Pacific Northwest
National Laboratory
Operated by Battelle for the
U.S. Department of Energy

Inventory Data Package for Hanford Assessments

C. T. Kincaid
P. W. Eslinger
R. L. Aaberg
T. B. Miley
I. C. Nelson
D. L. Strenge
J. C. Evans, Jr.

June 2006

Inventory Data Package
for Hanford Assessments

C. T. Kincaid
P. W. Eslinger
R. L. Aaberg
T. B. Miley
I. C. Nelson
D. L. Strenge
J. C. Evans

June 2006

Pacific Northwest National Laboratory
Richland, Washington 99352

Preface

The *2004 Annual Status Report for the Composite Analysis of Low-Level Waste Disposal in the Central Plateau at the Hanford Site* (DOE 2005a) indicated that a comprehensive update to the composite analysis (CA) was in preparation and would be submitted in 2006. The *Technical Scope and Approach for the 2004 Composite Analysis of Low Level Waste Disposal at the Hanford Site* (Kincaid et al. 2004) identified the requirements for that analysis and served as the basis for the data collection effort documented in this data package.

The U.S. Department of Energy (DOE) has recently decided to defer the CA update and will use the cumulative assessment currently under preparation for the environmental impact statement (EIS) being prepared for tank closure and waste management decisions as the updated CA. Submittal of the draft EIS is currently planned for FY 2008.

Summary

The System Assessment Capability (SAC) is an environmental assessment tool, the development of which began in 1999 at the direction of the U.S. Department of Energy Richland Operations Office (DOE-RL). This tool provides for the analysis of the movement of contaminants from waste sites at the Hanford Site into and through the vadose zone, groundwater, atmosphere, and Columbia River, to form a basis for estimating cumulative impacts (i.e., impacts from all-pathways) on hypothetical individuals who might reside onsite, on projected human populations using groundwater or Columbia River water as a function of time for the next 10,000 years, and on the ecology. The SAC tool does not address risks and impacts to intruders. This document provides an inventory of potential radioactive contaminants released (intentionally or otherwise) or disposed to ground as a function of time (past and projected) and the initial location of the release or disposal, which is essential for an analysis of alternate remedial actions.

SAC is an integrated modular system of computer codes and databases that continues to evolve as new or improved information becomes available. The codes are concerned with: annualized and total inventory of contaminants; release of contaminants from containment; movement of contaminants in the vadose zone, groundwater, atmosphere, and Columbia River; impacts on the riparian and river ecosystems; and risk to humans and other biota using groundwater from the unconfined aquifer and water from the Columbia River in the Hanford Reach and downstream. The databases relate to contaminant inventories, data supporting models of environmental pathways, and data supporting models of risk and impact.

This document presents the basis for a compilation of inventory for radioactive contaminants of interest by year for all potentially impactive waste sites on the Hanford Site for which inventory data exist in records or could be reasonably estimated. This document also includes discussions of the historical, current, and reasonably foreseeable (1944 to 2070) future radioactive waste and waste sites; the inventories of radionuclides that may have a potential for environmental impacts; a description of the method(s) for estimating inventories where records are inadequate; a description of the screening method(s) used to select those sites and contaminants that might make a substantial contribution to impacts; a listing of the remedial actions and their completion dates for waste sites; and tables showing the best estimate inventories available for Hanford assessments.

Acknowledgments

Contents

Figures

Tables

1.0   Introduction

In 1999, the U.S. Department of Energy (DOE) initiated the development of an assessment tool that would enable its users to model the movement of contaminants from waste sites at the Hanford Site through the vadose zone, groundwater, atmosphere, and Columbia River, to form the basis for estimating the composite impact to humans and the ecology. This tool was named the System Assessment Capability (SAC). It is an integrated system of computer codes and databases used to assess the impact of waste remaining on the Hanford Site. SAC simulations of future waste disposal actions and remedial actions will help decision makers and the public evaluate the relative significance of individual waste sites and the cumulative effects of contamination from Hanford.

The design of SAC resulted from extensive interactions with Hanford project staff, regulators, Tribal Nations, and other stakeholders. The approach taken in the assessment follows that advanced by regulatory agencies such as the U.S. Environmental Protection Agency (EPA) in their guidance on uncertainty analyses (Firestone et al. 1997) and ecological risk assessments (EPA 1998), and DOE in its radioactive waste management manual (DOE 1999a) and implementation guide (DOE 1999b) which support DOE Order 435.1 (DOE 1999c) on radioactive waste management. The approach taken is also consistent with the methods, characteristics, and controls associated with acceptable analyses as described by the Columbia River Comprehensive Impact Assessment (CRCIA) team (DOE 1998b).

1.1   Purpose of this Document

The purpose of this document is to present a description of the traceable and transparent process used to assemble an inventory for Hanford assessments. This document presents a compilation of all waste sites on the Hanford Site including historical, current, and reasonably foreseeable future waste sites (1944 to 2070) that may have a potential to affect the environment and describes the screening method used to select those sites. It also describes the screening method used to select those contaminants that are likely to make a substantial contribution to far-field and long-term impacts. The screening method did not consider impacts to intruders. The document also presents a description of the methods for estimating inventories where records are inadequate. Finally, this document presents a list of the sites and best estimate inventories available for use in future Hanford assessments. A compilation by year of the best-estimate radionuclide inventories for the waste sites and all supporting data are available from the authors.

Table 1.1 shows the major elements of the process used for assembly of the inventory from the selection of waste sites and contaminants for inclusion in the work to the assembly of the annual and cumulative inventories. The sections of the report are identified where information on each element can be found.

Table 1.1. Major Elements of the Inventory Assembly Process

Scope	Data	Fill-In	Inventory Databases
Waste Site Selection (Section 2.2)	Waste Disposal Documents and Databases (Sections 2.4, 5.0)	Fill-in Rules: • Uranium isotopes (Sections 4.1, 4.4) • Fission Products (Sections 4.2, 4.4) • Activation Products (Sections 4.3, 4.4)	Annual, Waste Site, Analyte Inventory
→	→	→	→
Contaminants of Interest Identified Section 2.3)	Waste Discharge and Disposal Models • HTWOS (Section 2.4, 3.1, 5.1) • Hanford SIM (Sections 2.4, 3.2, 5.2) Future Disposal and Cleanup (Section 2.5, Appendix A)	Surrogate Waste Sites and Inventories (Section 4.5, Appendix C)	Cumulative Waste Site, Analyte Inventory in 2005, 2035, and 2070 (Section 5.13, Appendices E, F, G)

1.2   Scope of this Document

The scope of this inventory data package covers the radiological inventories of active and planned low-level radioactive waste (LLW) discharges and disposals and the inventories of all other sources of radioactive contamination that could interact with them (see DOE Order 435.1, *Radioactive Waste Disposal*). For Hanford, the inclusion of "all other sources … that could interact" (DOE 1999c) causes all other sources of radioactive contamination remaining at Hanford to be included in Hanford assessments, (e.g., inactive prior discharges and disposals, unplanned releases including past tank leaks, residual inventories remaining in remediated structures including canyons). The unconfined aquifer underlying Hanford is continuous with groundwater flow from the Rattlesnake Hills, Cold Creek, and Dry Creek through the Central Plateau (200 Area) and to the Columbia River. There are examples of contamination from one operational area contaminating the groundwater under another, especially Central Plateau areas interacting with river corridor areas.

The location of the Hanford Site within the state of Washington, and relative to geographic features including the Rattlesnake Hills, Columbia River, and Yakima River is shown in Figure 1.1. The core zone of the Central Plateau shown in Figure 1.1 is taken from the *Hanford Site End-State Vision* (DOE 2005b, Figure 1.2). Groundwater contamination from past operations exists in the unconfined aquifer underlying the 100, 200, and 300 Areas. Substantial plumes of mobile contaminants have migrated to the north and to the east-southeast from the Central Plateau. Co-mingling of contaminant plumes is possible between contaminant plumes with origins in the 200 Areas and those originating from the 100 and 300 Areas. Similarly, co-mingling is possible between plumes originating in the 200 West Area and

those originating from 200 East Area waste sites. Accordingly, Hanford Site assessments can involve sources and their inventories in all operational areas of the site.

The radiological inventory is the quantity of contaminant discharged or disposed in waste sites and available for release into the environment. Where necessary to complete the portrait of the total Hanford Site inventory, this compilation includes quantities stored for future offsite shipment (e.g., spent fuel, high-level waste glass, transuranic waste destined for the Waste Isolation Pilot Plant). A thorough under-standing of the inventory is key to any assessment because potential groundwater and river contamination levels are proportional to the amount of radionuclides disposed at the Hanford Site; especially those capable of migrating from discharge and disposal sites. The information needed to determine the inventory includes waste site locations, amounts or rates of discharge or disposal, concentrations of contaminants in waste or total activity in waste deposits, the change in inventory because of natural processes (e.g., decay), and the movement of inventories because of Hanford cleanup and disposal actions. The compilation of some of this information (e.g., location, cleanup schedule) resides in the Geographic and Operational Site Parameters List (GOSPL) workbook and is fully documented in the GOSPL data package (Last et al. 2006).
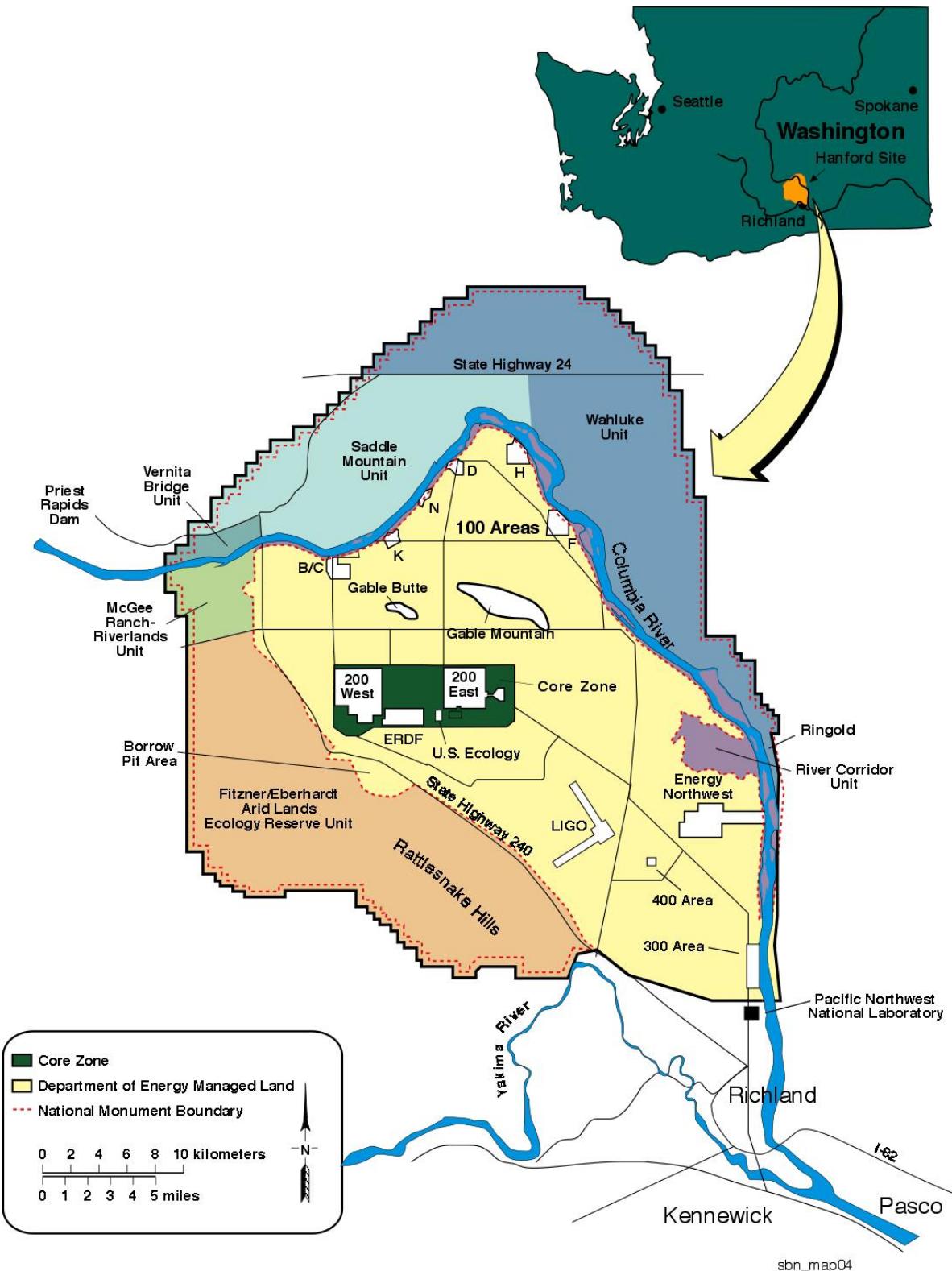
Figure 1.1. Hanford Site Location

2.0   Background

The vast majority of the radioactive waste inventory at the Hanford Site was created during the production of nuclear materials for national defense during World War II and the Cold War. Research and development activities contributed, and continue to contribute, a minor amount of waste to the total. Ongoing remedial actions are resulting in the movement of waste on the Hanford Site with all remove, treat, and dispose remedial actions producing waste for disposal in the Environmental Restoration Disposal Facility (ERDF), a trench on the Central Plateau devoted to *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) waste. The recovery and treatment of tank waste will yield low-activity and low-level radioactive waste to be disposed at Hanford and vitrified high-level waste to be exported to a national repository. Discharges have occurred to the vadose zone from a variety of facilities including liquid discharges to subsurface cribs (drain fields), trenches, French drains, ditches, and ponds. Since 1944, solid waste has been disposed to unlined low-level waste burial grounds, and current disposals (including decontamination and decommissioning debris, and mixed low-level waste) occur to lined trenches. Unplanned releases directly to the vadose zone occurred when material spilled onto the land surface (e.g., containerized waste was dropped and spilled) and when liquids were lost from engineered containment systems including pipelines and buried tanks.

2.1   Conceptual Model of the Hanford Site Inventory

A schematic representation of Hanford Site operations and waste generation during the production operations is shown in Figure 2.1. There were four distinct steps in the production process: fuel fabrication, fuel irradiation, chemical separations, and product finishing. During the first decades at the Hanford Site, it was common to locate waste disposal sites relatively close to waste-generating facilities. This practice resulted in numerous disposal sites of varying configuration. The highly radioactive liquid waste from chemical separations was stored in large underground tanks in the 200 Areas (Agnew et al. 1997; Kupfer et al. 1997). Large volumes of solid waste (e.g., contaminated tools and protective clothing) were disposed in burial grounds, and large volumes of relatively low-level radioactive liquid waste were discharged to shallow subsurface cribs (i.e., drain fields), French drains, injection (or reverse) wells, and specific retention trenches. By 1990, all fuel fabrication, reactor operations, and chemical separations work ended and cleanup of past-practice units had begun. Low-level waste from ongoing laboratory and other waste management operations is disposed in burial grounds in the 200 West and 200 East Areas. Most liquid discharges of radioactive waste have been discontinued, an exception being liquid discharges to the State-Approved Land Disposal Site, which receives treated water from the 200 Area Effluent Treatment Facility. To determine an inventory estimate at a moment in time (e.g., now or at site closure), one needs to amend the four steps identified in Figure 2.1 to include two aspects:

1. The quantities of radionuclides and chemicals imported and exported from the Hanford Site are introduced or extracted at several points in the operation. For example, materials fed into the fuel fabrication process, chemicals fed into the reactor operation and chemical separations processes, and uranium and other special nuclear materials were exported from the Hanford Site.

2. Decisions regarding the remediation, decontamination and decommissioning, and disposal actions will impact many of the facilities and waste depicted in Figure 2.1. These cleanup actions will define the end-state configuration (i.e., both location and stability or form) of the waste remaining at the Hanford Site.
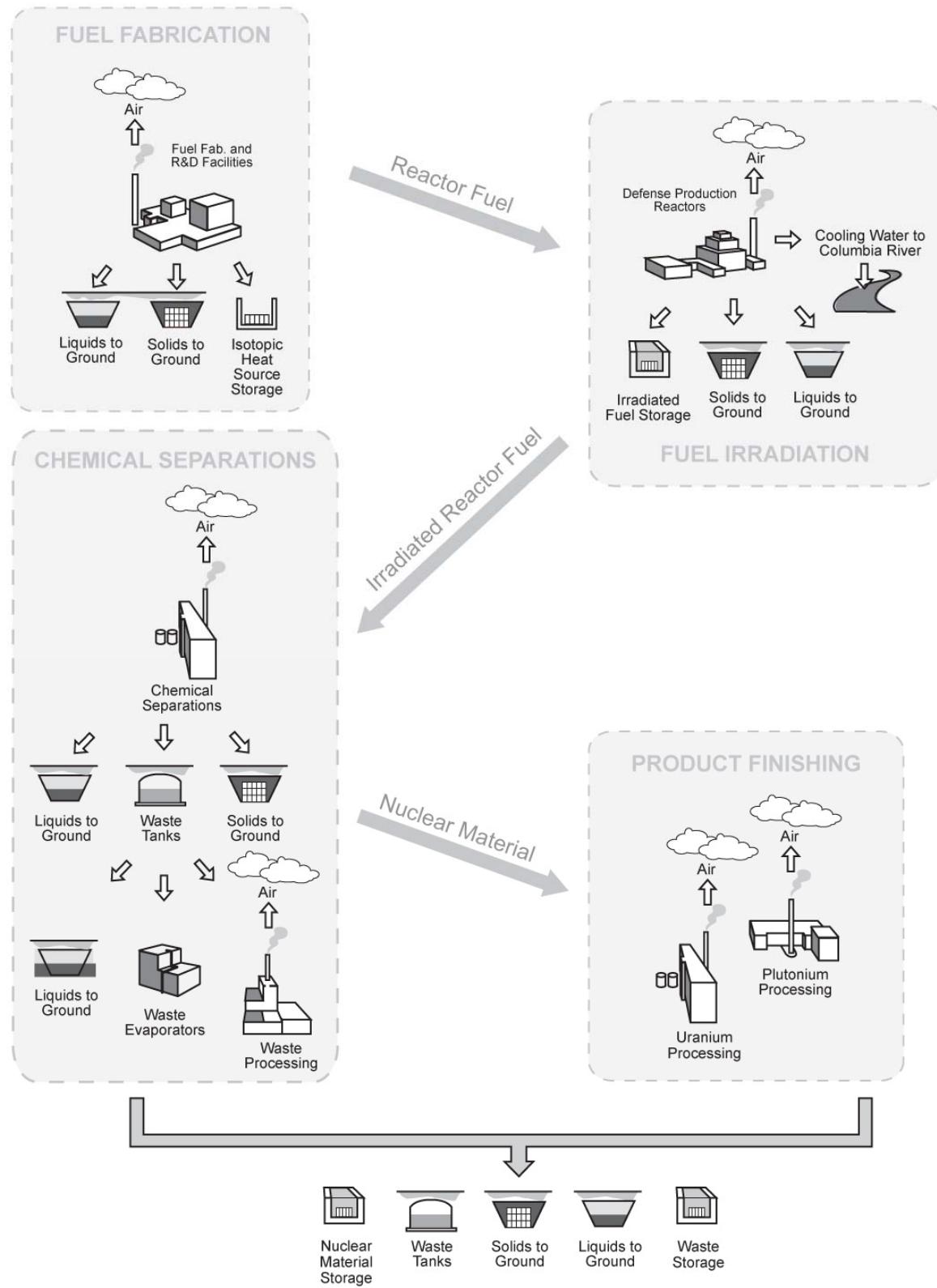
Figure 2.1. Conceptual Model of the Hanford Waste Generation and Disposition Process

Avenues by which contaminants enter and migrate through the environment to reach the accessible environment are shown in Figure 2.2. In this report, materials are not considered <u>waste</u> until they are placed in the environment and allowed to release (e.g., solid waste) or are declared waste (e.g., spent fuel). Thus, tank waste inventories currently <u>stored</u> in single- and double-shell tanks in the Central Plateau are not included in this inventory until they are recovered, treated, and disposed.
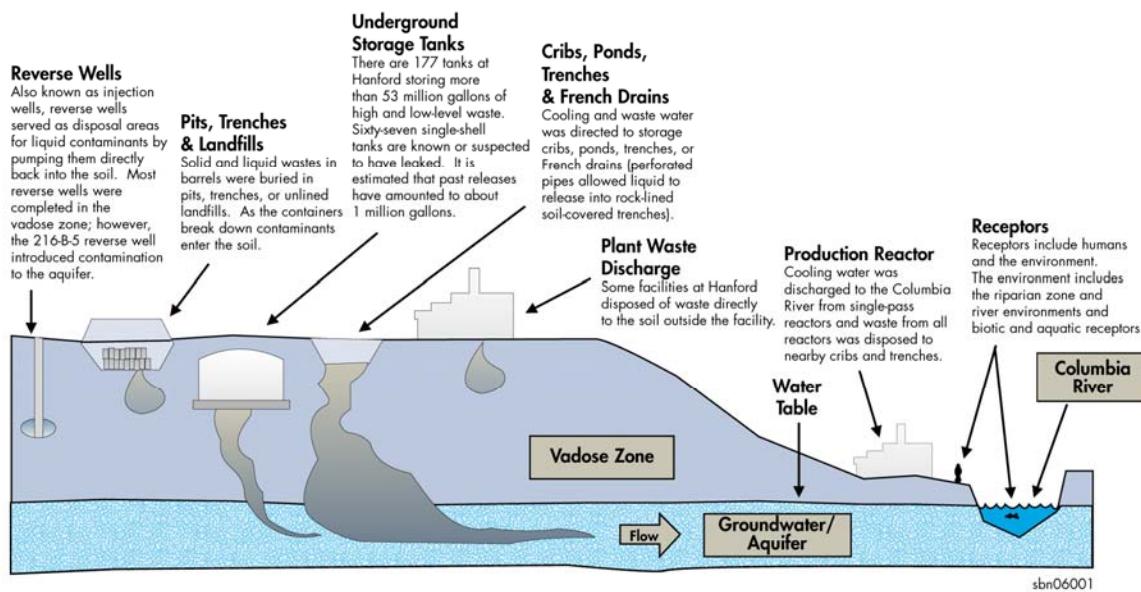
Figure 2.2. Avenues by which Hanford Waste Enters the Environment

At the Central Plateau, disposals generally fall into three classes from a contaminant migration viewpoint: those that have migrated through the vadose zone and resulted in groundwater plumes (e.g., cribs receiving tritium bearing waste from the Plutonium-Uranium Extraction [PUREX] and Reduction Oxidation [REDOX] Plants); those that have migrated deep into but not necessarily through the vadose zone (e.g., specific retention trenches like BC, BX, T, and TX); and those that have not migrated far into the vadose zone, if at all, (e.g., solid waste burial grounds). Some waste stored in underground single-shell tanks has leaked into the vadose zone and some past leaks appear to have contaminated groundwater, and at least one reverse well (i.e., 216-B-5) resulted in contamination of the unconfined aquifer.

The conceptual illustration of SAC (Figure 2.3) portrays a linear flow of information. In general, the inventory places contamination into waste sites, and the SAC tool provides for the analysis of the move- ment of contaminants from waste sites at the Hanford Site into and through the vadose zone, groundwater, atmosphere, and Columbia River. A soil environment is also modeled as impacted by both groundwater and atmospheric deposition. Contamination levels in the environment form a basis for estimating cumulative impacts on hypothetical future individuals and the ecology. In a few cases, the release of inventory occurs directly into the groundwater through a reverse well and into the Columbia River from the single-pass reactors. During operation of the chemical separations plant, there were direct releases into the atmosphere. The atmosphere, groundwater, Columbia River, and soil technical elements provide media-specific concentration estimates used in the risk and impact assessment.
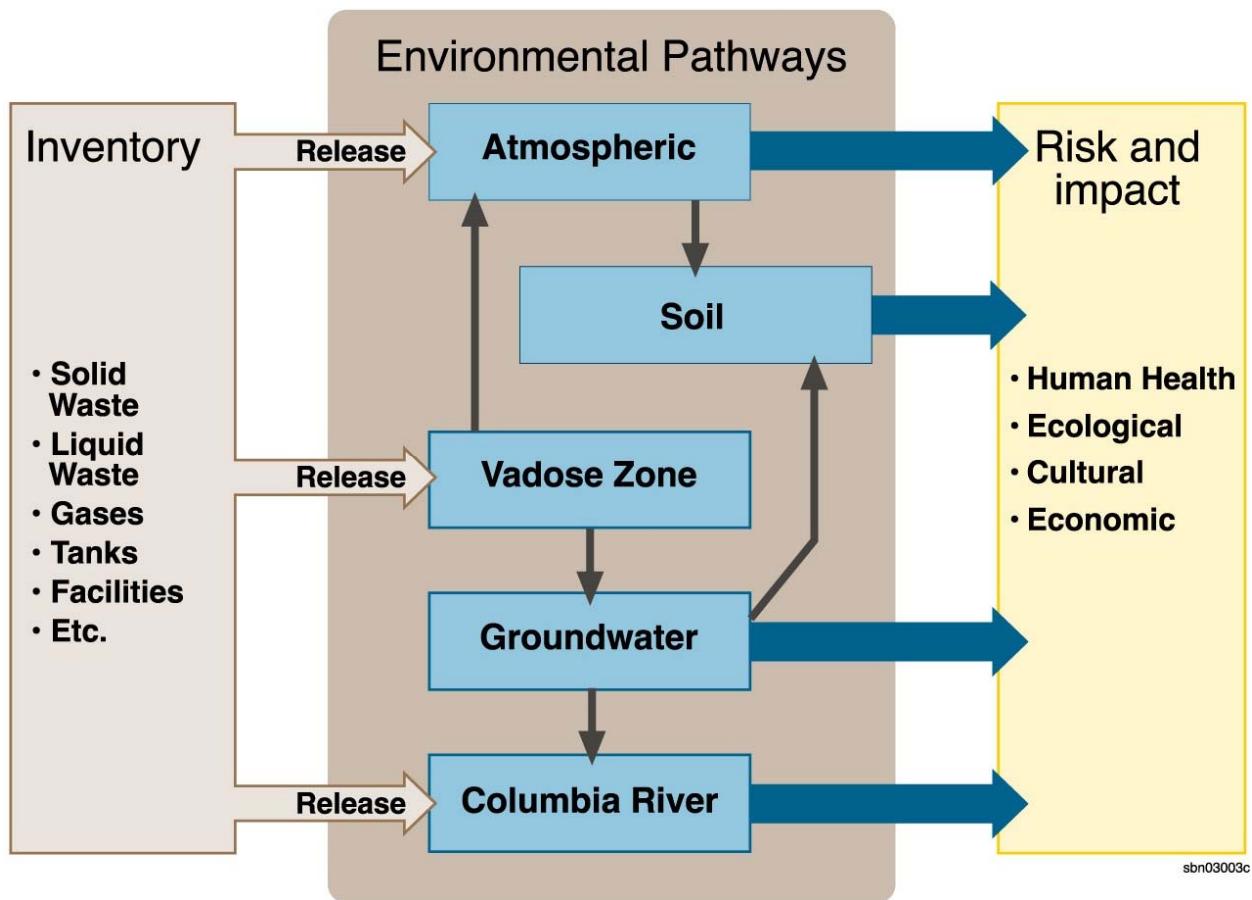
Figure 2.3. Conceptual Model of the System Assessment Capability

One of the challenges associated with performing an assessment is appropriately presenting how well the results predict what might actually occur. This is because the attributes of the site that effect transport of contaminants, the impact of contaminants on living systems, and the future conditions used in the assessment, as well as many other factors upon which the predictions depend, are not completely known or understood. SAC was developed to allow the performance of a probabilistic risk assessment so an indication of the effect of inventory uncertainty on contaminant concentrations in the environment, the ecology, and man can be examined. In general, other sources of uncertainty, such as conceptual model uncertainty are not addressed within the inventory projection (e.g., alternate concepts of chemical separations plant waste streams), but will be discussed in the interpretation of the inventory and impacts in completed analyses.

2.2   Selection of Waste Sites and Waste Types for Analysis

Table 2.1 summarizes the screening process used to identify 1,052 waste sites, for which inventories are to be developed if data and information are available. The screening process begins with the 2,730 sites listed in the Waste Information Data System (WIDS) in January 2003 and involves a number of screening rules or screens. Table 2.1 includes a description of the data source or screening rule applied, the number of sites deleted, and the number of sites retained after application of the screen. The original number of WIDS sites is supplemented by ten sites not named in WIDS but needed to represent

2.4

Table 2.1. Summary of Screening Rules Applied to Identify Waste Sites for Hanford Assessments

Description of Data Source or Screen Applied	Sites Added (+), Deleted (-), or Retained	Sites After Screen
WIDS sites identified in January 2003 download	+2,730	2,730
Non-WIDS sites[a]	+10	2,740
Non-WIDS clean water sites added [b]	+14	2,754
Waste sites classified as "rejected" or "proposed rejected" plus no inventory, and those reclassified as "closed out," "deleted from NPL" (National Priorities List), "interim closed out," "no action," "rejected," or "rejected (consolidation)" plus no inventory.[c]	-880	1,874
Site types not representing environmental releases of contaminants of interest[d]	-530	1,344
Eliminate waste streams categorized as "non-dangerous" or non-regulated[e]	-42	1,302
Eliminate waste types	-77	1,225
Surface contamination, surface runoff	-45	1,180
Remediated UPRs	-18	1,162
Small quantity contaminant sites	-15	1,147
Biological transport	-11	1,136
Test or no waste received[f]	-3	1,133
Retain original UPRs (Eliminate consolidated UPRs)[g]	-9	1,124
Duplicate sites[h]	-8	1,116
UPRs within waste sites [i]	-7	1,109
Constituents not of interest[j]	-3	1,106
Vague description; routed to disposal site; dose from sand filter; conveyance only[k]	-6	1,100
Screened previously [l]	-15	1,085
Site removed (Hanford SIM UPRs; tank farm related UPRs)	-33	1,052

(a) Non-WIDS sites: US Ecology, 221-B, 221-T, 224-U, 231-Z, 234-5Z, 218-E-LLW, 218-E-RCRA, 291-WTP, and 600-148-west. Also, WIDS site 600-148 is converted to 600-148_east.

(b) New non-WIDS clean sites: 100B_Sewage_Sum, 100D_Sewage_Sum, 100F_Sewage_Sum, 100H_Sewage_Sum, 100K_Sewage_Sum, 1182_Pumphouse, 1199-33-18B, 1199-34-15A%B, 499-S1-8J, 6607-07, 6607-18, 699-ORV-1%2, N-RCH-WELL, and WPPSS_Sanitary.

(c) Exceptions are seven clean water sites and UPR-200-E-16 for which Hanford SIM provides an inventory.

(d) Of 575 sites that represent contaminants not of interest, 45 waste sites are retained as clean water sites.

(e) Of 44 waste sites categorized as "non-dangerous" or "non-regulated," 2 are retained as clean water sites; 300_RFBP, and 200-A_TEDF.

(f) No waste received at three sites: 218-W-6, 400-31, and 600-262.

(g) Consolidated unplanned releases: 200-E-120, 200-E-131, 200-E-132, 200-E-133, 200-E-134, 200-W-93, 200-W-94, 200-W-95, and 200-W-96

(h) Duplicates: UPR-200-E-11, UPR-200-E-41, UPR-200-E-103, UPR-200-W-11, UPR-200-W-27, UPR-200-W-36, UPR-200-W-62, and UPR-200-W-137.

(i) UPRs within waste sites: UPR-200-E-23, UPR-200-E-24, UPR-200-E-30, UPR-200-E-53, UPR-200-E-66, UPR-200-W-45, and UPR-200-W-84

(j) Constituents not of interest: 100-K-13, 100-N-13, and 100-D-54.

(k) UPR-300-33 and UPR-300-35, routed to disposal site; 300-258 conveyance only (pipe trench), UPR-200-E-90 dose rate from sand filter, UPR-200-W-124 and UPR-200-N-2 vague description.

(l) Screened previously: 100-D-30, 100-K-63, 100-K-64, 100-K-81, 200-E-139, 200-E-43, 200-W-63, 200-W-81, 300-22, 300-256, 300-260, 300-43, 300-46, UPR-200-N-1, UPR-200-W-111, UPR-200-W-112, and WESF.

non-DOE waste and future waste disposals or accumulations of waste (for example, the commercial low-level radioactive waste disposal facility operated by US Ecology Inc., a stack release point for the future Waste Treatment Plant complex, future offsite shipments). In addition, there are 14 sites not included in WIDS that are included as clean water sites for water balance. There are 32 future waste streams (from Hanford Tank Waste Operation Simulator [HTWOS]) that are combined into 3 disposal sites and 4 products to be shipped offsite.

The series of screens that eliminate sites begins with the elimination of WIDS sites originally classi-fied as either 'rejected' or 'rejected proposed.' 'Rejected proposed' is the label placed on a waste site in the WIDS database that is proposed for rejection. In addition, sites without an inventory that are reclassified as 'closed out,' 'deleted from NPL (National Priorities List),' 'interim closed out,' 'no action,' 'rejected,' or 'rejected consolidated' are eliminated. Table 2.2 shows the distribution of site classifications for the 880 sites eliminated by the classification criterion or screen.

