	2.9×10^{-2}	0.0×10^{0}	2.9×10^{-2}
Other Metal/Alloys	1.4×10^{0}	8.0×10^{-1}	6.2×10^{-1}
Other Inorganic Material	3.3×10^{1}	8.1×10^{1}	-4.8×10^{1}
Cellulosic Material	7.6×10^{0}	4.0×10^{-1}	7.2×10^{0}
Rubber Material	1.3×10^{-2}	0.0×10^{0}	1.3×10^{-2}
Plastic Material	3.8×10^{0}	2.2×10^{0}	1.6×10^{0}
Solidified Inorganic Material	2.5×10^{2}	4.2×10^{2}	-1.6×10^{2}
Cement (Solidified)	9.8×10^{1}	3.9×10^{2}	-2.9×10^{2}
Vitrified Material	4.6×10^{-2}	3.2×10^{1}	-3.2×10^{1}
Solidified Organic Material	2.7×10^{0}	1.0×10^{-1}	2.6×10^{0}
Soil	4.2×10^{0}	6.0×10^{-1}	3.6×10^{0}

[1] See Page 6, 27, and 28 for discussion.

Table DATA-F-B-13. WIPP CH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Solidified Organic Material[1]

Final Waste Form: *Solidified Organic Material*

TRU Waste Site Volumes (m^3)							
Site	**2003 Stored**	**Rev. 2 Stored**	**2003 Proj.**	**Rev. 2 Proj.**	**2003 Total**	**Rev. 2 Total**	**Total Diff.**
Argonne National Laboratory - East	0.0×10^{0}	2.1×10^{-1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	2.1×10^{-1}	-2.1×10^{-1}
Energy Technology Engineering Center	8.4×10^{-1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	8.4×10^{-1}	0.0×10^{0}	8.4×10^{-1}
Hanford (Richland-RL)	2.3×10^{0}	7.4×10^{0}	3.4×10^{2}	9.4×10^{0}	3.4×10^{2}	1.7×10^{1}	3.2×10^{2}
Idaho National Engineering and Environmental Laboratory	1.1×10^{3}	7.9×10^{2}	0.0×10^{0}	0.0×10^{0}	1.1×10^{3}	7.9×10^{2}	3.6×10^{2}
Lawrence Livermore National Laboratory	8.1×10^{0}	1.0×10^{0}	4.8×10^{0}	5.8×10^{0}	1.3×10^{1}	6.9×10^{0}	6.0×10^{0}
Los Alamos National Laboratory	3.9×10^{3}	1.5×10^{0}	2.7×10^{1}	2.9×10^{1}	3.9×10^{3}	3.1×10^{1}	3.9×10^{3}
Rocky Flats Environmental Technology Site	1.4×10^{2}	1.1×10^{2}	4.4×10^{0}	3.1×10^{1}	1.4×10^{2}	1.4×10^{2}	3.9×10^{0}
TRU Waste Site Total	5.2×10^{3}	9.1×10^{2}	3.8×10^{2}	7.5×10^{1}	5.5×10^{3}	9.8×10^{2}	4.6×10^{3}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	3.9×10^{-1}	3.0×10^{-1}	9.0×10^{-2}
Al-Base Metal/Alloys	1.9×10^{-1}	0.0×10^{0}	1.9×10^{-1}
Other Metal/Alloys	2.8×10^{-1}	0.0×10^{0}	2.8×10^{-1}
Other Inorganic Material	2.7×10^{1}	1.2×10^{2}	-8.8×10^{1}
Cellulosic Material	3.7×10^{-1}	3.0×10^{-1}	7.0×10^{-2}
Rubber Material	2.5×10^{-1}	0.0×10^{0}	2.5×10^{-1}
Plastic Material	7.1×10^{0}	6.7×10^{0}	3.6×10^{-1}
Solidified Inorganic Material	1.4×10^{2}	2.1×10^{1}	1.2×10^{2}
Cement (Solidified)	3.8×10^{1}	1.3×10^{2}	-9.2×10^{1}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	3.3×10^{2}	6.1×10^{2}	-2.8×10^{2}
Soil	3.6×10^{1}	2.0×10^{-1}	3.6×10^{1}

[1] *See Page 6, 27, and 28 for discussion.*

Table DATA-F-B-14. WIPP CH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Uncategorized Metal[1]

Final Waste Form: *Uncategorized Metal*

TRU Waste Site Volumes (m^3)								
Site	Emplaced Waste Volume	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Argonne National Laboratory – East	0.0×10^{0}	0.0×10^{0}	5.0×10^{0}	0.0×10^{0}	1.3×10^{2}	0.0×10^{0}	1.3×10^{2}	-1.3×10^{2}
Argonne National Laboratory - West	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	2.9×10^{2}	0.0×10^{0}	2.9×10^{2}	-2.9×10^{2}
Hanford (Richland-RL)	0.0×10^{0}	1.1×10^{2}	4.4×10^{2}	4.4×10^{3}	2.0×10^{4}	4.5×10^{3}	2.0×10^{4}	-1.6×10^{4}
Idaho National Engineering and Environmental Laboratory	1.1×10^{1}	9.4×10^{0}	5.9×10^{3}	0.0×10^{0}	0.0×10^{0}	9.4×10^{0}	5.9×10^{3}	-5.9×10^{3}
Los Alamos National Laboratory	0.0×10^{0}	1.5×10^{3}	4.2×10^{3}	3.2×10^{1}	2.9×10^{3}	1.5×10^{3}	7.1×10^{3}	-5.5×10^{3}
Mound Plant	0.0×10^{0}	0.0×10^{0}	8.2×10^{1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	8.2×10^{1}	-8.2×10^{1}
Rocky Flats Environmental Technology Site	3.5×10^{2}	7.9×10^{2}	9.3×10^{1}	6.7×10^{2}	2.4×10^{2}	1.5×10^{3}	3.3×10^{2}	1.1×10^{3}
Savannah River Site	0.0×10^{0}	0.0×10^{0}	7.0×10^{1}	0.0×10^{0}	1.2×10^{2}	0.0×10^{0}	1.9×10^{2}	-1.9×10^{2}
TRU Waste Site Total	3.6×10^{2}	2.4×10^{3}	1.1×10^{4}	5.1×10^{3}	2.3×10^{4}	7.5×10^{3}	3.4×10^{4}	-2.7×10^{4}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	8.8×10^{1}	1.5×10^{2}	-6.5×10^{1}
Al-Base Metal/Alloys	5.3×10^{0}	3.5×10^{0}	1.8×10^{0}
Other Metal/Alloys	8.5×10^{1}	2.1×10^{2}	-1.3×10^{2}
Other Inorganic Material	1.2×10^{0}	1.4×10^{1}	-1.3×10^{1}
Cellulosic Material	2.3×10^{0}	1.2×10^{1}	-9.9×10^{0}
Rubber Material	1.5×10^{0}	7.0×10^{-1}	8.3×10^{-1}
Plastic Material	7.5×10^{0}	7.9×10^{0}	-3.7×10^{-1}
Solidified Inorganic Material	7.7×10^{0}	0.0×10^{0}	7.7×10^{0}
Cement (Solidified)	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	6.7×10^{-1}	0.0×10^{0}	6.7×10^{-1}
Soil	6.1×10^{-2}	0.0×10^{0}	6.1×10^{-2}

[1] *See Page 6, 27, and 28 for discussion.*

Table DATA-F-B-15. WIPP RH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Combustible Material[1]

Final Waste Form: ***Combustible Material***

TRU Waste Site Volumes (m^3)							
Site	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Battelle Columbus Laboratories	1.7×10^{1}	0.0×10^{0}	8.9×10^{-1}	0.0×10^{0}	1.8×10^{1}	0.0×10^{0}	1.8×10^{1}
Hanford (Richland-RL)	8.9×10^{-1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	8.9×10^{-1}	0.0×10^{0}	8.9×10^{-1}
Idaho National Engineering and Environmental Laboratory	0.0×10^{0}	2.1×10^{1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	2.1×10^{1}	-2.1×10^{1}
Los Alamos National Laboratory	0.0×10^{0}	1.5×10^{1}	0.0×10^{0}	4.9×10^{1}	0.0×10^{0}	6.4×10^{1}	-6.4×10^{1}
TRU Waste Site Total	1.8×10^{1}	3.6×10^{1}	8.9×10^{-1}	4.9×10^{1}	1.9×10^{1}	8.5×10^{1}	-6.7×10^{1}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	8.7×10^{0}	1.9×10^{2}	-1.8×10^{2}
Al-Base Metal/Alloys	7.6×10^{0}	3.0×10^{-1}	7.3×10^{0}
Other Metal/Alloys	6.3×10^{0}	1.7×10^{1}	-1.0×10^{1}
Other Inorganic Material	9.2×10^{0}	8.6×10^{0}	5.7×10^{-1}
Cellulosic Material	3.9×10^{1}	4.9×10^{1}	-1.0×10^{1}
Rubber Material	2.3×10^{1}	6.4×10^{1}	-4.1×10^{1}
Plastic Material	9.2×10^{1}	7.0×10^{0}	8.5×10^{1}
Solidified Inorganic Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Cement (Solidified)	1.7×10^{1}	0.0×10^{0}	1.7×10^{1}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	1.5×10^{0}	0.0×10^{0}	1.5×10^{0}
Soil	1.4×10^{0}	0.0×10^{0}	1.4×10^{0}

[1] *See Pages 28 and 29 for discussion.*

1 ***Table DATA-F-B-16. WIPP RH-TRU Waste Profile Differences Between TWBIR Rev. 2 and***
2 ***2003 Update — Filter Material[1]***

Final Waste Form: ***Filter Material***

TRU Waste Site Volumes (m^3)							
Site	***2003 Stored***	***Rev. 2 Stored***	***2003 Proj.***	***Rev. 2 Proj.***	***2003 Total***	***Rev. 2 Total***	***Total Diff.***
Argonne National Laboratory - West	1.8×10^0	0.0×10^0	8.9×10^0	0.0×10^0	1.1×10^1	0.0×10^0	1.1×10^1
Battelle Columbus Laboratories	5.3×10^0	0.0×10^0	0.0×10^0	0.0×10^0	5.3×10^0	0.0×10^0	5.3×10^0
Hanford (Richland-RL)	1.8×10^0	0.0×10^0	0.0×10^0	0.0×10^0	1.8×10^0	0.0×10^0	1.8×10^0
TRU Waste Site Total	8.9×10^0	0.0×10^0	8.9×10^0	0.0×10^0	1.8×10^1	0.0×10^0	1.8×10^1

Waste Material Parameters	***2003 Update Average Density (kg/m^3)***	***TWBIR Rev. 2 Average Density (kg/m^3)***	***Difference (kg/m^3)***
Fe-Base Metal/Alloys	3.3×10^1	0.0×10^0	3.3×10^1
Al-Base Metal/Alloys	1.7×10^1	0.0×10^0	1.7×10^1
Other Metal/Alloys	4.3×10^1	0.0×10^0	4.3×10^1
Other Inorganic Material	1.1×10^2	0.0×10^0	1.1×10^2
Cellulosic Material	7.3×10^1	0.0×10^0	7.3×10^1
Rubber Material	1.9×10^1	0.0×10^0	1.9×10^1
Plastic Material	6.3×10^0	0.0×10^0	6.3×10^0
Solidified Inorganic Material	0.0×10^0	0.0×10^0	0.0×10^0
Cement (Solidified)	7.7×10^0	0.0×10^0	7.7×10^0
Vitrified Material	0.0×10^0	0.0×10^0	0.0×10^0
Solidified Organic Material	1.2×10^1	0.0×10^0	1.2×10^1
Soil	0.0×10^0	0.0×10^0	0.0×10^0