Table 2.2. Distribution of Site Classifications for the Sites Eliminated

Site Classification Summary	
Closed Out	84
Deleted from NPL	76
No Action	12
Interim Closed Out	54
Rejected	571
Rejected (Consolidation)	48
Rejected (Proposed)	35
Total	**880**

Sites are also dropped based on their waste site type not being an environmental release point (for example, septic tanks, fabrication shops, offices, control structures, loading docks, storage pads [<90 day], burn pits, coal ash pits, sanitary sewers). If releases occurred from such waste sites, they are dealt with as 'unplanned releases.' Some uncontaminated sites that are associated with the release of large amounts of water to the ground (for example, septic systems, sewage lagoons, and coal ash pits) are retained for the purpose of water balance. 'Storage pads (<90 day)' is terminology used in WIDS to indicate a storage pad for *Resource Conservation and Recovery Act* (RCRA) identified waste that can be stored at a generator site for no longer than 90 days. Table 2.3 shows the distribution of site types for 530 sites eliminated based on site type.

Sites representing non-radioactive or non-hazardous chemical waste streams are also omitted. Forty-two sites were eliminated because the waste category associated with the site was non-hazardous and/or non-radioactive; one additional unplanned release site was eliminated because the site description indicated the spill was fuel oil. Similarly, most waste sites found to contain only hazardous non-radioactive waste are omitted on the basis of the waste type (for example, waste sites devoted to ash, asbestos, demolition and inert waste, ordinance, storm water runoff). Table 2.4 shows the distribution of waste types for 77 sites eliminated based on the type of waste disposed.

Table 2.3. Distribution of Site Types for Sites Eliminated

Site Type Summary	
Burn pit	30
Catch tank	35
Coal ash pit	3
Control structure	9
Depression/Pit (nonspecific	7
Diversion box	71
Dumping area	78
Electrical substation	1
Evaporator	5
Fabrication shop	2
Foundation	11
Inert/Demolition landfill	6
Loading dock	1
Maintenance shop	3
Military compound	3
Mud pit	1
Neutralization tank	20
Office	1
Process pit	3
Process sewer	19
Product piping	7
Pump station	5
Receiver tank	5
Receiving vault	7
Sanitary landfill	7
Sanitary sewer	1
Septic tank	59
Silo	2
Spoils pile/Berm	2
Storage pad (<90 day)	2
Storage tank	75
Sump	14
Tank farm process piping	10
Valve pit	25
Total	**530**

Table 2.4. Distribution of Waste Types for Sites Eliminated

Waste Type Summary	
Asbestos (non-friable)	1
Ash	5
Batteries	1
Construction debris	6
Demolition and inert waste	18
Misc. trash and debris	15
Oil	25
Sanitary sewage	1
Vegetation	5
Total	**77**

Finally, a review of WIDS records for specific waste sites indicates that some sites have negligible inventory. A number of WIDS sites described as surface contamination, unplanned releases that have been remediated, sites with small quantities of contaminants, duplicate sites, and sites identified but not used for waste disposal are all eliminated from consideration. Several consolidated unplanned releases that appear in WIDS are rejected in order to retain previously described releases that are better described under their original waste site designation. When applying a screen, sites that may be candidates for elimination are always compared to a list of 'waste sites with inventory data' from prior analyses and retained if listed. Ultimately, 1,052 waste sites were identified for further review and development of inventory data and estimates.

Work to define inventories has shown that sites on the list of 1,052 may not be particularly relevant to environmental releases. Efforts to develop inventories for waste sites relied on existing documentation of discharges, disposals, and unplanned releases, and on the Hanford Soil Inventory Model (Hanford SIM) for simulation of inventories for 377 liquid discharges and unplanned releases. When not included in records or Hanford SIM results, which are based on records, the history of waste sites reported in the WIDS database was reviewed to determine if there was a basis for estimating an inventory. The review identified over 100 waste sites that are accounted for in the inventory of another waste site, (e.g., an unplanned release in a solid waste burial ground), over 150 waste sites involving documented minimal releases, and others that represented duplicate event information. As of January 2006, inventory data have been assembled for a total of 690 sites for inclusion in Hanford assessments. Of these, 570 waste sites are in the Central Plateau, 97 are in the 100 Areas, 11 are in the 300 Areas, 11 are in the 600 Area, and 1 is in the 400 Area.

The list of waste sites included in future Hanford assessments will change. The WIDS file from January 2003 will be used throughout this work. However, the WIDS database is continually updated to reflect new information on existing waste sites and to incorporate newly identified waste sites. Hanford SIM simulator may identify more or different waste sites, and the HTWOS simulator may identify more or different waste streams requiring disposal.

2.3   Choice of Radioactive Contaminants

The radioactive contaminants to be included in Hanford assessments were selected through the data quality objectives (DQO) process documented in (Kincaid et al. 2004). Two key considerations formed the basis for the selection process:

- Which radioactive contaminants have been observed in the environment and have the potential to impact human or ecological health?

- Which radioactive contaminants have sufficient inventory in waste sites and have the potential to impact human and/or ecological health as indicated through previous assessments?

The screening process used to select the radioactive contaminants for Hanford assessments included the following steps:

- Reviewed all groundwater monitoring data from 1990 to December 2002

- Retained all sample results above detection levels

- Retained all samples not rejected by data quality assurance checks

- Retained all radionuclides with a half-life greater than 10 years

- Identified all samples above drinking water standards

- Identified all radionuclides that have regional or Hanford Site scale distribution (spatial distribution criteria – represent more than one or two points in the aquifer)

- Identified all radionuclides that represent a current issue and not a single moment in time observation (temporal distribution criteria)

- Incorporated radionuclides that may have a future impact as indicated by performance assessments and environmental impact statement studies

The 16 radioactive contaminants selected for inclusion in Hanford assessments are listed in Table 2.5, which identifies the primary source of the selection data.

2.4   Major Data Sources

A single source of inventory data does not exist for the fifty plus years of Hanford operations. Records of disposals and discharges have been kept or developed from operation records; however, the content of those records has changed over time. Because disposed and discharged quantities of fission products could be related to the production of special nuclear materials, early records were secret and few efforts were made to develop or show total inventories of radionuclides with greater impact to man and the environment (e.g., technetium-99, iodine-129) until very near the end of Hanford's production mission. Our knowledge of the presence, abundance, and health implications of some radionuclides also

Table 2.5. Radioactive Contaminants of Potential Concern for Hanford Assessments

Groundwater/Surface Water	Air[a]	Primary Source[b]
Tritium[c]		Groundwater monitoring (Hartman et al. 2003)
Carbon-14	Carbon-14	Groundwater monitoring (Hartman et al. 2003); Air monitoring (Poston et al. 2002)
Chlorine-36		1998 Composite Analysis (Kincaid et al. 1998), SPRD EIS (DOE 1989)
Selenium-79		Immobilized Low-Activity Waste (ILAW) Performance Assessment (DOE 2001)
Strontium-90[c]		Groundwater monitoring (Hartman et al. 2003)
Technetium-99		Groundwater monitoring (Hartman et al. 2003)
Iodine-129	Iodine-129	Groundwater monitoring (Hartman et al. 2003); Air monitoring (PNNL-13910)
Cesium-137		Groundwater monitoring (Hartman et al. 2003)
Europium-152		Surface water monitoring (Poston et al. 2002)
Radium-226[d]		ERDF RI/FS (DOE 1994)
Protactinium-231[e]		ILAW Performance Assessment (DOE 2001)
Uranium-233		ILAW Performance Assessment (DOE 2001)
Uranium-234[c]		Groundwater monitoring (Hartman et al. 2003)
Uranium-235[c]		Groundwater monitoring (Hartman et al. 2003)
Neptunium-237		ILAW Performance Assessment (DOE 2001)
Uranium-238[c]		Groundwater monitoring (Hartman et al. 2003)

(a) Atmospheric monitoring does not identify any radionuclides at or near the standard, and, therefore, fails to identify any radionuclides requiring inclusion in Hanford assessments. Carbon-14 is included as an atmospheric radioactive contaminant of potential concern in Hanford assessments because it appears in the surplus production reactor environmental impact statement (DOE 1989) as an atmospheric radioactive contaminant of concern. Iodine-129 is included because it has the potential to move in the vapor phase from subsurface deposits to the land surface, and, thus, be available to the atmospheric transport pathway.
(b) Primary source that identified the radioactive contaminant as one of potential concern to be included in Hanford assessments.
(c) Radioactive contaminants found in seeps that discharge to the Columbia River include tritium at Hanford town site, strontium-90 in the 100 Area, and uranium in the 300 Area.
(d) Radium-226 as a progeny will be included in the calculation of uranium-234 and uranium-238 dose.
(e) Protactinium-231 as a progeny will be included in the calculation of uranium-235 dose.

changed considerably since 1944. Accordingly, early records that provided information on strontium-90, cesium-137, and specific uranium and plutonium isotopes have evolved to current records that provide data on radionuclides of greater potential health and ecological impact because of their mobility in the environment and uptake in the body, (e.g., technetium-99, iodine-129). Older records that were once believed to be sufficient for the management of waste and understanding potential health and ecological impacts are now augmented with estimates of the possible abundance of other radionuclides.

Records of solid waste disposal at the Hanford Site are maintained in the Solid Waste Information and Tracking Systems (SWITS) (Anderson 1996). Most of the information in the database on disposals

prior to 1968 is estimated. Individual disposal records were first kept in 1968. A computer-generated report of solid waste disposal was first generated in 1971. Reports prior to 1971 were done by hand. Through the evolution of hardware, software, and data processing protocols, the recording of solid waste disposals evolved to the SWITS database that was adopted in October 1991. Today the SWITS database provides solid waste inventories for disposals from 1944 to present and includes solid waste burial grounds in all operational areas of the Hanford Site. Anderson (1996 Volume 2, Section 8) provides a complete description of the history of solid waste records development and augmentation. A database and tool for forecasting solid waste disposals is known as the Solid Waste Integrated Forecast Tool (SWIFT). Initially documented by Templeton and Dirks (1995), this tool relies on data updated annually by the generators of solid waste destined for disposal at Hanford. SWIFT provides a forecast of disposals from DOE operations that are under RCRA.

In 1979, Maxfield (1979) wrote a history, or handbook, on radioactive waste sites and unplanned releases. The document gathered information from a variety of sources on all waste sites in the Central Plateau with the exclusion of those in tank farms. Each waste site or unplanned release was described and all information concerning that site, including references to maps, illustrations, and photos, were grouped with that site. Maxfield drew upon and superseded prior reports including Anderson's (1976) report on liquid discharges through 1975. In the 1980s, waste sites were reviewed to determine their hazard ranking to define those that fell under the CERCLA program. A compilation of information on all past solid waste disposals, liquid discharges, and unplanned releases gave rise to a report by Stenner et al. (1988) and the creation of the Hanford Inactive Sites Surveillance (HISS) database. The compiled data were also provided to the WIDS database which tracks information on CERCLA and non-CERCLA waste sites. The Environmental Release Summary (ERS) database contains the historical data files of the total or cumulative radioactive inventory for inactive liquid waste sites at the Hanford Site (Diediker 1999).

Because of their relationship to past and present day estimates of tank waste, and because of their incomplete nature, the record of liquid discharges and unplanned releases at the Hanford Site are augmented by models of both tank waste and planned and unplanned liquid discharges. To augment the record of past disposals, discharges and unplanned releases with planned future disposals, simulated tank waste inventories are imported to the inventory database from the HTWOS model (Kirkbride et al. 2005). HTWOS is a model of annual waste movement from Hanford's single- and double-shell tanks to its final disposition including high-level waste glass, low-activity waste glass, bulk vitrification glass, contact-handled and remote-handled transuranic waste, tank retrieval losses, tank residuals, and all secondary waste streams (gaseous, liquid, and solid). The HTWOS model relies on the design of chemical separations, solidification, and vitrification processes incorporated into the Waste Treatment Plant and the other tank waste treatment options. The HTWOS estimates of low-activity glass, bulk vitrification glass, and solidified secondary waste streams are disposed in lined trenches at Hanford.

To augment the record of liquid discharges and unplanned releases, simulated inventories are imported to the inventory database from the Hanford SIM. The Hanford SIM is a model of annual discharge and unplanned liquid releases for the more substantial liquid waste losses to the vadose zone on Hanford's Central Plateau. The Hanford SIM uses inputs from prior reports including those by Maxfield (1979), Stenner et al. (1988), and Diediker (1999), as well as waste stream composition estimates from the Hanford Defined Waste (HDW) Model (Higley et al. 2004) to simulate planned discharges and unplanned releases.

2.11

Specific sources for other waste that will remain at the Hanford Site and some that will be exported are reported in Section 5. For example, sources of inventory data are presented for the graphite cores of production reactors, the commercial low-level radioactive waste disposal site operated by US Ecology, the spent nuclear fuel stored pending export, the cesium-strontium capsules, and fuel-failure events associated with the operation of the single-pass production reactors.

For those waste inventories not fully assembled (i.e., many early Hanford solid waste records focus on inventories of strontium-90, cesium-137, uranium isotopes, plutonium isotopes, and waste volume), a variety of fill-in rules for fission products, activation products, and uranium isotopes were used to complete inventories when appropriate. In addition to fill-in rules, inventories for some release events can only be estimated using similarity or surrogate estimates (e.g., when a volume, date, and separations plant waste stream of origin is documented in the record, waste sites or unplanned releases with a waste stream of similar origin can be used to estimate the inventory that may have been discharged or released by the event). Fill-in rules and surrogate methods of estimating inventories are described in Section 4.

2.5 Disposal and Cleanup Assumptions (Hanford Site Disposition Baseline)

The suite of all remedial actions for waste sites at Hanford has been described as the Hanford Site Disposition Baseline (HSDB). The HSDB has been developed to represent the most credible end-state of the Hanford Site based on information made available by DOE and its contractors, including interim and final records of decision. Hence, the HSDB is a combination of remedial actions based on interim and final records of decision and remedial actions proposed by DOE but not yet interim or finally approved by regulatory agencies.

Remedial action assumptions are used to estimate the movement of inventory within the Hanford Site for Hanford assessments. For example, all CERCLA cleanup wastes at the Hanford Site are disposed in the ERDF trench located between 200 West and 200 East Areas on the Central Plateau. Thus, the reme-diated fractions of inventories in 100, 200, and 300 Area CERCLA sites move to the ERDF. A residual inventory could remain in the environment at the original site. Similar transfers of waste inventory arise in the decontamination and decommissioning of facilities, including the production reactors and canyon buildings. Where possible, assumed remedial actions will be applied to entire classes of waste or waste forms. For example, all liquid discharge sites in the river corridor will be excavated to 4.5 m below grade with all excavated materials transported to and disposed in the ERDF trench.

While remedial actions that result in the movement of waste from one waste site to another (e.g., ERDF) are described here, the simulated movement of the inventory occurs during model simulation. Essentially, the model of Hanford waste deposition and contaminant migration begins in 1944, and remedial actions of waste sites containing disposed or discharged waste are part of the model.

A significant step in the translation of the current setting to a stable closure of the Hanford Site is the recovery, separation, solidification, and disposal of tank waste that is now stored in single- and double-shell tanks. The inventory conceptual model provides a framework from which to estimate location, quantity, and composition of the radionuclide and chemical inventory. The conceptual model and related assumptions for tank waste are included in documentation of the HTWOS simulation included

in this analysis (Kirkbride et al. 2005).[1] The accumulation and decay correction of annual inventories yields the projection of inventory at times of interest, for example, at 2035 when the majority of waste disposal and remedial actions are complete and at 2070 when the commercial low-level radioactive waste site is assumed closed. Corresponding to the time of Hanford Site closure, the inventory model would yield a final inventory available for use in long-term Hanford risk and impact assessment.

Several of the remedies included in the HSDB do not reflect a final remedy selected by the regulatory agency. Those remedies not final will be the subject of future studies and records of decision. The baseline does include a logical suite of remedial actions based on records of decision and interim records of decision issued to date, as well as recently proposed remedial actions.

2.5.1   Central Plateau

Remedial actions for most waste sites on the Central Plateau of Hanford are the subject of future decisions by the Hanford Site regulatory community including the Washington State Department of Ecology (Ecology) and EPA. Accordingly, the remedial actions included in current Hanford assessments cannot be considered final until ongoing and future studies are completed and records of decision are published.

The suite of remedial actions included here are taken from the *Plan for Central Plateau Closure* (FHI 2004), which was approved for public release in November 2004, and unpublished information provided by DOE.[2,3] The general closure approach for entire classes of waste sites are provided in *Plan for Central Plateau Closure* (FHI 2004); for example, for underground tanks the report indicates that:

- "Ancillary equipment will be closed in accordance with the tank system closure plans. Actions may include decontamination, flushing, grouting, removal, or isolation.

- Tanks will be isolated and void-filled.

- A barrier will be placed over the tank farm. Where possible, demolition rubble from structures within the tank farm zone will be used as fill beneath the barrier. The lateral extent of the barrier also will encompass adjacent waste sites, foundations from demolished adjacent structures, and closed wells."

In addition to the general closure approach, each of 22 closure zones are described in Appendix A of the *Plan for Central Plateau Closure* (FYI 2004) including a summary of the closure approach and a diagram showing the location and areal extent of surface barriers.

---

[1] Note: The movement of tank waste from tanks to disposal is not a waste-site-to-waste-site remedial action because the tank waste is initially stored in the tank and not available for release into the environment.

[2] Hildebrand RD (U.S. Department of Energy, Richland, Washington). July 8, 2005, e-mail to CT Kincaid (Pacific Northwest National Laboratory, Richland, Washington). Subject: *FW: files on Central Plateau* with attached files. Contained e-mail from RA Holten to RD Hildebrand, dated July 7, 2005. Subject: *Files on Central Plateau* with attached files: All_WIDS_Review_for_CPCP_update.xls, Zone Locations.xls, Zone number to MII file crosswalk.xls, and Summary of Dates.xls.

[3] Holten RA (DOE/RL Richland Washington). July 7, 2005, e-mail to CT Kincaid (Pacific Northwest National Laboratory, Richland, Washington). Subject: *RE: ET caps and ET mono caps; Remedial action dates*.

The published description of the proposed remedial actions has been augmented through personal communications from DOE Richland Operations Office staff [4,5] regarding the remediation proposed for individual waste sites on the Central Plateau. One change is a shift to the use of evapotranspiration (ET) caps instead of Modified RCRA Subtitle C barriers over waste sites that receive barriers. A second change is an accelerated completion schedule for remedial actions at some Central Plateau waste sites. The files indicate the date of closure for each zone (that is, MSExcel file 'Summary of Dates.xls'), and the remedy for each waste site considered on the Central Plateau (that is, MSExcel file 'All_WIDS_Review_for_CPCP_update.xls'). The remedial action and remedial action completion date are listed in Appendix A for each of the Central Plateau waste sites included in the list of 1,052 waste sites considered in this compilation of inventory for Hanford assessments.

2.5.2   River Corridor

Remedial actions for most waste sites on the river corridor of Hanford are the subject of interim remedial action records of decision and amendments to these actions issued by the Hanford Site regulatory community including Ecology and EPA. Accordingly, the remedial actions included in current Hanford assessments should be considered interim pending completion of remedial actions and review of the effectiveness of the remedy. In general, all waste sites in the river corridor are to be excavated and the resulting debris disposed in the ERDF trench on the Central Plateau. The production reactors are being cocooned in place for interim safe storage with surrounding buildings demolished and debris disposed in the ERDF trench. Consistent with the surplus production reactor EIS record of decision (DOE 1989), it is assumed that all of the graphite cores of the production reactors are removed from the river corridor and disposed in the 200 West Area by 2065. The final decision on remediation of the reactor cores will be the subject of future analyses.

The schedule for completion of the river corridor remedial actions as presented in the March 25, 2003, *TPA Quarterly Review* (BHI 2003a, 2003b) has been used to assign completion dates to waste sites. These schedule data reflect the long-range plan issued by the environmental restoration contractor (ERC) in January 2001. In addition to the schedule, ERC provided two data sets that enabled the creation of a disposition schedule: (1) a listing of sites and facilities from the ERC FY2003 Baseline Update Database[6] and (2) a time series listing of ERDF disposal tonnages from operational areas.[7] Appendix A shows the remedial action and remedial action completion date for each of the river corridor waste sites included in the list of 1,052 waste sites considered in this compilation of inventory for Hanford assessments.

---

[4] Hildebrand RD (U.S. Department of Energy, Richland, Washington). July 8, 2005, e-mail to CT Kincaid (Pacific Northwest National Laboratory, Richland, Washington). Subject: *FW: files on Central Plateau* with attached files. Contained e-mail from RA Holten to RD Hildebrand, dated July 7, 2005. Subject: *Files on Central Plateau* with attached files: All_WIDS_Review_for_CPCP_update.xls, Zone Locations.xls, Zone number to MII file crosswalk.xls, and Summary of Dates.xls

[5] Holten RA (U.S. Department of Energy, Richland, Washington). July 7, 2005, e-mail to CT Kincaid (Pacific Northwest National Laboratory, Richland, Washington). Subject: *RE: ET caps and ET mono caps; Remedial action dates*.

[6] LaPierre, J (Bechtel Hanford Inc., Richland Washington). April 28, 2003, e-mail to CT Kincaid (Pacific Northwest National Laboratory, Richland, Washington), Subject: *Site & Facility Listing from FY03 Update Database* with attached file Special List 4-28-03.

[7] Wintczak TM (Bechtel Hanford Inc., Richland, Washington). May 5, 2003, e-mail to CT Kincaid (Pacific Northwest National Laboratory, Richland, Washington), Subject: *To tonnage.xls* with attached file, To tonnage.xls.

2.6   Simplifying Implementation Assumptions

Two key simplifying assumptions are the generation of inventory deposits on an annual basis and the aggregation of site inventories. Tank waste discharged to cribs and some unplanned releases, including tank leaks, occurred over time intervals of months, weeks, or even days. Thus, for example, a crib disposal occurring over 4 months would be treated as if the total volume of water in the disposal were discharged to the environment even in time over a 1-year interval. Annual inventories are assumed to offer sufficient temporal resolution of disposal events for the purpose of calculating long-term effects after the waste migrates in the environment. Aggregation of sites offers potential computation time and data collection savings by reducing the number of sites requiring analysis and the amount of detailed data. The response of each aggregated site is assumed to approximate the aggregate response of the sites if they were simulated individually. All disposal actions are described in the software as contaminant concentrations within a disposal volume.

The inventory model considers the waste as it comes in contact with the environment (for example, disposed to solid waste burial, contained in facilities that have been decontaminated and decommissioned, discharged to the vadose zone via liquid disposal facilities). Disposal actions occur as the waste becomes available for release to the environment, which often is not the same time as when the waste was generated because waste is often stored and treated prior to disposal. In general, material or waste stored or contained in facilities for subsequent recovery, treatment, or repackaging is not included until it is disposed. One exception is that mixed radioactive waste to be treated, packaged, and finally disposed in an Integrated Disposal Facility (IDF) is routed to the IDF when scheduled for waste storage or treatment onsite.[8] The IDF is envisioned to be a double-lined facility and it is assumed to not release contaminants until after its closure in 2035. Accordingly, waste disposal dates at IDF that pre-date 2035 are overridden by the release model. Waste in single- and double-shell tanks is not included in the inventory until tank waste is recovered, separated, vitrified, and disposed. Only the losses during waste recovery, low-activity fraction of tank waste, secondary waste streams (e.g., captured and solidified off-gas waste), and melters from the vitrification process are disposed at Hanford. However, tank leaks are entered into the inventory at the year of the leak. Once the time of site closure is reached, no further inventory will be generated, imported, or exported, and the inventory is complete.

---

[8] Note that use of an IDF in the 200 East or 200 West Area for disposal of all future DOE low-level and mixed low-level radioactive waste may or may not occur pending the record of decision for the Tank Closure and Waste Management Environmental Impact Statement.

3.0   Other Inventory Models

Detailed models applied to estimate annual and cumulative inventories include the HTWOS and the Hanford SIM.

3.1   The Hanford Tank Waste Operation Simulator Model

The Tank Farm Contractor, CH2M HILL Hanford Group, Inc., has developed and applied a model designed to simulate the future processing and movement of waste currently stored in single- and double-shell tanks in the Central Plateau of the Hanford Site. It is the Hanford Tank Waste Operation Simulator, (HTWOS) (Kirkbride et al. 2005). This model begins with an inventory in each tank and simulates its future form and location by applying a series of assumptions regarding the recovery, pre-treatment, and immobilization of that waste. Materials to be exported, including contact-handled and remote-handled transuranic waste and vitrified high-level waste, are assumed to be stored without the potential for future release prior to shipment from the Hanford Site. Tank waste to remain at Hanford including immobilized low-activity waste and secondary waste streams are assumed to be disposed in a new IDF located to the southwest of the PUREX Plant canyon.[9]

This model uses the Best Basis Inventory[10] (BBI) to define the initial inventory in each tank, assumes a tank waste recovery schedule (i.e., identifies the tanks recovered each year), and assumes parameters defining the waste treatment operation (e.g., capture efficiencies in vitrification products, waste product densities and volumes, and secondary waste stream compositions). Ultimately, the HTWOS model provides a series of files showing the annual output of primary products and secondary waste streams from tank waste processing. The model also provides an estimate of the residual tank waste left in each tank following tank waste recovery, and an estimate of the liquid waste composition during tank waste recovery. This later estimate of liquid waste composition can be used to define potential losses to the vadose zone from the tank during waste recovery operations. The HTWOS model provides curie estimates for 46 radionuclides and kilogram estimates for 68 chemical elements. In addition, it provides estimates of the mass of 89 chemical species, 12 glass formers, 19 gas phase constituents, and 62 waste oxides (see Appendix C of Kirkbride et al. 2005).

The HTWOS simulation incorporated into this inventory is known as the Development Run executed on January 5, 2005, and documented in Kirkbride et al. (2005). This simulation of the HTWOS model is referred to as the Development Run because of its intended use to assist with the development of the model through the inclusion of transuranic products, bulk vitrification products, and secondary waste streams, some of which include substantial inventory of key radionuclides. Assumptions detailing the volume of tank waste products and secondary waste streams created from tank waste are summarized in Appendix A of Puigh and Wood (2005). A key assumption is the BBI of iodine-129 inventory in single- and double-shell tanks, i.e., 43.94 Ci (acquired from TWINS on August 10, 2004). That compares to the more current BBI of October 2005 for iodine-129 of 30.2 Ci in tank waste, a 31% reduction.

---

[9] Use of an IDF and its location are assumed pending publication of the record of decision for the Tank Closure and Waste Management Environmental Impact Statement.

[10] The Best Basis Inventory is reported on the Thank Waste Information System (TWINS) web site that can be found at http://twins.pnl.gov/twins.htm. To obtain the Best Basis Inventory, go to the web site and from its main menu select "Data," then "Data Source Selection Forms," and then "Best Basis Inventory."

3.2   The Hanford Soil Inventory Model

Under funding from the Remediation and Closure Science (RCS) Project of the Pacific Northwest National Laboratory from 2000 until 2005, and from the Tank Farm Vadose Zone Project of CH2M HILL Hanford Group, Inc. during 2005, Nuvotec has developed and applied a code to estimate the more substantial past liquid discharges and unplanned liquid releases at the Hanford Site. The model is known as the Hanford SIM, and it is in its first revision, Corbin et al. (2005). Its initial version was published in 2001 (Simpson et al. 2001). The Hanford SIM is based on process knowledge of chemical separations plants and waste transfer records from those plants to single-shell tanks, double-shell tanks and liquid discharges (e.g., to cribs, specific-retention trenches, French drains, and ponds), and unplanned releases including past tank leaks.

The Hanford SIM begins with an estimate of the inventory in spent fuel brought to the Central Plateau for processing (Wootan and Finfrock 2002). It uses estimates of waste stream compositions from the HDW Model (Higley et al. 2004) and other sources (Corbin et al. 2005). In addition to waste transfer records, several other Hanford reports are used to better define the waste composition and volume, and the timing of unplanned releases to the vadose zone environment. Among these reports are Field and Jones (2005), Diediker (1999), WHC (1990), Stenner et al (1988), and Maxfield (1979). The Hanford SIM produces a mass balanced and charged balanced estimate of the waste inventories purposely discharged or inadvertently lost to the vadose zone at 377 waste sites. The model includes inventories for 46 radionuclides and 29 chemicals.

Among the key assumptions underlying Hanford SIM inventory estimates, the Wootan and Finfrock (2002) study estimates 49.4 Ci of iodine-129 is in processed spent fuel, and the Higley et al. (2004) study estimated 31.8 Ci of iodine-129 remained in tank waste. This differs substantially from the BBI estimate of 43.94 Ci of iodine-129 in tank waste included in the HTWOS model (Kirkbride et al. 2005) which came from the August 10, 2004, TWINS database.

While results of the Hanford SIM have been brought forward in this report for a short list of 16 radio-nuclides, estimates of a great many other analytes are available from the Hanford SIM report (Corbin et al. 2005). Table 3.1 provides the complete list of radioactive and chemical analytes reported.

The Hanford SIM is a Monte Carlo stochastic model that was executed for 25,000 realizations to achieve the converged solution reported in Corbin et al. (2005). Both the waste stream composition and the waste stream volume are treated as uncertain in the model. However, the volume of transfers are assigned a relatively narrow uncertainty range because of confidence in waste transfer reports. Annual releases to the environment are reported as 21-point distributions for inventory (in Ci or kg), volume (in ML), and concentration (in µCi/L or µg/mL). That is, values are provided corresponding to the mean, standard deviation, and the 21 percentiles 0.5%, 5%, 10%, 15%, …85%, 90%, 95%, 99.5%. All annual data on each waste site for each analyte are reported in Appendix C of Corbin et al. (2005).

Table 3.1. Radionuclides and Chemicals Simulated by the Hanford Soil Inventory Model

Radionuclide	Radionuclide	Chemical	Chemical
Tritium	Radium-226	Aluminum (Al)	Mercury (Hg)
Carbon-14	Radium-228	Ammonia (NH$_3$)	Nickel (Ni)
Nickel-59	Actinium-227	Bismuth (Bi)	Nitrate (NO$_3$)
Nickel-63	Protactinium-231	Butanol	Nitrite (NO$_2$)
Cobalt-60	Thorium-229	Calcium (Ca)	Normal paraffin hydrocarbon (NPH)
Selenium-79	Thorium-232	Carbonate (CO$_3$)	Phosphate (PO$_4$)
Strontium-90	Uranium-232	Carbon tetrachloride (CCl$_4$)	Potassium (K)
Yttrium-90	Uranium-233	Chlorine (Cl)	Silver (Ag)
Zirconium-93	Uranium-234	Chromium (Cr)	Silicon (Si)
Niobium-93m	Uranium-235	Ferrocyanide (Fe(NC)6)	Sodium (Na)
Technetium-99	Uranium-236	Fluorine (F)	Sulfate (SO$_4$)
Ruthenium-106	Uranium-238	Iron (Fe)	Total uranium
Cadmium-113m	Neptunium-237	Lanthanum (La)	Tributyl phosphate (TBP)
Antimony-125	Plutonium-238	Lead (Pb)	Zirconium (Zr)
Tin-126	Plutonium-239	Manganese (Mn)	
Iodine-129	Plutonium-240		
Cesium-134	Plutonium-241		
Cesium-137	Plutonium-242		
Barium-137m	Americium-241		
Samarium-151	Americium-243		
Europium-152	Curium-242		
Europium-154	Curium-243		
Europium-155	Curium-244		

4.0 Inventory Fill-In Rules

Many early Hanford records focus on inventories of strontium-90, cesium-137, uranium isotopes, and plutonium isotopes as well as the waste volume. Therefore, the record information of isotope composition is incomplete for the purpose of conducting a risk analysis. A variety of fill-in rules for fission products, activation products and uranium isotopes are used to complete missing inventory values. In addition to fill-in rules, inventories for some waste sites or unplanned releases can only be estimated using similarity or surrogate estimates. For example, waste streams of similar origin can be used to estimate the inventory that may be discharged or released by an unplanned event when volume data and separations plant waste stream of origin are documented in the record. A summary of the inventory fill-in rules is provided in the following sections. These fill-in rules were provided by Fluor Hanford, Inc., and are consistent with fill-in rules applies to complete inventories in the SWITS database. More detailed information on the derivation of these rules is provided by Coony (2002).

4.1 Fill-In Rules for Uranium

Three related methods are used to estimate the mass or activity of uranium isotopes. These methods are applied to estimate uranium isotopic composition or total mass:

- Estimate total uranium mass given uranium isotopic composition
- Estimate isotope composition given total uranium mass
- Estimate a uranium isotope amount given other isotope amounts

Some waste streams at Hanford were a byproduct of using fuel highly enriched in uranium-233. A reasonably complete inventory is available for this special fuel type. The following general uranium rules are not applied to these special uranium-233 waste streams.

4.1.1 Estimate Total Uranium Mass from Uranium Isotopic Composition

When the activities of each uranium isotope are known, the total uranium mass can be calculated as follows:

$$U = \sum_i \frac{A_i}{Sp_i} \tag{4.1}$$

where: U = mass of uranium, kg
   A_i = activity of each uranium isotope i, Ci
   Sp_i = specific activity of isotope i, Ci/kg

4.1.2 Estimate Uranium Isotope Composition Given Total Uranium Mass

Watrous and Wootan (1997) provides detailed information on fuel processing campaigns. The time periods for several fuel processing campaigns are summarized in Table 4.1. The fuel composition (curies) for the fuel types processed in the different campaigns is provided in Table 4.2. The fuel composition data are converted to weight percent in Table 4.3.

Table 4.1. Fuel Processing Campaigns

Fuel Code	Begin	End
AL-0.71U	1944	1972
AL-0.94U	1958	1971
ZR-0.94U	1963	1988
ZR-1.1U	1966	1988
AL-0.0TH	1965	1970
ZR-2.1U	1968	1969

Table 4.2. Fuel Composition Data (Ci) for Six Fuel Processing Campaigns

Fuel Code	AL-0.71U	AL-0.94U	ZR-0.94U	ZR-1.1U	AL-0.0TH	ZR-2.1U
Uranium-232	1.37E+00	5.43E-01	6.35E-01	1.26E-01	3.02E+03	6.28E-02
Uranium-233	4.23E-02	1.47E-02	6.63E-03	1.51E-03	1.17E+04	8.79E-04
Uranium-234	2.55E+04	7.35E+03	2.09E+03	4.66E+02	8.18E+01	1.71E+02
Uranium-235	1.09E+03	2.76E+02	7.57E+01	2.03E+01	2.53E-04	7.26E+00
Uranium-236	4.29E+02	5.04E+02	1.80E+02	4.34E+01	3.54E-05	1.77E+01
Uranium-238	2.61E+04	4.99E+03	1.44E+03	3.20E+02	2.07E-12	1.19E+02

Table 4.3. Fuel Composition Data Converted to Weight Percent

Fuel Code	AL-0.71U	AL-0.94U	ZR-0.94U	ZR-1.1U	AL-0.0TH	ZR-2.1U
Uranium-232	0.00000%	0.00000%	0.00000%	0.00000%	0.01151%	0.00000%
Uranium-233	0.0000%	0.0000%	0.0000%	0.0000%	98.9086%	0.0000%
Uranium-234	0.0052%	0.0079%	0.0077%	0.0077%	1.0703%	0.0077%
Uranium-235	0.646%	0.853%	0.809%	0.977%	0.010%	0.940%
Uranium-236	0.0085%	0.0520%	0.0642%	0.0697%	0.0000%	0.0765%
Uranium-238	99.340%	99.087%	99.119%	98.946%	0.000%	98.976%

A single reference composition is desired that represents uranium material types of normal, depleted, and enriched. The majority of the uranium in waste (greater than 90% by material type) is depleted uranium. In this composition, uranium-232 and uranium-233 are ignored as being insignificant (<1.0E-12 weight fraction and 1.0E-10 weight fraction, respectively). The composition of the AL-0.71U fuel is closest to the composition discussed in the Hanford Defense Waste Environmental Impact Statement (RHO 1985). Of significance is that the uranium-235 and uranium-238 weight % are nearly identical (AL-0.71U fuel and RHO 1985). The Al-07.1U fuel composition is selected as the reference composition for the following reasons:

- The composition is similar to the RHO composition.
- The fuel represents 80% of fuel separated at Hanford.
- This fuel was separated during the period of high discharges of uranium to the ground.

Unknown isotopic values (curies) can be calculated from a known mass of uranium given the representative fuel composition. The uranium isotope factors presented in Table 4.4 provide this capability.

Table 4.4. Uranium Factors by Isotope for the Representative Fuel Composition

Isotope	Weight (%)[a]	Specific Activity (Ci/kg)	Uranium Isotope Factor (Ci/kg)
Uranium-232	[b]	2.14E+4	[a]
Uranium-233	[b]	9.68	[a]
Uranium-234	0.0052%	6.25	3.25E-4
Uranium-235	0.6458%	2.16E-3	1.40E-5
Uranium-236	0.0085%	6.47E-2	5.50E-6
Uranium-238	99.3405%	3.36E-4	3.34E-4
(a) Taken from Table 4.3.			
(b) Weight fractions and mass factors are insignificant.			

4.1.3   Estimate Uranium Isotope Composition Given Other Uranium Isotopes

Unknown isotopic values (curies) can be calculated from a known value of another uranium isotope using the information provided in Table 4.4. In essence, the value of an isotope is estimated using a multiplication factor applied to another isotope. The uranium ratio multiplication factors are provided in Table 4.5. As an example application of these values, suppose that 1 Ci of uranium-235 is known to be in a waste stream. One would then estimate there are 23.86 Ci of uranium-238 in the same waste stream.

Table 4.5. Uranium Ratio Multiplication Factors

| Known Isotope | Unknown Isotope[a] | | | |
	Uranium-234	Uranium-235	Uranium-236	Uranium-238
Uranium-234	1.00	0.043	0.017	1.03
Uranium-235	23.21	1.00	0.39	23.86
Uranium-236	59.09	2.55	1.00	60.73
Uranium-238	0.97	0.042	0.016	1.00
(a) Units are Ci unknown isotope/Ci known isotope.				

4.2   Fill-In Rules for Fission Products

The fill-in rules for fission products start with fuel compositions reported in SWITS (Hanson et al. 1973). The fuel composition description is then expanded to include iodine-129. Finally, the fission product ratios are adjusted to account for the delay in time from reactor discharge to the time of fuel dissolution.

4.2.1   Develop Fission Product Factors

The fission product factors (relative abundance of difference isotopes) were obtained from SWITS (Hanson et al. 1973). The values are valid for fuel 1 year after discharge from the reactor. Given the date of the reference, the factors are likely based on simulated aluminum cladding fuel.

A value for iodine-129 is not provided in Table 4.6. Simulated fuel compositions as a function of time for N Reactor fuel have been developed (Hedengren 1985). Selected fission product composition values were extracted for simulated Mark IV 6% plutonium-240 fuel at 1-year reactor discharge are presented in Table 4.7.

The SWITS fission product factors in Table 4.6 were extracted for the isotopes represented in Table 4.7 and normalized to unit curie percent. These values are presented in Table 4.8. The calculations show that Mark IV fuel composition is representative of the SWITS 1-year factors.

Table 4.6. Fission Product Factors from SWITS (Ci basis)

Isotope	Factor	Isotope	Factor
Cobalt-60	0.000E+00	Tellurium-125m	2.178E-04
Selenium-79	4.990E-08	Antimony-126	1.094E-07
Strontium-90	1.881E-02	Tin-126	1.105E-07
Yttrium-90	1.881E-02	Antimony-126m	1.105E-07
Zirconium-93	6.455E-07	Tellurium-127	1.354E-03
Niobium-95	1.053E-01	Tellurium-127m	1.369E-03
Zirconium-95	4.988E-02	Barium-137m	1.848E-02
Niobium-95m	1.059E-03	Cesium-134	5.557E-04
Technetium-99	2.867E-06	Cesium-135	5.746E-08
Rhodium-106	4.051E-02	Cesium-137	2.009E-02
Ruthenium-106	4.051E-02	Cerium-144	2.784E-01
Palladium-107	8.455E-09	Praseodymium-144	2.784E-01
Silver-110	5.015E-08	Promethium-147	7.022E-02
Silver-110m	2.507E-06	Samarium-151	1.938E-04
Cadmium-113m	4.514E-10	Europium-152	3.000E-07
Tin-119m	4.372E-05	Europium-154	3.038E-05
Tin-121m	3.943E-06	Europium-155	7.353E-04
Tin-123m	1.847E-05	Gadolinium-162	9.860E-06
Antimony-125	7.985E-04	Terbium-162	9.862E-06

Table 4.7. Fission Product Composition for N Reactor Fuel

Isotope	Ci/MTU	Curie%
Strontium-90	2.964E+03	3.71%
Yttrium-90	2.965E+03	3.71%
Ruthenium-106	8.014E+03	10.03%
Rhodium-106	8.014E+03	10.03%
Cesium-134	3.695E+02	0.46%
Cesium-137	3.436E+03	4.30%
Barium-137m	3.250E+03	4.07%
Cerium-144	4.071E+04	50.93%
Promethium-147	1.021E+04	12.77%
Sum	**7.993E+04**	**100.00%**

Table 4.8. Normalized SWITS Fission Product Factors for N Reactor Fuel Isotopes

Isotope	Factor	Curie %
Strontium-90	0.01881	3.71%
Yttrium-90	0.01881	3.71%
Ruthenium-106	0.04051	8.00%
Rhodium-106	0.04051	8.00%
Cesium-134	0.0005557	0.11%
Cesium-137	0.02009	3.97%
Barium-137m	0.01848	3.65%
Cerium-144	0.2784	54.98%
Promethium-147	0.07022	13.87%
Sum	**0.5063857**	**100.00%**

For strontium-90, the SWITS factor and the simulated Mark IV 6% fuel composition are exactly the same. As such, the selected method for iodine-129 uses strontium-90 as the basis for the factor. The strontium-90 value for simulated Mark IV 6% fuel 1 year after reactor discharge is 2,964 Ci (Hedengren 1985). The iodine-129 value from the ORIGEN2 runs (Hedengren 1985) is 9.642E-4 Ci at 1 year after fuel discharge from the reactor. The activity of iodine-129 can obtained be from the activity of strontium-90 as follows:

$$\frac{9.642 \times 10^{-4} \; Ci \; I129}{2.964 \times 10^{3} \; Ci \; Sr90} = 3.253 \times 10^{-7} \; \frac{Ci \; I129}{Ci \; Sr90} \tag{4.2}$$

The final fission production factors for the suite of isotopes used in Hanford assessments, normalized to sum to unity, are provided in Table 4.9. These factors are valid for fuel 1 year after discharge from the reactor.

Table 4.9. Fission Product Composition (Ci basis)

Isotope	Final Factor
Selenium-79	5.27E-09
Strontium-90	0.0195
Yttrium-90	0.0195
Technetium-99	3.02E-06
Iodine-129	6.48E-09
Cesium-137	0.0213
Barium-137m	0.0196
Europium-152	2.81E-07
Europium-154	5.98E-05
Europium-155	2.97E-04
Others	0.9197
Sum	**1.0000**

4.2.2   Adjust Fission Product Factors for Time Delay

The values in Table 4.9 are the basis for the factors applied to the data, however, they only represent fuel 1 year after discharge from the reactor. The desired factors are a function of fuel age. The values from Table 4.9 were adjusted for radioactive decay and renormalized to sum to unity for up to 11 years after discharge from the reactor. The revised fission product composition as a function of time after discharge from the reactor is provided in Table 4.10.

Table 4.10. Fission Product Composition (Ci basis) as a Function of Time After Fuel Discharge

Isotope	Number of Years After Discharge From Reactor					
	1	2	3	4	5	6
Selenium-79	5.27E-09	1.24E-08	2.18E-08	3.28E-08	4.33E-08	5.21E-08
Strontium-90	0.0195	0.0449	0.0767	0.1128	0.1456	0.1708
Yttrium-90	0.0195	0.0449	0.0767	0.1128	0.1456	0.1708
Technetium-99	3.02E-06	7.11E-06	1.25E-05	1.88E-05	2.48E-05	2.98E-05
Iodine-129	6.48E-09	1.53E-08	2.67E-08	4.03E-08	5.32E-08	6.40E-08
Cesium-137	0.0213	0.0490	0.0839	0.1235	0.1596	0.1874
Barium-137m	0.0196	0.0451	0.0772	0.1136	0.1468	0.1724
Europium-152	2.81E-07	6.29E-07	1.05E-06	1.50E-06	1.88E-06	2.15E-06
Europium-154	5.98E-05	1.30E-04	2.10E-04	2.92E-04	3.56E-04	3.95E-04
Europium-155	2.97E-04	6.04E-04	9.14E-04	1.19E-03	1.36E-03	1.41E-03
Others	0.9197	0.8154	0.6843	0.5357	0.4008	0.2968
Sum	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**
Isotope	Number of Years After Discharge From Reactor					
	7	8	9	10	11	
Selenium-79	5.89E-08	6.44E-08	6.90E-08	7.29E-08	7.64E-08	
Strontium-90	0.1887	0.2013	0.2104	0.2172	0.2223	
Yttrium-90	0.1887	0.2013	0.2104	0.2172	0.2223	
Technetium-99	3.37E-05	3.69E-05	3.95E-05	4.17E-05	4.38E-05	
Iodine-129	7.24E-08	7.91E-08	8.47E-08	8.95E-08	9.39E-08	
Cesium-137	0.2073	0.2214	0.2316	0.2393	0.2452	
Barium-137m	0.1907	0.2036	0.2131	0.2201	0.2255	
Europium-152	2.31E-06	2.40E-06	2.44E-06	2.45E-06	2.44E-06	
Europium-154	4.12E-04	4.16E-04	4.10E-04	4.00E-04	3.87E-04	
Europium-155	1.38E-03	1.30E-03	1.21E-03	1.10E-03	9.99E-04	
Selenium-79	0.2228	0.1705	0.1328	0.1047	0.0832	
Sum	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	

The guidance for selection of a representative fuel age is presented in Table 4.11. The fuel age is related to different periods of fuel reactor operations. For fuel ages greater than 11 years, the assumed fuel age is 11 years because changes in the composition after 11 years are small. This assumption is also made to maintain consistency with other Hanford projects that use these fill-in rules.

Table 4.11. Representative Fuel Age

Time Period	Fuel Age (yr)
1944 to 1972	1
1973 to 1983	Increase the value by 1 each year, starting with 2 in 1973, up to 11 in 1982. Value does not exceed 11.
1984 to 1987	1
1988 and later	Increase the value by 1 each year, starting with 2 in 1988, up to 11 in 1997. Value does not exceed 11.

Factors as a function of fuel age are calculated using the data in Table 4.10. These factors allow the amount (curies) of an unknown isotope to be estimated from the amount (curies) of any one of several known isotopes. The fission product factors as a function of time since the fuel was discharged from the reactor are provided in Table 4.12.

Table 4.12. Fission Product Ratios as a Function of Years After Reactor Discharge (Ci basis)

Year	Unknown Isotope	Selenium-79	Strontium-90	Technetium-99	Iodine-129	Cesium-137	Europium-152
1	Selenium-79	1	2.703E-07	1.746E-03	8.141E-01	2.476E-07	1.875E-02
1	Strontium-90	3.700E+6	1	6.462E+3	3.012E+6	9.160E-1	6.937E+04
1	Technetium-99	5.726E+2	1.548E-4	1	4.661E+2	1.418E-4	1.074E+01
1	Iodine-129	1.228E+0	3.320E-7	2.145E-3	1	3.041E-7	2.303E-02
1	Cesium-137	4.039E+6	1.092E+0	7.054E+3	3.288E+6	1	7.573E+04
1	Europium-152	5.334E+1	1.442E-5	9.315E-2	4.342E+1	1.320E-5	1
2	Selenium-79	1	2.769E-7	1.746E-3	8.141E-1	2.533E-7	1.973E-02
2	Strontium-90	3.612E+6	1	6.308E+3	2.940E+6	9.151E-1	7.127E+04
2	Technetium-99	5.726E+2	1.585E-4	1	4.661E+2	1.451E-4	1.130E+01
2	Iodine-129	1.228E+0	3.401E-7	2.145E-3	1	3.112E-7	2.424E-02
2	Cesium-137	3.947E+6	1.093E+0	6.894E+3	3.213E+6	1	7.789E+04
2	Europium-152	5.068E+1	1.403E-5	8.850E-2	4.125E+1	1.284E-5	1
3	Selenium-79	1	2.836E-7	1.746E-3	8.141E-1	2.592E-7	2.077E-02
3	Strontium-90	3.526E+6	1	6.158E+3	2.870E+6	9.141E-1	7.323E+04
3	Technetium-99	5.726E+2	1.624E-4	1	4.661E+2	1.484E-4	1.189E+01
3	Iodine-129	1.228E+0	3.484E-7	2.145E-3	1	3.185E-7	2.551E-02
3	Cesium-137	3.857E+6	1.094E+0	6.736E+3	3.140E+6	1	8.011E+04
3	Europium-152	4.815E+1	1.366E-5	8.409E-2	3.920E+1	1.248E-5	1
4	Selenium-79	1	2.905E-7	1.746E-3	8.141E-1	2.653E-7	2.186E-02
4	Strontium-90	3.442E+6	1	6.011E+3	2.802E+6	9.132E-1	7.524E+04
4	Technetium-99	5.726E+2	1.664E-4	1	4.661E+2	1.519E-4	1.252E+01
4	Iodine-129	1.228E+0	3.569E-7	2.145E-3	1	3.2588E-7	2.685E-02
4	Cesium-137	3.769E+6	1.095E+0	6.583E+3	3.069E+6	1	8.240E+04
4	Europium-152	4.575E+1	1.329E-5	7.989E-2	3.724E+1	1.214E-5	1
5	Selenium-79	1	2.976E-7	1.746E-3	8.141E-1	2.715E-7	2.301E-02
5	Strontium-90	3.360E+6	1	5.868E+3	2.735E+6	9.122E-1	7.731E+04
5	Technetium-99	5.726E+2	1.704E-4	1	4.661E+2	1.554E-4	1.317E+01
5	Iodine-129	1.228E+0	3.656E-7	2.145E-3	1	3.335E-7	2.826E-02

Table 4.12. (contd)

Year	Unknown Isotope	Selenium-79	Strontium-90	Technetium-99	Iodine-129	Cesium-137	Europium-152
5	Cesium-137	3.684E+6	1.096E+0	6.433E+3	2.999E+6	1	8.475E+04
5	Europium-152	4.346E+1	1.293E-5	7.590E-2	3.538E+1	1.180E-5	1
6	Selenium-79	1	3.049E-7	1.746E-3	8.141E-1	2.778E-7	2.422E-02
6	Strontium-90	3.280E+6	1	5.729E+3	2.670E+6	9.113E-1	7.944E+04
6	Technetium-99	5.726E+2	1.746E-4	1	4.661E+2	1.591E-4	1.387E+01
6	Iodine-129	1.228E+0	3.745E-7	2.145E-3	1	3.413E-7	2.975E-02
6	Cesium-137	3.600E+6	1.097E+0	6.286E+3	2.930E+6	1	8.717E+04
6	Europium-152	4.129E+1	1.259E-5	7.212E-2	3.362E+1	1.147E-5	1
7	Selenium-79	1	3.123E-7	1.746E-3	8.141E-1	2.843E-7	2.549E-02
7	Strontium-90	3.202E+6	1	5.592E+3	2.607E+6	9.103E-1	8.162E+04
7	Technetium-99	5.726E+2	1.788E-4	1	4.661E+2	1.628E-4	1.459E+01
7	Iodine-129	1.228E+0	3.836E-7	2.145E-3	1	3.492E-7	3.131E-02
7	Cesium-137	3.518E+6	1.098E+0	6.143E+3	2.864E+6	1	8.966E+04
7	Europium-152	3.923E+1	1.225E-5	6.852E-2	3.194E+1	1.115E-5	1
8	Selenium-79	1	3.199E-7	1.746E-3	8.141E-1	2.909E-7	2.683E-02
8	Strontium-90	3.126E+6	1	5.459E+3	2.545E+6	9.094E-1	8.386E+04
8	Technetium-99	5.726E+2	1.832E-4	1	4.661E+2	1.666E-4	1.536E+01
8	Iodine-129	1.228E+0	3.930E-7	2.145E-3	1	3.574E-7	3.295E-02
8	Cesium-137	3.437E+6	1.100E+0	6.003E+3	2.798E+6	1	9.222E+04
8	Europium-152	3.727E+1	1.192E-5	6.510E-2	3.034E+1	1.084E-5	1
9	Selenium-79	1	3.277E-7	1.746E-3	8.141E-1	2.977E-7	2.824E-02
9	Strontium-90	3.052E+6	1	5.329E+3	2.484E+6	9.085E-1	8.617E+04
9	Technetium-99	5.726E+2	1.876E-4	1	4.661E+2	1.705E-4	1.617E+01
9	Iodine-129	1.228E+0	4.025E-7	2.145E-3	1	3.657E-7	3.469E-02
9	Cesium-137	3.359E+6	1.101E+0	5.866E+3	2.735E+6	1	9.485E+04
9	Europium-152	3.541E+1	1.161E-5	6.185E-2	2.883E+1	1.054E-5	1
10	Selenium-79	1	3.357E-7	1.746E-3	8.141E-1	3.046E-7	2.972E-02
10	Strontium-90	2.979E+6	1	5.203E+3	2.425E+6	9.075E-1	8.854E+04
10	Technetium-99	5.726E+2	1.922E-4	1	4.661E+2	1.744E-4	1.702E+01
10	Iodine-129	1.228E+0	4.124E-7	2.145E-3	1	3.742E-7	3.651E-02
10	Cesium-137	3.283E+6	1.102E+0	5.733E+3	2.672E+6	1	9.756E+04
10	Europium-152	3.365E+1	1.129E-5	5.876E-2	2.739E+1	1.025E-5	1
11	Selenium-79	1	3.439E-7	1.746E-3	8.141E-1	3.117E-7	3.128E-02
11	Strontium-90	2.908E+6	1	5.079E+3	2.367E+6	9.066E-1	9.097E+04
11	Technetium-99	5.726E+2	1.969E-4	1	4.661E+2	1.785E-4	1.791E+01
11	Iodine-129	1.228E+0	4.224E-7	2.145E-3	1	3.829E-7	3.843E-02
11	Cesium-137	3.208E+6	1.103E+0	5.602E+3	2.611E+6	1	1.003E+05
11	Europium-152	3.197E+1	1.099E-5	5.583E-2	2.602E+1	9.966E-6	1

4.3   Fill-In Rules for Activation Products

The fill-in rules for activation products start with fuel compositions reported in SWITS (Hanson et al. 1973). The fuel composition description is then expanded to include europium-152. Finally, the activation product ratios are adjusted to account for the delay in time from reactor discharge to the time of fuel dissolution.

4.3.1   Develop Activation Product Factors

The activation product factors (relative abundance of difference isotopes) were obtained from SWITS (Hanson et al. 1973) and are provided in Table 4.13. The fuel age is not explicitly given, but values appear to be valid for fuel 1 year after discharge from the reactor.

Table 4.13. Activation Product Factors from SWITS (Ci basis)

Isotope	Amount (Ci)
Carbon-14	0.01
Manganese-54	0.07
Cobalt-58	0.01
Iron-59	0.04
Cobalt-60	0.67
Cesium-137	0.0103
Barium-137m	0.0097
Europium-154	0.085
Europium-155	0.085
Sum	**0.99**

When europium-155 and europium-154 are reported in SWITS, the expectation is that europium-152 is reported as well. As such, a factor for europium-152 needs to be developed. Simulated fuel compositions as a function of time for N Reactor fuel have been developed (Hedengren 1985). Composition values are collected from the fission product tables rather than the activation product tables because the activation product tables do not provide values for europium-152, europium-154, and europium-155. Composition values for simulated Mark IV 6% plutonium-240 fuel at 1 year after reactor discharge are the following: europium-152, 9.015E-4 Ci/MTU; europium-154, 9.325E-2 Ci/MTU, and europium-155, 1.509E-1 Ci/MTU. The sum of europium-154 and europium-155 factors for SWITS and ORIGEN2 are provided in Table 4.14.

Table 4.14. Sum of Europium-154 and Europium-155 Factors for SWITS and ORIGEN2

Isotope	SWITS (Ci)	ORIGEN2 Ci/MTU
Europium-154	0.085	0.09325
Europium-155	0.085	0.15090
Sum	**0.17**	**0.24415**

An activation product factor for europium-152 is developed by multiplying the ORIGEN2 value of 9.015E-4 Ci by the ratio of the SWITS sum to the ORIGEN2 sum from Table 4.14. This results in an europium-152 factor of 0.0006 Ci.

A final adjustment was made so the activation factors sum to unit. The adjustments are shown in Table 4.15. The final factors are shown in the right column of this table.

Table 4.15. Final Adjusted Activation Product Factors

Isotope	Derived (Ci)	Adjustment (Ci)	Final Factor (Ci)
Carbon-14	0.01		0.01
Manganese-54	0.07		0.07
Cobalt-58	0.01		0.01
Iron-59	0.04		0.04
Cobalt-60	0.67	0.006	0.676
Cesium-137	0.0103	0.0007	0.011
Barium-137m	0.0097	0.0006	0.0103
Europium-152	0.0006	0.0001	0.0007
Europium-154	0.085	0.001	0.086
Europium-155	0.085	0.001	0.086
Sum	**0.9906**	**0.0094**	**1**

4.3.2   Adjust Activation Product Factors for Time Delay

The values in Table 4.15 are the basis for the factors are applied to the data, however, they only represent fuel 1 year after discharge from the reactor. The desired factors are a function of fuel age. The values from Table 4.15 were adjusted for radioactive decay and renormalized to sum to unity for up to 11 years after discharge from the reactor. The revised activation product composition as a function of time after discharge from the reactor is provided in Table 4.16.

Table 4.16. Activation Product Composition (Ci basis) as a Function of Time After Fuel Discharge

Isotope	Number of Years After Reactor Discharge										
	1	2	3	4	5	6	7	8	9	10	11
Carbon-14	0.0100	0.0124	0.0142	0.0162	0.0184	0.0208	0.0235	0.0264	0.0297	0.0334	0.0374
Cobalt-60	0.6760	0.7323	0.7404	0.7405	0.7364	0.7299	0.7217	0.7124	0.7022	0.6911	0.6792
Cesium-137	0.0110	0.0133	0.0150	0.0167	0.0185	0.0204	0.0225	0.0248	0.0272	0.0298	0.0327
Barium-137m	0.0103	0.0124	0.0140	0.0156	0.0173	0.0191	0.0211	0.0232	0.0255	0.0279	0.0306
Europium-152	0.0007	0.0008	0.0009	0.0010	0.0011	0.0011	0.0012	0.0013	0.0014	0.0015	0.0016
Europium-154	0.0860	0.0980	0.1043	0.1097	0.1148	0.1197	0.1246	0.1294	0.1342	0.1389	0.1437
Europium-155	0.0860	0.0918	0.0915	0.0902	0.0884	0.0864	0.0842	0.0819	0.0796	0.0772	0.0748
Others	0.1200	0.0389	0.0197	0.0100	0.0050	0.0025	0.0013	0.0006	0.0003	0.0002	0.0001
Sum	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**	**1.0000**

The guidance for selecting a representative fuel age for fission product rules is presented in Table 4.11. The guidance is applied for activation product rules.

Factors as a function of fuel age are calculated using the data in Table 4.16. These factors allow the amount (curies) of an unknown isotope to be estimated from the amount (curies) of any one of several known isotopes. The activation product factors as a function of time since the fuel was discharged from the reactor are provided in Table 4.17.

Table 4.17. Activation Product Ratios as a Function of Time Since Fuel Discharge from the Reactor

Years	Unknown Isotope	Known Isotope					
		Carbon-14	Cobalt-60	Cesium-137	Europium-152	Europium-154	Europium-155
1	Carbon-14	1	1.48E-2	9.09E-1	1.43E+1	1.16E-1	1.16E-1
1	Cesium-137	1.10E+0	1.63E-2	1	1.57E+1	1.28E-1	1.28E-1
1	Europium-152	7.00E-2	1.04E-3	6.36E-2	1	8.14E-3	8.14E-3
2	Carbon-14	1	1.69E-2	9.30E-1	1.50E+1	1.26E-1	1.35E-1
2	Cesium-137	1.08E+0	1.81E-2	1	1.62E+1	1.35E-1	1.45E-1
2	Europium-152	6.65E-2	1.12E-3	6.19E-2	1	8.38E-3	8.95E-3
3	Carbon-14	1	1.92E-2	9.52E-1	1.58E+1	1.37E-1	1.56E-1
3	Cesium-137	1.05E+0	2.02E-2	1	1.66E+1	1.44E-1	1.64E-1
3	Europium-152	6.32E-2	1.22E-3	6.02E-2	1	8.63E-3	9.84E-3
4	Carbon-14	1	2.19E-2	9.74E-1	1.67E+1	1.48E-1	1.80E-1
4	Cesium-137	1.03E+0	2.25E-2	1	1.71E+1	1.52E-1	1.85E-1
4	Europium-152	6.01E-2	1.32E-3	5.85E-2	1	8.89E-3	1.08E-2
5	Carbon-14	1	2.50E-2	9.96E-1	1.75E+1	1.60E-1	2.08E-1
5	Cesium-137	1.00E+0	2.51E-2	1	1.76E+1	1.61E-1	2.09E-1
5	Europium-152	5.71E-2	1.43E-3	5.69E-2	1	9.16E-3	1.19E-2
6	Carbon-14	1	2.85E-2	1.02E+0	1.84E+1	1.74E-1	2.41E-1
6	Cesium-137	9.81E-1	2.80E-2	1	1.81E+1	1.71E-1	2.36E-1
6	Europium-152	5.42E-2	1.55E-3	5.53E-2	1	9.43E-3	1.31E-2
7	Carbon-14	1	3.25E-2	1.04E+0	1.94E+1	1.89E-1	2.79E-1
7	Cesium-137	9.59E-1	3.12E-2	1	1.86E+1	1.81E-1	2.67E-1
7	Europium-152	5.15E-2	1.68E-3	5.37E-2	1	9.71E-3	1.44E-2
8	Carbon-14	1	3.71E-2	1.07E+0	2.04E+1	2.04E-1	3.23E-1
8	Cesium-137	9.37E-1	3.48E-2	1	1.91E+1	1.91E-1	3.02E-1
8	Europium-152	4.90E-2	1.82E-3	5.23E-2	1	1.00E-2	1.58E-2
9	Carbon-14	1	4.23E-2	1.09E+0	2.15E+1	2.21E-1	3.73E-1
9	Cesium-137	9.16E-1	3.87E-2	1	1.97E+1	2.03E-1	3.42E-1
9	Europium-152	4.65E-2	1.97E-3	5.08E-2	1	1.03E-2	1.74E-2
10	Carbon-14	1	4.83E-2	1.12E+0	2.26E+1	2.40E-1	4.32E-1
10	Cesium-137	8.95E-1	4.32E-2	1	2.02E+1	2.15E-1	3.87E-1
10	Europium-152	4.42E-2	2.13E-3	4.94E-2	1	1.06E-2	1.91E-2
11	Carbon-14	1	5.50E-2	1.14E+0	2.38E+1	2.60E-1	5.00E-1
11	Cesium-137	8.75E-1	4.81E-2	1	2.08E+1	2.28E-1	4.37E-1
11	Europium-152	4.20E-2	2.31E-3	4.80E-2	1	1.09E-2	2.10E-2

4.4 Applications of Fill-In Rules

Application of the fill-in rules for inventory estimation is described in four general categories in Sections 4.4.1 through 4.4.4. These categories are: special application of fission product rules to fuel failure releases, general application of uranium fill-in rules, general application of fission product rules and general application of activation product rules.

4.4.1 Fuel Failures

During the operational era (1963–1986), N Reactor cooling water associated with fuel element failures was directed to the 1301 and 1325 trenches. Today those trenches are known as the 116-N-1 and 116-N-3 waste sites, respectively. Because these trenches received N Reactor coolant contaminated when fuel elements failed, it is appropriate to use the fission product fill-in rules for these sites. Since the annual inventory of record would reflect fuel failures of that year, the fuel ratio method in Table 4.12 for fuel of 1-year age was used. This set of rules applied to the following six analytes: selenium-79, strontium-90, technetium-99, iodine-129, cesium-137, and europium-152 for all years that releases occurred at the two sites 116-N-1 and 116-N-3. The fill-in rule is invoked only if needed to supplement the data from the inventory database. Inventories associated with fuel element failures for the eight single-pass reactors are described in Section 5.3.

4.4.2 Uranium

The uranium record is assumed to be complete for uranium-233, thus no fill-in rules are implemented for this isotope. The factors in Table 4.5 were used to estimate isotopic ratios for uranium-234, uranium-235, and uranium-238, and fill in missing data. These rules were applied to the union of waste sites flagged for fission-product and activation-product fill-in rules, or, in this case, 482 waste sites (see Appendix B). Although the rules are available for a large number of sites, they are involved only when at least one uranium inventory of record exists (i.e., a uranium isotope or total inventory). Thus, they are applied only to supplement or fill-in existing uranium data.

4.4.3 Fission Product

Fission product rules apply to the inventory of the following six analytes: selenium-79, strontium-90, technetium-99, iodine-129, cesium-137, and europium-152. As shown in Table 4.12, the rule depends on the number of years after the fuel is discharged from the reactor. The following general rules were applied in choosing which section of data from Table 4.12 to apply:

- All releases before 1973 used the data for year 1.
- All releases for 1973 used the data for year 2.
- All releases from 1974 through 1983 used the data for years 3 through 11.
- All releases from 1984 through 1987, as the PUREX Plant began processing newly spent fuel, created releases used the data from year 1.
- In years 1988 through 1996, releases used the data for years 2 through 10, respectively.
- In 1997 and all succeeding years, the data for year 11 were used.

These fission product rules were applied to a total of 301 sites (see Appendix B). Although the rules are available for a large number of sites, they are invoked only if needed to supplement the data from the inventory database.

4.4.4 Activation Product

Activation product rules apply to the inventory of the following three analytes: carbon-14, cesium-137, and europium-152. As shown in Table 4.17, the rule depends on the number of years after the fuel is discharged from the reactor. The following general rules were applied in choosing which section of data from Table 4.12 to apply:

- All releases before 1973 used the data for year 1.
- All releases for 1973 used the data for year 2.
- All releases from 1974 through 1983 used the data for years 3 through 11.
- All releases from 1984 through 1987, as the PUREX Plant began processing newly spent fuel, created releases used the data from year 1.
- In years 1988 through 1996, releases used the data for years 2 through 10, respectively.
- In 1997 and all succeeding years, the data for year 11 were used.

These activation product rules were applied to a total of 181 sites (see Appendix B). Although the rules are available for a large number of sites, they are invoked only if needed to supplement the data from the inventory database.