3 ***[1] See Pages 28 and 29 for discussion.***

1 ***Table DATA-F-B-17. WIPP RH-TRU Waste Profile Differences Between TWBIR Rev. 2 and***
2 ***2003 Update — Heterogeneous Debris[1]***

Final Waste Form: ***Heterogeneous Debris***

TRU Waste Site Volumes (m^3)							
Site	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Argonne National Laboratory - East	1.5×10^{1}	0.0×10^{0}	1.0×10^{2}	0.0×10^{0}	1.2×10^{2}	0.0×10^{0}	1.2×10^{2}
Argonne National Laboratory - West	6.2×10^{0}	0.0×10^{0}	3.6×10^{1}	1.2×10^{3}	4.3×10^{1}	1.2×10^{3}	-1.2×10^{3}
Battelle Columbus Laboratories	0.0×10^{0}	5.8×10^{2}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	5.8×10^{2}	-5.8×10^{2}
Bettis Atomic Power Laboratory	2.0×10^{0}	0.0×10^{0}	0.0×10^{0}	6.7×10^{0}	2.0×10^{0}	6.7×10^{0}	-4.7×10^{0}
Energy Technology Engineering Center	8.9×10^{-1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	8.9×10^{-1}	0.0×10^{0}	8.9×10^{-1}
Hanford (Richland-RL)	2.6×10^{2}	2.0×10^{2}	3.2×10^{3}	4.1×10^{3}	3.5×10^{3}	4.3×10^{3}	-7.9×10^{2}
Idaho National Engineering and Environmental Laboratory	2.0×10^{2}	5.0×10^{1}	0.0×10^{0}	0.0×10^{0}	2.0×10^{2}	5.0×10^{1}	1.5×10^{2}
Knolls Atomic Power Laboratory - Schenectady	0.0×10^{0}	0.0×10^{0}	1.4×10^{2}	0.0×10^{0}	1.4×10^{2}	0.0×10^{0}	1.4×10^{2}
Los Alamos National Laboratory	1.2×10^{2}	1.2×10^{1}	0.0×10^{0}	0.0×10^{0}	1.2×10^{2}	1.2×10^{1}	1.1×10^{2}
Oak Ridge National Laboratory	0.0×10^{0}	1.4×10^{3}	2.7×10^{2}	2.4×10^{2}	2.7×10^{2}	1.7×10^{3}	-1.4×10^{3}
Sandia National Laboratories - Albuquerque	4.6×10^{0}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	4.6×10^{0}	0.0×10^{0}	4.6×10^{0}
Savannah River Site	0.0×10^{0}	0.0×10^{0}	2.3×10^{1}	0.0×10^{0}	2.3×10^{1}	0.0×10^{0}	2.3×10^{1}
TRU Waste Site Total	6.1×10^{2}	2.3×10^{3}	3.8×10^{3}	5.5×10^{3}	4.4×10^{3}	7.8×10^{3}	-3.4×10^{3}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	1.2×10^{2}	1.8×10^{2}	-5.9×10^{1}
Al-Base Metal/Alloys	8.0×10^{0}	2.4×10^{1}	-1.6×10^{1}
Other Metal/Alloys	3.5×10^{1}	1.4×10^{1}	2.1×10^{1}
Other Inorganic Material	4.7×10^{1}	1.9×10^{2}	-1.4×10^{2}
Cellulosic Material	1.6×10^{1}	5.7×10^{1}	-4.2×10^{1}
Rubber Material	1.1×10^{1}	1.0×10^{1}	3.6×10^{-1}
Plastic Material	1.6×10^{1}	4.9×10^{1}	-3.3×10^{1}
Solidified Inorganic Material	3.6×10^{1}	9.0×10^{0}	2.7×10^{1}
Cement (Solidified)	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	1.4×10^{1}	2.9×10^{0}	1.1×10^{1}
Soil	3.5×10^{1}	3.5×10^{0}	3.1×10^{1}

3 ***[1] See Pages 28 and 29 for discussion.***

Table DATA-F-B-18. WIPP RH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Inorganic Non-Metal[1]

Final Waste Form: ***Inorganic Non-Metal***

TRU Waste Site Volumes (m^3)							
Site	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Argonne National Laboratory - West	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	2.1×10^{1}	0.0×10^{0}	2.1×10^{1}	-2.1×10^{1}
Battelle Columbus Laboratories	1.4×10^{1}	0.0×10^{0}	8.9×10^{-1}	0.0×10^{0}	1.5×10^{1}	0.0×10^{0}	1.5×10^{1}
Hanford (Richland-RL)	2.8×10^{1}	0.0×10^{0}	4.3×10^{1}	0.0×10^{0}	7.1×10^{1}	0.0×10^{0}	7.1×10^{1}
Idaho National Engineering and Environmental Laboratory	0.0×10^{0}	4.6×10^{1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	4.6×10^{1}	-4.6×10^{1}
TRU Waste Site Total	4.3×10^{1}	4.6×10^{1}	4.4×10^{1}	2.1×10^{1}	8.6×10^{1}	6.8×10^{1}	1.9×10^{1}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	1.6×10^{2}	9.0×10^{-1}	1.6×10^{2}
Al-Base Metal/Alloys	2.1×10^{1}	0.0×10^{0}	2.1×10^{1}
Other Metal/Alloys	4.8×10^{1}	1.0×10^{-1}	4.8×10^{1}
Other Inorganic Material	9.9×10^{2}	5.6×10^{1}	9.3×10^{2}
Cellulosic Material	3.9×10^{0}	6.1×10^{0}	-2.2×10^{0}
Rubber Material	1.8×10^{0}	2.0×10^{-1}	1.6×10^{0}
Plastic Material	2.4×10^{1}	3.8×10^{0}	2.0×10^{1}
Solidified Inorganic Material	1.5×10^{1}	4.0×10^{-1}	1.4×10^{1}
Cement (Solidified)	3.1×10^{0}	0.0×10^{0}	3.1×10^{0}
Vitrified Material	0.0×10^{0}	1.9×10^{3}	-1.9×10^{3}
Solidified Organic Material	2.8×10^{-1}	0.0×10^{0}	2.8×10^{-1}
Soil	7.1×10^{0}	0.0×10^{0}	7.1×10^{0}

[1] *See Pages 28 and 29 for discussion.*

Table DATA-F-B-19. WIPP RH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Lead/Cadmium Metal[1]

Final Waste Form: ***Lead/Cadmium Metal***

TRU Waste Site Volumes (m^3)							
Site	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Argonne National Laboratory - West	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	6.2×10^{0}	0.0×10^{0}	6.2×10^{0}	-6.2×10^{0}
Energy Technology Engineering Center	0.0×10^{0}	8.9×10^{-1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	8.9×10^{-1}	-8.9×10^{-1}
Hanford (Richland-RL)	1.2×10^{1}	2.7×10^{0}	7.1×10^{0}	6.1×10^{1}	1.9×10^{1}	6.3×10^{1}	-4.4×10^{1}
Idaho National Engineering and Environmental Laboratory	0.0×10^{0}	3.6×10^{0}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	3.6×10^{0}	-3.6×10^{0}
TRU Waste Site Total	1.2×10^{1}	7.1×10^{0}	7.1×10^{0}	6.7×10^{1}	1.9×10^{1}	7.4×10^{1}	-5.5×10^{1}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	5.4×10^{3}	2.4×10^{1}	5.4×10^{3}
Al-Base Metal/Alloys	0.0×10^{0}	2.1×10^{0}	-2.1×10^{0}
Other Metal/Alloys	7.4×10^{1}	5.1×10^{2}	-4.4×10^{2}
Other Inorganic Material	0.0×10^{0}	1.4×10^{0}	-1.4×10^{0}
Cellulosic Material	0.0×10^{0}	5.0×10^{-1}	-5.0×10^{-1}
Rubber Material	0.0×10^{0}	1.9×10^{0}	-1.9×10^{0}
Plastic Material	0.0×10^{0}	2.8×10^{0}	-2.8×10^{0}
Solidified Inorganic Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Cement (Solidified)	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	0.0×10^{0}	5.0×10^{0}	-5.0×10^{0}
Soil	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}

[1] *See Pages 28 and 29 for discussion.*

Table DATA-F-B-20. WIPP RH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Soil[1]

Final Waste Form: ***Soil***

TRU Waste Site Volumes (m^3)							
Site	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Oak Ridge National Laboratory	0.0×10^0	0.0×10^0	2.0×10^2	0.0×10^0	2.0×10^2	0.0×10^0	2.0×10^2
TRU Waste Site Total	0.0×10^0	0.0×10^0	2.0×10^2	0.0×10^0	2.0×10^2	0.0×10^0	2.0×10^2

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)	
Fe-Base Metal/Alloys	0.0×10^0	0.0×10^0	0.0×10^0	
Al-Base Metal/Alloys	0.0×10^0	0.0×10^0	0.0×10^0	
Other Metal/Alloys	0.0×10^0	0.0×10^0	0.0×10^0	
Other Inorganic Material	0.0×10^0	0.0×10^0	0.0×10^0	
Cellulosic Material	0.0×10^0	0.0×10^0	0.0×10^0	
Rubber Material	0.0×10^0	0.0×10^0	0.0×10^0	
Plastic Material	0.0×10^0	0.0×10^0	0.0×10^0	
Solidified Inorganic Material	0.0×10^0	0.0×10^0	0.0×10^0	
Cement (Solidified)	0.0×10^0	0.0×10^0	0.0×10^0	
Vitrified Material	0.0×10^0	0.0×10^0	0.0×10^0	
Solidified Organic Material	0.0×10^0	0.0×10^0	0.0×10^0	
Soil	1.3×10^3	0.0×10^0	1.3×10^3	

[1] See Pages 28 and 29 for discussion.

Table DATA-F-B-21. WIPP RH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Solidified Inorganic Material[1]

Final Waste Form: *Solidified Inorganic Material*

TRU Waste Site Volumes (m^3)							
Site	**2003 Stored**	**Rev. 2 Stored**	**2003 Proj.**	**Rev. 2 Proj.**	**2003 Total**	**Rev. 2 Total**	**Total Diff.**
Argonne National Laboratory - West	1.6×10^{1}	1.8×10^{0}	2.3×10^{1}	2.8×10^{1}	3.9×10^{1}	3.0×10^{1}	8.9×10^{0}
Battelle Columbus Laboratories	1.8×10^{0}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	1.8×10^{0}	0.0×10^{0}	1.8×10^{0}
Hanford (Richland-RL)	1.5×10^{1}	0.0×10^{0}	1.2×10^{2}	0.0×10^{0}	1.3×10^{2}	0.0×10^{0}	1.3×10^{2}
Hanford (River Protection-RP)	4.5×10^{3}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	4.5×10^{3}	0.0×10^{0}	4.5×10^{3}
Idaho National Engineering and Environmental Laboratory	8.9×10^{-1}	6.5×10^{1}	0.0×10^{0}	0.0×10^{0}	8.9×10^{-1}	6.5×10^{1}	-6.4×10^{1}
Oak Ridge National Laboratory	0.0×10^{0}	1.0×10^{3}	1.9×10^{2}	2.1×10^{2}	1.9×10^{2}	1.2×10^{3}	-1.1×10^{3}
TRU Waste Site Total	4.5×10^{3}	1.1×10^{3}	3.3×10^{2}	2.3×10^{2}	4.8×10^{3}	1.3×10^{3}	3.5×10^{3}