4.5   Surrogate Site Rules

Historical documentation indicates that releases occurred at a number of sites, but no direct record inventory information is available. Surrogate rules have been developed for some of these sites. Application of the surrogate site rule is limited to those sites where a waste volume has been reported or can be estimated but the concentrations of analytes in the waste stream are unknown. In some cases, based on historical records or process knowledge, the same (or a similar) waste stream was routed to another site, called the surrogate site, and concentrations of analytes are available for that waste stream. The surrogate site rule simply takes the concentrations of analytes in the surrogate waste stream and applies them unchanged to the site with unknown concentrations.

Surrogate site rules are applied to waste streams at 52 sites. Appendix C provides summary information on the surrogate rule for each of these sites. The inventory of each radionuclide added by application of surrogate rules (best estimate case) is shown in Table 4.18. The data are for inventory introduced to the modeling system by the year 2070, and the results are decay corrected to the year 2070.

Table 4.18. Inventory Introduced by Surrogate Rules (decay corrected to 2070)

Analyte	Surrogate Data (Ci)	Percent Surrogate	Total (Ci)
Tritium	2.7200E+01	0.10%	2.7502E+04
Carbon-14	4.0957E+01	0.07%	5.6325E+04
Chlorine-36	0	0%	3.4838E+02
Selenium-79	7.7633E-03	0.00%	1.8487E+02
Strontium-90	1.8856E+03	0.01%	1.5375E+07
Technetium-99	3.9104E+00	0.01%	3.1321E+04
Iodine-129	8.7511E-03	0.01%	6.5513E+01
Cesium-137	2.5387E+03	0.01%	2.2977E+07
Europium-152	5.6700E+00	4.61%	1.2288E+02
Uranium-233	1.3628E+00	0.14%	9.5441E+02
Uranium-235	2.6026E-01	0.24%	1.0960E+02
Neptunium-237	8.1976E-03	0.00%	2.7366E+02
Uranium-234/238[a]	1.2274E+01	0.22%	5.6295E+03

(a) Within the System Assessment Capability (SAC), the combined curies of uranium-234 and uranium-238 are modeled as a single analyte because (1) both isotopes are in the uranium series decay chain, (2) their impacts on human health and the ecology can be addressed using the isotopic ratio between the two and their combined curies, and (3) modeling them as one analyte instead of two cuts the cost of their simulation in half.

5.0   Inventory Estimates

This section describes the sources of inventory data and information that are the basis for the assembled inventory. The original files and any cited derivatives related to each topic discussed in the following sections are archived and maintained on the SAC share, a computer repository of information maintained by PNNL about the project. 'SAC share' refers to the SAC Windows File server at \\sac.pnl.gov\Share\, and archived inventory subdirectories and files are found under \data\rev.1\inventory\. The assembly of inventory data occurred over a multiyear period. Much of the data were received initially in FY 2000 and 2001, and then updated by adding recent or additional record data. To assemble the inventory for some wastes and waste sites, one enters data files into the inventory database in their chronological order, and follows the instructions to edit, delete, and append data in the inventory database. To duplicate some inventories in the inventory database (e.g., solid waste burial grounds), it would be necessary to duplicate the original sequence of data entries. Section 7 on Quality Assurance describes in more detail the file archival and maintenance process for inventory data, and the configuration management of inventory files supporting Hanford assessments.

5.1   Tank Inventory

Inventories associated with the future disposition of today's single- and double-shell tank waste are estimated by the HTWOS (Kirkbride et al. 2005), which was described briefly in Section 3.1. This model of future tank waste disposition relies on an understanding of the tank waste inventory and the processes that will be used to retrieve the waste from the tanks, separate it into high-level and low-activity fractions, and vitrify it into a glass product. The HTWOS model provides estimates of the primary waste form and secondary waste stream inventories. A separate estimate of primary and secondary waste form volumes has been produced and utilized in conjunction with the HTWOS model results (see Appendix A in Puigh and Wood 2005). In addition to the primary waste forms and secondary waste streams, the HTWOS model provides an estimate of the tank residual for each tank and an estimate of tank retrieval loss composition. However, DOE's best estimate is that sufficient control exists on tank waste retrieval operations to ensure that no tank waste retrieval losses will occur to the vadose zone underlying single-shell tanks. High-pressure jet breakup and dissolution methods for tank waste retrieval will only be used in single-shell tanks that have not exhibited past leaks. A method involving less force will be used in those tanks that have exhibited past leaks. Accordingly, the Hanford assessment inventory described herein assumes there are no tank waste retrieval losses to the vadose zone during tank waste recovery operations for 149 single-shell tanks.

Original files provided from the HTWOS model run employed in the analysis are archived on the SAC share at \data\rev.1\inventory\HTWOS_30-Aug-05 in the zip file 'in.yearly-files-bd.zip,' and the resulting input file is located on the SAC share at \data\rev.1\inventory\HTWOS_30-Aug-05\Add_Pu\, file 'HTWOS_TDP.csv.'

5.2   Planned and Unplanned Liquid Releases

The substantial liquid discharges and unplanned releases on the Central Plateau are simulated using the Hanford SIM (Corbin et al. 2005), which was briefly described in Section 3.2. This model is a combination of process knowledge, waste transfer records, estimates of waste stream compositions, and

estimates of spent fuel inventories processed on the Central Plateau. The model run employed was provided on April 13, 2005, with an amendment to the release inventory at 216-B-7A%B[11] provided on June 15, 2005. The methods and files associated with this run of the SIM are documented in Corbin et al. (2005), and the original files provided from the Hanford SIM run employed in the analysis are archived on the SAC share at data\rev.1\inventory\SIM_25-Aug-05 as files 'SAC-Section1.xls' through 'SAC-Section6.xls,' and the resulting input file is located on the SAC share at \data\rev.1\inventory\SIM_25-Aug-05\Add_Am243\, file 'Combined_SIM_for_database.csv.' Note that the files provided the project in April and June 2005 are statistically the same as those published in September 2005.

Liquid discharge sites and unplanned releases other than those included in the Hanford SIM results are accounted for using published records of planned discharges and unplanned releases (e.g., Diediker 1999; Stenner et al. 1988; Maxfield 1979; Anderson 1976). This includes some waste sites in the 100 and 300 Areas. In most cases, published reports provide a cumulative decay-corrected inventory estimate for a single moment in time. This activity or mass inventory information was supplemented with information on the years of active discharge operations at a site to generate an estimate of the annual releases to the vadose zone. Maxfield (1979) provided information on all 200 Area engineered disposals and unplanned releases at waste sites on the Central Plateau. Stenner et al. (1988) assembled information on each of the proposed CERCLA waste sites on the Hanford Site including 100 and 300 Areas. Diediker (1999) provides a summary of cumulative release at 100 and 200 Area liquid waste disposal sites that had not been remediated by 1999. In his 1976 document, Anderson provides annual discharge and radioactive waste inventory data on waste sites on the Central Plateau. The final data sets for liquid discharge sites and unplanned releases based on these data were developed by Fluor Hanford, Inc. staff and provided to the Characterization of Systems Project.

Original files associated with liquid discharges and unplanned release sites that are not modeled by the Hanford SIM and are employed in the analysis are archived on the SAC share in various directories under \data\rev.1\inventory\Other Inventory Datasets\. The subdirectories and filenames associated with these data are presented in Table 5.1.

5.3   Fuel Element Failures

Fuel element failures occurred in the single-pass graphite core production reactors at the Hanford Site. These failures gave rise to contaminated reactor cooling water being released to the environment. The total inventory by radionuclide for fuel element failures in the single-pass reactors was developed for the Hanford Environmental Dose Reconstruction (HEDR) Project by BA Napier (Napier 1991), and was received as an Excel file *Fuel failure.xls*, dated March 22, 2000, from BA Napier.[12] This file contains inventory for 45 constituents, including the following radionuclides of potential interest to Hanford assessments: tritium, carbon-14, chlorine-36, selenium-79, strontium-90, technetium-99, iodine-129, cesium-137, uranium-234, uranium-235, uranium-236, neptunium-237, uranium-238, plutonium-239/240, americium-241, plutonium-241, and plutonium-242.

---

[11] The UNIX-based computer system prohibits the use of '&;' therefore, the notation '%' was used instead. Other places use the more familiar notation 216-B-7A&B. '216-B-7A%B' is the waste site name used in the analysis.

[12] Napier, BA (Pacific Northwest National Laboratory, Richland, Washington). March 23, 2003, e-mail to RL Aaberg (Pacific Northwest National Laboratory, Richland, Washington). Subject: *Fuel Failures* with attached file 'Fuel Failure.xls' (file dated 3/22/2000).

Table 5.1. Data Files for Liquid Discharge and Unplanned Release Sites not Modeled by the Hanford SIM

Miscellaneous Liquid Data Sets	Subdirectory[a]	Filename	Edited Input Filename
clean-discharge_2005-11-02_DCR-0020.csv	Clean_Discharges_Rev05 0605	Clean-discharges_initial.csv	Clean-discharges_review.xls
dp07	DP07	dp07.xls	dp07.xls
dp21	dp21	dp21.xls	dp21.xls
dpa4[0]	dpa4	dpa4[0]AppA.doc; db4.mdb	dpa4[0]AppArla.doc; db4.mdb
dpa9/2003	dpa9	dpa9[0]B.doc; dpa9.mdb	dpa9[0]B-rla.doc; dpa9.mdb
FMC_e_5-03-01	05_INVENTORY_DP_ Doc\FY2000-2001	FMC_e_5-03-01.rtf	NA[b]
Sac0_1908_NE	Sac0_1908_NE	Sac0_1908_NE.xls	Sac0_1908_NE.xls
sac0_liq_r00	sac0_liq_r00	sac0_liq_r00.xls	sac0_liq_r00.xls
sac0_liq_r01	sac0_liq_r01	sac0_liq_r01.xls	sac0_liq_r01.xls
sac0_liq_r05	sac0_liq_r05	sac0_liq_r05.xls	sac0_liq_r05.xls
sac0_liq_r11	sac0_liq_r11	sac0_liq_r11.xls	sac0_liq_r11.xls
sac0_misc_r00	sac0_misc_r00	sac0_misc_r00.xls	sac0_misc_r00.xls
sac0_river_r00	sac0_river_r00	sac0_river_r00.xls	sac0_river_r00.xls
sac0_upr_r04	sac0_upr_r04	sac0_upr_r04.xls	sac0_upr_r04.xls
Sac0_upr_r04_WIDS_1-17-01	Sac0_upr_r04_WIDS_1-17-01	Sac0_upr_r04_WIDS.xls	Sac0_upr_r04_WIDS.xls
SALDS_ctk_June_2005	SALDS_ctk_June_2005	SALDS_discharge%inventory_ctk_June_2005.xls	SALDS_discharge%inventory_ctk_June_2005.xls
(a) Subdirectory under \data\rev.1\inventory\Other Inventory Datasets.			
(b) NA = Not applicable; dataset refers to an e-mail from FM Coony.			

The total inventory was divided among the fuel element failures which occurred during the operating history of each reactor, apportioned by fraction released by reactor and year. A history of fuel ruptures (Gydesen 1993) contains a description of each rupture (for example, jacket split). Another HEDR document (Heeb and Bates 1994) classifies these fuel element failures on a scale of 1 to 6 and estimates the magnitude of fuel dissolution for each. The authors of this report obtained a data file (*STRRMrup.625*), containing most of the rupture information from Gydesen, from CM Heeb on January 16, 2003;[13] the file was compared and cross-checked with the Gydesen document. The rupture descriptions were merged into three classes, as shown in Table 5.2.

Each rupture event was weighted by the severity of the failure class, shown in the third column of Table 5.2: Class 1 was given a weighting factor of 4; Class 2, a factor of 2; and Class 3 was unweighted. Weighted subtotals and fraction of total inventory released were calculated for each reactor and year.

Disposal of effluent was assigned to either the Columbia River or to trench disposal, based on descriptions of past disposal and discharge operation as summarized in a personal communication.[14] Original files associated with fuel element failures, employed in the analysis are archived on the SAC

---

[13] Heeb, CM (retired from Pacific Northwest National Laboratory, Richland, Washington). January 16, 2003, e-mail to RL Aaberg (Pacific Northwest National Laboratory, Richland, Washington). Subject: *Rupture File* with attached file named 'strrmrup.625.'

[14] Kincaid CT (Pacific Northwest National Laboratory, Richland, Washington). 2003. Personal communication to RL Aaberg and FM Coony, "Treatment of Fuel Failure Events; Fractions to Assign to the Columbia River and to the Basin/Trench Disposal," April 1, 2003.

share at \data\rev.1\inventory\Other Inventory Datasets\FF_dp\ under filename 'FF_DataPackage.xls.' The fuel failure data package provides an estimate of the radionuclides released by rupture of production reactor fuel elements by reactor and year.

Table 5.2. Classification of Fuel Element Ruptures

Severity Class (1-3)	Original Classification[a]	Weighting
1 Worst	Disintegration, complete dissolution of fuel	4
2 Severe	Cleavage, uranium split, split, split transverse, jacket split, side and cap, split longitudinal, can split	2
3 All other	Includes Class 3 medium (cap, cap end, etc), Class 4 low (side, side tear, side other, side groove, etc) class 5 I&E Hole (hole, inside other), and class 6, all others.	1
(a) Description from Gydesen (1993); Class 1 through 6 from Heeb and Bates (1994).		

5.4   Reactor Cores

Inventories of the graphite cores are taken from the *Draft Environmental Impact Statement on Decommissioning Eight Surplus Production Reactors* (DOE 1989). Appendix A of that document contains a description of the single-pass production reactors including their locations, physical size, and radiological characteristics. Inventories are provided for each single-pass production reactor. The inventories are itemized for each reactor's graphite stack, thermal shield, process tubes, control system, bio-shield, and storage basin. A similar inventory for the N Reactor is provided by memo from the DOE program.[15]

Original files associated with graphite cores of production reactors, employed in the analysis are archived on the SAC share at \data\rev.1\inventory\Other Inventory Datasets \Hcores_ctk_052505\ under filename 'Hcores_25 May 2005.xls.'

5.5   Solid Waste Disposals

Records of past solid waste disposals and forecasts of future solid waste disposals are the responsibility of Fluor Hanford, Inc., the Project Hanford Management Contractor. Beginning in 2000, Fluor Hanford, Inc. provided the record of solid waste disposals based on the SWITS database. Initially, Fluor Hanford, Inc. provided the record of disposals from 1944 until September 1999. In 2005, Fluor Hanford, Inc. updated the files to include disposal records through September 2004. Also in 2005, using the SWIFT, Fluor Hanford, Inc. provided the Characterization of Systems Project a forecast of future solid waste disposals including onsite and offsite generators of low-level radioactive waste. In addition to annual entries for each burial ground, these disposals are formatted to reveal (1) onsite versus offsite contributions; (2) category 1 low-level waste, category 3 low-level waste, mixed low-level waste, GTC3, versus transuranic waste; and (3) waste of tank farm origin versus other onsite sources.

---

[15] Day RS (Hanford Site Environmental Restoration Contractor, Richland, Washington). February 11, 1997. ERC Team Interoffice Memorandum #042809 from RS Day to VG Edens. Subject: *105N and 107N Hazards Assessment (Inventories.* Environmental Restoration Contractor, Richland, Washington.

Original files associated with solid waste records and projections, employed in the analysis are archived on the SAC share in various directories under \data\rev.1\inventory\Other Inventory Datasets\. The subdirectories and filenames associated with these data are presented in Table 5.3.

Table 5.3. Data Files for Solid Waste Input Data

Solid Waste Data Set	Subdirectory[a]	Filename	Edited Input Filename
dp05	dp05	dp05.doc	dp05.doc
dp07	DP07	dp07.xls	dp07.xls
dp14	dp14	dp14.xls	dp14.xls
dp20/db05r	dp20_db05r	DP20.doc; db05r.mdb	DP20.doc; db05r.mdb
dpa3[0]_2/20/03	dpa3[0]	dpa3[0].doc; dpa3.mdb	dpa3.mdb
dpa4[0]	dpa4	dpa4[0]AppA.doc	dpa4[0]AppArla.doc
dpaB[0]/2004	dpaB	dpaB[0]A.xls	dpaB(0)A_edt.xls
dpaC[0]/2003	dpaC[0]2003	dpC[0]import.xls	dpaC(0)import.xls
dpaC[1]_5/2004	dpaC(1)_5_2004	dpaC[1].xls	dpaC(1).xls
dpaD /2004	DpaD_2004	DPaD[0]A.xls	DPaD(0)A_FY2005.xls
DpaD[0]/2003	dpaD(0)2003	dpaD[0]F.xls; dpaD[0]G.xls	dpaD(0)all_input.xls
DpaG 0/2004	dpaG 0_2004	DPaG[0]A.xls	DPaG_TableA.xls
DpaG[1] 01/2005	dpaG[1] 2005	DPaG[1]A.xls	DPaG[1]A.xls
dpaJ_2/2004	dpaJ_2_2004	dpaJ[0].doc	dpaJ.xls
dpaN_5/2004	dpaN_5_2004	DPaN[0]A.xls	DPaN(0).xls
dpaQ	05_INVENTORY_DP_Doc\FY2005\Coony-data\DpaQ	dpaQ[0].xls	dpaQ0.xls
dpaR/2005	dpaR_2005	DPaR[0]A.xls	DPaR_input.xls
dpaS/2005	dpaS_2005	DPaS[A].xls	DPaS(0)A_edt.xls
dpaT/2005	DpaT_2005	DPaT[0]A.xls	DPaT_data.xls
dpaU/2005	dpaU_2005	DPaU[0]A.xls	DPaU(0)A_edt.xls
DPaX(0)A_23_June_2005	DPaX(0)A_23_June_2005	DPaX[0]A_22 June 2005.xls	DPaX[0]A_22 June 2005.xls
dpaY/2005	dpaY_2005	DPaY[0]A.doc	dpaY.xls
FMC_e_2-23-01	FMC_e_2-23-01	FMC_e_2-23-01.rtf	NA[b]
PWE_e_6-07-05	PWE_e_6-07-05	PWE_e_6-07-05.rtf	NA[c] PWE_e_6-07-05.rtf
rla_add_083105	rla_add_8-31-2005	SRC_Add_Zeros.xls	SRC_Add_Zeros.xls
SAC_Updates_9-23-03	SAC_Updates_9-23-03	SAC_Updates_9-23-03.xls	NA[d]

(a) Subdirectory under \data\rev.1\inventory\Other Inventory Datasets\dataset name\filename.xls.
(b) NA = Not applicable; dataset refers to an e-mail from FM Coony.
(c) NA = Not applicable; dataset refers to an e-mail from PW Eslinger.
(d) NA = Changed air volume for B_Plant_Filter to filter media volume.

In the interest of using fully consistent inventories and releases to the water table in a suite of analyses, the Hanford Site Configuration Management Board requested that the Hanford Remediation Assessment Project include as an option use of the same inventory release to the water table presented in the IDF performance assessment (Puigh and Wood 2005).[16] These releases to the water table are referred to as third-party releases and they are furnished by Fluor Federal Services. The IDF would not receive waste for several months to years; therefore, its operation lies in the forecast period originally provided by the HTWOS model simulation of tank waste and the forecast of other Hanford and offsite generator disposals in Hanford Site solid waste disposal facilities. The HTWOS model simulation included disposal of immobilized low-activity waste, bulk vitrification product from a supplemental technology, and secondary waste streams of all tank waste processing. The HTWOS model results are identical in both analyses, that is (1) in this assembled inventory, and (2) in the third-party releases provided by Fluor Federal Services. In analyses using the IDF performance assessment inventory, (that is, the third-party releases), IDF performance assessment analyst files containing an estimate of future IDF disposals supersede the files assembled in this effort. As mentioned above, the two forecasts are identical with regard to the tank waste inventories because they both rely on a single HTWOS model simulation (Kirkbride et al. 2005) and the same BBI. However, they differ slightly in the forecast of waste from other Hanford and offsite generators because the IDF performance assessment relied on an earlier SWIFT data set (Barcot 2003) for Hanford approved solid waste generators and an estimate of other potential solid waste sources based on Fritz et al (2003). Because the inventories are not identical, use of third-party releases has the potential to introduce a mass balance discrepancy between alternate case studies performed using the SAC tool. Note that the third-party releases provided by Fluor Federal Services for release to the water table from IDF only relate to IDF operation. All prior DOE solid waste disposals are made to low-level waste burial grounds.

To assure traceability, the IDF performance assessment releases provided by Fluor Federal Services are treated as a data set like others in SAC, subject to the requirements of the Hanford Remediation Assessment Project Data Configuration Management & Verification Plan. Upon receipt, the third-party releases are prepared and managed as an Electronic Data Transfer Package (EDTP). These are stored in a Data Configuration Item location on the SAC Windows File server at \\sac.pnl.gov\Share\data\rev.1\3rdParty.releases.

5.6   US Ecology – Commercial Low-Level Waste

The Washington State Departments of Health and Ecology jointly issued a final environmental impact statement for the commercial low-level radioactive waste disposal site located at Richland, Washington (Washington State 2004). The EIS contains estimates of past disposal inventories over periods of time, (e.g., 1965−1981, 1982−1987), as well as estimates of future disposal inventory through the facility's operational life (e.g., 2056). Annual inventories were estimated based on the annual waste volumes reported in the environmental impact statement. The development of annual inventories was completed with the assistance of Andrew Thatcher, Washington State Department of Health, Olympia, Washington.

Original files associated with US Ecology commercial low-level radioactive waste, employed in the analysis are archived on the SAC share at \data\rev.1\inventory\Other Inventory Datasets\ 'US_Ecology_ctk_050205\ under filename 'REV1sourceterm_ctk_2-May-2005_rev4 with AHT input.xls.'

---

[16] The Integrated Disposal Facility in the 200 East Area is a proposed facility pending publication of the record of decision for the Tank Closure and Waste Management Environmental Impact Statement, which will decide whether and where it would exist.

5.7 Spent Nuclear Fuel

Records of spent nuclear fuel inventory are the responsibility of Fluor Hanford, Inc. the Project Hanford Management Contractor. Accordingly, Fluor Hanford, Inc. provided the spent nuclear fuel inventories to the Characterization of Systems Project. Spent nuclear fuel is not considered waste when generated, and the majority of spent nuclear fuel is never disposed to or released into the vadose zone environment. It is included in this analysis of inventory to enable a mass balance including the export of spent nuclear fuel. When spent nuclear fuel is staged for export from Hanford, (e.g., retrieved from K Basins and stored in the canister storage building prior to shipment offsite), it is assumed to be waste and is included in the inventory analysis. Thus, for the purposes of assembling Hanford inventories for spent nuclear fuel, they are assembled beginning with the year it was, or, is assumed to be, declared waste, (i.e., not when it was created in a reactor). This inventory includes K Basin spent nuclear fuel (Packer 1999; Reilly 1998), Shippingport spent nuclear fuel (Wittekind et al. 1999), FFTF spent nuclear fuel (Bergsman 1994), as well as some spent fuel used in research now disposed in solid waste burial grounds (Bergsman 1994). Inventories of sludge in the K Basins are taken from Pearce (2000). Actual transactions are taken from DOE (2005c), and proposed schedules for shipment to offsite disposal are from DOE (1998a) and Ecology et al. (1989).

Original files associated with spent nuclear fuel, employed in the analysis are archived on the SAC share in various directories under \data\rev.1\inventory\Other Inventory Datasets. The subdirectories and filenames associated with these data are presented in Table 5.4.

Table 5.4. Data Files for Spent Fuel Data

Data Set	Subdirectory[a]	Filename	Edited Input Filename
dp03	dp03	dp03.xls	dp03.xls
DP18	DP18	dp18.doc	DP18_add.xls
dpa6[1]/2005	dpa6	DPa6[1]A.xls	DPa6(1)A_edt.xls
dpaP5/2004	dpaP5_2004	DPaP[0].xls	DPaP(0).xls
sac0_sf_r00	Sac0_sf_r00	Sac0_sf_r00.xls	Sac0_sf_r00.xls
(a) Subdirectory under \data\rev.1\inventory\Other Inventory Datasets.			

5.8 Special Nuclear Materials

Inventories of the special nuclear material presented for the Plutonium Finishing Plant are from the final environmental impact statement on the stabilization of that facility (DOE 1996). Both the baseline inventory of material in the facility and an assumed 10% holdup or retention of that material is available in the environmental impact statement (DOE 1989). Additional information on special nuclear materials at the Hanford Site including tritium, uranium, and plutonium inventories was published by Fluor Hanford, Inc. (FHI 2001). A summary of information on losses during tritium production at Hanford can be found in Section 7 of Heeb and Gydesen (1994) and this topic is further described in Appendix D.

Original files associated with special nuclear material, employed in the analysis are archived on the SAC share at \data\rev.1\inventory\Other Inventory Datasets\Sac0_misc_r01\ under filename 'Sac0_misc_r01.xls.'

5.9   Cesium/Strontium Capsules and WESF

The inventory of cesium-137 and strontium-90 contained in capsules stored in the Waste Encapsulation and Storage Facility (WESF) has been estimated from data and information provided in the WESF Safety Analysis report (Covey 2004), a CH2M HILL Hanford Group, Inc. interoffice memorandum[17] and information provided by Pennock[18] and Holten.[19] The estimate was cross checked against data provided in the engineering support document for the Hanford defense waste environmental impact statement (RHO 1985). An additional inventory of residue within the WESF, especially the hot cells, was taken from the safety analysis report (Covey 2004).

Original files associated with cesium/strontium capsules and WESF employed in the analysis are archived on the SAC share at \data\rev.1\inventory\Other Inventory Datasets\ CS-SR_ctk_051605\ under filename 'Cs-Sr inventories in WESF_21-April-2005.xls.'

5.10 Fast Flux Test Facility (FFTF)

Inventories associated with buildings within the Fast Flux Test Facility (FFTF) complex have been taken from the technical information document supporting the ongoing environmental impact analysis for closure of the facility (York 2005). This document includes a risk assessment and supporting data (Clark et al. 2003) for the FFTF completed in August 2003 prior to issuance of the technical information document.

Original files associated with FFTF employed in the analysis are archived on the SAC share at \data\rev.1\inventory\Other Inventory Datasets\FFTF_ctk_070505\, under filenames 'CA inventory for the Fast Flux Test Facility_30 May 2005.doc' and 'FFTF_INV_05-30-05.xls.'

5.11 Atmospheric Releases

The basis for the collected atmospheric releases from the separations plants is, in part, data from the HEDR (Napier 1992). The basis for collected carbon-14 atmospheric releases from the reactors is a method described in Section 5.2 of a HEDR report (Heeb 1994). In this method, the average daily carbon-14 release value is generated using two historical reports. The annual release of carbon-14 for each of the eight single-pass production reactors from Anderson (1958) is (0.1÷8 reactors) Ci/day. This release is applied from start up of reactor operations through 1959. The assumed number of days per year is 365. The annual release of carbon-14 from McConnon (1962) for each reactor is (0.127÷8 reactors) Ci/day. This annual release is applied from 1960 through 1971. The assumed number of days per year is 365. The release values are applied for the operating months per year of each reactor. The data from the HEDR Project do not contain data for the later period, e.g., after 1972. For this later period, some inventory data for the separations plants has been assembled from monitoring reports. These annual reports are listed in Table 5.5.

---

[17] CH2M HILL Hanford Group, Inc. Interoffice Memo from BA Higley to TM Horner, dated April 30, 2003; Subject: *Hanford Material Balance for Strontium-90 and Cesium-137.*

[18] Pennock, JA (company, Richland, Washington). May 16, 2005, e-mail to CT Kincaid (Pacific Northwest National Laboratory, Richland, Washington); Subject: *RE: Cs-Sr inventories in WESF.*

[19] Holten, RA (DOE/RL, Richland, Washington). May 26, 2005, e-mail to ME Burandt (DOE/ORP, Richland, Washington); Subject: *Re: Your request for validation of TC-EIS assumptions related to RL.*

Table 5.5. Reference List of Reports Including Atmospheric Releases

Year – Effluent Release	Report Reference – Author(s), Date
1944−1972	DSHS (1987)
1973	Nees and Corley (1974a, 1974b)
1974	Fix (1975); Fix and Blumer (1975)
1975	Speer, Fix, and Blumer (1976)
1976	Fix, Blumer Hoenes, and Bramson (1977)
1977	Houston and Blumer (1978)
1978	Houston and Blumer (1979)
1979	Houston and Blumer (1980)
1980	Sula and Blumer (1981)
1981	Sula, McCormack, Dirkes, Price, and Eddy (1982)
1982	Sula, Carlile, Price, and McCarmack (1983)
1983	Price, Carlile, Dirkes, and Trevathan (1984)
1984	Price, Carlile, Dirkes, Jaquish, Trevathan, and Woodruff (1985)
1985	Price, Carlile, Dirkes, Jaquish, Trevathan, and Woodruff (1986)
1985, Supplement	Price (1986)
1986	PNL (1987)
1987	Jaquish and Mitchell (1988)
1988	Jaquish and Bryce (1989)
1989	Jaquish and Bryce (1990)
1990	Woodruff, Hanf, Hefty, and Lundgren (1991)
1991	Woodruff, Hanf, and Lundgren (1992)
1992	Woodruff, Hanf, and Lundgren (1993)
1993	Dirkes, Hanf, Woodruff, and Lundgren (1994)
1994	Dirkes and Hanf (1995)
1995	Dirkes and Hanf (1996)
1996	Dirkes and Hanf (1997)

Original files associated with atmospheric releases are archived on the SAC share, and are listed in Table 5.6.

Table 5.6. Data Files for Atmospheric Release Data

Data Set	Subdirectory[a]	Filename	Edited Input Filename
dp07	DP07	dp07.xls	dp07.xls
DPa7/2003	dpa7	dpa7[1].doc; dpa7.mdb;	dpa7[1].doc; dpa7.mdb;
Sac0_air_r00	Sac0_air_r00	Sac0_air_r00.xls	Sac0_air_r00.xls
Sac0_air_r01	Sac0_air_r01	Sac0_air_r01.xls	Sac0_air_r01.xls
TBM - Duplicate of 1989 data	TBM - Duplicate of 1989 data	Dataset TBM.doc; FW Release of C14.htm	N/A
(a) Subdirectory under \data\rev.1\inventory\Other Inventory Datasets.			

5.12 Facilities including Canyons, Tunnels, Stacks, and Filters

Inventories in facilities have been estimated using safety analysis and other similar reports developed as facilities transitioned from operations to decontamination and decommissioning (D&D) activities. Data and information sources for facilities are summarized in Table 5.7. The available information does not distinguish between before and after D&D activities. A portion of current facility inventories could be included in the SWIFT forecast of solid waste disposals. Hence, there is potential for double counting some of the facilities inventory.

Table 5.7. Reference List of Reports Including Facility and Allied Structure Inventories

Facilities and Allied Structures	Report Reference – Author(s), Date	Title and Document Number
B Plant	DK Smith (1998)	*Closeout of End Point 00.00.26, Remaining Hazardous Substances/Dangerous Waste Documentation*, File No. 16D00-98-DKS-078
B Plant	FM Simmons (1999)	*Documentation of Remaining Hazardous Substances / Dangerous Wastes in B Plant*, HNF-3208, Rev. 0A
B Plant	BA Schwehr (1999)	*B Plant Surveillance and Maintenance Phase Safety Analysis Report*, HNF-3358, Rev. 0
U Plant	H&R Technical Assoc. and NR Kerr (2000)	*U Plant Facility Safety Analysis Report*, BHI-01157, Rev. 2
224-B	NR Kerr (2000)	*224-B Facility Safety Analysis Report*, BHI-01156, Rev. 0
REDOX Plant	NR Kerr and H&R Technical Assoc, and MH Chew & Assoc. (2000)	*REDOX Facility Safety and Analysis Report*, BHI-01142, Rev. 2
PUREX Plant	EN Dodd III (1999a)	*Plutonium Uranium Extraction (PUREX) End State Basis for Interim Operation (BIO) for Surveillance and Maintenance*, HNF-SD-CP-ISB-004, Rev. 0
PUREX Plant	EN Dodd III (1999b)	*PUREX Deactivated End-State Hazard Analysis*, HNF-SD-CP-HIE-004, Rev. 0
PUREX Plant	J Reddick (1993)	*Estimate of PUREX Plant Inventory of Chemicals and Radioactivity*; Letter report from LATA, Inc. to D Washenfelder, WHC.

Files associated with facilities are archived on the SAC share in various subdirectories, under \data\rev.1\inventory\Other Inventory Datasets\. The subdirectories and filenames associated with these data are presented in Table 5.8.

5.13 Site Total Summary Including the Effect of Inventory Completion Rules

A knowledge of the inventories in waste sites is the first step in evaluating potential long-term far-field impacts to man and the environment. Knowledge of the inventory today, prior to application of remedial actions, enables the study of potential impact of alternate remedial actions and even a no-action scenario. The assembled inventory includes data on a waste site, year, and analyte basis. Of the 1,052 waste sites identified for study, 690 have been assigned inventories of one or more analytes of

interest. Information on the remaining waste sites was reviewed and they were determined to be (1) water sites discharging clean water, (2) waste sites within waste sites (i.e., unplanned releases within waste sites), (3) waste sites involving documented minimal releases or contaminants not of interest, or (4) duplicate event reporting. Note that inventory movement through remedial actions are simulated by SAC and are not reported in this inventory compilation. The SAC analysis begins in 1944 and, being part of the simulation, changes in inventory due to remedial actions are not presented as changes to the accumulated inventory shown here. For example, inventories in river corridor waste sites continue to be reported as being in those waste sites in the inventory. It is only during simulation that remedial actions are modeled and the CERCLA site inventories are moved to the ERDF trench in the Central Plateau of Hanford.