Waste Material Parameters	**2003 Update Average Density (kg/m^3)**	**TWBIR Rev. 2 Average Density (kg/m^3)**	**Difference (kg/m^3)**
Fe-Base Metal/Alloys	6.8×10^{0}	3.8×10^{0}	3.0×10^{0}
Al-Base Metal/Alloys	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Other Metal/Alloys	3.4×10^{-2}	1.0×10^{-1}	-6.6×10^{-2}
Other Inorganic Material	6.9×10^{-1}	2.7×10^{0}	-2.0×10^{0}
Cellulosic Material	3.5×10^{-3}	0.0×10^{0}	3.5×10^{-3}
Rubber Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Plastic Material	1.6×10^{-2}	3.0×10^{-1}	-2.8×10^{-1}
Solidified Inorganic Material	9.2×10^{1}	3.9×10^{2}	-3.0×10^{2}
Cement (Solidified)	2.4×10^{0}	3.9×10^{2}	-3.8×10^{2}
Vitrified Material	1.8×10^{-1}	7.0×10^{-1}	-5.2×10^{-1}
Solidified Organic Material	3.1×10^{-2}	0.0×10^{0}	3.1×10^{-2}
Soil	4.1×10^{-3}	0.0×10^{0}	4.1×10^{-3}

[1] *See Pages 28 and 29 for discussion.*

Table DATA-F-B-22. WIPP RH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Solidified Organic Material[1]

Final Waste Form: ***Solidified Organic Material***

TRU Waste Site Volumes (m^3)							
Site	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Battelle Columbus Laboratories	5.3×10^0	0.0×10^0	0.0×10^0	0.0×10^0	5.3×10^0	0.0×10^0	5.3×10^0
Energy Technology Engineering Center	4.1×10^0	0.0×10^0	0.0×10^0	0.0×10^0	4.1×10^0	0.0×10^0	4.1×10^0
Idaho National Engineering and Environmental Laboratory	0.0×10^0	3.6×10^0	0.0×10^0	0.0×10^0	0.0×10^0	3.6×10^0	-3.6×10^0
TRU Waste Site Total	9.5×10^0	3.6×10^0	0.0×10^0	0.0×10^0	9.5×10^0	3.6×10^0	5.9×10^0

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	4.9×10^1	3.0×10^{-1}	4.9×10^1
Al-Base Metal/Alloys	0.0×10^0	0.0×10^0	0.0×10^0
Other Metal/Alloys	0.0×10^0	0.0×10^0	0.0×10^0
Other Inorganic Material	1.2×10^1	1.2×10^2	-1.0×10^2
Cellulosic Material	2.0×10^1	3.0×10^{-1}	2.0×10^1
Rubber Material	4.2×10^0	0.0×10^0	4.2×10^0
Plastic Material	2.0×10^1	6.7×10^0	1.3×10^1
Solidified Inorganic Material	0.0×10^0	2.1×10^1	-2.1×10^1
Cement (Solidified)	1.4×10^2	1.3×10^2	6.4×10^0
Vitrified Material	0.0×10^0	0.0×10^0	0.0×10^0
Solidified Organic Material	1.7×10^2	6.1×10^2	-4.4×10^2
Soil	0.0×10^0	2.0×10^{-1}	-2.0×10^{-1}

[1] See Pages 28 and 29 for discussion.

Table DATA-F-B-23. WIPP RH-TRU Waste Profile Differences Between TWBIR Rev. 2 and 2003 Update — Uncategorized Metal[1]

Final Waste Form: *Uncategorized Metal*

TRU Waste Site Volumes (m^3)							
Site	2003 Stored	Rev. 2 Stored	2003 Proj.	Rev. 2 Proj.	2003 Total	Rev. 2 Total	Total Diff.
Argonne National Laboratory - West	0.0×10^{0}	1.8×10^{1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	1.8×10^{1}	-1.8×10^{1}
Battelle Columbus Laboratories	8.9×10^{-1}	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}	8.9×10^{-1}	0.0×10^{0}	8.9×10^{-1}
Hanford (Richland-RL)	6.1×10^{1}	0.0×10^{0}	6.1×10^{3}	1.7×10^{4}	6.1×10^{3}	1.7×10^{4}	-1.1×10^{4}
Idaho National Engineering and Environmental Laboratory	2.2×10^{1}	3.1×10^{1}	0.0×10^{0}	0.0×10^{0}	2.2×10^{1}	3.1×10^{1}	-9.3×10^{0}
Los Alamos National Laboratory	0.0×10^{0}	6.8×10^{1}	0.0×10^{0}	5.0×10^{1}	0.0×10^{0}	1.2×10^{2}	-1.2×10^{2}
TRU Waste Site Total	8.4×10^{1}	1.2×10^{2}	6.1×10^{3}	1.7×10^{4}	6.1×10^{3}	1.8×10^{4}	-1.1×10^{4}

Waste Material Parameters	2003 Update Average Density (kg/m^3)	TWBIR Rev. 2 Average Density (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	1.8×10^{2}	7.5×10^{1}	1.1×10^{2}
Al-Base Metal/Alloys	4.5×10^{-1}	4.0×10^{-1}	5.4×10^{-2}
Other Metal/Alloys	5.6×10^{1}	3.8×10^{2}	-3.2×10^{2}
Other Inorganic Material	4.0×10^{1}	1.5×10^{1}	2.5×10^{1}
Cellulosic Material	7.5×10^{-2}	8.0×10^{-1}	-7.3×10^{-1}
Rubber Material	5.2×10^{-2}	0.0×10^{0}	5.2×10^{-2}
Plastic Material	7.8×10^{-2}	5.0×10^{-1}	-4.2×10^{-1}
Solidified Inorganic Material	3.1×10^{-3}	0.0×10^{0}	3.1×10^{-3}
Cement (Solidified)	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Vitrified Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Solidified Organic Material	0.0×10^{0}	0.0×10^{0}	0.0×10^{0}
Soil	6.2×10^{-2}	0.0×10^{0}	6.2×10^{-2}

[1] *See Pages 28 and 29 for discussion.*

The largest increase, 2.9×10^{4} m^3 for heterogeneous debris, is due to contributions from several sites (see Table DATA-F-B-7). Those with the largest increase in volumes are INEEL with 2.0×10^{4} m^3, SRS with 7.3×10^{3} m^3, LANL with 3.5×10^{3} m^3, RFETS with 2.2×10^{3} m^3, and Lawrence Livermore National Laboratory (LLNL) with 7.1×10^{2} m^3. The increased volume of heterogeneous debris from INEEL is due to the anticipated start-up of the Advanced Mixed Waste Treatment Facility (AMWTF). INEEL combined many waste streams into one new waste stream called IN-BN-510. The final waste form of this waste stream is heterogeneous debris. This new waste stream will be compacted so that an average of four 55-gallon drums will fit into one 100-gallon drum. This process has had an impact on the WMPs, as well. The remaining sites listed in Table DATA-F-B-7 with positive overall changes contributed additional volumes of less than 5.0×10^{2} m^3 each. The large volume of

heterogeneous debris waste from SRS originates from the "FB" and "HB" process lines (CCP 2003a, 2003b, 2003c, and 2003d). The LANL waste streams that contribute to the increased heterogeneous debris waste volume originate primarily from waste generated during facility and equipment operations and maintenance. RFETS added heterogeneous debris waste consisting of construction rubble, blacktop, concrete, dirt, and sand due primarily to decontamination and decommissioning operations. The emplaced volume for heterogeneous debris was 5.7×10^2 m^3 as of the inventory date. The sites that subtracted significant heterogeneous debris volume are Hanford RL with a difference of 3.3×10^3 m^3 and Oak Ridge National Laboratory (ORNL) with a difference of 1.1×10^3 m^3.

The overall increase in volume for solidified inorganic material is 2.2×10^4 m^3. Some sites added volume and some removed volume (see Table DATA-F-B-12). The sites that added solidified inorganic material volume are INEEL (2.5×10^4 m^3) and Hanford RP (3.9×10^3 m^3). The increased volume of solidified inorganic material from INEEL is due primarily to solidified sludges from treatment plants and other processes, such as ion exchange. The increased volume of solidified inorganic material from Hanford RP is due to the addition of tank sludges to the inventory for the first time. The sites that removed significant solidified inorganics volume are LANL (6.0×10^3 m^3) and SRS (1.3×10^3 m^3). The emplaced volume for this solidified inorganic material was 3.3×10^3 m^3 as of the inventory date, September 30, 2002.

The overall increase in volume for solidified organic material is 4.6×10^3 m^3. LANL added significant solidified organic material volume, with 3.9×10^3 m^3 (see Table DATA-F-B-13). This increased volume is primarily due to waste streams containing solidified waste from facility and equipment operations and maintenance. There was no emplaced volume for solidified organic material as of the inventory date.

The overall increase in volume for inorganic non-metal is 7.2×10^3 m^3. The site that added significant inorganic non-metal volume is INEEL, with 7.5×10^3 m^3 (see Table DATA-F-B-8). The emplaced volume for inorganic non-metal was 9.7×10^2 m^3 as of the inventory date.

The overall increase in volume for filter material is 8.5×10^2 m^3. The site adding significant filter material volume is LLNL, with 6.0×10^2 m^3 (see Table DATA-F-B-5). The emplaced volume for filter material was 3.4×10^2 m^3 as of the inventory date.

The overall decrease in volume for salt is -1.2×10^1 m^3. RFETS removed significant salt volume, with 3.0×10^2 m^3 (see Table DATA-F-B-10). The emplaced volume for salt was 1.5×10^3 m^3 as of the inventory date.

The overall decrease in volume for uncategorized metal is 2.7×10^4 m^3. The sites that removed significant uncategorized metal volume were Hanford RL with 1.6×10^4 m^3, LANL with 5.5×10^3 m^3, and INEEL with 5.9×10^3 m^3 (see Table DATA-F-B-14). The emplaced volume for uncategorized metal was 3.6×10^2 m^3 as of the inventory date.

The overall decrease in volume for combustible material is 4.2×10^3 m^3. The sites that removed significant volume were Hanford RL with 1.6×10^3 m^3, and INEEL with 3.3×10^3 m^3

(see Table DATA-F-B-4). The emplaced volume for combustible material was 6.1 $\times 10^2$ m^3 as of the inventory date.

DATA-F-B-1.5 Analysis of RH-TRU Waste Volume Differences by Site

Table DATA-F-B-2 compares the stored, projected, and anticipated RH-TRU waste volumes between the 2003 Update Report and TWBIR Revision 2 inventories by site and gives the total RH-TRU waste volumes.

The total difference in stored RH-TRU waste at the sites is 1.70 $\times 10^3$ m^3, or a 47 percent increase from the TWBIR Revision 2 inventory. The bulk of this additional stored volume came from Hanford RP (4.50 $\times 10^3$ m^3) and Hanford RL (1.80 $\times 10^2$ m^3). As with CH-TRU waste, the sites adjusted their existing inventory data for RH-TRU waste volumes based on new information (since the TWBIR Revision 2 inventory) about the waste and/or increased accessibility to the waste. Again, the Hanford RP waste is a new addition and was not addressed in the TWBIR Revision 2 inventory. Argonne National Laboratory - East, (ANL-E), BAPL, and Sandia National Laboratories (SNL) have added small volumes of stored RH-TRU waste to the inventory that were not previously reported. ORNL removed all RH-TRU waste stored volume and put it in projected waste volume because they plan to process the waste using segregation, compaction, size reduction, and evaporative drying for sludge (see Appendix DATA, Attachment F, Annex C).

The total projected RH-TRU waste volume has decreased by 1.35 $\times 10^4$ m^3, or a 56 percent decrease from the TWBIR Revision 2 inventory. The largest decrease in projected RH-TRU waste volume is 1.26 $\times 10^4$ m^3 reported by Hanford RL. This change is based on the site gaining better knowledge of the waste streams and thus managing the waste differently.

The anticipated RH-TRU waste is simply the sum of the stored and projected wastes. It follows that the overall change is a decrease of 1.15 $\times 10^4$ m^3, or a 42 percent decrease for the anticipated volumes. There was no emplaced waste volume as of the inventory date (September 30, 2002).