Table 5.8. Data Files for Facilities Data

Data Set	Subdirectory[a]	Filename	Edited Input file
Dp07	DP07	dp07.xls	dp07.xls
Sac0_misc_r00	Sac0_misc_r00	Sac0_misc_r00.xls	Sac0_misc_r00.xls
Sac0_misc r04	Sac0_misc_r04	Sac0_misc_r04.xls	Sac0_misc_r04.xls
Sac0_misc r05a	Sac0_misc_r05a	Sac0_misc_r05a.xls	Sac0_misc_r05a.xls
Sac0_misc r06	Sac0_misc_r06	Sac0_misc_r06.xls	Sac0_misc_r06.xls
Sac_updates_9-23-03	SAC_Updates_9-23-03	SAC_Updates_9-23-03.xls	SAC_Updates_9-23-03.xls
(a) Subdirectory under \data\rev.1\inventory\Other Inventory Datasets.			

The detailed assembled inventory is a compilation of annual discharges, disposals, and unplanned losses to the environment. Each entry is decay correct to the end of the year for which it is entered, i.e., December 31 of the data entry year. This assembled inventory captures data from the opening of the Hanford Site in 1944 until closure of much of the site in 2035, and final inventory changes in 2070 following closure of the commercial low-level radioactive waste site operated by US Ecology.

The inventory is simulated using a stochastic model to capture its uncertainty. However, the representation of uncertainty in the inventory is described in the Section 6. To discuss and better understand aspects of the inventory, it is accumulated and decay corrected at three moments in time to provide meaningful displays. The three moments in time selected are 2005, 2035, and 2070; essentially today, virtual site closure, and final site closure. The best estimate value of the accumulated inventory in each waste site at these moments in time is presented in Appendices E, F, and G. Each waste site - analyte inventory has been color coded to indicate which cells derive from the Hanford SIM, the HTWOS model, records (e.g., SWITS), estimates (fill-in rules), and surrogate rules. The resulting percentage breakdown of the origin of inventories by analyte for 2005, 2035, and 2070 are shown in Tables 5.9, 5.10, and 5.11. Note that some sites have multiple sources of inventory data.

Changes in the inventory source percentages between 2005 and later years are highlighted by the introduction of tank waste processing (i.e., the HTWOS model data) which accounts for nothing in 2005 and is complete by 2035. Changes after 2035 seen in Table 5.11 are a function of continued disposal at the commercial low-level radioactive waste site until 2056, (e.g., note the change in tritium inventory). The Hanford SIM entries are static after 2005. The record entries are static after 2005 with the exception of solid waste disposals and disposals to the commercial low-level waste disposal site. Shifts in percentages are dominated by the introduction of the HTWOS model data. Clearly the fill-in rule estimates and

the surrogate rule estimates have a nil, or very near zero, influence on the total inventory analyzed. Surrogate rule estimates generally are much less than 1% with only europium-152 showing more than 1%; with a half-life of 13.54 years, it will be greatly diminished because of decay not long after Hanford Site closure. The fill-in rule estimates account for nearly 1% of the iodine-129 and europium-152, and less than 1% for all others, most being much less than 1%. The europium-152 will vanish essentially because of decay in the near term, and the iodine-129 is dominated by Hanford SIM, HTWOS model, and record data and their uncertainty. Data for chlorine-36 are unique because chlorine-36 is in the graphite cores of the nine production reactors and not in the spent fuel or processing waste in substantial quantities. Thus, chlorine-36 appears as a record quantity and not a tank waste inventory analyte. The percentages shown include off-site shipments and glass inventories. This causes uranium inventories to be dominated by record quantities that include spent fuel as well as high-level waste glass canisters, both destined for off-site shipment.

Table 5.9. Percent of the Total Inventory in 2005 (best estimate inputs) by Analyte

Analyte	Hanford SIM	HTWOS	Record	Estimated (fill-in)	Surrogate
Tritium	18.67	0.00	81.18	0.00	0.15
Carbon-14	0.36	0.00	99.51	0.06	0.08
Chlorine-36	0.00	0.00	100	0.00	0.00
Selenium-79	2.32	0.00	96.98	0.69	0.01
Strontium-90	0.14	0.00	99.55	0.28	0.03
Technetium-99	14.97	0.00	84.43	0.52	0.09
Iodine-129	21.20	0.00	76.12	2.63	0.04
Cesium-137	0.32	0.00	99.38	0.28	0.02
Europium-152	0.18	0.00	90.26	1.77	7.79
Uranium-233	61.13	0.00	38.28	0.00	0.59
Uranium-235	3.09	0.00	95.98	0.67	0.26
Neptunium-237	36.79	0.00	63.21	0.00	0.01
Uranium-234/238	2.74	0.00	97.02	0.00	0.24

Table 5.10. Percent of the Total Inventory in 2035 (best estimate inputs) by Analyte

Analyte	Hanford SIM	HTWOS	Record	Estimated (fill-in)	Surrogate
Tritium	16.40	1.09	82.39	0.00	0.13
Carbon-14	0.35	1.43	98.09	0.05	0.07
Chlorine-36	0.00	0.00	100	0.00	0.00
Selenium-79	1.16	49.91	48.58	0.35	0.00
Strontium-90	0.06	56.88	42.93	0.12	0.01
Technetium-99	2.19	85.33	12.39	0.08	0.01
Iodine-129	7.23	65.57	26.26	0.92	0.01
Cesium-137	0.19	40.00	59.63	0.17	0.01
Europium-152	0.11	40.79	53.43	1.06	4.61
Uranium-233	14.76	75.86	9.24	0.00	0.14
Uranium-235	2.83	8.50	87.82	0.61	0.24
Neptunium-237	19.66	46.55	33.78	0.00	0.00
Uranium-234/238	2.53	7.70	89.55	0.00	0.22

Table 5.11. Percent of the Total Inventory in 2070 (best estimate inputs) by Analyte

Analyte	Hanford SIM	HTWOS	Record	Estimated (fill-in)	Surrogate
Tritium	12.55	0.83	86.52	0.00	0.10
Carbon-14	0.35	1.42	98.10	0.05	0.07
Chlorine-36	0.00	0.00	100	0.00	0.00
Selenium-79	1.16	49.91	48.58	0.35	0.00
Strontium-90	0.06	56.87	42.93	0.12	0.01
Technetium-99	2.19	85.33	12.39	0.08	0.01
Iodine-129	7.21	65.44	26.41	0.92	0.01
Cesium-137	0.19	40.00	59.63	0.17	0.01
Europium-152	0.11	40.79	53.43	1.06	4.61
Uranium-233	14.76	75.86	9.24	0.00	0.14
Uranium-235	2.83	8.50	87.83	0.61	0.24
Neptunium-237	19.66	46.55	33.78	0.00	0.00
Uranium-234/238	2.53	7.70	89.55	0.00	0.22

6.0   Stochastic Inventory Concepts

The Inventory Module uses information from the inventory database and other assessment setup data to generate stochastic realizations of inventory, to aggregate inventories for sites identified for aggregation and account for radioactive decay to the end of each year. All disposal actions are described as contaminant concentrations within a disposal volume. The volumes and concentrations are both treated as stochastic quantities. It is possible to obtain a deterministic inventory by running a single realization with a fixed set of inputs.

6.1   Uncertainty in Soil Inventory Model (SIM) Data

The Hanford SIM (Corbin et al. 2005) data set was provided in a stochastic format. This data set provided inventory estimates for liquid releases for 377 waste sites. The majority of these sites are located on the Central Plateau of Hanford; however, four are located in the 300 Area. An example SIM data set for a liquid release from 200-E-25 in 1971 is provided in Table 6.1. The SIM data are represented by a 21-point cumulative probability function for the volume of the waste stream and also for each analyte in the waste stream. Analytes not present in the SIM analyses are not estimated using any fill-in rules because the SIM analysts checked for the presence of these analytes when the data were generated. Thus, for the SIM data, a missing inventory within a waste stream implies a zero inventory rather than lack of information.

Table 6.1. SIM Volume and Concentration Data for 200-E-25 for 1971 Liquid Releases

Probability	Volume (m^3)	Uranium-234 (Ci/m^3)	Uranium-235 (Ci/m^3)	Uranium-238 (Ci/m^3)
0	1	4.15E-14	5.90E-16	2.32E-14
0.05	1.2	1.80E-12	4.38E-14	1.18E-12
0.1	1.32	5.65E-12	1.61E-13	3.87E-12
0.15	1.41	1.12E-11	3.46E-13	7.72E-12
0.2	1.49	1.82E-11	6.00E-13	1.27E-11
0.25	1.56	2.66E-11	9.22E-13	1.89E-11
0.3	1.62	3.66E-11	1.32E-12	2.61E-11
0.35	1.68	4.83E-11	1.79E-12	3.47E-11
0.4	1.73	6.18E-11	2.34E-12	4.45E-11
0.45	1.78	7.69E-11	2.99E-12	5.58E-11
0.5	1.83	9.44E-11	3.75E-12	6.90E-11
0.55	1.87	1.14E-10	4.63E-12	8.39E-11
0.6	1.92	1.37E-10	5.66E-12	1.01E-10
0.65	1.97	1.64E-10	6.86E-12	1.22E-10
0.7	2.03	1.96E-10	8.31E-12	1.45E-10
0.75	2.09	2.33E-10	1.01E-11	1.75E-10
0.8	2.16	2.80E-10	1.22E-11	2.11E-10
0.85	2.24	3.41E-10	1.51E-11	2.58E-10
0.9	2.33	4.25E-10	1.90E-11	3.24E-10
0.95	2.45	5.64E-10	2.56E-11	4.36E-10
1	2.65	9.82E-10	4.52E-11	7.80E-10

The mean and standard deviation of the SIM data were provided in addition to the information shown in Table 6.1. The best estimate inventory developed for some applications used the mean value of the SIM data rather than the stochastic representation illustrated here.

The A-10 crib (waste site 216-A-10) is a site that is known to have released large quantities of tritium. The description of inventory from the SIM data set for this site in the year 1965 is provided in Table 6.2.

Table 6.2. SIM Volume and Concentration Data for 216-A-10 for 1965 Liquid Releases

Cumulative Probability	Volume (m^3)	Tritium (Ci/m^3)	Technetium-99 (Ci/m^3)	Iodine-129 (Ci/m^3)	Uranium-234 (Ci/m^3)	Uranium-235 (Ci/m^3)	Uranium-238 (Ci/m^3)
0	3.01E+05	7.15E-05	5.17E-11	1.88E-10	2.16E-14	4.12E-16	3.52E-15
0.05	3.22E+05	2.12E-03	2.16E-09	7.88E-09	1.59E-11	4.32E-13	6.28E-12
0.1	3.34E+05	5.86E-03	6.67E-09	2.40E-08	1.18E-10	3.58E-12	5.84E-11
0.15	3.44E+05	1.08E-02	1.30E-08	4.62E-08	3.81E-10	1.22E-11	2.15E-10
0.2	3.52E+05	1.66E-02	2.09E-08	7.41E-08	8.75E-10	2.95E-11	5.43E-10
0.25	3.60E+05	2.33E-02	3.04E-08	1.08E-07	1.68E-09	5.83E-11	1.12E-09
0.3	3.66E+05	3.10E-02	4.15E-08	1.46E-07	2.84E-09	1.02E-10	2.02E-09
0.35	3.72E+05	3.97E-02	5.44E-08	1.91E-07	4.48E-09	1.65E-10	3.35E-09
0.4	3.78E+05	4.93E-02	6.87E-08	2.42E-07	6.66E-09	2.49E-10	5.17E-09
0.45	3.83E+05	6.02E-02	8.54E-08	2.99E-07	9.48E-09	3.62E-10	7.67E-09
0.5	3.88E+05	7.21E-02	1.04E-07	3.65E-07	1.31E-08	5.09E-10	1.09E-08
0.55	3.93E+05	8.58E-02	1.25E-07	4.37E-07	1.76E-08	6.94E-10	1.52E-08
0.6	3.98E+05	1.01E-01	1.49E-07	5.23E-07	2.34E-08	9.31E-10	2.06E-08
0.65	4.04E+05	1.19E-01	1.77E-07	6.19E-07	3.06E-08	1.23E-09	2.76E-08
0.7	4.10E+05	1.39E-01	2.10E-07	7.30E-07	3.97E-08	1.61E-09	3.67E-08
0.75	4.16E+05	1.62E-01	2.48E-07	8.63E-07	5.14E-08	2.11E-09	4.84E-08
0.8	4.24E+05	1.90E-01	2.94E-07	1.03E-06	6.67E-08	2.77E-09	6.41E-08
0.85	4.32E+05	2.26E-01	3.52E-07	1.22E-06	8.78E-08	3.68E-09	8.58E-08
0.9	4.42E+05	2.74E-01	4.30E-07	1.50E-06	1.19E-07	5.04E-09	1.19E-07
0.95	4.54E+05	3.49E-01	5.55E-07	1.93E-06	1.75E-07	7.45E-09	1.77E-07
1	4.75E+05	5.39E-01	8.65E-07	3.06E-06	3.60E-07	1.54E-08	3.78E-07

An example inventory calculation utilizing 5,000 realizations was conducted for this site. The tritium inventory ranges from 27.17 to 247,335 Ci and has a median of 28,051 Ci and a mean of 43,212 Ci. The generated inventory distribution is shown in Figure 6.1. Although the SIM data set has a reasonable amount of variability in the inventory for many sites, the inventory for this site, along with a few other sites that release large quantities of tritium, exhibits an unreasonably large variability. Further develop-ment work and data collection is required for the SIM model to produce estimates with a narrower range of variability. As a mitigating factor, when the releases from the A-10 crib are summed over the several years the crib operated, the resulting total is less variable than the data for each individual year.
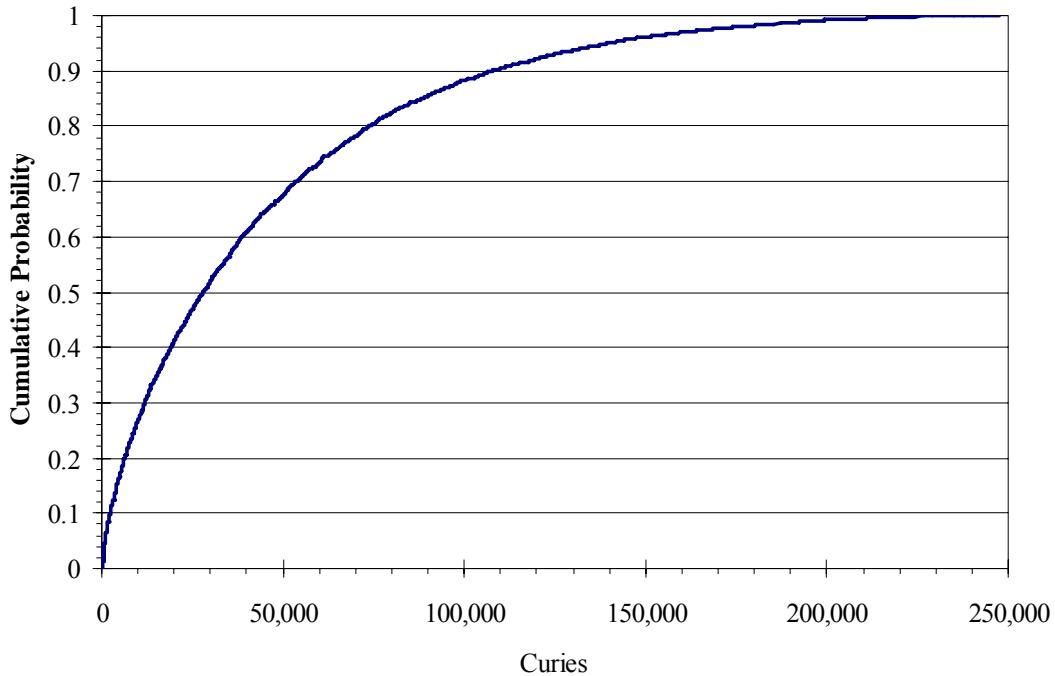
Figure 6.1. Cumulative Probability Function for the Tritium Inventory (Ci) Discharged to the 216-A-10 Crib in 1965 Based on the SIM Data Set

6.2   Uncertainty in All Other Inventory Data

For all sites not quantified by the SIM data, the Inventory Module simulates waste volumes and concentrations using a series of stochastic rules:

- All volume discharges were assigned a 20% uncertainty about the record or estimated volume of waste. This approach to uncertainty was adopted after consulting with current and retired Hanford staff familiar with inventory records. This uncertainty is implemented as a multiplier on the point estimate of volume, and the multiplier is defined as having a triangular distribution extending from 0.8 to 1.2 that is centered on 1.

- Consultations with current and retired Hanford staff familiar with inventory records indicated that individual site-specific inventories could be as much as 20-fold uncertain prior to 1970. Therefore, the analyte concentrations in waste streams released prior to 1970 were modeled with a lognormal (natural log) distribution, truncated at the 0.01 and 0.99 probability levels. The mean of the untruncated distribution was set to the point estimate or record value. The spread of the distribution was chosen by setting the standard deviation equal to twice the mean. This choice gave a wide variability representative of the stated 20-fold uncertainty of data during this operational era.

- Consultations with current and retired Hanford staff familiar with inventory records also indicated that individual site-specific inventory estimates were much more accurate after more detailed record keeping was initiated in 1970 and the variability was more in the range of one-half the record value to twice the recorded value. The analyte concentrations in waste streams released from 1970 on were also modeled with a lognormal (natural log) distribution, truncated at the 0.01 and 0.99

probability levels where the mean of the untruncated distribution was set to the point estimate or record value. However, the spread of the distribution was chosen by setting the standard deviation equal to 0.25 times the mean. This choice gave a much narrower variability representative of the stated one-half to two fold uncertainty of data during this operational era.

- An exception to the inventory rule is that all production reactor core inventories are assumed to be relatively well known irrespective of the date they enter the inventory record. Therefore, the post-1970 rule (smaller variability) was assigned to all Hanford Site production reactor cores.

In a few cases, a zero inventory was assigned to an analyte in a waste stream to preclude the application of a fill-in rule to that waste form. For these cases, the stochastic inventory was defined as a constant value of zero and did not implement any variability.

An example illustration of the variability rule applications is provided for the chlorine-36 inventory in D Reactor for a stochastic calculation utilizing 5,000 realizations. The record data set has a point estimate of 33.998 Ci of chlorine-36 and a disposal volume of 2,000 m^3 for this reactor. Using the above rules, the stochastic volume distribution would be triangular on the range 1,600 to 2,400 m^3. The sampled volume values range from 1,605.03 to 2,394.44 m^3 with a mean value of 2,000.00 and a median value of 2,000.02. The stochastic concentration distribution using the variability assumptions for pre-1970 data would use a mean value (in log space) of -4.87893 and a standard deviation (in log space) of 1.26864. The stochastic concentration distribution using the variability assumptions for post-1969 data would use the mean (in log space) of -4.104913 and a standard deviation (in log space) of 0.246221. For the pre-1970 variability assumptions, the generated inventory values (in curies) run from 0.726 to 319.2 with a mean of 29.66. For the post-1969 variability assumptions, the generated inventory values (in curies) run from 15.88 to 64.50 with a mean of 33.87. The cumulative distribution function for these two sets of sampled inventories are shown graphically in Figure 6.2.
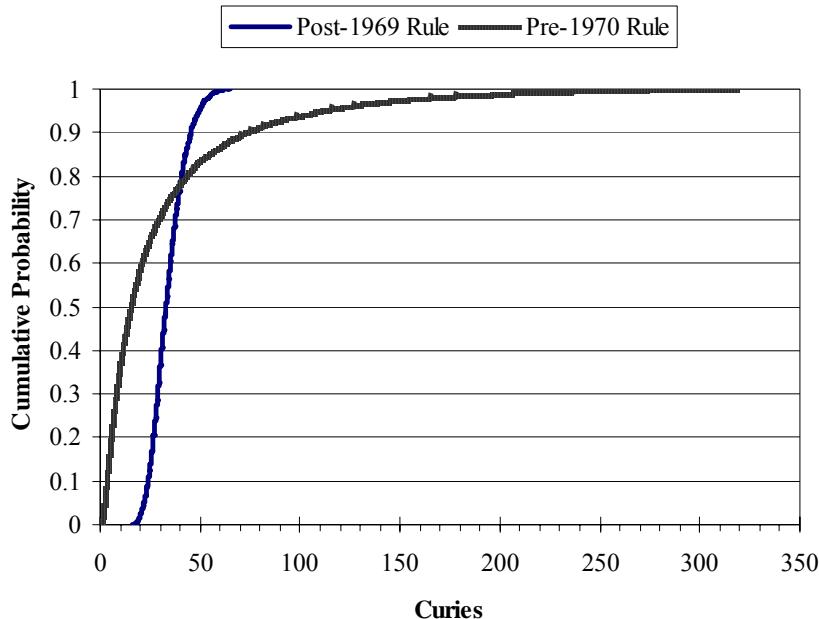
Figure 6.2. Example Cumulative Probability Functions for Chlorine-36 Inventory in D Reactor Using Pre-1970 and Post-1969 Uncertainty Rules

Another example illustration of the variability rule applications is provided for an iodine-129 inventory in the assumed IDF (218-E-RCRA) for a stochastic calculation utilizing 5,000 realizations. The record data set has a point estimate of 0.33493 Ci of iodine-129 in a cement waste form with a disposal volume of 483.146 m^3 that is scheduled for disposal in the year 2011. The generated values range from 0.1583 to 0.6566 Ci and have a mean value of 0.3337 Ci. The standard deviation of the generated values was 0.0823. The cumulative distribution function for this disposal action is shown graphically in Figure 6.3.
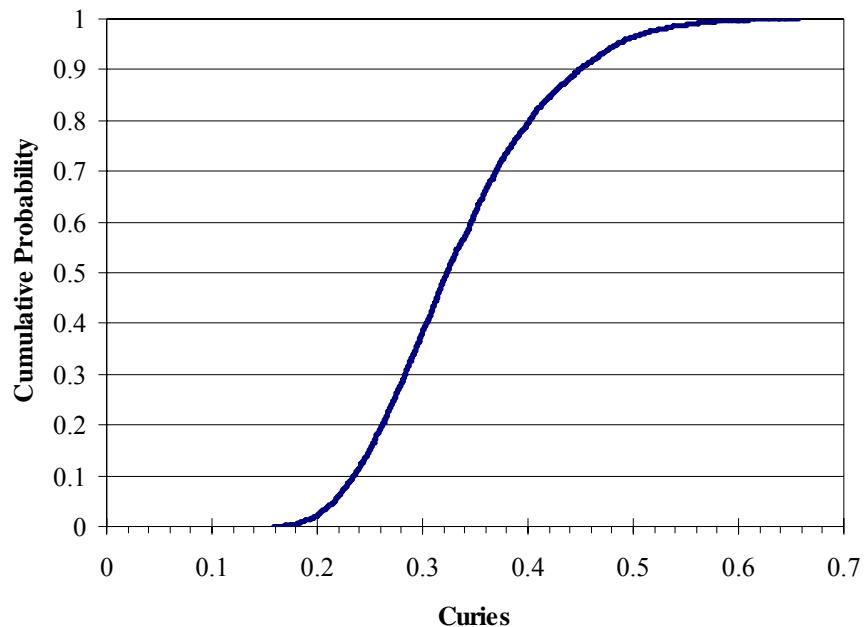
Figure 6.3. Example Cumulative Probability Functions for Iodine-129 Inventory in the Assumed IDF for a Single Cement Disposal Scheduled for 2011

A final illustration of the variability rule application is provided for disposal of some unsegregated trench waste containing uranium-238 at the 218-W-4A site in 1965. Results are provided for a stochastic calculation utilizing 5,000 realizations. The record data set has a point estimate of 31.98 Ci of uranium-238 in a disposal volume of 2,061.48 m^3. The generated inventory values range from 0.6828 to 300.22 Ci and have a mean value of 27.89 Ci. The truncation of the lower and upper 1% of the tails of the distribution for concentration preserves the median of the generated data but it does introduce a small downward bias on the mean value. The bias is much smaller when using the post-1969 variability rule than when using the pre-1970 variability rule.

6.3 Uncertainty in Total Onsite Inventory

A stochastic inventory run using 100 realizations was made for all onsite disposal actions. The use of 100 realizations is a modeling convenience for limiting run times. Summary statistics in the onsite inventory (curies) for four analytes are provided in Table 6.3: tritium, technetium-99, iodine-129, and uranium-234/238. Graphical representations of the variability in the inventory for these four analytes are provided in Figures 6.4 through 6.7. The best estimate for the onsite inventories is also provided to

illustrate that the best estimate inventory lies near the middle of the stochastic inventory values. Although there is some variability in the stochastic values for total on-site inventory, the variability in the total is relatively small.

Table 6.3. Summary Statistics for Onsite Inventory for Selected Analytes[a]

Analyte	Tritium (Ci)	Technetium-99 (Ci)	Iodine-129 (Ci)	Uranium-234/ Uranium-238 (Ci)
Minimum	24,640	20,560	49.3	2,730
Median	26,660	23,700	55.5	3,444
Maximum	28,700	30,100	62.0	4,349
Mean	26,680	23,860	55.5	3,433
Standard Deviation	950	1,460	2.2	265
Best Estimate	26,860	23,950	55.9	3,505
(a) Decay corrected to 2070.				
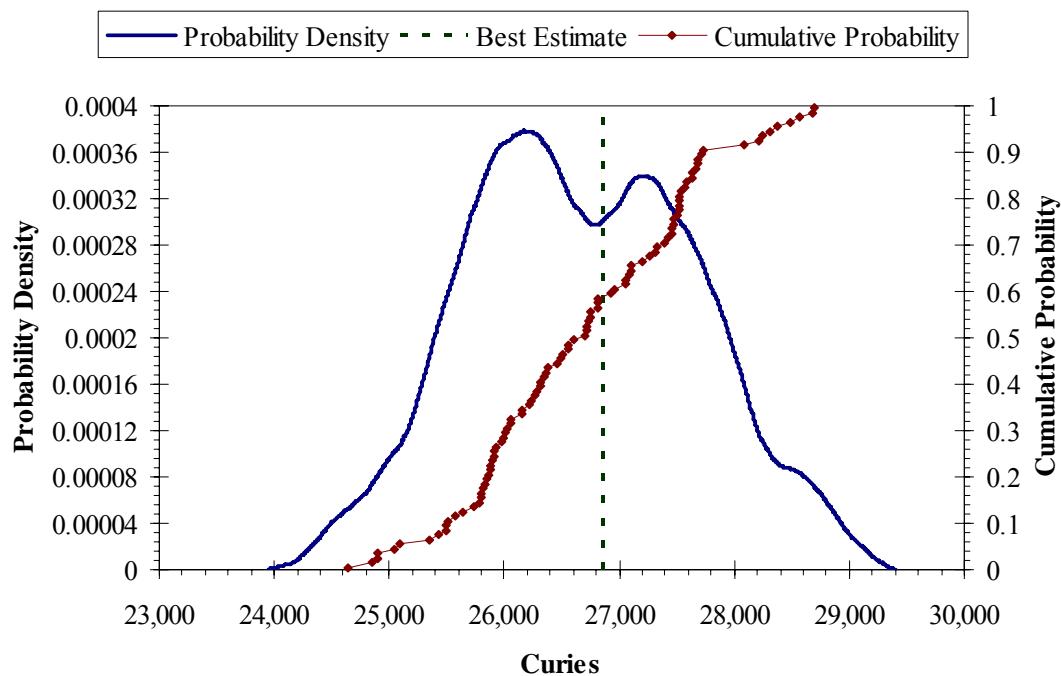
Figure 6.4. Example Stochastic Representation of Onsite Tritium Inventory (decay corrected to 2070)

6.6
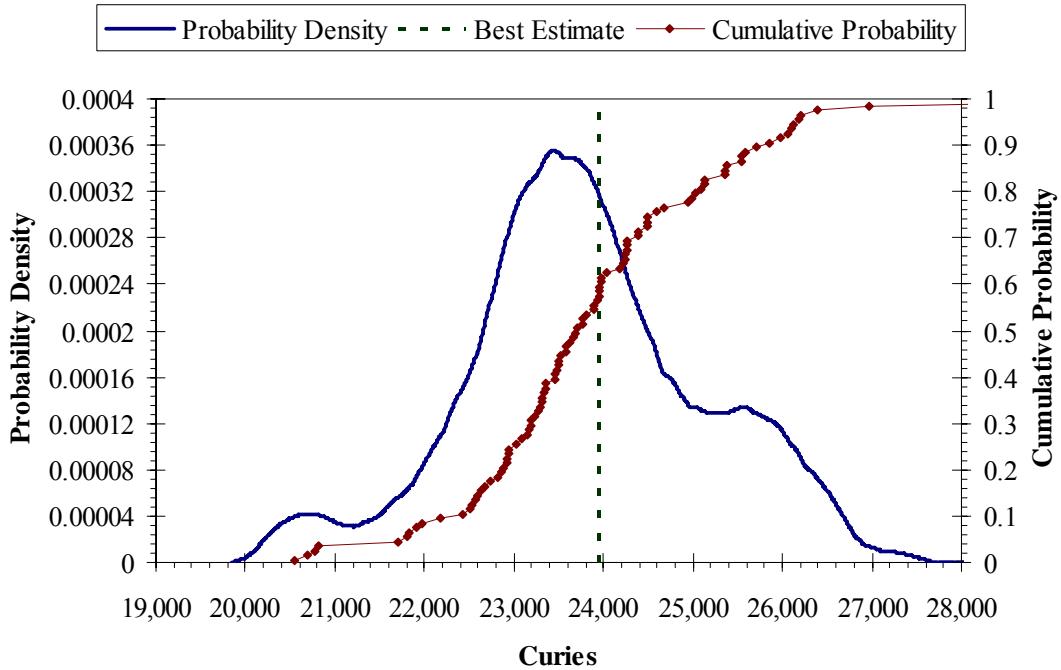
Figure 6.5. Example Stochastic Representation of Onsite Technetium-99 Inventory (decay corrected to 2070)
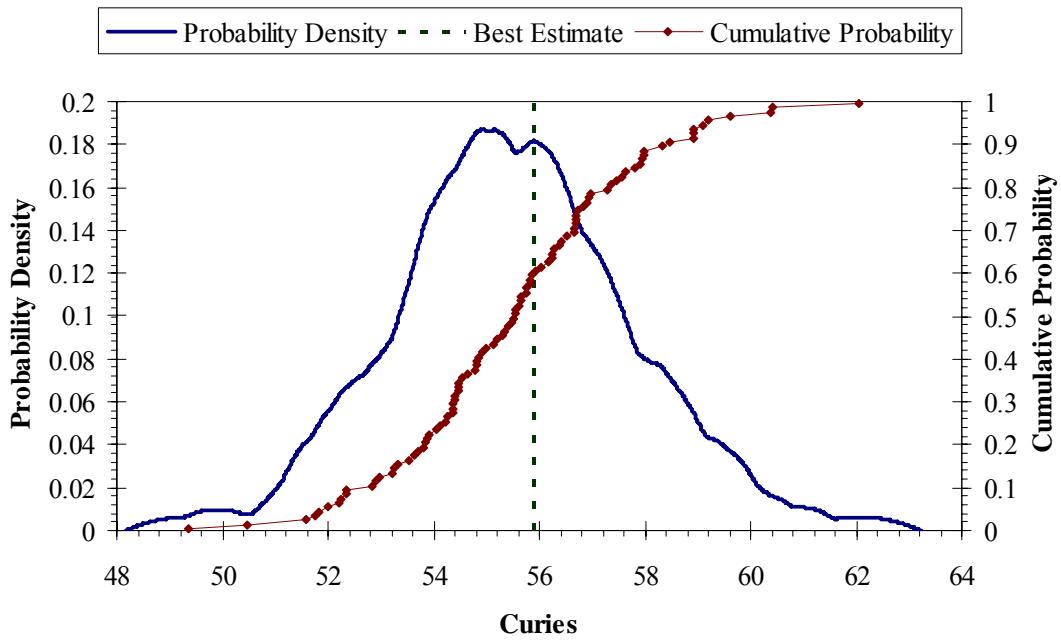
Figure 6.6. Example Stochastic Representation of Onsite Iodine-129 Inventory (decay corrected to 2070)
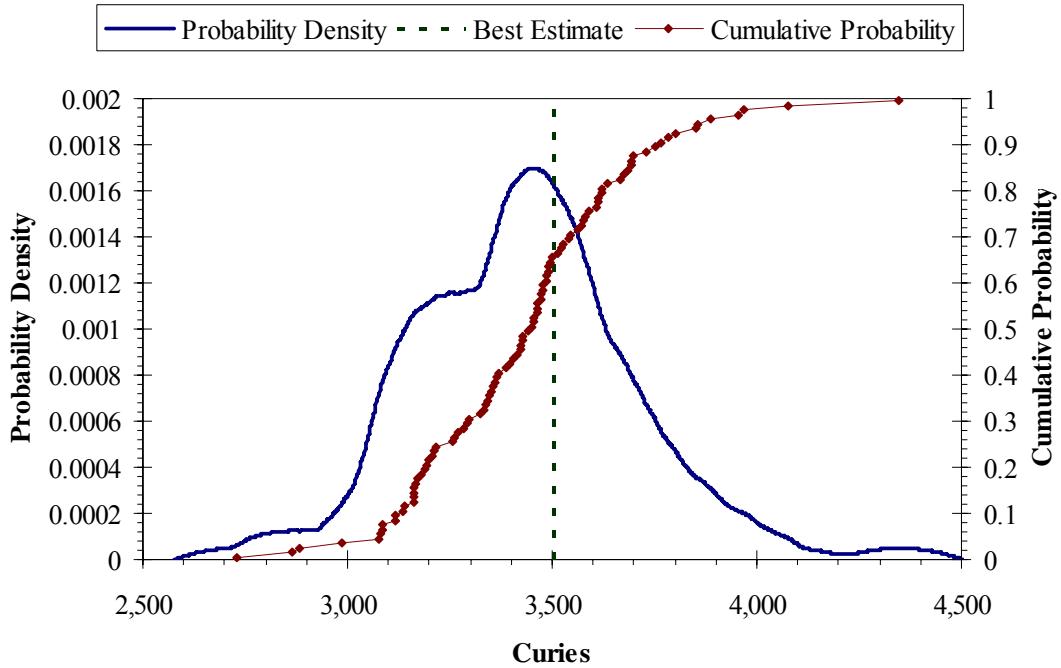
Figure 6.7. Example Stochastic Representation of Onsite Uranium-234/238 Inventory (decay corrected to 2070)

7.0 Quality Assurance

This section presents efforts performed to assure the quality, traceability, and reproducibility of the assembled inventory. When efforts to assemble a comprehensive inventory were initiated in 1999, development of a proof-of-principle data set was the goal. Today, a data set and modeling capability suitable for regulatory application is desired. As described in Section 5, the building blocks for this inventory are the products of many diverse efforts to assemble or estimate inventories for individual waste types including liquid discharges and unplanned releases, past and future solid waste, reactor cores, spent fuel, canyons, and tank waste. Some of these efforts date to the proof-of-principle period (1999–2002) of the effort. Independent review, additional data collection, and implementation of a configuration control system have all helped in the effort to migrate from a proof-of-principle data set to a data set that is adequate to support regulatory analyses.

Each of the data files named in Section 5 are now archived and maintained on the SAC share, i.e., the SAC Windows File server at \\sac.pnl.gov\share\data\rev.1\inventory\. There are two exceptions, files providing the releases to the water table from the draft IDF performance assessment (Puigh and Wood 2005) are stored at \\sac.pnl.gov\share\data\rev.1\3rdparty.releases\. The files containing releases from the assumed IDF are not under configuration management; however, they are traceable to their original source and provide an assurance of reproducibility for the assembled inventory. In addition, the inventory database resides on a more powerful server. However, a static copy of the inventory database that produces the input file for INPROC has been archived on the SAC share at \\sac.pnl.gov\share\data\rev.1\inventory\Static-Inventory-Database_2005-11-03 to provide data traceability to the current inventory data file.

Three files are maintained under configuration management for the inventory on the SAC share. They are the following:

- 'Attributes_2006-01-04_DCR-0029.xls' – this file is described briefly in Appendix B and is attached as an electronic appendix.

- 'inproc-input_2005-11-09_DCR-0024.xls' – this is the input file for the INPROC code which generates the inventory file for an assessment. It creates the waste site/year/analyte inventory file for an assessment by applying the fill-in and surrogate rules described in Section 4 to the inventory data described in Section 5 using the uncertainty rules described in Section 6.

- 'RMDLIB_2005-10-07_DCR-0014.DAT' -- this is a radionuclide chain decay library.

A readiness review was conducted prior to placing each data set under configuration management. All subsequent changes are managed and documented via a data change request. Each revised data set is uniquely identified with a descriptive name, the date the data set was revised, and the corresponding data change request number.

During the readiness review of data supporting the assembled inventory, a 100% check was performed to ensure that each data entry in the waste site/year/analyte data file traced back to an inventory record or model result archived and maintained on the SAC share, i.e., the SAC Windows File

server at \\sac.pnl.gov\share\data\rev.1\inventory\. The data in the Attributes files were also independently cross checked against original information. These reviews are documented in the data change requests.

During the development and assembly of the inventory, and during the peer review of this document, several items deserving of future review and revision have been identified. They fall into four general topics:

- Update to acquire the latest data and information. The current mission of the Hanford Site is environmental restoration and waste management. Inactive and closed facilities under CERCLA are being remediated. Active sites under RCRA will be undergo decontamination and decommissioning and will be transferred to CERCLA control for final remedial action and closeout. Both the CERCLA and RCRA activities are generating data and information on the inventories originally discharged and disposed to the environment. Periodically, the latest data and information produced should be used to update this inventory.

- Update fill-in and surrogate rules. The current fill-in rules are directly related to fill-in rules used in the completion of liquid discharge and solid waste inventory estimates for inactive waste sites at Hanford. This implies a consistency with past efforts made to estimate fission products, activation products, and uranium isotopes and totals when only limited data were available. When created, these rules were simplified to make their application efficient, and that was prior to the development of today's databases and computers. For example, average uranium isotopic ratios were adopted for all time. However, we know the time history of reactor fuel irradiated and processed at Hanford, and it would be possible to adopt a more highly resolved model today. The surrogate rules adopted in this work are a function of a review of waste site specific WIDS data and professional judgment. Efforts to update these surrogate rules would benefit from the participation of DOE contractors and regulators.

- Update tank waste representation. The HTWOS model is undergoing continuous modification as the BBI is updated quarterly, and as models and parameters describing tank waste recovery, separation, and solidification are matched to current DOE plans and Waste Treatment Plant design.

- Update liquid discharge and unplanned release. As field investigation and feasibility studies are conducted and completed for the CERCLA and RCRA sites, we are gaining knowledge of the contamination that remains in the vadose zone beneath waste sites. That information can be used to history match simulation capabilities. Regarding the inventory, the field data can indicate the absence or presence and abundance of selected contaminants, and be used to revise and refine the waste composition used our model of major liquid discharges and unplanned releases, i.e., the Hanford SIM.

The assembled inventory is the result of a multiyear effort by multiple projects and contractors. It is the judgment of the authors that it is adequate for assessments that support decision making at this time. As time and resources permit, periodic update efforts as outlined above would certainly improve the quality and accuracy of the assembled inventory.

8.0 References

Agnew SF, J Boyer, RA Corbin, TB Duran, JR Fitzpatrick, KA Jurgensen, TP Ortiz, and BL Young. 1997. *Hanford Tank Chemical and Radionuclide Inventories: HDW Model*. LA-UR-96-3860, Rev. 4, Los Alamos National Laboratory, Los Alamos, New Mexico.

Anderson BV. 1958. *Regional Monitoring - Data Summary All Results for Year 1957*. HW-89066, General Electric Company, Hanford Atomic Products Operation, Richland, Washington.

Anderson JD. 1976. *Input and Decayed Values of Radioactive Liquid Wastes Discharged to the Ground in the 200 Areas Through 1975*. ARC-CD-745, Atlantic Richfield Hanford Company, Richland, Washington.

Anderson JD. 1996. *The History of the 200 Area Burial Ground Facilities*. WHC-EP-0912, Volumes 1 and 2, Westinghouse Hanford Company, Richland, Washington.

Barcot, RA. 2003. *Solid Waste Integrated Forecast Technical (SWIFT) Report, FY2004-2035 2004.0, Volume 1*, HNF-EP-0918, Revision 13, Volume 1, Fluor Hanford, Inc., Richland, Washington.

Bergsman KH. 1994. *Hanford Spent Fuel Inventory Baseline*. WHC-SD-SNF-TI-001, Rev 0, Westinghouse Hanford Company, Richland, Washington.

BHI. 2003a. January 30, 2003. Bechtel Hanford, Inc., FY03 ERDF Baseline To-go Update, Richland Environmental Restoration Project; Estimate Presentation, Management Review. [file "FY 03 ERDF BL Estimate Presentation.DOC" with Attachment 1 "ERDF Quantities", Attachment 2 "Total ERDF Annual To Go Costs", and Attachment 3 "FY 2003 Baseline (Outyears FY03 – FY46).] Bechtel Hanford, Inc., Richland, Washington.

BHI. 2003b. March 25, 2003. *TPA Quarterly Review, Richland Environmental Restoration Project*. Bechtel Hanford, Inc., Richland, Washington.

CERCLA – *Comprehensive Environmental Response, Compensation, and Liability Act*. 1980. Public Law 96-150, as amended, 94 Stat. 2767, 42 USC 9601 et seq.

Clark SW, SW Callison, and TM Blakley. 2003. "Risk Assessment for the Fast Flux Test Facility Entombment Option." CH2M HILL, Richland Office, Richland, Washington, in York, MT, 2005. *Technical Information Document for the Fast Flux Test Facility Closure Project Environmental Impact Statement*. FFTF-18346, Rev.1. Fluor Hanford Inc., Richland, Washington.

Coony FM. 2002. *Methods Used to Assemble Site-Specific Waste Site Inventories for the Initial Assessment*. BHI-1570, Rev 0, Bechtel Hanford Inc., Richland, Washington.

Corbin RA, BC Simpson, MJ Anderson, WF Danielson, III, JG Field, TE Jones, and CT Kincaid. 2005. *Hanford Soil Inventory Model, Rev. 1*. RPP-26744, Rev. 0 and PNNL-15367, CH2M HILL Hanford Group, Inc., Richland, Washington.

Covey LI. 2004. *Waste Encapsulation and Storage Facility (WESF) Documented Safety Analysis*. HNF-8758, Rev 0C, Fluor Hanford, Inc., Richland, Washington.

Diediker LP. 1999. *Radionuclide Inventories of Liquid Waste Disposal Sites on the Hanford Site*. HNF-1744, Fluor Daniel Hanford, Inc., Richland, Washington.

Dirkes RL and RW Hanf. 1995. *Hanford Site Environmental Report for Calendar Year 1994*. PNL-10574, Pacific Northwest Laboratory, Richland, Washington.

Dirkes RL and RW Hanf. 1996. *Hanford Site Environmental Report for Calendar Year 1995*. PNL-11139, Pacific Northwest Laboratory, Richland, Washington.

Dirkes RL and RW Hanf. 1997. *Hanford Site Environmental Report for Calendar Year 1996*. PNL-11472, Pacific Northwest Laboratory, Richland, Washington.

Dirkes RL, RW Hanf, RK Woodruff, and RE Lundgren. 1994. *Hanford Site Environmental Report for Calendar Year 1993*. PNL-9823, Pacific Northwest Laboratory, Richland, Washington.

Dodd EN, III. 1999a. *Plutonium Uranium Extraction (PUREX) End State Basis for Interim Operation (BIO) for Surveillance and Maintenance*. HNF-SD-CP-ISB-004, Rev. 0, B&W Hanford Company for Fluor Daniel Hanford, Richland, Washington.

Dodd EN, III. 1999b. *PUREX Deactivated End-State Hazard Analysis*. HNF-SD-CP-HIE-004, Rev. 0, B&W Hanford Company for Fluor Daniel Hanford, Richland, Washington.

DOE. 1989. *Draft Environmental Impact Statement: Decommissioning of Eight Surplus Production Reactors at the Hanford Site, Richland, Washington*. DOE/EIS-0119D, U.S. Department of Energy, Washington, D.C.

DOE. 1994. *Remedial Investigation and Feasibility Study Report for the Environmental Restoration Disposal Facility*. DOE/RL-93-99, Rev. 1, U.S. Department of Energy, Richland, Washington.

DOE. 1996. *Final Environmental Impact Statement Plutonium Finishing Plant Stabilization*. EIS-0244F, U.S. Department of Energy, Richland, Washington.

DOE. 1998a. *Accelerating Cleanup Paths to Closure*. DOE/EM-0362, U.S. Department of Energy, Office of Environmental Management, Washington D.C.

DOE. 1998b. *Screening Assessment and Requirements for a Comprehensive Assessment: Columbia River Comprehensive Impact Assessment*. DOE/RL-96-16, Rev. 1, U.S. Department of Energy, Richland, Washington.

DOE. 1999a. *Radioactive Waste Management Manual*. DOE M 435.1-1, U.S. Department of Energy, Washington, D.C.

DOE. 1999b. *Implementation Guide for Use with DOE M 435.1-1*. DOE G 435.1-1, U.S. Department of Energy, Washington, D.C.

DOE. 1999c. *DOE Order 435.1 Radioactive Waste Management*. U.S. Department of Energy, Washington D.C.

DOE. 2001. *Hanford Immobilized Low-Activity Waste Performance Assessment: 2001 Version*. DOE/ORP-2000-24, Rev. 0 (formerly DOE/RL/97-69), U.S. Department of Energy, Office of River Protection, Richland, Washington.

DOE. 2005a. *2004 Annual Status Report for the Composite Analysis of Low-Level Disposal in the Central Plateau at the Hanford Site*. DOE/RL-2005-58, U.S. Department of Energy, Richland, Washington.

DOE. 2005b. *Hanford Site End State Vision*. DOE/RL-2005-57, U.S. Department of Energy, Richland, Washington.

DOE/RL. 2005c. Internet, http://www.hanford.gov/rl/uploadfiles/10025_pie.pdf, 5/5/05.

DSHS. 1987. Special Investigation Report by the Department of Social and Health Services Iodine-129 Task Force (Task Force: D Peterson, A Conklin, A Jeffries, L Melby, and G Ziegler), Department of Social and Health Services, State of Washington, Olympia, Washington.

Ecology - Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy. 1989. *Hanford Federal Facility Agreement and Consent Order*. Document No. 89-10, as amended (The Tri-Party Agreement), Olympia, Washington.

EPA. 1998. *Guidelines for Ecological Risk Assessment*. EPA/630/R-95/002F, Risk Assessment Forum, U.S. Environmental Protection Agency, Washington, D.C. (also published as Federal Register 63(93):26846-26924).

Field JG and TE Jones. 2005. *Tank Farm Vadose Zone Contaminant: Volume Estimates for Risk Assessments*. RPP-23405, Rev. 1, CH2M HILL Hanford Group, Inc., Richland, Washington.

Firestone M, P Fenner-Crisp, T Barry, D Bennet, S Chang, M Callahan, A Burke, J Michaud, M Olsen, P Cirone, D Barnes, WP Wood, and SM Knott. 1997. *Guiding Principles for Monte Carlo Analysis*, EPA/630/R-97/001, Risk Assessment Forum, U.S. Environmental Protection Agency, Washington, D.C.

Fix JJ. 1975. *Environmental Surveillance at Hanford for CY-1974*. BNWL 1910. Battelle-Northwest Laboratory, Richland, Washington.

Fix JJ and PJ Blumer. 1975. *Environmental Surveillance at Hanford for CY-1974 Data (Addendum)*. BNWL 1910ADD, Battelle-Northwest Laboratory, Richland, Washington.

Fix JJ, PJ Blumer, GR Hoenes and PE Bramson. 1977. *Environmental Surveillance at Hanford for CY 1976*. BNWL-2124, Battelle-Northwest Laboratory, Richland, Washington.

FHI. 2001. *Nuclear Material Mass Flow and Accountability on the Hanford Site*. HNF-8069, Fluor Hanford, Inc., Richland, Washington.

FHI. 2004. *Plan for Central Plateau Closure*. CP-22319-DEL, Rev. 0, Fluor Hanford, Inc., Richland, Washington.

Fritz, LL, CK Girres, JJ Lang and TJ DeForest. 2003. *Hanford Site Solid Waste Management Environmental Impact Statement Technical Information Document*, HNF-4755, Rev. 1, Fluor Hanford, Inc., Richland, Washington.

Gydesen SP. 1993. *Fuel-Element Failure in Hanford Single-Pass Reactors 1944-1971*. PNWD-2161 HEDR, prepared for the Technical Steering Panel and the Centers for Disease Control and Prevention by Battelle, Pacific Northwest Laboratory, Richland, Washington.

H&R Technical Associates and NR Kerr. 2000. *U Plant Facility Safety Analysis Report*. BHI-01157, Rev. 2, Bechtel Hanford, Inc., Richland, Washington.

Hanson GL, JD Anderson, GR Kiel, BJ McMurray, and NP Nisick. 1973. *Input and Decayed Values of Radioactive Solid Wastes Buried in the 200 Areas Through 1971*. ARH-2762, Atlantic Richfield Hanford Company, Richland, Washington.

Hartman MJ, LF Morasch, and WD Webber (eds.). 2003. *Hanford Groundwater Monitoring for Fiscal Year 2002*. PNNL-14187, Pacific Northwest National Laboratory, Richland, Washington.

Hedengren DC. 1985. *ORIGEN2 Predictions of N Reactor Fuel Fission Product Composition*. SD-CP-TI-77, Rev. 0, Rockwell Hanford Operations, Richland, Washington.

Heeb CM and SP Gydesen. 1994. *Sources of Secondary Radionuclide Releases from Hanford Operations*. PNWD-2254 HEDR, Battelle Pacific Northwest Laboratories, Richland, Washington.

Heeb CM. 1994. *Radionuclide Releases to the Atmosphere from Hanford Operations, 1944-1972*. PNWD-2222 HEDR, Battelle Pacific Northwest Laboratories, Richland Washington.

Heeb CM. 1993. File: STRRMrup.625, Received 1/16/2003. Background information for *Radionuclide Releases to the Columbia River from Hanford Operations, 1944-1971*. PNWD-2233 HEDR, Battelle, Pacific Northwest Laboratory, Richland, Washington.

Heeb CM and DJ Bates. 1994. *Radionuclide Releases to the Columbia River from Hanford Operations, 1944-1971*. PNWD-2233 HEDR, prepared for the Technical Steering Panel and the Centers for Disease Control and Prevention by Battelle, Pacific Northwest Laboratory, Richland, Washington.

Higley BA, DE Place, RA Corbin, and BC Simpson. 2004. *Hanford Defined Waste Model – Revision 5.0*. RPP-19822, Rev. 0, CH2M HILL Hanford Group, Inc., Richland, Washington.

Houston JR and PJ Blumer. 1978. *Environmental Surveillance at Hanford for CY 1977*. PNL-2614, Pacific Northwest Laboratory, Richland, Washington.

Houston JR and PJ Blumer. 1979. *Environmental Surveillance at Hanford for CY 1978*. PNL-2932, Pacific Northwest Laboratory, Richland, Washington.

Houston JR and PJ Blumer. 1980. *Environmental Surveillance at Hanford for CY 1979*. PNL-3283, Pacific Northwest Laboratory, Richland, Washington.

Jaquish RE and PJ Mitchell. 1988. *Environmental Monitoring at Hanford for 1987*. PNL-6464, Pacific Northwest Laboratory, Richland, Washington.

Jaquish RE and RW Bryce. 1989. *Hanford Site Environmental Report for Calendar Year 1988*. PNL-6825, Pacific Northwest Laboratory, Richland, Washington.

Jaquish RE and RW Bryce. 1990. *Hanford Site Environmental Report for Calendar Year 1989*. PNL-7346, Pacific Northwest Laboratory, Richland, Washington.

Kerr NR, H&R Technical Associates, and MH Chew & Associates. 2000. *REDOX Facility Safety and Analysis Report*. BHI-01142, Rev. 2, Bechtel Hanford, Inc., Richland, Washington.

Kerr NR. 2000. *224-B Facility Safety Analysis Report*. BHI-01156, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.

Kincaid CT, RW Bryce, and JW Buck. 2004. *Technical Scope and Approach for the 2004 Composite Analysis of Low-Level Waste Disposal at the Hanford Site*. PNNL-14372, Pacific Northwest National Laboratory, Richland, Washington.

Kincaid CT, MP Bergeron, CR Cole, MD Freshley, NL Hassig, VG Johnson, DI Kaplan, RJ Serne, GP Streile, DL Strenge, PD Thorne, LW Vail, GA Whyatt, and SK Wurstner. 1998. *Composite Analysis for Low-Level Waste Disposal in the 200-Area Plateau of the Hanford Site*. PNNL-11800, Pacific Northwest National Laboratory, Richland, Washington.

Kirkbride RA, PJ Certa, TM Hohl, AM Johnson, and RS Wittman. 2005. *Hanford Tank Waste Operations Simulator Model Data Package for the Development Run for the Refined Target Case*. RPP-RPT-23412, Revision 0A, CH2M HILL Hanford Group, Inc., Richland, Washington.

Kupfer MJ, AL Boldt, BA Higley, KM Hodgson, LW Shelton, BC Simpson, RA Watrous, MD LeClair, GL Borsheim, RT Winward, RM Orme, NG Colton, SL Lambert, DE Place, and WW Schulz. 1997. *Standard Inventories of Chemicals and Radionuclides in Hanford Site Tank Wastes*. HNF-SD-WM-TI-740, Rev. 0, Lockheed Martin Hanford Corporation, Richland, Washington.

Last GV, WE Nichols, and CT Kincaid. 2006. *Geographic and Operational Site Parameters List (GOSPL) for Hanford Assessments*. PNNL-14725, Rev 1, Pacific Northwest National Laboratory, Richland, Washington.

Maxfield HL. 1979. *Handbook 200 Area Waste Sites*. RHO-CD-673, Volumes 1, 2, and 3, Rockwell Hanford Operations, Richland, Washington.

McConnon D. 1962. *The Status of Gaseous Effluent Monitoring at HAP December 1961*. HW-69205 REV, General Electric Company, Hanford Atomic Products Operation, Richland, Washington.

Napier BA. 1991. *Selection of Dominant Radionuclides for Phase 1 of the Hanford Environmental Dose Reconstruction Project*. PNL-7231 HEDR, prepared for the Technical Steering Panel by Battelle, Pacific Northwest Laboratory, Richland, Washington.

Napier BA. 1992. *Determination of Radionuclides and Pathways Contributing to Cumulative Dose*. BN-SA-3673 HEDR, Battelle Pacific Northwest Laboratories, Richland, Washington.

Napier BA. 2000. File: Fuel Failure.xls. Size: 35 KB. Date 3/22/2000. (file received by RL Aaberg 1/23/2003). Background information for Napier et al 1999. "Inventory Scoping Study for the System Assessment Capability," Groundwater / Vadose Integration Project. June, 1999.

Nees WL and JP Corley. 1974a. *Environmental Surveillance at Hanford for CY-1973*. BNWL 1811, Battelle-Northwest Laboratory, Richland, Washington.

Nees WL and JP Corley. 1974b. *Environmental Surveillance at Hanford for CY-1973 Data*. BNWL 1811(ADD), Battelle-Northwest Laboratory, Richland, Washington.

Packer MJ. 1999. *105-K Basin Material Design Feed Description for Spent Nuclear Fuel Project Facilities, Volume 1, Fuel*. HNF-SD-SNF-TI-009, Volume 1, Rev. 3, Numatec Hanford Inc., Richland, Washington.

Pearce KL. 2000. *105-K Basin Material Design Basis Feed Description for Spent Nuclear Fuel Project Facilities*, *Volume 2, Sludge*. HNF-SD-SNF-TI-009, Revision 3, Volume 2, Fluor Hanford, Inc., Richland, Washington.

PNL. 1987. *Environmental Monitoring at Hanford for 1986*. PNL-6120, Pacific Northwest Laboratory, Richland, Washington.

Poston TM, RW Hanf, RL Dirkes, and LF Morasch (eds.). 2002. *Hanford Site Environmental Report for Calendar Year 2001*. PNNL-13910, Pacific Northwest National Laboratory, Richland, Washington.

Price KR. 1986. *Environmental Monitoring at Hanford for 1985*. PNL-5817, Pacific Northwest Laboratory, Richland, Washington.

Price KR, JMV Carlile, RL Dirkes, and MS Trevathan. 1984. *Environmental Surveillance at Hanford for CY 1983*. PNL-5038, Pacific Northwest Laboratory, Richland, Washington.

Price KR, JMV Carlile, RL Dirkes, RE Jaquish, MS Trevathan, and RK Woodruff. 1985. *Environmental Monitoring at Hanford for 1984*. PNL-5407, Pacific Northwest Laboratory, Richland, Washington.

Price KR, JMV Carlile, RL Dirkes, RE Jaquish, MS Trevathan, and RK Woodruff. 1986. *Environmental Monitoring at Hanford for 1984 Supplement*. PNL-5407 Suppl, Pacific Northwest Laboratory, Richland, Washington.

Puigh RJ and MI Wood. 2005. *Inventory Data Package for the 2005 Integrated Disposal Facility Performance Assessment*. RPP-20692, Rev. 1, CH2M HILL Hanford Group, Inc., Richland, Washington.

Reddick J. 1993. *Estimate of PUREX Plant Inventory of Chemicals and Radioactivity*. Letter Report to Westinghouse Hanford Company (D Washenfelder), Los Alamos Technical Associates, Richland, Washington.

Reilly MA. 1998. *Spent Nuclear Fuel Project Technical Databook*. HNF-SD-SNF-TI-015, Rev. 6, Fluor Daniel Hanford, Richland, Washington.

RHO. 1985. *Hanford Defense Waste Disposal Alternatives: Engineering Support Data for the Hanford Defense Waste – Environmental Impact Statement*. RHO-RE-ST-30P, Rockwell Hanford Operations, Richland, Washington.

Schwehr BA. 1999. *B Plant Surveillance and Maintenance Phase Safety Analysis Report*. HNF-3358, Rev. 0, B&W Hanford Company for Fluor Daniel Hanford, Richland, Washington.

Simmons FM. 1999. *Documentation of Remaining Hazardous Substances/Dangerous Wastes in B Plant*. HNF-3208, Rev. 0A, B&W Hanford Company for Fluor Daniel Hanford, Richland, Washington.

Simpson BC, RA Corbin, and SF Agnew. 2001. *Hanford Soil Inventory Model*. BHI-01496, Rev. 0, Bechtel Hanford, Inc., Richland, Washington.

Smith DK. 1998. Closeout of End Point 00.00.26, "Remaining Hazardous Substances/Dangerous Waste Documentation," File No. or Ref.: 16D00-98-DKS-078. B&W Hanford Company, Richland, Washington.

Speer DR, JJ Fix, and PJ Blumer. 1976. *Environmental Surveillance at Hanford for CY 1975*. BNWL-1979, Battelle-Northwest Laboratory, Richland, Washington.

Stenner RD, KH Cramer, KA Higley, SJ Jette, DA Lamar, TJ McLaughlin, DR Sherwood, and NC Van Houten. 1988. *Hazard Ranking System Evaluation of CERCLA Inactive Waste Sites at Hanford (Volume 1 – Evaluation Methods and Results, Volume 2 – Engineered-Facility Sites {HISS Data Base} Volume 3 – Unplanned-Release Sites {HISS Data Base})*. PNL-6456, Vol 1, 2, and 3, Pacific Northwest Laboratory, Richland, Washington.

Sula MJ and PJ Blumer. 1981. *Environmental Surveillance at Hanford for CY 1980*. PNL-3728, Pacific Northwest Laboratory, Richland, Washington.

Sula MJ, JMV Carlile, KR Price, and WD McCarmack. 1983. *Environmental Surveillance at Hanford for CY 1982*. PNL-4657, Pacific Northwest Laboratory, Richland, Washington.

Sula MJ, WD McCormack, RL Dirkes, KR Price, and PA Eddy. 1982. *Environmental Surveillance at Hanford for CY 1981*. PNL-4221, Pacific Northwest Laboratory, Richland, Washington.

Templeton KJ and LL Dirks. 1995. *Solid Low-Level Waste Forecasting Guide*. PNL-10487, Pacific Northwest Laboratory, Richland, Washington.

Washington State Department of Health and Washington State Department of Ecology. 2004. *Final Environmental Impact Statement Commercial Low-Level Radioactive Waste Disposal Site Richland, Washington*. DOH Publication 320-031, Washington State Department of Health, Olympia, Washington.

Watrous RA and DW Wootan. 1997. *Activity of Fuel Batches Processed Through Hanford Separations Plants, 1944 Through 1989*. HNF-SD-WM-TI-794, Rev. 0, Lockheed Martin Hanford Corporation, Richland, Washington.

WHC. 1990. *Hanford Site Stream-Specific Reports*. WHC-EP-0342 (report and 33 stream-specific addenda), Westinghouse Hanford Company, Richland, Washington.

Wintczak TM. May 5, 2003, e-mail to CT Kincaid, Subject "To tonnage.xls" with attached file "To tonnage.xls"

Wittekind WD, SP Roblyer, and H Toffer. 1999. *Shippingport Pressurized Water Reactor Core 2 Blanket Assemblies Source Term Calculations Using ORIGEN2*. HNF-SD-SNF-TI-061, Rev. 1, Fluor Daniel Northwest, Richland, Washington.

Woodruff RK, RW Hanf, and RE Lundgren. 1992. *Hanford Site Environmental Report for Calendar Year 1991*. PNL-8148, Pacific Northwest Laboratory, Richland, Washington.

Woodruff RK, RW Hanf, and RE Lundgren. 1993. *Hanford Site Environmental Report for Calendar Year 1992*. PNL-8682, Pacific Northwest Laboratory, Richland, Washington.

Woodruff RK, RW Hanf, MG Hefty, and RE Lundgren. 1991. *Hanford Site Environmental Report for Calendar Year 1990*. PNL-7930, Pacific Northwest Laboratory, Richland, Washington.

Wootan DW and SF Finfrock. 2002. *Activity of Fuel Batches Processed Through Hanford Separations Plants, 1944 through 1989*. RPP-13489, Revision 0, CH2M HILL Hanford Group, Inc., Richland, Washington.

York MT. 2005. *Technical Information Document for the Fast Flux Test Facility Closure Project Environmental Impact Statement*. FFTF-18346, Rev. 1, Fluor Hanford, Richland, Washington.

Appendix A

Remedial Actions and Completion Dates

Appendix A

Remedial Actions and Completion Dates

This appendix presents the current baseline information of remedial action and completion date for each waste site under consideration. It is based on information made available by the U.S. Department of Energy (DOE) and its contractors and on final and interim records of decision. Remedial actions and schedule data for river corridor waste sites was drawn (1) from the March 25, 2003, Tri-Party (TPA) Quarterly Review (BHI 2003a, 2003b), (2) a listing of site and facilities from the Environmental Restoration Contractor FY 2003 Baseline (e-mail from J LaPierre[1]), and (3) a calendar listing of Environmental Restoration Disposal Facility (ERDF) disposal tonnages from operational areas (e-mail from TM Wintczak[2]). Remedial action and schedule data for Central Plateau waste sites was drawn from (1) the *Plan for Central Plateau Closure* (FHI 2004) and (2) files containing remedy and closure zone dates provided by DOE Richland Operations Office staff (e-mail from RD Hildebrand;[3] e-mail from R Holten[4]).

References

BHI. 2003a. January 30, 2003. Bechtel Hanford, Inc., FY03 ERDF Baseline To-go Update, Richland Environmental Restoration Project; Estimate Presentation, Management Review. [file "FY 03 ERDF BL Estimate Presentation.DOC" with Attachment 1 "ERDF Quantities," Attachment 2 "Total ERDF Annual To Go Costs," and Attachment 3 "FY 2003 Baseline (Outyears FY03 – FY46)."]

BHI. 2003b. March 25, 2003. *TPA Quarterly Review, Richland Environmental Restoration Project*. Bechtel Hanford, Inc., Richland, Washington,

---

[1] LaPierre, J (Bechtel Hanford, Inc., Richland, Washington). April 28, 2003, e-mail to CT Kincaid (Pacific Northwest National Laboratory, Richland, Washington), Subject: *Site & Facility Listing from FY03 Update Database* with attached file Special List 4-28-03.

[2] Wintczak TM (Bechtel Hanford, Inc., Richland, Washington). May 5, 2003, e-mail to CT Kincaid (Pacific Northwest National Laboratory, Richland, Washington), Subject: *To tonnage.xls* with attached file, To tonnage.xls.

[3] Hildebrand RD (U.S. Department of Energy, Richland, Washington). July 8, 2005, e-mail to CT Kincaid (Pacific Northwest National Laboratory, Richland, Washington). Subject: *FW: files on Central Plateau* with attached files. Contained e-mail from RA Holten to RD Hildebrand, dated July 7, 2005. Subject: *Files on Central Plateau* with attached files: All_WIDS_Review_for_CPCP_update.xls, Zone Locations.xls, Zone number to MII file crosswalk.xls, and Summary of Dates.xls

[4] Holten RA (U.S. Department of Energy, Richland, Washington). July 7, 2005, e-mail to CT Kincaid (Pacific Northwest National Laboratory, Richland, Washington). Subject: *RE: ET caps and ET mono caps; Remedial action dates*.