DATA-F-B-1.6 RH-TRU Waste Volumes by Final Waste Form by Site

Five of the nine RH-TRU waste final waste form total volumes increased (filter material, inorganic non-metal, soil, solidified inorganic material , and solidified organic material). Of these, the solidified inorganic material volume had the largest increase of 3.5 $\times 10^3$ m^3. The filter material, soil, and solidified organic material increased by 2.0 $\times 10^2$ m^{3}or less.

Four of the nine RH-TRU waste final waste form total volumes decreased (heterogeneous debris, combustible material, lead/cadmium metal, and uncategorized metal). These decreases ranged from 6.7 $\times 10^1$ m^3 or less for combustible material and lead/cadmium metal to 1.1 $\times 10^4$ m^3 for uncategorized metal.

The overall increase in volume for RH-TRU waste solidified inorganic material is 3.5 $\times 10^3$ m^3. Some sites added volume and some removed volume (see Table DATA-F-B-21). The sites

that added significant volume were Hanford RP (4.5×10^3 m^3) and Hanford RL (1.3×10^2 m^3). The site that removed significant volume was ORNL (1.1×10^3 m^3).

The overall decrease in volume for RH-TRU waste uncategorized metal is 1.1×10^4 m^3. The site that removed significant uncategorized metal volume is Hanford RL with 1.1×10^4 m^3 (see Table DATA-F-B-23). The decreased volume from Hanford RL is primarily due to reassignment of the waste to more appropriate final waste forms based on new characterization information.

DATA-F-B-2.0 WASTE MATERIAL PARAMETERS AND CONTAINER MATERIALS

Tables DATA-F-B-24 and DATA-F-B-25 compare WMP data for the WIPP roll-ups from the TWBIR Revision 2 (DOE 1995) with the 2003 Update Report data from TWBID Revision 2.1 (LANL 2003) for CH-TRU and RH-TRU waste, respectively. These tables also show, in the last column, the result of subtracting the 2003 Update Report value from the TWBIR Revision 2 value. These tables, unlike Tables DATA-F-B-4 through DATA-F-B-23, contain the rolled-up values for the container (also referred to as packaging) materials. One of the container materials given in Table DATA-F-B-25 is "Steel Plug." The term "N/A," indicating "not applicable," has been entered for the 2003 Update container material value and the difference value. The steel plugs are added by WIPP Waste Handling Operations at the WIPP facility and are addressed in Appendix DATA, Attachment F, Section DATA-F-3.5.

A detailed comparison of the 2003 Update Report and TWBIR Revision 2 volume data is provided in Section DATA-F-B-1.0. However, because volume is a factor in the comparison of 2003 Update Report and TWBIR Revision 2 WMP average densities, it is also considered here.

The 2003 Update Report and TWBIR Revision 2 data in Tables DATA-F-B-4 through DATA-F-B-23 and Tables DATA-F-B-24 and DATA-F-B-25 were analyzed for differences in volume and WMP average densities, as applicable. The volume data for each final waste form for CH-TRU waste (Tables DATA-F-B-4 through DATA-F-B-14) and the volume data for each final waste form for RH-TRU waste (from Tables DATA-F-B-15 through DATA-F-B-23) are discussed in Section DATA-F-B-1.0. The WMP data for each final waste form and for the WIPP roll-up (Tables DATA-F-B-24 and DATA-F-B-25) are discussed here. Finally, the differences in the waste container material average densities are addressed.

The Fe-base metal/alloys, cellulosic, rubber, and plastic (CPR) materials , and cement (solidified) WMPs impact gas generation within the WIPP. The EPA Compliance Certification Decision (EPA 1998) therefore sets limits for these WMPs. The collective limit for CPR materials in the WIPP is a maximum of 20,000,000 kg. Because of the maximum limit on the CPR materials, particular attention is paid to the increases in these WMPs. The total CPR materials average density for the TWBIR Revision 2 inventory was 98 kg/m^3 (DOE 1995) and the 2003 Update Report total is 114 kg/m^3. It is therefore important to understand the basis of these increases. These are discussed in Section DATA-F-B-2.1 for CH-TRU waste and in Section DATA-F-B-2.2 for RH-TRU waste.

The repository limit for the ferrous metals and non-ferrous metals is a minimum: 20,000,000 kg for ferrous metals and 2,000 kg for nonferrous metals. According to the Contact Handled Transuranic Acceptance Criteria for the Waste Isolation Pilot Plant (DOE 2002), these minimum limits are met in the total repository inventory by the metals that constitute the payload containers. Container materials are discussed in Sections DATA-F-B-2.3 and DATA-F-B-2.4.

DATA-F-B-2.1 Analysis of CH-TRU Waste Material Parameter Differences

Analysis of the TWBIR Revision 2 and 2003 Update Report for CH-TRU waste data show that half of the WMP average densities increased (see Table DATA-F-B-24). There are 12 WMPs, and 6 of them decreased in average density. Decreases were noted in Fe-base metal/alloys, Al-base metal/alloys, other metal/alloys, cement (solidified), vitrified material, and soil. The average densities of the other inorganic materials, CPR materials, solidified inorganic material, and solidified organic material all increased.

Of particular interest are the increases in the average densities of CPR materials of 4.1 kg/m^3 for cellulosic material, 8.4 kg/m^3 for plastic material, and 4.4 kg/m^3 for rubber material. An analysis of the CPR materials in the roll-ups by final waste form (Tables DATA-F-B-4 through DATA-F-B-14) show that there are increases in the average densities of CPR materials for heterogeneous debris (35, 18, and 13 kg/m^3, respectively). In addition, the average density of plastic material increased by 11.0 kg/m^3 for filter material. Finally, the average density of cellulosic material increased by 82 kg/m^3 and the average density of plastic material increased by 18 kg/m^3 for graphite. There are other increases in the average densities of the CPR materials , but these increases are all less than 10 kg/m^3, and will not be specifically addressed here.

Heterogeneous debris had the largest increases in the CPR materials average densities. The primary cause of these increases is the new waste stream at the INEEL, IN-BN-510, Supercompacted Debris Waste. The average densities for the CPR materials WMPs are 303, 205, and 80 kg/m^3 respectively for this waste stream (LANL 2003). The densities of CPR materials are high because of the nature of the treatment of this waste stream, and because INEEL combined approximately 200 debris waste streams to produce this single waste stream (see the waste stream crosswalk in Appendix DATA, Attachment F, Annex C). The INEEL is treating the waste at the AMWTF and has the capability of supercompacting 55-gallon drums containing CH-TRU waste. The compacted drums are then placed in one 100-gallon drum for shipment to the WIPP.

Graphite had the next largest increases in cellulosic and plastic material average densities (82 and 18 kg/m^3, respectively). The average density of rubber did not change for heterogeneous debris. The only new contributions to graphite came from RFETS. The RFETS reported six waste streams with graphite. The RFETS estimated approximately 166 kg/m^3 of cellulosic material in two of these waste streams, and approximately 22 kg/m^3 of plastic material in four of these waste streams (LANL 2003). The waste streams with high reported cellulosic material originated from the disposal of graphite molds and mechanical cleaning of the graphite molds.

Table DATA-F-B-24. Differences in Waste Material Parameter Average Densities (kg/m^3) for CH-TRU Waste Between TWBIR Rev. 2 and 2003 Update Report[1]

Waste Material Parameters	*2003 Update (kg/m^3)*	*TWBIR Rev. 2 (kg/m^3)*	*Difference (kg/m^3)*
Fe-Base Metal/Alloys	1.1×10^{2}	1.7×10^{2}	-5.9×10^{1}
Al-Base Metal/Alloys	1.4×10^{1}	1.8×10^{1}	-3.7×10^{0}
Other Metal/Alloys	3.0×10^{1}	6.7×10^{1}	-3.7×10^{1}
Other Inorganic Material	4.2×10^{1}	3.1×10^{1}	1.1×10^{1}
Cellulosic Material	5.8×10^{1}	5.4×10^{1}	4.1×10^{0}
Rubber Material	1.4×10^{1}	1.0×10^{1}	4.4×10^{0}
Plastic Material	4.2×10^{1}	3.4×10^{1}	8.4×10^{0}
Solidified Inorganic Material	7.7×10^{1}	5.4×10^{1}	2.3×10^{1}
Cement (Solidified)	2.9×10^{1}	5.0×10^{1}	-2.1×10^{1}
Vitrified	6.2×10^{0}	5.5×10^{1}	-4.9×10^{1}
Solidified Organic Material	1.6×10^{1}	5.6×10^{0}	1.0×10^{1}
Soil	1.9×10^{1}	4.4×10^{1}	-2.5×10^{1}
Container Materials			
Steel	1.7×10^{2}	1.4×10^{2}	3.2×10^{1}
Plastic	1.6×10^{1}	2.6×10^{1}	-1.0×10^{1}
Lead	1.4×10^{-2}	*N/A*	*N/A*

[1] See Pages 29 and 30 for discussion.

DATA-F-B-2.2 Analysis of RH-TRU Waste Material Parameter Differences

Analysis of the TWBIR Revision 2 and 2003 Update Report RH-TRU waste data show that most of the WMP average densities decreased (see Table DATA-F-B-25). There are 12 WMPs, and 8 of them decreased in average density. Decreases were noted in the Al-base metal/alloys, other metal/alloys, other inorganic materials, CPR materials, cement (solidified), and vitrified. The average densities of the Fe-base metal/alloys, solidified inorganic material, solidified organic material, and soil increased.

The largest WMP increases were for soil (25 kg/m^3), solidified inorganic material (17 kg/m^3), and Fe -base metal/alloys (12 kg/m^3). The average density of solidified organic material increased by only 3.0 kg/m^3.

Although the average densities of RH-TRU waste CPR materials decreased overall (Table DATA-F-B-25), an analysis of the CPR materials in the roll-ups by final waste form (Tables DATA-F-B-15 through DATA-F-B-23) show that there are increases in the average densities of CPR materials in some of the final waste forms. The average densities of cellulosic material increased in the filter material and solidified organic material (by 73 and 20 kg/m^3, respectively). There is an increase in the rubber material for filter material (19 kg/m^3).

Table DATA-F-B-25. Difference on Waste Material Parameter Average Densities (kg/m^3) for RH-TRU Waste Between TWBIR Rev. 2 and 2003 Update Report[1]

Waste Material Parameters	2003 Update (kg/m^3)	TWBIR Rev. 2 (kg/m^3)	Difference (kg/m^3)
Fe-Base Metal/Alloys	1.1×10^2	1.0×10^2	1.2×10^1
Al-Base Metal/Alloys	2.5×10^0	7.1×10^0	-4.6×10^0
Other Metal/Alloys	3.2×10^1	2.5×10^2	-2.2×10^2
Other Inorganic Material	3.5×10^1	6.4×10^1	-2.9×10^1
Cellulosic Material	4.5×10^0	1.7×10^1	-1.2×10^1
Rubber Material	3.1×10^0	3.3×10^0	-2.1×10^{-1}
Plastic Material	4.9×10^0	1.5×10^1	-1.0×10^1
Solidified, Inorganic Material	3.9×10^1	2.2×10^1	1.7×10^1
Cement (Solidified)	8.7×10^{-1}	1.9×10^1	-1.8×10^1
Vitrified	5.7×10^{-2}	4.7×10^0	-4.6×10^0
Solidified, Organic Material	4.0×10^0	9.3×10^{-1}	3.0×10^0
Soil	2.6×10^1	1.0×10^0	2.5×10^1
Container Materials			
Steel	4.8×10^2	4.5×10^2	3.7×10^1
Plastic	1.4×10^0	3.1×10^0	-1.7×10^0
Lead	4.4×10^2	4.7×10^2	-2.2×10^1
Steel Plug	N/A	2.1×10^3	N/A

[1] *See Pages 31 and 32 for discussion.*

Finally, the average density of plastic increased in the combustible material, inorganic non-metal, and solidified organic material (by 85, 20, and 13 kg/m^3, respectively). The remaining increases in the average densities of the CPR materials are less than 10 kg/m^3 each.

DATA-F-B-2.3 Analysis of CH-TRU Waste Container Materials

The container materials for CH-TRU waste are steel, plastic, and lead. Table DATA-F-B-24 indicates that the average density of steel increased from 140 kg/m^3 to 170 kg/m^3 and the average density of plastic decreased from 26 kg/m^3 to 16 kg/m^3.

Two significant changes in the inventory contributed to the increase in the average density of steel container materials. First, a review of the TWBIR Rev. 2 database (DOE 1995) reveals that the sites did not intend to use pipe overpack components (POCs) at that time, and hence none were reported in the database. The supporting database for the 2003 Update Report, the TWBID Revision 2.1 (LANL 2003), indicates that LANL, RFETS, and Hanford RL will use the POC. In fact, RFETS has shipped waste from seven waste streams using POCs, and these are now emplaced in the WIPP. The difference in the average density of steel between the 55-gallon drum (131 kg/m^3; Attachment F, Table DATA-F-32) and the POCs (525 kg/m^3, as reported by RFETS) is approximately 394 kg/m^3. There are currently 56 waste streams for which the sites have indicated POCs will be used. These are shown below in Table DATA-F-

B-26 along with seven waste streams that have already been shipped to and emplaced in the WIPP.

Second, the INEEL super-compacted debris waste stream (IN-BN-510) discussed above will have an average of four compacted 55-gallon drums in each 100-gallon drum. The steel comprising the 55-gallon drums falls into the Fe-base metal/alloys WMP and the steel comprising the 100-gallon drums is steel container material for this waste stream. The typical value for a 55-gallon drum is 131 kg/m^3, and the typical value for a 100-gallon drum is 114 kg/m^3, as provided in Attachment F, Table DATA-F-32. The container/packaging materials for this waste stream are discussed in Appendix DATA, Attachment F, Annex D, Section DATA-F-D-3.3.1.

The values for lead are marked "N/A" for "not applicable," because lead is typically not a component of CH-TRU waste containment.

DATA-F-B-2.4 Analysis of RH-TRU Waste Container Materials

The RH-TRU waste container materials are steel, plastic, lead, and steel plug. The steel waste container material increased by 37 kg/m^3. The plastic and lead waste container materials decreased (by approximately 2 and 22 kg/m^3, respectively). The steel plug is actually supplied by the Waste Handling Operations group at the WIPP and is not reported by the sites in the current inventory, as it is not part of the shipped package. The average density for the steel plug was, however, reported in the TWBIR Revision 2 inventory.

DATA-F-B-3.0 RADIONUCLIDES

A comparison of Table 3-1 from TWBIR Revision 3 (DOE 1996) to the data reported in Attachment F, Table DATA-F-37 is contained in Table DATA-F-B-27 for CH-TRU waste and Table DATA-F-B-28 for RH-TRU waste. The radionuclide values from TWBIR Revision 3 were decayed through 1995 as the base year and have not been further decayed, but are reported as they were in Revision 3. The values for short-lived radionuclides would have decreased over the six-year interval if no change in the inventory occurred since the CCA. The values from TWBID Revision 2.1 (LANL 2003) are decayed through 2001. A review of the results for CH-TRU waste indicates that although there is a substantial change in some radionuclides from 1995 to 2001, with the exception of ^{239}Pu and ^{240}Pu, the activities for the dominant five radionuclides have changed very little and the overall activity for all radionuclides has decreased by 17 percent. The results for RH-TRU waste are not as consistent, with substantial variations in individual radionuclide activity, and an overall increase in activity of 30 percent. Based on total curies, the five most abundant CH-TRU waste isotopes in the TWBIR Revision 3, ^{241}Am, ^{238}Pu, ^{239}Pu, ^{240}Pu, and ^{241}Pu, are the most abundant in the 2003 Update Report (see bottom of Table DATA-F-B-27). For RH-TRU waste, the five most abundant isotopes in the TWBIR Revision 3, ^{137m}Ba, ^{137}Cs, ^{241}Pu, ^{90}Sr, and ^{90}Y, are still the most abundant in the 2003 report (see bottom of Table DATA-F-B-28).

Table DATA-F-B-26. Waste Streams Shipped and to be Shipped in POCs to the WIPP

Site	Waste Stream	Site	Waste Stream	Site	Waste Stream
LANL	LA-OS-00-01	RFETS	RF-MT0532E	RFETS	RF-TT391P
RFETS	RF-MT0090	RFETS	RF-MT0532F	RFETS	RF-TT391P
RFETS	RF-MT0091	RFETS	RF-MT0541	RFETS	RF-TT392P
RFETS	RF-MT0092	RFETS	RF-MT0H61	RFETS	RF-TT393R
RFETS	RF-MT0093	RFETS	RF-MT3011	RFETS	RF-TT394P
RFETS	RF-MT0097	RFETS	RF-MT420P	RFETS	RF-TT395P
RFETS	RF-MT0290	RFETS	RF-MT532A	RFETS	RF-TT398P
RFETS	RF-MT-0292	RFETS	RF-MT532B	RFETS	RF-TT398R
RFETS	RF-MT0299	RFETS	RF-MT532C	RFETS	RF-TT411R
RFETS	RF-MT0320	RFETS	RF-MT532D	RFETS	RF-TT429R
RFETS	RF-MT0371	RFETS	RF-TT0300	RFETS	RF-TT433x
RFETS	RF-MT0373	RFETS	RF-TT0310	RFETS	RF-TT436R
RFETS	RF-MT0377	RFETS	RF-TT0312	RFETS	RF-TT454x
RFETS	RF-MT0419	RFETS	RF-TT0340	Hanford RL	RL-W756
RFETS	RF-MT0423	RFETS	RF-TT0368	WIPP	WP-RF003.01
RFETS	RF-MT0444	RFETS	RF-TT0370	WIPP	WP-RF005.01
RFETS	RF-MT0523A	RFETS	RF-TT0440	WIPP	WP-RF005.02
RFETS	RF-MT0523B	RFETS	RF-TT0442	WIPP	WP-RF006.01
RFETS	RF-MT0523C	RFETS	RF-TT0601	WIPP	WP-RF008.01
RFETS	RF-MT0523D	RFETS	RF-TT310P	WIPP	WP-RF009.01
RFETS	RF-MT0523E	RFETS	RF-TT390P	WIPP	WP-RF118.01

Table DATA-F-B-27. WIPP Disposal Radionuclide Inventory Comparison, 1995 to 2001, CH-TRU Waste[1]

Radionuclide	CH-TRU Waste Curies, Decayed through 2001	CH-TRU Waste Curies, Decayed through 1995	Delta (Ci)	Percent Change
^{225}Ac	1.55×10^{0}	2.88×10^{0}	-1.33×10^{0}	-4.62×10^{1}
^{227}Ac	5.06×10^{-1}	6.08×10^{-1}	-1.02×10^{-1}	-1.68×10^{1}
^{228}Ac	4.79×10^{0}	7.47×10^{-1}	4.04×10^{0}	5.41×10^{2}
^{109m}Ag	1.26×10^{-4}	1.57×10^{1}	-1.57×10^{1}	-1.00×10^{2}
^{110}Ag	4.40×10^{-11}	7.07×10^{-9}	-7.03×10^{-9}	-9.94×10^{1}
^{110m}Ag	3.34×10^{-9}	5.31×10^{-7}	-5.28×10^{-7}	-9.94×10^{1}
^{241}Am	4.01×10^{5}	4.42×10^{5}	-4.10×10^{4}	-9.28×10^{0}
^{242}Am	4.70×10^{-2}	1.75×10^{0}	-1.70×10^{0}	-9.73×10^{1}
^{242m}Am	4.78×10^{-2}	1.75×10^{0}	-1.70×10^{0}	-9.73×10^{1}
^{243}Am	2.10×10^{1}	3.26×10^{1}	-1.16×10^{1}	-3.56×10^{1}
^{245}Am	1.31×10^{-10}	1.33×10^{-9}	-1.20×10^{-9}	-9.02×10^{1}
^{217}At	1.55×10^{0}	2.88×10^{0}	-1.33×10^{0}	-4.62×10^{1}
^{137m}Ba	9.06×10^{3}	7.63×10^{3}	1.43×10^{3}	1.87×10^{1}
^{210}Bi	2.58×10^{0}	2.55×10^{0}	3.00×10^{-2}	1.18×10^{0}
^{211}Bi	5.00×10^{-1}	6.09×10^{-1}	-1.09×10^{-1}	-1.79×10^{1}
^{212}Bi	5.84×10^{0}	2.71×10^{1}	-2.13×10^{1}	-7.85×10^{1}
^{213}Bi	1.55×10^{0}	2.88×10^{0}	-1.33×10^{0}	-4.62×10^{1}
^{214}Bi	6.29×10^{0}	1.16×10^{1}	-5.31×10^{0}	-4.58×10^{1}
^{249}Bk	9.07×10^{-6}	9.16×10^{-5}	-8.25×10^{-5}	-9.01×10^{1}
^{250}Bk	3.65×10^{-12}	4.37×10^{-11}	-4.01×10^{-11}	-9.16×10^{1}
^{14}C	1.21×10^{0}	1.08×10^{1}	-9.59×10^{0}	-8.88×10^{1}
^{109}Cd	1.28×10^{-4}	1.57×10^{1}	-1.57×10^{1}	-1.00×10^{2}
^{113m}Cd	NR	1.82×10^{-6}	-1.82×10^{-6}	-1.00×10^{2}
^{141}Ce	NR	NR	0.00×10^{0}	0.00×10^{0}
^{144}Ce	3.56×10^{-4}	6.26×10^{-2}	-6.22×10^{-2}	-9.94×10^{1}
^{249}Cf	7.64×10^{-2}	6.42×10^{-2}	1.22×10^{-2}	1.90×10^{1}
^{250}Cf	1.83×10^{-1}	3.30×10^{-1}	-1.47×10^{-1}	-4.45×10^{1}
^{251}Cf	3.64×10^{-4}	3.78×10^{-3}	-3.42×10^{-3}	-9.04×10^{1}
^{252}Cf	2.08×10^{-1}	2.43×10^{0}	-2.22×10^{0}	-9.14×10^{1}
^{242}Cm	3.94×10^{-2}	1.14×10^{0}	-1.10×10^{0}	-9.65×10^{1}
^{243}Cm	3.97×10^{-1}	2.72×10^{0}	-2.32×10^{0}	-8.54×10^{1}
^{244}Cm	1.16×10^{4}	3.15×10^{4}	-1.99×10^{4}	-6.32×10^{1}
^{245}Cm	8.42×10^{-3}	1.15×10^{-2}	-3.08×10^{-3}	-2.68×10^{1}
^{246}Cm	1.55×10^{0}	1.02×10^{-1}	1.45×10^{0}	1.42×10^{3}
^{247}Cm	2.77×10^{-10}	3.21×10^{-9}	-2.93×10^{-9}	-9.14×10^{1}
^{248}Cm	9.14×10^{-2}	3.69×10^{-2}	5.45×10^{-2}	1.48×10^{2}
^{250}Cm	6.64×10^{-11}	NR	6.64×10^{-11}	0.00×10^{0}

Table DATA-F-B-27. WIPP Disposal Radionuclide Inventory Comparison, 1995 to 2001, CH-TRU Waste[1]

Radionuclide	CH-TRU Waste Curies, Decayed through 2001	CH-TRU Waste Curies, Decayed through 1995	Delta (Ci)	Percent Change
^{58}Co	NR	3.05×10^{-13}	-3.05×10^{-13}	-1.00×10^{2}