REMEDIAL ACTION & COMPLETION DATES
USES JANUARY 6, 2006 HANFORD ASSESSMENTS SITE LIST
CENTRAL PLATEAU WASTE SITES

WIDS Site Code	Zone	Completion Date	Remedy	Notes
200-A_TEDF	200-E Ponds Zone	2032	No Action	
200-E-100	B Plant Zone	2022	No Action	
200-E-102	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
200-E-103	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
200-E-106	IDF Zone	2035	No Action	
200-E-107	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
200-E-115	WTP/A Farm Zone	2034	RTD	1
200-E-117	B Plant Zone	2022	RTD	1
200-E-121	B Farm Zone	2026	RTD	1
200-E-122	B Plant Zone	2022	RTD	1
200-E-123	Solid Waste Zone	2027	RTD	1
200-E-124	Purex Zone	2021	RTD	
200-E-125	Purex Zone	2021	RTD	
200-E-126	200-E Ponds Zone	2016	No Action	MESC/MNA/IC
200-E-127	200-E Ponds Zone	2016	No Action	MESC/MNA/IC
200-E-128	Solid Waste Zone	2027	RTD	1
200-E-129	B Plant Zone	2022	RTD	1
200-E-130	B Plant Zone	2022	RTD	1
200-E-136	Purex Zone	2021	D&D / ET Cap	Closed out as part of completion of 202A
200-E-25	B Plant Zone	2022	RTD	1
200-E-28	B Plant Zone	2022	D&D / ET Cap	Closed out as part of completion of 221B
200-E-4	Semi-Works Zone	2017	RTD	1
200-E-41	Semi-Works Zone	2017	D&D / ET Cap	Closed out as part of Semi-Works
200-E-44	Purex Zone	2021	No Action	Close out as part of 202A
200-E-5	200-E Admin Zone	2024	No Action	
200-E-55	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
200-E-56	Semi-Works Zone	2017	ABAR2E17 w/ Semi Wks	ET Cap
200-E-57	Semi-Works Zone	2017	RTD	1
200-E-60	B Farm Zone	2026	RTD/ABAR w/ B-BX-BY WMA	ET Cap
200-E-61	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
200-E-62	Purex Zone	2021	No Action	
200-E-63	Purex Zone	2021	No Action	
200-E-64	Purex Zone	2021	No Action	
200-E-65	Purex Zone	2021	No Action	
200-E-67	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
200-E-68	Purex Zone	2021	No Action	
200-E-69	Purex Zone	2021	No Action	
200-E-7	200-E Admin Zone	2024	No Action	
200-E-70	Purex Zone	2021	No Action	
200-E-71	Purex Zone	2021	No Action	
200-E-72	Purex Zone	2021	No Action	
200-E-73	Purex Zone	2021	No Action	
200-E-74	Purex Zone	2021	No Action	
200-E-75	Purex Zone	2021	No Action	
200-E-76	Purex Zone	2021	No Action	
200-E-77	Purex Zone	2021	No Action	
200-E-78	Purex Zone	2021	No Action	
200-E-79	Purex Zone	2021	No Action	
200-E-80	Purex Zone	2021	No Action	
200-E-81	Purex Zone	2021	No Action	
200-E-82	200-E Admin Zone	2024	No Action	
200-E-84	Purex Zone	2021	No Action	
200-E-85	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
200-E-88	B Plant Zone	2022	No Action	
200-E-89	B Plant Zone	2022	No Action	
200-E-9	200-E Admin Zone	2024	No Action	
200-E-90	B Plant Zone	2022	No Action	
200-E-91	B Plant Zone	2022	No Action	
200-E-92	B Plant Zone	2022	No Action	
200-E-93	B Plant Zone	2022	No Action	
200-E-94	B Plant Zone	2022	No Action	
200-E-95	B Plant Zone	2022	No Action	
200-E-97	B Plant Zone	2022	No Action	

A.2

WIDS Site Code	Zone	Completion Date	Remedy	Notes
200-E-98	B Plant Zone	2022	No Action	
200-E-99	B Plant Zone	2022	No Action	
200-W-104	U Plant Zone	2016	RTD	Close out as part of 2714U
200-W-15	REDOX Zone	2030	ABAR w/ REDOX	ET Cap
200-W-20	T Plant Zone	2033	D&D / ET Cap	Closed out as part of completion of 221T
200-W-22	REDOX Zone	2030	RTD	1
200-W-42	U Plant Zone	2016	RTD	1
200-W-52	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
200-W-67	S/U Farm Zone	2028	No Action	MESC/MNA/IC
200-W-69	REDOX Zone	2030	D&D / ET Cap	Closed out as part of completion of 222S
200-W-76	REDOX Zone	2030	D&D / ET Cap	Closed out as part of completion of 222S
200-W-83	T Plant Zone	2017	RTD	1
200-W-85	U Plant Zone	2016	RTD	1
200-W-86	T Plant Zone	2017	No Action	MESC/MNA/IC
200-W-87	U Plant Zone	2016	RTD	1
200-W-9	T Plant Zone	2033	ABAR w/ T Plant	ET Cap
200-W-90	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
202-A-WS-1	Purex Zone	2021	D&D / ET Cap	Closed out as part of completion of 202A
203-S_%_205-S	REDOX Zone	2030	RTD	Close out as part of REDOX
207-A-NORTH	200-E Ponds Zone	2016	No Action	MESC/MNA/IC
207-A-SOUTH	200-E Ponds Zone	2016	No Action	MESC/MNA/IC
207-B	Solid Waste Zone	2027	RTD	1
207-S	200-W Ponds Zone	2016	IBAR	ET Cap
207-T	T Farm Zone	2031	RTD	1
207-U	T Plant Zone	2017	No Action	MESC/MNA/IC
207-Z	PFP Zone	2017	ABAR2W07/PFP	ET Cap
209-E-WS-2	Semi-Works Zone	2017	RTD	1
213-W	WM Zone	2023	D&D	Closed out as part of completion of 213W
216-A-1	200-E Ponds Zone	2016	ABAR2E08	ET Cap
216-A-10	Purex Zone	2021	IBAR	ET Cap
216-A-11	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-12	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-13	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-14	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-15	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-16	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
216-A-17	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
216-A-18	200-E Ponds Zone	2016	IBAR	ET Cap
216-A-19	200-E Ponds Zone	2016	ABAR2E09	ET Cap
216-A-2	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-20	200-E Ponds Zone	2016	ABAR2E09	ET Cap
216-A-21	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-22	Purex Zone	2021	RTD	
216-A-23A	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
216-A-23B	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
216-A-24	200-E Ponds Zone	2016	IBAR	ET Cap
216-A-25	200-E Ponds Zone	2016	No Action	MESC/MNA/IC
216-A-26	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-26A	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-27	Purex Zone	2021	IBAR	ET Cap
216-A-28	Purex Zone	2021	RTD	
216-A-29	200-E Ponds Zone	2016	No Action	MESC/MNA/IC
216-A-3	Purex Zone	2021	RTD	
216-A-30	Purex Zone	2021	IBAR	Change ABAR with 216-A-30 add 50,000 sf - ET Mono
216-A-31	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-32	Purex Zone	2021	IBAR	ET Cap
216-A-33	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-34	200-E Ponds Zone	2016	ABAR2E09	ET Cap
216-A-35	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
216-A-36A	Purex Zone	2021	IBAR	ET Cap
216-A-36B	Purex Zone	2021	IBAR	ET Cap
216-A-37-1	Purex Zone	2021	IBAR	ET Cap
216-A-37-2	Purex Zone	2021	IBAR	ET Cap
216-A-39	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
216-A-4	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono

A.3

WIDS Site Code	Zone	Completion Date	Remedy	Notes
216-A-40	Purex Zone	2021	RTD	
216-A-41	Purex Zone	2021	RTD	
216-A-42	Purex Zone	2021	RTD	
216-A-45	Purex Zone	2021	IBAR	ET Cap
216-A-5	Purex Zone	2021	IBAR	ET Cap
216-A-6	Purex Zone	2021	IBAR	ET Cap
216-A-7	200-E Ponds Zone	2016	ABAR2E08	ET Cap
216-A-8	200-E Ponds Zone	2016	IBAR	ET Cap
216-A-9	Purex Zone	2021	RTD	
216-B-10A	B Plant Zone	2022	RTD	1
216-B-10B	B Plant Zone	2022	RTD	1
216-B-11A%B	B Farm Zone	2026	ABAR w/ B-BX-BY WMA	ET Cap
216-B-12	B Plant Zone	2022	IBAR	ET Cap
216-B-13	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
216-B-14	NRDWL/BC Control Zone	2009	ABAR2E06	ABAR-ET Mono
216-B-15	NRDWL/BC Control Zone	2009	ABAR2E06	ABAR-ET Mono
216-B-16	NRDWL/BC Control Zone	2009	ABAR2E06	ABAR-ET Mono
216-B-17	NRDWL/BC Control Zone	2009	ABAR2E06	ABAR-ET Mono
216-B-18	NRDWL/BC Control Zone	2009	ABAR2E06	ABAR-ET Mono
216-B-19	NRDWL/BC Control Zone	2009	ABAR2E06	ABAR-ET Mono
216-B-20	NRDWL/BC Control Zone	2009	ABAR2E05	ABAR-ET Mono
216-B-21	NRDWL/BC Control Zone	2009	ABAR2E05	ABAR-ET Mono
216-B-2-1	Solid Waste Zone	2027	RTD	1
216-B-22	NRDWL/BC Control Zone	2009	ABAR2E05	ABAR-ET Mono
216-B-2-2	Solid Waste Zone	2027	RTD	1
216-B-23	NRDWL/BC Control Zone	2009	ABAR2E04	ABAR-ET Mono
216-B-2-3	Solid Waste Zone	2027	RTD	1
216-B-24	NRDWL/BC Control Zone	2009	ABAR2E04	ABAR-ET Mono
216-B-25	NRDWL/BC Control Zone	2009	ABAR2E04	ABAR-ET Mono
216-B-26	NRDWL/BC Control Zone	2009	ABAR2E04	ABAR-ET Mono
216-B-27	NRDWL/BC Control Zone	2009	ABAR2E04	ABAR-ET Mono
216-B-28	NRDWL/BC Control Zone	2009	ABAR2E04	ABAR-ET Mono
216-B-29	NRDWL/BC Control Zone	2009	ABAR2E01	ABAR-ET Mono
216-B-3	200-E Ponds Zone	2016	No Action	MESC/MNA/IC
216-B-30	NRDWL/BC Control Zone	2009	ABAR2E01	ABAR-ET Mono
216-B-31	NRDWL/BC Control Zone	2009	ABAR2E01	ABAR-ET Mono
216-B-3-1	200-E Ponds Zone	2016	No Action	MESC/MNA/IC
216-B-32	NRDWL/BC Control Zone	2009	ABAR2E01	ABAR-ET Mono
216-B-3-2	200-E Ponds Zone	2016	No Action	MESC/MNA/IC
216-B-33	NRDWL/BC Control Zone	2009	ABAR2E01	ABAR-ET Mono
216-B-3-3	200-E Ponds Zone	2016	No Action	MESC/MNA/IC
216-B-34	NRDWL/BC Control Zone	2009	ABAR2E01	ABAR-ET Mono
216-B-35	B Farm Zone	2026	ABAR2E16	ET Cap
216-B-36	B Farm Zone	2026	ABAR2E16	ET Cap
216-B-37	B Farm Zone	2026	ABAR2E16	ET Cap
216-B-38	B Farm Zone	2026	ABAR2E16	ET Cap
216-B-39	B Farm Zone	2026	ABAR2E16	ET Cap
216-B-3A_RAD	200-E Ponds Zone	2016	No Action	
216-B-3B_RAD	200-E Ponds Zone	2016	No Action	
216-B-3C_RAD	200-E Ponds Zone	2016	No Action	
216-B-4	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
216-B-40	B Farm Zone	2026	ABAR2E16	ET Cap
216-B-41	B Farm Zone	2026	ABAR2E16	ET Cap
216-B-42	B Farm Zone	2026	ABAR2E16	ET Cap
216-B-43	B Farm Zone	2026	ABAR2E13	ET Cap
216-B-44	B Farm Zone	2026	ABAR2E13	ET Cap
216-B-45	B Farm Zone	2026	ABAR2E13	ET Cap
216-B-46	B Farm Zone	2026	ABAR2E13	ET Cap
216-B-47	B Farm Zone	2026	ABAR2E13	ET Cap
216-B-48	B Farm Zone	2026	ABAR2E13	ET Cap
216-B-49	B Farm Zone	2026	ABAR2E13	ET Cap
216-B-5	B Plant Zone	2022	No Action	MESC/MNA/IC
216-B-50	B Farm Zone	2026	ABAR2E13	ET Cap
216-B-51	B Farm Zone	2026	No Action	MESC/MNA/IC
216-B-52	NRDWL/BC Control Zone	2009	ABAR2E04	ABAR-ET Mono
216-B-53A	NRDWL/BC Control Zone	2009	RTD	

A.4

WIDS Site Code	Zone	Completion Date	Remedy	Notes
216-B-53B	NRDWL/BC Control Zone	2009	RTD	
216-B-54	NRDWL/BC Control Zone	2009	RTD	
216-B-55	B Plant Zone	2022	IBAR	ET Cap
216-B-57	B Farm Zone	1994	IBAR	Hanford
216-B-58	NRDWL/BC Control Zone	2009	RTD	
216-B-59	B Plant Zone	2022	RTD	1
216-B-59B	B Plant Zone	2022	RTD	1
216-B-6	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
216-B-60	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
216-B-62	B Plant Zone	2022	IBAR	ET Cap
216-B-63	Solid Waste Zone	2027	RTD	1
216-B-7A%B	B Farm Zone	2026	ABAR w/ B-BX-BY WMA	ET Cap
216-B-8	B Farm Zone	2026	IBAR	ET Cap
216-B-9	Solid Waste Zone	2027	IBAR	ET Cap
216-BY-201	B Farm Zone	2026	RTD/ABAR2E13	ET Cap
216-C-1	Semi-Works Zone	2017	ABAR2E17 w/ Semi Wks	ET Cap
216-C-10	Semi-Works Zone	2017	IBAR	ET Cap
216-C-2	Semi-Works Zone	2017	ABAR2E17 w/ Semi Wks	ET Cap
216-C-3	Semi-Works Zone	2017	ABAR2E17 w/ Semi Wks	ET Cap
216-C-4	Semi-Works Zone	2017	ABAR2E17 w/ Semi Wks	ET Cap
216-C-5	Semi-Works Zone	2017	ABAR2E17 w/ Semi Wks	ET Cap
216-C-6	Semi-Works Zone	2017	ABAR2E17 w/ Semi Wks	ET Cap
216-C-7	Semi-Works Zone	2017	RTD	1
216-C-8	C Farm Zone	2016	ABAR w/ C WMA	ET Cap
216-C-9	Semi-Works Zone	2017	No Action	MESC/MNA/IC
216-N-1	200-E Ponds Zone	2016	RTD	1
216-N-2	200-E Ponds Zone	2016	RTD	1
216-N-3	200-E Ponds Zone	2016	RTD	1
216-N-4	200-E Ponds Zone	2016	RTD	1
216-N-5	200-E Ponds Zone	2016	RTD	1
216-N-6	200-E Ponds Zone	2016	RTD	1
216-N-7	200-E Ponds Zone	2016	RTD	1
216-N-8	200-E Ponds Zone	2016	No Action	
216-S-1%2	REDOX Zone	2030	IBAR	ET Cap
216-S-10D	200-W Ponds Zone	2016	No Action	MESC/MNA/IC
216-S-10P	200-W Ponds Zone	2016	ABAR2W11	ET Cap
216-S-11	200-W Ponds Zone	2016	ABAR2W11	ET Cap
216-S-12	REDOX Zone	2030	IBAR	ET Cap
216-S-13	REDOX Zone	2030	IBAR	ET Cap
216-S-14	200-W Ponds Zone	2016	RTD	1
216-S-15	S/U Farm Zone	2028	ABAR w/ S-SX-SY WMA	ET Cap
216-S-16D	200-W Ponds Zone	2016	No Action	MESC/MNA/IC
216-S-16P	200-W Ponds Zone	2016	IBAR	ET Cap
216-S-17	200-W Ponds Zone	2016	ABAR2W11	ET Cap
216-S-18	S/U Farm Zone	2028	IBAR	ET Cap
216-S-19	200-W Ponds Zone	2016	RTD	1
216-S-20	REDOX Zone	2030	RTD	1
216-S-21	200-W Ponds Zone	2016	IBAR	ET Cap
216-S-22	REDOX Zone	2030	IBAR	ET Cap
216-S-23	S/U Farm Zone	2028	IBAR	ET Cap
216-S-25	200-W Ponds Zone	2016	IBAR	ET Cap
216-S-26	200-W Ponds Zone	2016	RTD	1
216-S-3	S/U Farm Zone	2028	ABAR w/ S-SX-SY WMA	ET Cap
216-S-4	200-W Ponds Zone	2016	ABAR2W09	ET Cap
216-S-5	200-W Ponds Zone	2016	ABAR2W11	ET Cap
216-S-6	200-W Ponds Zone	2016	ABAR2W11	ET Cap
216-S-7	REDOX Zone	2030	IBAR	ET Cap
216-S-8	REDOX Zone	2030	IBAR	ET Cap
216-S-9	S/U Farm Zone	2028	IBAR	ET Cap
216-SX-2	S/U Farm Zone	2028	IBAR	ET Cap
216-T-1	T Plant Zone	2017	IBAR	ET Cap
216-T-10	T Plant Zone	2017	ABAR2W08	ET Cap
216-T-11	T Plant Zone	2017	ABAR2W08	ET Cap
216-T-12	T Farm Zone	2031	IBAR	ET Cap
216-T-13	T Farm Zone	2031	IBAR	ET Cap
216-T-14	T Farm Zone	2031	ABAR2W02	ET Cap

A.5

WIDS Site Code	Zone	Completion Date	Remedy	Notes
216-T-15	T Farm Zone	2031	ABAR2W02	ET Cap
216-T-16	T Farm Zone	2031	ABAR2W02	ET Cap
216-T-17	T Farm Zone	2031	ABAR2W02	ET Cap
216-T-18	T Farm Zone	2031	IBAR	ET Cap
216-T-19	T Farm Zone	2031	RTD/ABAR w/ TX-TY WMA	ET Cap
216-T-2	T Plant Zone	2017	No Action	MESC/MNA/IC
216-T-20	T Farm Zone	2031	ABAR2W13	ET Cap
216-T-21	T Farm Zone	2031	ABAR2W05	ET Cap
216-T-22	T Farm Zone	2031	ABAR2W05	ET Cap
216-T-23	T Farm Zone	2031	ABAR2W05	ET Cap
216-T-24	T Farm Zone	2031	ABAR2W05	ET Cap
216-T-25	T Farm Zone	2031	ABAR2W05	ET Cap
216-T-26	T Farm Zone	2031	ABAR2W04	ET Cap
216-T-27	T Farm Zone	2031	ABAR2W04	ET Cap
216-T-28	T Farm Zone	2031	ABAR2W04	ET Cap
216-T-29	T Plant Zone	2033	ABAR w/ T Plant	ET Cap
216-T-3	T Plant Zone	2017	No Action	MESC/MNA/IC
216-T-31	T Farm Zone	2031	RTD/ABAR w/ TX-TY WMA	ET Cap
216-T-32	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
216-T-33	T Plant Zone	2017	IBAR	ET Cap
216-T-34	T Plant Zone	2017	IBAR	ET Cap
216-T-35	T Plant Zone	2017	IBAR	ET Cap
216-T-36	T Farm Zone	2031	RTD	1
216-T-4-1D	T Farm Zone	2031	RTD	1
216-T-4-2	WM Zone	2023	RTD	1
216-T-4A	WM Zone	2023	IBAR	ET Cap
216-T-4B	WM Zone	2023	IBAR	ET Cap
216-T-5	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
216-T-6	T Plant Zone	2017	IBAR	ET Cap
216-T-7	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
216-T-8	T Plant Zone	2017	IBAR	ET Cap
216-T-9	T Plant Zone	2017	ABAR2W08	ET Cap
216-TY-201	T Farm Zone	2031	ABAR2W04	ET Cap
216-U-1%2	U Plant Zone	2016	IBAR	ET Cap
216-U-10	200-W Ponds Zone	2016	ABAR2W09	ET Cap
216-U-11	200-W Ponds Zone	2016	IBAR	ET Cap
216-U-12	U Plant Zone	2016	IBAR	ET Cap
216-U-13	S/U Farm Zone	2028	ABAR w/ U WMA	ET Cap
216-U-14	T Plant Zone	2017	No Action	MESC/MNA/IC
216-U-15	U Plant Zone	2016	RTD	1
216-U-16	U Plant Zone	2016	No Action	MESC/MNA/IC
216-U-17	U Plant Zone	2016	No Action	MESC/MNA/IC
216-U-3	S/U Farm Zone	2028	IBAR	ET Cap
216-U-4	U Plant Zone	2016	RTD/ABAR w/ U Plant	ET Cap
216-U-4A	U Plant Zone	2016	RTD/ABAR w/ U Plant	ET Cap
216-U-4B	U Plant Zone	2016	RTD/ABAR w/ U Plant	ET Cap
216-U-5	U Plant Zone	2016	RTD	1
216-U-6	U Plant Zone	2016	RTD	1
216-U-7	U Plant Zone	2016	RTD/ABAR w/ U Plant	ET Cap
216-U-8	U Plant Zone	2016	IBAR	ET Cap
216-U-9	200-W Ponds Zone	2016	No Action	MESC/MNA/IC
216-W-LWC	T Plant Zone	2017	IBAR	ET Cap
216-Z-1%2	PFP Zone	2017	ABAR2W07/PFP	ET Cap
216-Z-10	PFP Zone	2017	ABAR2W12/231-Z	ET Cap
216-Z-11	PFP Zone	2017	ABAR2W10	ET Cap
216-Z-12	PFP Zone	2017	ABAR2W07/PFP	ET Cap
216-Z-13	PFP Zone	2017	No Action	
216-Z-14	PFP Zone	2017	ABAR2W07/PFP	ET Cap
216-Z-15	PFP Zone	2017	ABAR2W07/PFP	ET Cap
216-Z-16	PFP Zone	2017	IBAR	ET Cap
216-Z-17	PFP Zone	2017	ABAR2W12/231-Z	ET Cap
216-Z-18	PFP Zone	2017	ABAR2W07/PFP	ET Cap
216-Z-19	PFP Zone	2017	ABAR2W10	ET Cap
216-Z-1A	PFP Zone	2017	ABAR2W07/PFP	ET Cap
216-Z-1D	PFP Zone	2017	ABAR2W10	ET Cap
216-Z-20	PFP Zone	2017	ABAR2W10	ET Cap

A.6

WIDS Site Code	Zone	Completion Date	Remedy	Notes
216-Z-21	PFP Zone	2017	IBAR	ET Cap
216-Z-3	PFP Zone	2017	ABAR2W07/PFP	ET Cap
216-Z-4	PFP Zone	2017	ABAR2W12/231-Z	ET Cap
216-Z-5	PFP Zone	2017	ABAR2W12/231-Z	ET Cap
216-Z-6	PFP Zone	2017	ABAR2W12/231-Z	ET Cap
216-Z-7	PFP Zone	2017	ABAR2W12/231-Z	ET Cap
216-Z-8	PFP Zone	2017	ABAR2W07/PFP	ET Cap
216-Z-9	PFP Zone	2017	ABAR2W07/PFP	ET Cap
218-C-9	Semi-Works Zone	2017	RTD/IBAR	ET Cap
218-E-1	Purex Zone	2021	IBAR	ET Cap
218-E-10	Solid Waste Zone	2027	IBAR	ET Cap
218-E-12A	Solid Waste Zone	2027	IBAR	ET Cap
218-E-12B	Solid Waste Zone	2027	ABAR2E12	ET Cap
218-E-2	Solid Waste Zone	2027	ABAR2E14	ET Cap
218-E-2A	Solid Waste Zone	2027	ABAR2E14	ET Cap
218-E-4	Solid Waste Zone	2027	IBAR	ET Cap
218-E-5	Solid Waste Zone	2027	ABAR2E14	ET Cap
218-E-5A	Solid Waste Zone	2027	ABAR2E14	ET Cap
218-E-7	B Plant Zone	2022	RTD	1
218-E-8	Solid Waste Zone	2027	ABAR2E12	ET Cap
218-E-9	Solid Waste Zone	2027	ABAR2E14	ET Cap
218-W-1	WM Zone	2023	ABAR2W06	ET Cap
218-W-11	WM Zone	2023	IBAR	ET Cap
218-W-1A	WM Zone	2023	IBAR	ET Cap
218-W-2	WM Zone	2023	ABAR2W06	ET Cap
218-W-2A	WM Zone	2023	ABAR2W01	ET Cap
218-W-3	WM Zone	2023	ABAR2W01	ET Cap
218-W-3A	WM Zone	2023	ABAR2W01	ET Cap
218-W-3AE	WM Zone	2023	IBAR	ET Cap
218-W-4A	WM Zone	2023	IBAR	ET Cap
218-W-4B	WM Zone	2023	ABAR2W06	ET Cap
218-W-4C	WM Zone	2023	IBAR	ET Cap
218-W-5	WM Zone	2023	IBAR	ET Cap
221-B-WS-2	B Plant Zone	2022	IBAR	Closed out as part of completion of 221B
241-A-101	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-A-102	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-A-103	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-A-104	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-A-105	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-A-106	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AN-101	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AN-102	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AN-103	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AN-104	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AN-105	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AN-106	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AN-107	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AP-101	WTP/A Farm Zone	2034	ABAR w/ AP WMA	ET Cap
241-AP-102	WTP/A Farm Zone	2034	ABAR w/ AP WMA	ET Cap
241-AP-103	WTP/A Farm Zone	2034	ABAR w/ AP WMA	ET Cap
241-AP-104	WTP/A Farm Zone	2034	ABAR w/ AP WMA	ET Cap
241-AP-105	WTP/A Farm Zone	2034	ABAR w/ AP WMA	ET Cap
241-AP-106	WTP/A Farm Zone	2034	ABAR w/ AP WMA	ET Cap
241-AP-107	WTP/A Farm Zone	2034	ABAR w/ AP WMA	ET Cap
241-AP-108	WTP/A Farm Zone	2034	ABAR w/ AP WMA	ET Cap
241-AW-101	WTP/A Farm Zone	2034	ABAR w/ AW WMA	ET Cap
241-AW-102	WTP/A Farm Zone	2034	ABAR w/ AW WMA	ET Cap
241-AW-103	WTP/A Farm Zone	2034	ABAR w/ AW WMA	ET Cap
241-AW-104	WTP/A Farm Zone	2034	ABAR w/ AW WMA	ET Cap
241-AW-105	WTP/A Farm Zone	2034	ABAR w/ AW WMA	ET Cap
241-AW-106	WTP/A Farm Zone	2034	ABAR w/ AW WMA	ET Cap
241-AX-101	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AX-102	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AX-103	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AX-104	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AY-101	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap

A.7

WIDS Site Code	Zone	Completion Date	Remedy	Notes
241-AY-102	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AZ-101	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-AZ-102	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
241-B-101	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-102	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-103	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-104	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-105	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-106	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-107	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-108	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-109	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-110	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-111	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-112	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-201	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-202	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-203	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-204	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-B-361	B Plant Zone	2022	IBAR	
241-BX-101	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BX-102	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BX-103	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BX-104	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BX-105	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BX-106	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BX-107	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BX-108	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BX-109	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BX-110	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BX-111	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BX-112	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-101	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-102	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-103	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-104	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-105	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-106	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-107	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-108	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-109	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-110	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-111	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-BY-112	B Farm Zone	2030	ABAR w/ B-BX-BY WMA	ET Cap
241-C-101	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-102	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-103	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-104	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-105	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-106	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-107	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-108	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-109	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-110	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-111	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-112	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-201	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-202	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-203	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-C-204	C Farm Zone	2030	ABAR w/ C WMA	ET Cap
241-S-101	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-S-102	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-S-103	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-S-104	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-S-105	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-S-106	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap

WIDS Site Code	Zone	Completion Date	Remedy	Notes
241-S-107	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-S-108	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-S-109	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-S-110	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-S-111	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-S-112	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-101	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-102	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-103	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-104	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-105	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-106	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-107	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-108	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-109	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-110	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-111	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-112	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-113	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-114	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SX-115	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SY-101	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SY-102	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-SY-103	S/U Farm Zone	2030	ABAR w/ S-SX-SY WMA	ET Cap
241-T-101	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-102	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-103	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-104	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-105	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-106	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-107	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-108	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-109	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-110	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-111	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-112	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-201	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-202	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-203	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-204	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
241-T-361	T Plant Zone	2017	IBAR	
241-TX-101	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-102	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-103	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-104	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-105	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-106	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-107	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-108	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-109	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-110	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-111	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-112	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-113	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-114	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-115	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-116	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-117	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TX-118	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TY-101	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TY-102	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TY-103	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TY-104	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TY-105	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-TY-106	T Farm Zone	2031	ABAR w/ TX-TY WMA	ET Cap
241-U-101	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap

A.9

WIDS Site Code	Zone	Completion Date	Remedy	Notes
241-U-102	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-103	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-104	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-105	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-106	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-107	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-108	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-109	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-110	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-111	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-112	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-201	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-202	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-203	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-204	S/U Farm Zone	2030	ABAR w/ U WMA	ET Cap
241-U-361	U Plant Zone	2016	RTD/IBAR	ET Cap
241-WR-VAULT	U Plant Zone	2016	RTD/ABAR w/ U Plant	ET Cap
241-Z-361	PFP Zone	2017	RTD/ABAR2W07/PFP	ET Cap
241-Z-8	PFP Zone	2017	RTD/ABAR2W07/PFP	ET Cap
2607-E1	200-E Admin Zone	2024	No Action	
2607-E10	WTP/A Farm Zone	2034	No Action	
2607-E11	200-E Admin Zone	2024	No Action	
2607-E12	200-E Ponds Zone	2016	No Action	
2607-E1A	200-E Admin Zone	2024	No Action	
2607-E3	B Plant Zone	2022	RTD	1
2607-E4	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
2607-E5	Semi-Works Zone	2017	No Action	
2607-E6	200-E Admin Zone	2024	No Action	
2607-E7A	Semi-Works Zone	2017	No Action	
2607-E8	200-E Admin Zone	2024	No Action	
2607-E8A	200-E Admin Zone	2024	No Action	
2607-E9	B Farm Zone	2026	RTD	1
2607-EA	Purex Zone	2021	No Action	
2607-EB	B Farm Zone	2026	ABAR w/ B-BX-BY WMA	ET Cap
2607-EC	WTP/A Farm Zone	2034	No Action	
2607-ED	WTP/A Farm Zone	2034	ABAR w/ A-AN-AX-AY-AZ WMA	ET Cap
2607-EG	C Farm Zone	2016	RTD/ABAR w/ C WMA	ET Cap
2607-EL	200-E Admin Zone	2024	No Action	
2607-EM	200-E Admin Zone	2024	No Action	
2607-EP	200-E Admin Zone	2024	No Action	
2607-EQ	200-E Admin Zone	2024	No Action	
2607-FSN	ERDF Zone	2029	No Action	
2607-W1	T Plant Zone	2017	No Action	
2607-W2	T Plant Zone	2017	No Action	
2607-W3	T Plant Zone	2017	RTD	1
2607-W4	T Plant Zone	2017	RTD	1
2607-W5	U Plant Zone	2016	No Action	MESC/MNA/IC
2607-W6	200-W Ponds Zone	2016	No Action	
2607-W7	U Plant Zone	2016	No Action	
2607-W8	PFP Zone	2017	ABAR2W07/PFP	ET Cap
2607-W9	S/U Farm Zone	2028	No Action	
2607-WA	PFP Zone	2017	No Action	
2607-WC	200-W Ponds Zone	2016	No Action	
2607-WL	WM Zone	2023	No Action	
2607-Z	PFP Zone	2017	ABAR2W07/PFP	ET Cap
2607-Z1	PFP Zone	2017	ABAR2W07/PFP	ET Cap
2704-C-WS-1	Semi-Works Zone	2017	RTD	1
296-A-13	Purex Zone	2021	D&D / ET Cap	Close out as part of 291AR
296-S-13	REDOX Zone	2030	RTD / ET Cap	Closed out as part of completion of 222S
296-S-16	REDOX Zone	2030	RTD / ET Cap	Closed out as part of completion of 219S
296-S-21	REDOX Zone	2030	RTD / ET Cap	Closed out as part of completion of 222S
299-E24-111	Purex Zone	2021	ABAR2E07	ET Cap
600-148_east	ERDF Zone	2035	IBAR	ET Cap
600-148_west	ERDF Zone	2035	IBAR	ET Cap
600-211	ETF Zone	2033	No Action	
600-214	ETF Zone	2033	No Action	