1

Table DATA-F-B-27. WIPP Disposal Radionuclide Inventory Comparison, 1995 to 2001, CH-TRU Waste — Continued[1]

Radionuclide	CH-TRU Waste Curies, Decayed through 2001	CH-TRU Waste Curies, Decayed through 1995	Delta (Ci)	Percent Change
^{60}Co	9.85×10^{-1}	6.46×10^{1}	-6.36×10^{1}	-9.85×10^{1}
^{51}Cr	NR	NR	0.00×10^{0}	0.00×10^{0}
^{134}Cs	2.05×10^{-2}	1.34×10^{-2}	7.10×10^{-3}	5.30×10^{1}
^{135}Cs	NR	5.02×10^{-4}	-5.02×10^{-4}	-1.00×10^{2}
^{137}Cs	9.65×10^{3}	8.06×10^{3}	1.59×10^{3}	1.97×10^{1}
^{254}Es	NR	4.24×10^{-11}	-4.24×10^{-11}	-1.00×10^{2}
^{150}Eu	NR	3.51×10^{-5}	-3.51×10^{-5}	-1.00×10^{2}
^{152}Eu	1.95×10^{0}	1.26×10^{0}	6.90×10^{-1}	5.48×10^{1}
^{154}Eu	1.65×10^{0}	1.15×10^{0}	5.00×10^{-1}	4.35×10^{1}
^{155}Eu	6.73×10^{-2}	9.46×10^{-1}	-8.79×10^{-1}	-9.29×10^{1}
^{55}Fe	NR	1.91×10^{-5}	-1.91×10^{-5}	-1.00×10^{2}
^{59}Fe	NR	2.64×10^{-7}	-2.64×10^{-7}	-1.00×10^{2}
^{221}Fr	1.55×10^{0}	2.88×10^{0}	-1.33×10^{0}	-4.62×10^{1}
^{223}Fr	6.91×10^{-3}	8.39×10^{-3}	-1.48×10^{-3}	-1.76×10^{1}
^{152}Gd	4.40×10^{-14}	NR	4.40×10^{-14}	0.00×10^{0}
^{3}H	2.17×10^{2}	8.69×10^{-1}	2.16×10^{2}	2.49×10^{4}
^{129}I	5.12×10^{-4}	7.05×10^{-7}	5.11×10^{-4}	7.25×10^{4}
^{85}Kr	4.62×10^{-1}	2.02×10^{-1}	2.60×10^{-1}	1.29×10^{2}
^{54}Mn	NR	8.51×10^{-4}	-8.51×10^{-4}	-1.00×10^{2}
^{22}Na	3.91×10^{-7}	NR	3.91×10^{-7}	0.00×10^{0}
^{93m}Nb	NR	NR	0.00×10^{0}	0.00×10^{0}
^{95}Nb	NR	2.54×10^{-9}	-2.54×10^{-9}	-1.00×10^{2}
^{95m}Nb	NR	8.50×10^{-12}	-8.50×10^{-12}	-1.00×10^{2}
^{59}Ni	7.64×10^{-2}	7.52×10^{-3}	6.89×10^{-2}	9.16×10^{2}
^{63}Ni	3.72×10^{0}	9.19×10^{-1}	2.80×10^{0}	3.05×10^{2}
^{237}Np	4.80×10^{0}	5.61×10^{1}	-5.13×10^{1}	-9.14×10^{1}
^{238}Np	2.36×10^{-4}	8.77×10^{-3}	-8.53×10^{-3}	-9.73×10^{1}
^{239}Np	2.08×10^{1}	3.26×10^{1}	-1.18×10^{1}	-3.62×10^{1}
^{240m}Np	1.31×10^{-6}	1.50×10^{-6}	-1.90×10^{-7}	-1.27×10^{1}
^{231}Pa	1.21×10^{0}	4.51×10^{-1}	7.59×10^{-1}	1.68×10^{2}
^{233}Pa	4.75×10^{0}	5.61×10^{1}	-5.14×10^{1}	-9.15×10^{1}
^{234}Pa	9.25×10^{-3}	5.14×10^{-2}	-4.22×10^{-2}	-8.20×10^{1}
^{234m}Pa	7.11×10^{0}	3.96×10^{1}	-3.25×10^{1}	-8.20×10^{1}
^{209}Pb	1.55×10^{0}	2.88×10^{0}	-1.33×10^{0}	-4.62×10^{1}
^{210}Pb	2.61×10^{0}	2.55×10^{0}	6.00×10^{-2}	2.35×10^{0}
^{211}Pb	5.01×10^{-1}	6.09×10^{-1}	-1.08×10^{-1}	-1.77×10^{1}
^{212}Pb	5.82×10^{0}	2.71×10^{1}	-2.13×10^{1}	-7.85×10^{1}

Table DATA-F-B-27. WIPP Disposal Radionuclide Inventory Comparison, 1995 to 2001, CH-TRU Waste — Continued[1]

Radionuclide	CH-TRU Waste Curies, Decayed through 2001	CH-TRU Waste Curies, Decayed through 1995	Delta (Ci)	Percent Change
^{214}Pb	6.30×10^{0}	1.16×10^{1}	-5.30×10^{0}	-4.57×10^{1}
^{107}Pd	NR	7.41×10^{-5}	-7.41×10^{-5}	-1.00×10^{2}
^{147}Pm	1.82×10^{0}	7.87×10^{0}	-6.05×10^{0}	-7.69×10^{1}
^{210}Po	2.61×10^{0}	2.55×10^{0}	6.00×10^{-2}	2.35×10^{0}
^{211}Po	1.53×10^{-3}	1.71×10^{-3}	-1.80×10^{-4}	-1.05×10^{1}
^{212}Po	3.72×10^{0}	1.73×10^{1}	-1.36×10^{1}	-7.85×10^{1}
^{213}Po	1.52×10^{0}	2.82×10^{0}	-1.30×10^{0}	-4.61×10^{1}
^{214}Po	6.30×10^{0}	1.16×10^{1}	-5.30×10^{0}	-4.57×10^{1}
^{215}Po	5.00×10^{-1}	6.09×10^{-1}	-1.09×10^{-1}	-1.79×10^{1}
^{216}Po	5.82×10^{0}	2.71×10^{1}	-2.13×10^{1}	-7.85×10^{1}
^{218}Po	6.19×10^{0}	1.16×10^{1}	-5.41×10^{0}	-4.66×10^{1}
^{144}Pr	3.49×10^{-4}	6.18×10^{-2}	-6.15×10^{-2}	-9.94×10^{1}
^{236}Pu	4.38×10^{-4}	1.04×10^{-2}	-9.96×10^{-3}	-9.58×10^{1}
^{238}Pu	1.61×10^{6}	2.61×10^{6}	-1.00×10^{6}	-3.83×10^{1}
^{239}Pu	6.60×10^{5}	7.85×10^{5}	-1.25×10^{5}	-1.59×10^{1}
^{240}Pu	1.07×10^{5}	2.10×10^{5}	-1.03×10^{5}	-4.90×10^{1}
^{241}Pu	2.40×10^{6}	2.31×10^{6}	9.00×10^{4}	3.90×10^{0}
^{242}Pu	2.67×10^{1}	1.17×10^{3}	-1.14×10^{3}	-9.77×10^{1}
^{243}Pu	2.74×10^{-10}	3.21×10^{-9}	-2.94×10^{-9}	-9.15×10^{1}
^{244}Pu	1.29×10^{-6}	1.50×10^{-6}	-2.10×10^{-7}	-1.40×10^{1}
^{223}Ra	5.06×10^{-1}	6.09×10^{-1}	-1.03×10^{-1}	-1.69×10^{1}
^{224}Ra	5.81×10^{0}	2.71×10^{1}	-2.13×10^{1}	-7.86×10^{1}
^{225}Ra	1.55×10^{0}	2.88×10^{0}	-1.33×10^{0}	-4.62×10^{1}
^{226}Ra	6.37×10^{0}	1.16×10^{1}	-5.23×10^{0}	-4.51×10^{1}
^{228}Ra	5.66×10^{0}	7.47×10^{-1}	4.91×10^{0}	6.58×10^{2}
^{106}Rh	1.58×10^{-4}	2.90×10^{-2}	-2.88×10^{-2}	-9.95×10^{1}
^{219}Rn	5.00×10^{-1}	6.09×10^{-1}	-1.09×10^{-1}	-1.79×10^{1}
^{220}Rn	5.82×10^{0}	2.71×10^{1}	-2.13×10^{1}	-7.85×10^{1}
^{222}Rn	6.31×10^{0}	1.16×10^{1}	-5.29×10^{0}	-4.56×10^{1}
^{106}Ru	1.59×10^{-4}	2.90×10^{-2}	-2.88×10^{-2}	-9.95×10^{1}
^{125}Sb	5.04×10^{-3}	1.21×10^{-1}	-1.16×10^{-1}	-9.58×10^{1}
^{126}Sb	NR	1.35×10^{-4}	-1.35×10^{-4}	-1.00×10^{2}
^{126m}Sb	NR	9.65×10^{-4}	-9.65×10^{-4}	-1.00×10^{2}
^{79}Se	1.32×10^{-4}	4.35×10^{-4}	-3.03×10^{-4}	-6.97×10^{1}
^{147}Sm	4.78×10^{-10}	NR	4.78×10^{-10}	0.00×10^{0}
^{151}Sm	5.68×10^{1}	1.47×10^{0}	5.53×10^{1}	3.76×10^{3}
^{119m}Sn	NR	4.14×10^{-6}	-4.14×10^{-6}	-1.00×10^{2}

Table DATA-F-B-27. WIPP Disposal Radionuclide Inventory Comparison, 1995 to 2001, CH-TRU Waste — Continued[1]

Radionuclide	CH-TRU Waste Curies, Decayed through 2001	CH-TRU Waste Curies, Decayed through 1995	Delta (Ci)	Percent Change
^{121m}Sn	NR	2.66×10^{-2}	-2.66×10^{-2}	-1.00×10^{2}
^{126}Sn	NR	9.65×10^{-4}	-9.65×10^{-4}	-1.00×10^{2}
^{90}Sr	5.75×10^{4}	6.85×10^{3}	5.07×10^{4}	7.39×10^{2}
^{182}Ta	NR	NR	0.00×10^{0}	0.00×10^{0}
^{99}Tc	1.67×10^{2}	2.52×10^{1}	1.42×10^{2}	5.63×10^{2}
^{123}Te	6.78×10^{-5}	NR	6.78×10^{-5}	0.00×10^{0}
^{123m}Te	4.98×10^{-19}	NR	4.98×10^{-19}	0.00×10^{0}
^{125m}Te	1.22×10^{-3}	2.95×10^{-2}	-2.83×10^{-2}	-9.59×10^{1}
^{127}Te	NR	1.30×10^{-7}	-1.30×10^{-7}	-1.00×10^{2}
^{127m}Te	NR	1.33×10^{-7}	-1.33×10^{-7}	-1.00×10^{2}
^{227}Th	4.93×10^{-1}	6.01×10^{-1}	-1.08×10^{-1}	-1.80×10^{1}
^{228}Th	5.89×10^{0}	2.71×10^{1}	-2.12×10^{1}	-7.83×10^{1}
^{229}Th	1.55×10^{0}	2.88×10^{0}	-1.33×10^{0}	-4.62×10^{1}
^{230}Th	1.01×10^{-1}	8.06×10^{-2}	2.04×10^{-2}	2.53×10^{1}
^{231}Th	3.53×10^{-1}	1.28×10^{1}	-1.24×10^{1}	-9.72×10^{1}
^{232}Th	6.61×10^{0}	9.13×10^{-1}	5.70×10^{0}	6.24×10^{2}
^{234}Th	7.12×10^{0}	3.96×10^{1}	-3.25×10^{1}	-8.20×10^{1}
^{207}Tl	4.98×10^{-1}	6.07×10^{-1}	-1.09×10^{-1}	-1.80×10^{1}
^{208}Tl	2.09×10^{0}	9.73×10^{0}	-7.64×10^{0}	-7.85×10^{1}
^{209}Tl	3.41×10^{-2}	6.22×10^{-2}	-2.81×10^{-2}	-4.52×10^{1}
^{232}U	1.64×10^{0}	2.58×10^{1}	-2.42×10^{1}	-9.36×10^{1}
^{233}U	1.24×10^{3}	1.79×10^{3}	-5.50×10^{2}	-3.07×10^{1}
^{234}U	1.68×10^{2}	4.65×10^{2}	-2.97×10^{2}	-6.39×10^{1}
^{235}U	1.32×10^{0}	1.28×10^{1}	-1.15×10^{1}	-8.97×10^{1}
^{236}U	1.30×10^{-1}	3.33×10^{-1}	-2.03×10^{-1}	-6.10×10^{1}
^{237}U	2.15×10^{1}	5.66×10^{1}	-3.51×10^{1}	-6.20×10^{1}
^{238}U	2.44×10^{1}	3.96×10^{1}	-1.52×10^{1}	-3.84×10^{1}
^{240}U	1.28×10^{-6}	1.50×10^{-6}	-2.20×10^{-7}	-1.47×10^{1}
^{90}Y	5.74×10^{4}	6.85×10^{3}	5.06×10^{4}	7.38×10^{2}
^{91}Y	NR	NR	0.00×10^{0}	0.00×10^{0}
^{65}Zn	2.32×10^{-10}	NR	2.32×10^{-10}	0.00×10^{0}
^{93}Zr	1.13×10^{-3}	5.63×10^{-3}	-4.50×10^{-3}	-7.99×10^{1}
^{95}Zr	NR	1.15×10^{-9}	-1.15×10^{-9}	-1.00×10^{2}
Total:	5.33×10^{6}	6.42×10^{6}	-1.10×10^{6}	-1.71×10^{1}

NR – Not Reported
-2001 – Decayed through 12/31/01
-1995 – Decayed through 12/31/95
-Total curies estimated by assuming a volume of (168,485 m^3) for CH-TRU waste and (7,079 m^3) of RH-TRU waste

Table DATA-F-B-27. WIPP Disposal Radionuclide Inventory Comparison, 1995 to 2001, CH-TRU Waste — Continued[1]

Radionuclide	CH-TRU Waste Curies, Decayed through 2001	CH-TRU Waste Curies, Decayed through 1995	Delta (Ci)	Percent Change
Most Abundant Radionuclides	*CH-TRU Waste Activity (Ci)*			
^{241}Am	4.01×10^{5}			
^{238}Pu	1.61×10^{6}			
^{239}Pu	6.60×10^{5}			
^{240}Pu	1.07×10^{5}			
^{241}Pu	2.40×10^{6}			
Total	5.18×10^{6}			
Percent of Total	9.72×10^{1}			

[1] See Page 33 for discussion.

Table DATA-F-B-28. WIPP Disposal Radionuclide Inventory Comparison, 1995 to 2001, RH-TRU Waste[1]

Radionuclide	RH-TRU Waste Curies, 2001	RH-TRU Waste Curies, 1995	delta	% change
^{225}Ac	3.68×10^{-2}	1.17×10^{-1}	-8.02×10^{-2}	-6.85×10^{1}
^{227}Ac	4.00×10^{-6}	7.57×10^{-4}	-7.53×10^{-4}	-9.95×10^{1}
^{228}Ac	1.43×10^{-1}	7.77×10^{-2}	6.53×10^{-2}	8.40×10^{1}
^{109m}Ag	NR	NR	0.00×10^{0}	0.00×10^{0}
^{110}Ag	1.92×10^{-11}	1.74×10^{-9}	-1.72×10^{-9}	-9.89×10^{1}
^{110m}Ag	1.46×10^{-9}	1.31×10^{-7}	-1.30×10^{-7}	-9.89×10^{1}
^{241}Am	1.36×10^{4}	5.96×10^{3}	7.64×10^{3}	1.28×10^{2}
^{242}Am	8.52×10^{-4}	NR	8.52×10^{-4}	0.00×10^{0}
^{242m}Am	1.96×10^{-1}	NR	1.96×10^{-1}	0.00×10^{0}
^{243}Am	7.15×10^{-1}	2.28×10^{-4}	7.15×10^{-1}	3.13×10^{5}
^{225}Ac	3.68×10^{-2}	1.17×10^{-1}	-8.02×10^{-2}	-6.85×10^{1}
^{227}Ac	4.00×10^{-6}	7.57×10^{-4}	-7.53×10^{-4}	-9.95×10^{1}
^{228}Ac	1.43×10^{-1}	7.77×10^{-2}	6.53×10^{-2}	8.40×10^{1}
^{109m}Ag	NR	NR	0.00×10^{0}	0.00×10^{0}
^{110}Ag	1.92×10^{-11}	1.74×10^{-9}	-1.72×10^{-9}	-9.89×10^{1}
^{110m}Ag	1.46×10^{-9}	1.31×10^{-7}	-1.30×10^{-7}	-9.89×10^{1}
^{241}Am	1.36×10^{4}	5.96×10^{3}	7.64×10^{3}	1.28×10^{2}
^{242}Am	8.52×10^{-4}	NR	8.52×10^{-4}	0.00×10^{0}
^{242m}Am	1.96×10^{-1}	NR	1.96×10^{-1}	0.00×10^{0}
^{243}Am	7.15×10^{-1}	2.28×10^{-4}	7.15×10^{-1}	3.13×10^{5}
^{245}Am	NR	2.87×10^{-16}	-2.87×10^{-16}	-1.00×10^{2}
^{217}At	3.69×10^{-2}	1.17×10^{-1}	-8.01×10^{-2}	-6.85×10^{1}
^{137m}Ba	3.36×10^{5}	2.04×10^{5}	1.32×10^{5}	6.47×10^{1}
^{210}Bi	2.11×10^{-7}	7.16×10^{-6}	-6.95×10^{-6}	-9.71×10^{1}
^{211}Bi	3.96×10^{-6}	7.58×10^{-4}	-7.54×10^{-4}	-9.95×10^{1}
^{212}Bi	2.70×10^{0}	7.36×10^{-2}	2.63×10^{0}	3.57×10^{3}
^{213}Bi	3.68×10^{-2}	1.17×10^{-1}	-8.02×10^{-2}	-6.85×10^{1}
^{214}Bi	1.36×10^{-6}	3.58×10^{-5}	-3.44×10^{-5}	-9.62×10^{1}
^{249}Bk	NR	1.98×10^{-11}	-1.98×10^{-11}	-1.00×10^{2}
^{250}Bk	NR	NR	0.00×10^{0}	0.00×10^{0}
^{14}C	2.05×10^{0}	2.05×10^{0}	0.00×10^{0}	0.00×10^{0}
^{109}Cd	NR	NR	0.00×10^{0}	0.00×10^{0}
^{113m}Cd	1.64×10^{-1}	5.46×10^{-7}	1.64×10^{-1}	3.00×10^{7}
^{141}Ce	3.77×10^{-19}	NR	3.77×10^{-19}	0.00×10^{0}
^{144}Ce	1.82×10^{0}	5.13×10^{0}	-3.31×10^{0}	-6.45×10^{1}

Table DATA-F-B-28. WIPP Disposal Radionuclide Inventory Comparison, 1995 to 2001, RH-TRU Waste — Continued[1]

Radionuclide	RH-TRU Waste Curies, 2001	RH-TRU Waste Curies, 1995	delta	% change
^{249}Cf	8.37×10^{-4}	4.47×10^{-3}	-3.63×10^{-3}	-8.13×10^{1}
^{250}Cf	1.50×10^{-2}	NR	1.50×10^{-2}	0.00×10^{0}
^{251}Cf	1.59×10^{-4}	NR	1.59×10^{-4}	0.00×10^{0}
^{252}Cf	1.77×10^{-2}	1.29×10^{0}	-1.27×10^{0}	-9.86×10^{1}
^{242}Cm	7.15×10^{-4}	NR	7.15×10^{-4}	0.00×10^{0}
^{243}Cm	4.90×10^{-1}	4.95×10^{1}	-4.90×10^{1}	-9.90×10^{1}
^{244}Cm	2.70×10^{2}	3.15×10^{2}	-4.50×10^{1}	-1.43×10^{1}
^{245}Cm	1.06×10^{-2}	1.46×10^{-6}	1.06×10^{-2}	7.26×10^{5}
^{246}Cm	6.74×10^{-1}	NR	6.74×10^{-1}	0.00×10^{0}
^{247}Cm	9.44×10^{0}	NR	9.44×10^{0}	0.00×10^{0}
^{248}Cm	1.83×10^{-3}	2.05×10^{-4}	1.63×10^{-3}	7.93×10^{2}
^{250}Cm	NR	NR	0.00×10^{0}	0.00×10^{0}
^{58}Co	NR	1.24×10^{-11}	-1.24×10^{-11}	-1.00×10^{2}
^{60}Co	1.68×10^{3}	1.04×10^{4}	-8.72×10^{3}	-8.38×10^{1}
^{51}Cr	NR	3.04×10^{-6}	-3.04×10^{-6}	-1.00×10^{2}
^{134}Cs	3.36×10^{1}	1.84×10^{1}	1.52×10^{1}	8.26×10^{1}
^{135}Cs	6.90×10^{-5}	1.17×10^{-4}	-4.80×10^{-5}	-4.10×10^{1}
^{137}Cs	3.65×10^{5}	2.16×10^{5}	1.49×10^{5}	6.90×10^{1}
^{254}Es	NR	NR	0.00×10^{0}	0.00×10^{0}
^{150}Eu	NR	NR	0.00×10^{0}	0.00×10^{0}
^{152}Eu	6.95×10^{2}	1.22×10^{3}	-5.25×10^{2}	-4.30×10^{1}
^{154}Eu	4.23×10^{2}	5.91×10^{2}	-1.68×10^{2}	-2.84×10^{1}
^{155}Eu	1.85×10^{1}	1.18×10^{2}	-9.95×10^{1}	-8.43×10^{1}
^{55}Fe	4.20×10^{-2}	1.69×10^{-1}	-1.27×10^{-1}	-7.51×10^{1}
^{59}Fe	NR	NR	0.00×10^{0}	0.00×10^{0}
^{221}Fr	3.68×10^{-2}	1.17×10^{-1}	-8.02×10^{-2}	-6.85×10^{1}
^{223}Fr	5.45×10^{-8}	1.04×10^{-5}	-1.03×10^{-5}	-9.95×10^{1}
^{152}Gd	1.95×10^{-11}	NR	1.95×10^{-11}	0.00×10^{0}
^{3}H	1.15×10^{0}	6.60×10^{-2}	1.08×10^{0}	1.64×10^{3}
^{129}I	8.20×10^{-2}	NR	8.20×10^{-2}	0.00×10^{0}
^{85}Kr	1.13×10^{-1}	1.68×10^{0}	-1.57×10^{0}	-9.33×10^{1}
^{54}Mn	1.82×10^{0}	2.35×10^{-2}	1.80×10^{0}	7.64×10^{3}
^{22}Na	2.95×10^{-1}	NR	2.95×10^{-1}	0.00×10^{0}
^{93m}Nb	2.75×10^{-4}	NR	2.75×10^{-4}	0.00×10^{0}
^{95}Nb	7.53×10^{-14}	6.69×10^{-1}	-6.69×10^{-1}	-1.00×10^{2}
^{95m}Nb	2.52×10^{-16}	2.24×10^{-3}	-2.24×10^{-3}	-1.00×10^{2}

Table DATA-F-B-28. WIPP Disposal Radionuclide Inventory Comparison, 1995 to 2001, RH-TRU Waste — Continued[1]

Radionuclide	RH-TRU Waste Curies, 2001	RH-TRU Waste Curies, 1995	delta	% change
^{59}Ni	2.30×10^{1}	NR	2.30×10^{1}	0.00×10^{0}
^{63}Ni	1.12×10^{3}	9.88×10^{-1}	1.12×10^{3}	1.13×10^{5}
^{237}Np	6.66×10^{-1}	2.85×10^{0}	-2.18×10^{0}	-7.66×10^{1}
^{238}Np	4.28×10^{-6}	NR	4.28×10^{-6}	0.00×10^{0}
^{239}Np	6.28×10^{-2}	2.28×10^{-4}	6.26×10^{-2}	2.74×10^{4}
^{240m}Np	1.11×10^{-3}	2.21×10^{-11}	1.11×10^{-3}	5.02×10^{9}
^{231}Pa	1.79×10^{-5}	1.91×10^{-3}	-1.89×10^{-3}	-9.91×10^{1}
^{233}Pa	2.31×10^{-3}	2.85×10^{0}	-2.85×10^{0}	-9.99×10^{1}
^{234}Pa	2.82×10^{-3}	1.36×10^{-2}	-1.08×10^{-2}	-7.93×10^{1}
^{234m}Pa	2.17×10^{0}	1.05×10^{1}	-8.33×10^{0}	-7.93×10^{1}
^{209}Pb	3.68×10^{-2}	1.17×10^{-1}	-8.02×10^{-2}	-6.85×10^{1}
^{210}Pb	2.13×10^{-7}	7.16×10^{-6}	-6.95×10^{-6}	-9.70×10^{1}
^{211}Pb	3.95×10^{-6}	7.58×10^{-4}	-7.54×10^{-4}	-9.95×10^{1}
^{212}Pb	2.69×10^{0}	7.36×10^{-2}	2.62×10^{0}	3.55×10^{3}
^{214}Pb	1.36×10^{-6}	3.58×10^{-5}	-3.44×10^{-5}	-9.62×10^{1}
^{107}Pd	2.88×10^{-6}	1.73×10^{-5}	-1.44×10^{-5}	-8.33×10^{1}
^{147}Pm	3.51×10^{2}	1.07×10^{1}	3.40×10^{2}	3.18×10^{3}
^{210}Po	2.13×10^{-7}	7.16×10^{-6}	-6.95×10^{-6}	-9.70×10^{1}
^{211}Po	1.20×10^{-8}	2.12×10^{-6}	-2.11×10^{-6}	-9.94×10^{1}
^{212}Po	1.72×10^{0}	4.72×10^{-2}	1.67×10^{0}	3.54×10^{3}
^{213}Po	3.60×10^{-2}	1.15×10^{-1}	-7.90×10^{-2}	-6.87×10^{1}
^{214}Po	1.36×10^{-6}	3.57×10^{-5}	-3.43×10^{-5}	-9.62×10^{1}
^{215}Po	3.95×10^{-6}	7.58×10^{-4}	-7.54×10^{-4}	-9.95×10^{1}
^{216}Po	2.69×10^{0}	7.36×10^{-2}	2.62×10^{0}	3.55×10^{3}
^{218}Po	1.34×10^{-6}	3.58×10^{-5}	-3.45×10^{-5}	-9.63×10^{1}
^{144}Pr	1.78×10^{0}	5.07×10^{0}	-3.29×10^{0}	-6.49×10^{1}
^{236}Pu	NR	NR	0.00×10^{0}	0.00×10^{0}
^{238}Pu	3.61×10^{3}	1.45×10^{3}	2.16×10^{3}	1.49×10^{2}
^{239}Pu	5.38×10^{3}	1.03×10^{4}	-4.92×10^{3}	-4.78×10^{1}
^{240}Pu	1.68×10^{3}	5.07×10^{3}	-3.39×10^{3}	-6.69×10^{1}
^{241}Pu	1.12×10^{5}	1.42×10^{5}	-3.00×10^{4}	-2.11×10^{1}
^{242}Pu	4.74×10^{-1}	1.50×10^{-1}	3.24×10^{-1}	2.16×10^{2}
^{243}Pu	9.33×10^{0}	NR	9.33×10^{0}	0.00×10^{0}
^{244}Pu	1.10×10^{-3}	2.21×10^{-11}	1.10×10^{-3}	4.98×10^{9}
^{223}Ra	3.99×10^{-6}	7.58×10^{-4}	-7.54×10^{-4}	-9.95×10^{1}
^{224}Ra	2.69×10^{0}	7.36×10^{-2}	2.62×10^{0}	3.55×10^{3}

Table DATA-F-B-28. WIPP Disposal Radionuclide Inventory Comparison, 1995 to 2001, RH-TRU Waste — Continued[1]

Radionuclide	RH-TRU Waste Curies, 2001	RH-TRU Waste Curies, 1995	delta	% change
^{225}Ra	3.69×10^{-2}	1.17×10^{-1}	-8.01×10^{-2}	-6.85×10^{1}
^{226}Ra	1.38×10^{-6}	3.58×10^{-5}	-3.44×10^{-5}	-9.61×10^{1}
^{228}Ra	1.69×10^{-1}	7.77×10^{-2}	9.13×10^{-2}	1.18×10^{2}
^{106}Rh	6.79×10^{-2}	1.09×10^{1}	-1.08×10^{1}	-9.94×10^{1}
^{219}Rn	3.95×10^{-6}	7.58×10^{-4}	-7.54×10^{-4}	-9.95×10^{1}
^{220}Rn	2.69×10^{0}	7.36×10^{-2}	2.62×10^{0}	3.55×10^{3}
^{222}Rn	1.36×10^{-6}	3.58×10^{-5}	-3.44×10^{-5}	-9.62×10^{1}
^{106}Ru	6.79×10^{-2}	1.09×10^{1}	-1.08×10^{1}	-9.94×10^{1}
^{125}Sb	4.38×10^{0}	1.89×10^{0}	2.49×10^{0}	1.32×10^{2}
^{126}Sb	4.17×10^{-5}	3.16×10^{-5}	1.01×10^{-5}	3.20×10^{1}
^{126m}Sb	2.98×10^{-4}	2.25×10^{-4}	7.30×10^{-5}	3.24×10^{1}
^{79}Se	4.46×10^{-2}	1.02×10^{-4}	4.45×10^{-2}	4.36×10^{4}
^{147}Sm	6.89×10^{-9}	NR	6.89×10^{-9}	0.00×10^{0}
^{151}Sm	5.80×10^{2}	3.57×10^{-1}	5.80×10^{2}	1.62×10^{5}
^{119m}Sn	NR	9.59×10^{-7}	-9.59×10^{-7}	-1.00×10^{2}
^{121m}Sn	5.15×10^{-4}	6.69×10^{-3}	-6.18×10^{-3}	-9.23×10^{1}
^{126}Sn	2.98×10^{-4}	2.25×10^{-4}	7.30×10^{-5}	3.24×10^{1}
^{90}Sr	2.46×10^{5}	2.09×10^{5}	3.70×10^{4}	1.77×10^{1}
^{182}Ta	NR	4.21×10^{-8}	-4.21×10^{-8}	-1.00×10^{2}
^{99}Tc	1.59×10^{2}	5.85×10^{-3}	1.59×10^{2}	2.72×10^{6}
^{123}Te	NR	NR	0.00×10^{0}	0.00×10^{0}
^{123m}Te	NR	NR	0.00×10^{0}	0.00×10^{0}
^{125m}Te	1.06×10^{0}	4.65×10^{-1}	5.95×10^{-1}	1.28×10^{2}
^{127}Te	NR	1.71×10^{-9}	-1.71×10^{-9}	-1.00×10^{2}
^{127m}Te	NR	1.75×10^{-9}	-1.75×10^{-9}	-1.00×10^{2}
^{227}Th	3.89×10^{-6}	7.47×10^{-4}	-7.43×10^{-4}	-9.95×10^{1}
^{228}Th	2.72×10^{0}	7.36×10^{-2}	2.65×10^{0}	3.60×10^{3}
^{229}Th	3.69×10^{-2}	1.17×10^{-1}	-8.01×10^{-2}	-6.85×10^{1}
^{230}Th	3.76×10^{-4}	7.56×10^{-3}	-7.18×10^{-3}	-9.50×10^{1}
^{231}Th	5.23×10^{-2}	4.63×10^{0}	-4.58×10^{0}	-9.89×10^{1}
^{232}Th	2.81×10^{-1}	9.25×10^{-2}	1.89×10^{-1}	2.04×10^{2}
^{234}Th	2.17×10^{0}	1.05×10^{1}	-8.33×10^{0}	-7.93×10^{1}
^{207}Tl	3.93×10^{-6}	7.56×10^{-4}	-7.52×10^{-4}	-9.95×10^{1}
^{208}Tl	9.71×10^{-1}	2.65×10^{-2}	9.45×10^{-1}	3.56×10^{3}
^{209}Tl	8.10×10^{-4}	2.53×10^{-3}	-1.72×10^{-3}	-6.80×10^{1}
^{232}U	2.53×10^{0}	NR	2.53×10^{0}	0.00×10^{0}

Table DATA-F-B-28. WIPP Disposal Radionuclide Inventory Comparison, 1995 to 2001, RH-TRU Waste — Continued[1]

Radionuclide	RH-TRU Waste Curies, 2001	RH-TRU Waste Curies, 1995	delta	% change
^{233}U	3.41×10^{1}	1.58×10^{2}	-1.24×10^{2}	-7.84×10^{1}
^{234}U	2.17×10^{1}	4.27×10^{1}	-2.10×10^{1}	-4.92×10^{1}
^{235}U	9.42×10^{-1}	4.63×10^{0}	-3.69×10^{0}	-7.97×10^{1}
^{236}U	1.42×10^{0}	9.68×10^{-2}	1.32×10^{0}	1.37×10^{3}
^{237}U	1.75×10^{-2}	3.48×10^{0}	-3.46×10^{0}	-9.95×10^{1}
^{238}U	1.30×10^{2}	1.05×10^{1}	1.20×10^{2}	1.14×10^{3}
^{240}U	1.09×10^{-3}	2.21×10^{-11}	1.09×10^{-3}	4.93×10^{9}
^{90}Y	2.43×10^{5}	2.09×10^{5}	3.40×10^{4}	1.63×10^{1}
^{91}Y	8.11×10^{-13}	NR	8.11×10^{-13}	0.00×10^{0}
^{65}Zn	NR	NR	0.00×10^{0}	0.00×10^{0}
^{93}Zr	3.39×10^{-1}	1.32×10^{-3}	3.38×10^{-1}	2.56×10^{4}
^{95}Zr	3.43×10^{-14}	3.02×10^{-1}	-3.02×10^{-1}	-1.00×10^{2}
Total:	1.33×10^{6}	1.02×10^{6}	3.12×10^{5}	3.06×10^{1}

-NR Not Reported
-2001 Decayed through 12/31/01
-1995 Decayed through 12/31/95
-Total curies estimated by assuming a volume of (168,485 m^3) for CH-TRU waste and (7,079 m^3) of RH-TRU waste

Most Abundant Radionuclides	RH-TRU Waste Activity (Ci)
^{137m}Ba	3.36×10^{5}
^{137}Cs	3.65×10^{5}
^{241}Pu	1.12×10^{5}
^{90}Sr	2.46×10^{5}
^{90}Y	2.43×10^{5}
Total	1.30×10^{6}
Percent of Total	9.76×10^{1}

[1] *See Page 33 for discussion.*

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