WIDS Site Code	Zone	Completion Date	Remedy	Notes
6607-16	ETF Zone	2033	No Action	
6607-5	ERDF Zone	2029	No Action	
6607-9	ERDF Zone	2029	No Action	
B_PLANT_FILTER	B Plant Zone	2022	ABAR w/ B Plant	Closed out as part of completion of 221B
HWVP	CSB Zone	2031	No Action	
UPR-200-E-1	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
UPR-200-E-10	Purex Zone	2021	RTD	
UPR-200-E-112	B Plant Zone	2022	RTD	1
UPR-200-E-117	Purex Zone	2021	ABAR2E10/PUREX	ABAR2E10/ET-Mono
UPR-200-E-12	Purex Zone	2021	RTD	
UPR-200-E-140	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
UPR-200-E-145	200-E Ponds Zone	2016	No Action	MESC/MNA/IC
UPR-200-E-17	Purex Zone	2021	No Action	
UPR-200-E-29	Purex Zone	2021	IBAR	ET Cap
UPR-200-E-3	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
UPR-200-E-33	Purex Zone	2021	RTD	
UPR-200-E-36	Semi-Works Zone	2017	RTD	1
UPR-200-E-39	Purex Zone	2021	No Action	
UPR-200-E-43	B Farm Zone	2026	ABAR w/ B-BX-BY WMA	ET Cap
UPR-200-E-44	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
UPR-200-E-45	B Plant Zone	2022	RTD/ABAR2E3	ET Cap
UPR-200-E-50	WTP/A Farm Zone	2034	RTD	1
UPR-200-E-52	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
UPR-200-E-54	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
UPR-200-E-55	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
UPR-200-E-56	200-E Ponds Zone	2016	No Action	
UPR-200-E-7	B Plant Zone	2022	RTD	1
UPR-200-E-77	B Plant Zone	2022	IBAR	ET Cap
UPR-200-E-78	Solid Waste Zone	2027	IBAR	ET Cap
UPR-200-E-79	B Farm Zone	2026	No Action	MESC/MNA/IC
UPR-200-E-80	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
UPR-200-E-84	B Plant Zone	2022	RTD/ABAR2E2	ET Cap
UPR-200-E-85	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
UPR-200-E-86	C Farm Zone	2016	IBAR	ET Cap
UPR-200-E-87	B Plant Zone	2022	ABAR w/ B Plant	ET Cap
UPR-200-E-9	B Farm Zone	2026	IBAR	ET Cap
UPR-200-E-99	C Farm Zone	2016	RTD	1
UPR-200-W-101	U Plant Zone	2016	ABAR w/ U Plant	ET Cap
UPR-200-W-102	T Plant Zone	2033	ABAR w/ T Plant	ET Cap
UPR-200-W-103	PFP Zone	2017	ABAR2W07/PFP	ET Cap
UPR-200-W-108	S/U Farm Zone	2028	RTD	1
UPR-200-W-109	REDOX Zone	2030	No Action	
UPR-200-W-113	T Farm Zone	2031	ABAR2W13	ET Cap
UPR-200-W-130	PFP Zone	2017	ABAR2W12/231-Z	ET Cap
UPR-200-W-131	T Farm Zone	2031	ABAR2W13	ET Cap
UPR-200-W-135	T Farm Zone	2031	ABAR2W13	ET Cap
UPR-200-W-138	U Plant Zone	2016	ABAR w/ U Plant	ET Cap
UPR-200-W-164	S/U Farm Zone	2028	RTD	1
UPR-200-W-19	U Plant Zone	2016	No Action	MESC/MNA/IC
UPR-200-W-2	T Plant Zone	2033	ABAR w/ T Plant	ET Cap
UPR-200-W-20	S/U Farm Zone	2028	ABAR w/ S-SX-SY WMA	ET Cap
UPR-200-W-21	T Plant Zone	2033	ABAR w/ T Plant	ET Cap
UPR-200-W-28	T Farm Zone	2031	ABAR2W13	ET Cap
UPR-200-W-29	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
UPR-200-W-32	REDOX Zone	2030	RTD	1
UPR-200-W-33	U Plant Zone	2016	RTD/ABAR w/ U Plant	ET Cap
UPR-200-W-38	T Plant Zone	2033	ABAR w/ T Plant	ET Cap
UPR-200-W-39	U Plant Zone	2016	ABAR w/ U Plant	ET Cap
UPR-200-W-44	T Plant Zone	2017	RTD	1
UPR-200-W-55	U Plant Zone	2016	ABAR w/ U Plant	ET Cap
UPR-200-W-61	REDOX Zone	2030	ABAR w/ REDOX	ET Cap
UPR-200-W-68	200-W Ponds Zone	2016	No Action	
UPR-200-W-69	REDOX Zone	2030	RTD	1
UPR-200-W-71	S/U Farm Zone	2028	ABAR w/ U WMA	ET Cap
UPR-200-W-78	U Plant Zone	2016	ABAR w/ U Plant	ET Cap
UPR-200-W-8	U Plant Zone	2016	No Action	

WIDS Site Code	Zone	Completion Date	Remedy	Notes
UPR-200-W-82	REDOX Zone	2030	No Action	MESC/MNA/IC
UPR-200-W-87	REDOX Zone	2030	ABAR w/ REDOX	ET Cap
UPR-200-W-96	REDOX Zone	2030	RTD	1
UPR-200-W-97	T Farm Zone	2031	ABAR2W03/T WMA	ET Cap
UPR-200-W-98	T Plant Zone	2033	ABAR w/ T Plant	ET Cap
UPR-600-12	NRDWL/BC Control Zone	2015	No Action	MESC/MNA/IC

Above remedy assignments made based on review of "All_WIDS_Review_for_CPCP_update.xls"
provided via E-mail Hildebrand (Holten) to Kincaid July 8, 2005
Note: These sites are listed under the tab "In CP Closure"

WIDS Site Code	Zone	Completion Date	Remedy	Notes
200_ETF	ETF	2032	D&D	
200-E-137	B plant	2022	RTD / ET Cap	
200-E-138	B plant	2022	RTD / ET Cap	
200-E-17	ETF	2032	D&D	
200-E-30	B plant	2022	D&D / ET Cap	
200-E-54	PUREX	2021	ET Cap	
200-W-40	T Plant	2033	D&D / ET Cap	
200-W-43	REDOX	2030	D&D / ET Cap	
200-W-44	U Plant	2016	D&D / ET Cap	
200-W-45	T Plant	2033	D&D / ET Cap	
200-W-72	PFP	2017	no action	
200-W-PP	T Plant	2033	IBAR	ET Cap
201-C	Semi-Works	2017	D&D / ET Cap	
202-S	REDOX	2030	D&D / ET Cap	
205-A	PUREX	2021	D&D	
2101-M-POND	200-E Admin	2024	RTD	
212-N	200-E Ponds	2016	D&D	
212-P	200-E Ponds	2016	D&D	
212-R	200-E Ponds	2016	D&D	
218-E-14	PUREX	2021	D&D / ET Cap	
218-E-15	PUREX	2021	D&D / ET Cap	
218-E-LLW	IDF	2035	IBAR	ET Cap
218-E-RCRA	IDF	2035	IBAR	ET Cap
221-B	B plant	2022	IBAR	ET Cap
221-B_SDT	B plant	2022	IBAR	ET Cap
221-T	T plant	2033	IBAR	ET Cap
221-T-11-R	T plant	2033	IBAR	ET Cap
221-U	U plant	2016	IBAR	ET Cap
222-SD	REDOX	2030	IBAR	ET Cap
224-B	B plant	2022	IBAR	ET Cap
224-T	T plant	2033	IBAR	ET Cap
224-U	U plant	2016	IBAR	ET Cap
225-B	B plant	2022	IBAR	ET Cap
231-Z	PFP	2017	IBAR	ET Cap
232-Z	PFP	2017	D&D / ET Cap	
233-S	REDOX	2030	D&D / ET Cap	
234-5Z	PFP	2017	IBAR	ET Cap
2607-EK	200-E Admin	2024	no action	
2607-ER	200-E Admin	2024	no action	
2607-FSM	100 N Area	2012	RTD	
2607-WB	PFP	2017	no action	
2711-S	REDOX	2030	D&D / ET Cap	
2718-S	REDOX	2030	D&D / ET Cap	
276-S	REDOX	2030	D&D / ET Cap	
276-U	U plant	2016	IBAR	ET Cap
2904-SA	REDOX	2030	D&D	
291-C	Semi-Works	2017	D&D / ET Cap	
291-S-1	REDOX	2030	RTD / ET Cap	
291-U	U plant	2016	D&D / ET Cap	
291-U-1	U plant	2016	RTD	
291-WTP	WTP/A farm	2034	RTD	
292-S	REDOX	2030	D&D / ET Cap	

WIDS Site Code	Zone	Completion Date	Remedy	Notes
293-S	REDOX	2030	D&D / ET Cap	
296-S-1	REDOX	2030	RTD / ET Cap	
296-S-12	REDOX	2030	RTD / ET Cap	
296-U-10	U plant	2016	RTD / ET Cap	
600-117	Zone 25 - 300 Area	2011	RTD	
600-256	ERDF	2029	no action	
600-33	100 B/C Area	2006	RTD	
600-58	Zone 23 - 100 Area	2035	RTD	
600-59	Zone 23 - 100 Area	2035	RTD	
	Zone 24 - 600 Area			
6607-07	Essential	2034	no action	
6607-18	ERDF	2029	no action	
GTF	WPT/A farm	2034	no action	
GTFL	WPT/A farm	2034	no action	
RMWSF	CWC	2033	RTD	
TRUSAF	T plant	2033	D&D	
UPR-200-E-105	B farm	2026	ET Cap	
UPR-200-E-106	Solid Waste	2027	no action	
UPR-200-E-107	C farm	2016	ABAR2ECTF	ET Cap
UPR-200-E-108	B farm	2026	ET Cap	
UPR-200-E-109	B farm	2026	ET Cap	
UPR-200-E-110	B farm	2026	ET Cap	
UPR-200-E-141	Semi-Works	2017	RTD	
UPR-200-E-16	C farm	2016	ET Cap	
UPR-200-E-38	B farm	2026	ET Cap	
UPR-200-E-40	PUREX	2021	no action	
UPR-200-E-6	B farm	2026	ABAR2EBTF	ET Cap
UPR-200-E-73	B farm	2026	ET Cap	
UPR-200-E-74	B farm	2026	ET Cap	
UPR-200-E-75	B farm	2026	ET Cap	
UPR-200-E-81	C farm	2016	ET Cap	
UPR-200-E-82	C farm	2016	ET Cap	
UPR-200-W-100	T farm	2031	ET Cap	
UPR-200-W-12	T farm	2031	ET Cap	
UPR-200-W-127	S/U farm	2028	RTD / ET Cap	
UPR-200-W-132	S/U farm	2028	ET Cap	
UPR-200-W-134	WM	2023	ABAR2W12	
UPR-200-W-150	T farm	2031	IBAR	ET Cap
UPR-200-W-163	U plant	2016	no action	
UPR-200-W-24	U plant	2016	ET Cap	
UPR-200-W-52	S/U farm	2028	no action	
UPR-200-W-74	PFP	2017	no action	
UPR-200-W-75	PFP	2017	no action	
UPR-200-W-83	REDOX	2030	no action	
UPR-200-W-90	PFP	2017	no action	
UPR-200-W-95	200-W Ponds	2016	no action	

Assignments made based on review of "All_WIDS_Review_for_CPCP_update.xls"
provided via E-mail Hildebrand (Holten) to Kincaid July 8, 2005
Note: These sites are NOT listed under the tab "In CP Closure"

RIVER CORRIDOR WASTE SITES

WIDS Site Code	Zone	Completion Date	Remedy	Notes
100-B-15	100-BC-1	2003	RTD	
100-B-3	100-BC-1	2003	RTD	
100-B-5	100-BC-1	2004	RTD	
100-B-8	100-BC-1	2004	RTD	
116-B-1	100-BC-1	1999	RTD	
116-B-2	100-BC-1	1999	RTD	
116-B-3	100-BC-1	1999	RTD	
116-B-4	100-BC-1	1997	RTD	
116-B-5	100-BC-1	1997	RTD	
116-B-6A	100-BC-1	1999	RTD	
116-B-6B	100-BC-1	1999	RTD	

WIDS Site Code	Zone	Completion Date	Remedy	Notes
116-B-7	100-BC-1	2001	RTD	
116-C-1	100-BC-1	1997	RTD	
118-B-5	100-BC-1	2004	RTD	
118-B-7	100-BC-1	2004	RTD	
118-B-8	100-BC-1	2065	RTD	
118-B-9	100-BC-1	2004	RTD	
132-C-2	100-BC-1	2001	RTD	
100-C-3	100-BC-2	2005	RTD	
100-C-6	100-BC-2	2005	RTD	
116-C-2A	100-BC-2	1999	RTD	
116-C-2C	100-BC-2	1999	RTD	
118-B-1	100-BC-2	2005	RTD	
118-B-2	100-BC-2	2005	RTD	
118-B-3	100-BC-2	2006	RTD	
118-B-4	100-BC-2	2006	RTD	
118-B-6	100-BC-2	2006	RTD	
118-C-1	100-BC-2	2006	RTD	
118-C-3	100-BC-2	2065	RTD	
118-C-4	100-BC-2	2006	RTD	
120-D-1	**100-D PONDS**	1996	RTD	
100-D-24	100-DR-1	2007	RTD	
100-D-29	100-DR-1	2007	RTD	
100-D-3	100-DR-1	2007	RTD	
100-D-32	100-DR-1	2007	RTD	
100-D-42	100-DR-1	2007	RTD	
100-D-45	100-DR-1	2007	RTD	
100-D-49	100-DR-1	2007	RTD	
100-D-60	100-DR-1	2008	RTD	
100-D-8	100-DR-1	2008	RTD	
116-D-1A	100-DR-1	2001	RTD	
116-D-1B	100-DR-1	2001	RTD	
116-D-2	100-DR-1	1999	RTD	
116-D-5	100-DR-1	2008	RTD	
116-DR-1%2	100-DR-1	2000	RTD	
116-DR-5	100-DR-1	2008	RTD	
118-D-6	100-DR-1	2065	RTD	
120-D-2	100-DR-1	2008	RTD	
100-D-23	100-DR-2	2009	RTD	
100-D-40	100-DR-2	2009	RTD	
100-D-43	100-DR-2	2009	RTD	
100-D-47	100-DR-2	2010	RTD	
100-D-53	100-DR-2	2010	RTD	
116-D-8	100-DR-2	2010	RTD	
116-DR-3	100-DR-2	2010	RTD	
116-DR-4	100-DR-2	2000	RTD	
116-DR-6	100-DR-2	2000	RTD	
116-DR-8	100-DR-2	2010	RTD	
118-D-1	100-DR-2	2007	RTD	
118-D-2	100-DR-2	2008	RTD	
118-D-3	100-DR-2	2008	RTD	
118-D-4	100-DR-2	2009	RTD	
118-D-5	100-DR-2	2009	RTD	
118-DR-1	100-DR-2	2010	RTD	
118-DR-2	100-DR-2	2065	RTD	
122-DR-1	100-DR-2	2010	RTD	
132-DR-2	100-DR-2	2010	RTD	
100-F-10	**100-FR-1**	2003	RTD	
100-F-12	100-FR-1	2002	RTD	
100-F-19	100-FR-1	2003	RTD	
100-F-23	100-FR-1	2003	RTD	
100-F-24	100-FR-1	2005	RTD	
100-F-25	100-FR-1	2005	RTD	
100-F-29	100-FR-1	2005	RTD	
100-F-33	100-FR-1	2005	RTD	
100-F-36	100-FR-1	2005	RTD	
100-F-37	100-FR-1	2005	RTD	

WIDS Site Code	Zone	Completion Date	Remedy	Notes
100-F-38	100-FR-1	2005	RTD	
100-F-39	100-FR-1	2005	RTD	
100-F-9	100-FR-1	2006	RTD	
116-F-1	100-FR-1	2006	RTD	
116-F-10	100-FR-1	2006	RTD	
116-F-11	100-FR-1	2006	RTD	
116-F-16	100-FR-1	2006	RTD	
116-F-2	100-FR-1	2002	RTD	
116-F-3	100-FR-1	2006	RTD	
116-F-4	100-FR-1	2001	RTD	
116-F-5	100-FR-1	2001	RTD	
116-F-6	100-FR-1	2006	RTD	
116-F-7	100-FR-1	2006	RTD	
116-F-8	100-FR-1	2006	RTD	
116-F-9	100-FR-1	2002	RTD	
118-F-8	100-FR-1	2065	RTD	
132-F-5	100-FR-1	2007	RTD	
141-C	100-FR-1	2007	RTD	
UPR-100-F-1	100-FR-1	2008	RTD	
UPR-100-F-3	100-FR-1	2008	RTD	
118-F-1	100-FR-2	2005	RTD	
118-F-2	100-FR-2	2006	RTD	
118-F-3	100-FR-2	2006	RTD	
118-F-4	100-FR-2	2007	RTD	
118-F-5	100-FR-2	2007	RTD	
118-F-6	100-FR-2	2008	RTD	
118-F-7	100-FR-2	2008	RTD	
100-H-10	100-HR-1	2003	RTD	
100-H-12	100-HR-1	2007	RTD	
100-H-13	100-HR-1	2007	RTD	
100-H-14	100-HR-1	2007	RTD	
100-H-31	100-HR-1	2008	RTD	
100-H-33	100-HR-1	2008	RTD	
100-H-34	100-HR-1	2008	RTD	
100-H-5	100-HR-1	2001	RTD	
100-H-7	100-HR-1	2008	RTD	
100-H-8	100-HR-1	2008	RTD	
100-H-9	100-HR-1	2008	RTD	
116-H-1	100-HR-1	2001	RTD	
116-H-2	100-HR-1	2001	RTD	
116-H-3	100-HR-1	2001	RTD	
116-H-4	100-HR-1	2008	RTD	
116-H-5	100-HR-1	2009	RTD	
116-H-6	100-HR-1	1997	RTD	
116-H-7	100-HR-1	2001	RTD	
116-H-9	100-HR-1	2009	RTD	
118-H-6	100-HR-1	2065	RTD	
118-H-1	100-HR-2	2007	RTD	
118-H-2	100-HR-2	2008	RTD	
118-H-3	100-HR-2	2009	RTD	
118-H-4	100-HR-2	2009	RTD	
118-H-5	100-HR-2	2010	RTD	
600-108	100-IU-6	2004	RTD	
600-111	100-IU-6	2004	RTD	
100-K-55	**100-KR-1**	2003	RTD	
100-K-57	100-KR-1	2003	RTD	
100-K-78	100-KR-1	2003	RTD	
100-K-80	100-KR-1	2003	RTD	
116-K-1	100-KR-1	2004	RTD	
116-K-2	100-KR-1	2004	RTD	
116-K-3	100-KR-1	2004	RTD	
116-KE-4	100-KR-1	2004	RTD	
116-KW-3	100-KR-1	2004	RTD	
100-K-1	**100-KR-2**	2004	RTD	
100-K-14	100-KR-2	2004	RTD	
100-K-2	100-KR-2	2004	RTD	

A.15

WIDS Site Code	Zone	Completion Date	Remedy	Notes
100-K-36	100-KR-2	2009	RTD	
100-K-38	100-KR-2	2009	RTD	
100-K-4	100-KR-2	2009	RTD	
100-K-42	100-KR-2	2009	RTD	
100-K-43	100-KR-2	2009	RTD	
100-K-46	100-KR-2	2009	RTD	
100-K-5	100-KR-2	2009	RTD	
100-K-56	100-KR-2	2009	RTD	
100-K-6	100-KR-2	2009	RTD	
100-K-61	100-KR-2	2009	RTD	
100-K-62	100-KR-2	2009	RTD	
116-KE-1	100-KR-2	2010	RTD	
116-KE-2	100-KR-2	2010	RTD	
116-KE-3	100-KR-2	2010	RTD	
116-KE-5	100-KR-2	2010	RTD	
116-KE-6D	100-KR-2	2010	RTD	
116-KW-1	100-KR-2	2010	RTD	
116-KW-2	100-KR-2	2010	RTD	
116-KW-4	100-KR-2	2010	RTD	
118-K-1	100-KR-2	2010	RTD	
118-KE-1	100-KR-2	2065	RTD	
118-KE-2	100-KR-2	2010	RTD	
118-KW-1	100-KR-2	2065	RTD	
118-KW-2	100-KR-2	2010	RTD	
120-KE-2	100-KR-2	2010	RTD	
120-KE-3	100-KR-2	2010	RTD	
120-KW-2	100-KR-2	2011	RTD	
UPR-100-K-1	100-KR-2	2011	RTD	
100-N-1	**100-NR-1**	2003	RTD	
100-N-29	100-NR-1	2003	RTD	
100-N-54	100-NR-1	2009	RTD	
100-N-55	100-NR-1	2009	RTD	
100-N-59	100-NR-1	2009	RTD	
100-N-60	100-NR-1	2010	RTD	
100-N-62	100-NR-1	2010	RTD	
100-N-63	100-NR-1	2010	RTD	
100-N-64	100-NR-1	2010	RTD	
100-N-66	100-NR-1	2065	RTD	
116-N-4	100-NR-1	2010	RTD	
120-N-3	100-NR-1	2010	RTD	
120-N-7	100-NR-1	2010	RTD	
124-N-10	100-NR-1	2010	RTD	
UPR-100-N-1	100-NR-1	2011	RTD	
UPR-100-N-10	100-NR-1	2011	RTD	
UPR-100-N-12	100-NR-1	2011	RTD	
UPR-100-N-25	100-NR-1	2011	RTD	
UPR-100-N-30	100-NR-1	2012	RTD	
UPR-100-N-35	100-NR-1	2012	RTD	
UPR-100-N-5	100-NR-1	2012	RTD	
UPR-100-N-7	100-NR-1	2012	RTD	
UPR-100-N-8	100-NR-1	2012	RTD	
116-N-1	100-NR-1 (TSD SITES RA)	2012	RTD	
116-N-3	100-NR-1 (TSD SITES RA)	2002	RTD	
120-N-1	100-NR-1 (TSD SITES RA)	2001	RTD	
120-N-2	100-NR-1 (TSD SITES RA)	2001	RTD	
UPR-100-N-31	100-NR-1 (TSD SITES RA)	2012	RTD	
300_ASH_PITS	**300-FF-1**	1997	no action	
300_RFBP	300-FF-1	2001	no action	
316-1	300-FF-1	2001	RTD	
316-2	300-FF-1	1999	RTD	
316-5	300-FF-1	1998	RTD	

A.16

WIDS Site Code	Zone	Completion Date	Remedy	Notes
618-4	300-FF-1	2003	RTD	
UPR-300-32	300-FF-1	2001	RTD	
UPR-300-34	300-FF-1	2001	RTD	
UPR-300-36	300-FF-1	2001	RTD	
UPR-300-37	300-FF-1	2001	RTD	
UPR-300-FF-1	300-FF-1	2003	RTD	
4843	**300-FF-2**	1995	RTD	
300_VTS	300-FF-2	2012	RTD	
300-121	300-FF-2	2003	RTD	
300-2	300-FF-2	2004	RTD	
300-249	300-FF-2	2004	RTD	
300-25	300-FF-2	2005	RTD	
300-264	300-FF-2	2005	RTD	
300-265	300-FF-2	2005	RTD	
300-270	300-FF-2	2006	RTD	
300-39	300-FF-2	2007	RTD	
307_RB	300-FF-2	2007	RTD	
309-WS-1	300-FF-2	2009	RTD	
309-WS-2	300-FF-2	2009	RTD	
316-4	300-FF-2	2006	RTD	
331_LSLDF	300-FF-2	2010	RTD	
331_LSLT2	300-FF-2	2011	RTD	
3712_USSA	300-FF-2	2011	RTD	
600-259	300-FF-2	2012	RTD	
618-10	300-FF-2	2011	RTD	
618-11	300-FF-2	2012	RTD	
618-13	300-FF-2	2012	RTD	
618-2	300-FF-2	2006	RTD	
618-3	300-FF-2	2006	RTD	
618-5	300-FF-2	2008	RTD	
618-7	300-FF-2	2008	RTD	
618-8	300-FF-2	2012	RTD	
618-9	300-FF-2	1991	RTD	
UPR-300-10	300-FF-2	2012	RTD	
UPR-300-12	300-FF-2	2012	RTD	
UPR-300-48	300-FF-2	2012	RTD	
300_RLWS	**RA ACP - 300-FF-2**	2004	RTD	
300_RRLWS	RA ACP - 300-FF-2	2004	RTD	
300-16	RA ACP - 300-FF-2	2005	RTD	
300-214	RA ACP - 300-FF-2	2006	RTD	
300-224	RA ACP - 300-FF-2	2006	RTD	
300-24	RA ACP - 300-FF-2	2006	RTD	
300-251	RA ACP - 300-FF-2	2007	RTD	
300-255	RA ACP - 300-FF-2	2007	RTD	
300-262	RA ACP - 300-FF-2	2001	RTD	
300-28	RA ACP - 300-FF-2	2008	RTD	
300-33	RA ACP - 300-FF-2	2009	RTD	
300-4	RA ACP - 300-FF-2	2009	RTD	
300-40	RA ACP - 300-FF-2	2009	RTD	
300-48	RA ACP - 300-FF-2	2010	RTD	
300-80	RA ACP - 300-FF-2	2010	RTD	
303-M-SA	RA ACP - 300-FF-2	2010	RTD	
303-M-UOF	RA ACP - 300-FF-2	2010	RTD	
313_ESSP	RA ACP - 300-FF-2	2010	RTD	
316-3	RA ACP - 300-FF-2	2011	RTD	
333_ESHWSA	RA ACP - 300-FF-2	2011	RTD	
618-1	RA ACP - 300-FF-2	2010	RTD	
UPR-300-1	RA ACP - 300-FF-2	2011	RTD	
UPR-300-11	RA ACP - 300-FF-2	2011	RTD	
UPR-300-2	RA ACP - 300-FF-2	2011	RTD	
UPR-300-38	RA ACP - 300-FF-2	2012	RTD	
UPR-300-39	RA ACP - 300-FF-2	2012	RTD	
UPR-300-4	RA ACP - 300-FF-2	2012	RTD	
UPR-300-40	RA ACP - 300-FF-2	2012	RTD	
UPR-300-45	RA ACP - 300-FF-2	2012	RTD	
UPR-300-5	RA ACP - 300-FF-2	2012	RTD	

Based on data provided by BHI in April and May 2003
TPA quarterly report, March 25, 2003
E-mail Wintczak to Kincaid May 5, 2003; attached table To tonnage.xls
E-mail LaPierre to Kincaid April 28, 2003; attached table Special List 4-28-03.xls

WIDS Site Code	Zone	Completion Date	Remedy	Notes
100B_Sewage_Sum	Based on latest B/C Area remedial action	2006	no action	
100D_Sewage_Sum	Based on latest D Area remedial action	2010	no action	
100-D-59	Based on latest D Area remedial action	2010	RTD	
100F_Sewage_Sum	Based on latest F Area remedial action	2008	no action	
100H_Sewage_Sum	Based on latest H Area remedial action	2010	no action	
100K_Sewage_Sum	Based on latest K Area remedial action	2011	no action	
130-N-1	Based on N Area completion by 2012	2012	RTD	
1908-NE	Based on 1908N	2012	RTD	
300-123	Based on latest 300 Area sites in 2012	2012	RTD	
303-K_CWS	Based on 303 facilities 303A through 303G	2004	RTD	
305-B_SF	Based on 305B	2004	RTD	
325_WTF	Based on closure date for 300-FF Area	2012	RTD	
400-11	Zone 26 - 400 Area	2015	no action	
400-7	Zone 26 - 400 Area	2015	no action	
499-S1-8J	Zone 26 - 400 Area	2015	no action	
US_Ecology	Per SEPA EIS assumption regarding placement of barriers	2005	IBAR	
WPPSS_Sanitary	Sanitary sewerage waste	2020	no action	
WRAP	Zone 19 - WRAP lies within the CP Waste Mgmt Zone that closes in 2027	2027	D&D	
1182_Pumphouse	No date, clean water site	2002	no action	
1199-33-18B	No date, clean water site	2003	no action	
1199-34-15A%B	No date, clean water site	2003	no action	
699-ORV-1%2	No date, clean water site	2003	no action	
N-RCH-WELL	No date, clean water site	2410	no action	

Based on data provided by BHI in April and May 2003
TPA quarterly report, March 25, 2003
E-mail Wintczak to Kincaid May 5, 2003; attached table To tonnage.xls
E-mail LaPierre to Kincaid April 28, 2003; attached table Special List 4-28-03.xls
Zone assignments, where used, from E-mail Hildebrand (Holten) to Kincaid July 8, 2005; attached file Summary of Dates.xls
Dates shown for 1182…, 1199-33…, 1199-34…, 699…, and N-RCH-WELL are from prior assignment

Column C and D in this color (light blue) - data are from BHI provided "Special List_100&300 Areas_05-06--03.xls" which dates from 2003.
Column C in this color (bright yellow) - data are assumed RTD dates for graphite cores of production reactors.
Column D in this color (sand) - data are from Holten email to Kincaid dated July 7, 2005; subject "RE: ET caps and ET mono caps; Remedial action dates"
Column C in this color (light green) - data on remedial action completion date derives from the "Summary of Dates.xls" file received from Holten via fowarded emal from Hildebrand to Kincaid dated July 8, 2005; subject "FW: files on Central Plateau"
Column C in this color (mauve) - data on remedial action completion date assigned by analyst to ensure disposal site availability through all disposals
Column C in this color (orange) - datum is assigned by analyst to be consistent with construction date of Prototype Hanford Barrier
Column C in this color (neon green) - data are assigned by analyst to be consistent with the tank waste residual inventory in 2029. Holten dates preceeded 2030.
Column D or E in this color (neon blue) - data on remedial actions derives from the "All_WIDS_Review_for_CPCP_update.xls" file received from Holten via fowarded emal from Hildebrand to Kincaid dated July 8, 2005; subject "FW: files on Central Plateau"
Column D in this color (light mauve) - data on remedial actions derives from the "All_WIDS_Review_for_CPCP_update.xls" file, but has been modified to delete RTD which triggers complete RTD in the SAC and is meant in the file to mean RTD of surface or near-surface contaminants.
Column C and D in this color (light purple) - datum is from the State of Washington SEPA EIS on the US Ecology, Inc., commercial LLW disposal site

WIDS Site Code	Zone	Completion Date	Remedy	Notes

Column D in this color (grey) - data was assigned by analyst; all sites are "clean water" sites and only involve the water flow analysis; N-RCH-WELL is the North Richland well field and it is assumed to operate indefinitely and especially during a long-term steady-state future.

Column D in this color (split pea green) - data are assigned by analyst after review of CP-22319-DEL, Rev.0, "Plan for Central Plateau Closure" and/or the WIDS database; supporting notes are captured in "GOSPL_2005-11-17_DCR-0026_ctk_remedial actions_2005-12-14.xls"

No Action	leave waste undisturbed, allow surface to recover naturally
RTD	retrieve, treat, dispose
MESC/MNA/IC	maintain existing soil cover, monitored natural attenuation, institutional control
ET Cap	3 feet thick evapotranspiration layer overlying a sand layer
ET Mono	3 feet thick evapotranspiration layer
Hanford	an engineered barrrier designed to prevent intrusion, infiltration, and erosion
D&D	decontamination and decommissioning
IBAR	individual site barrier
ABAR	aggregated site barrier
ABAR w/ B Plant	aggregated barrier covering B Plant and immediate vicinity
ABAR w/ PUREX	aggregated barrier covering PUREX and immediate vicinity
ABAR w/ T Plant	aggregated barrier covering T Plant and immediate vicinity
ABAR w/ U Plant	aggregated barrier covering U Plant and immediate vicinity
ABAR w/ REDOX	aggregated barrier covering REDOX and immediate vicinity
ABAR w/A-AN-AX-AY-AZ	aggregated barrier covering A-AN-AX-AY-AZ tank farms
ABAR w/AP WMA	aggregated barrier covering AP tank farm
ABAR w/AW WMA	aggregated barrier covering AW tank farm
ABAR w/B-BX-BY WMA	aggregated barrier covering B-BX-BY tank farm
ABAR2EBTF	aggregated barrier covering B-BX-BY tank farm
ABAR w/C WMA	aggregated barrier covering C tank farm
ABAR2ECTF	aggregated barrier covering C tank farm
ABAR w/S-SX-SY WMA	aggregated barrier covering S-SX-SY tank farm
ABAR w/T WMA	aggregated barrier covering T tank farm
ABAR w/TX-TY WMA	aggregated barrier covering TX-TY tank farm
ABAR w/U WMA	aggregated barrier covering U tank farm
ABAR2E01	aggregated barrier in NRDWL/BC Control Zone; covers 216-B-29 thru B-34
ABAR2E02	aggregated barrier within B Plant Zone
ABAR2E03	aggregated barrier within B Plant Zone
ABAR2E04	aggregated barrier in NRDWL/BC Control Zone; covers 216-B-23 thru B-28, & B-52
ABAR2E05	aggregated barrier in NRDWL/BC Control Zone; covers 216-B-20 thru B-22
ABAR2E06	aggregated barrier in NRDWL/BC Control Zone; covers 216-B-14 thru B-19, & 200-E-14
ABAR2E07	aggregated barrier within PUREX Zone; covers 216-A-38-1 and vicinity
ABAR2E08	aggregated barrier within 200 E Ponds Zone
ABAR2E09	aggregated barrier within 200 E Ponds Zone
ABAR2E10/PUREX	aggregated barrier within PUREX Zone; covers PUREX and vicinity
ABAR2E12	aggregated barrier within Solid Waste Zone; covers 218-E-8 and -12B and vicinity
ABAR2E13	aggregated barrier in B Farm Zone; covers BY cribs and 216-B-50
ABAR2E14	aggregated barrier within Solid Waste Zone; covers 218-E-2, -2A, -5, -5A, -9 and vicinity
ABAR2E16	aggregated barrier within B Farm Zone, covers BX trenches
ABAR2E17	aggregated barrier within Semi-Works Zone
ABAR2W01	aggregated barrier within WM Zone; covers northern portion of WM Zone burial grounds
ABAR2W02	aggregated barrier within T Farm Zone; 216-T-14 thru -17
ABAR2W03	aggregated barrier within T Farm Zone, covers T farm WMA
ABAR2W04	aggregated barrier within T Farm Zone; covers 216-T-26 thru -28
ABAR2W05	aggregated barrier within T Farm Zone; covers 216-T-21 thru -25
ABAR2W06	aggregated barrier within WM Zone; covers 218-W-1, -2, -4B
ABAR2W07/PFP	aggregated barrier within PFP Zone, covers PFP facility and vicinity
ABAR2W08	aggregated barrier within T Plant Zone; covers 216-T-9 thru -11
ABAR2W09	aggregated barrier within 200 W Ponds Zone; covers 216-U-10 (U Pond) and vicinity
ABAR2W10	aggregated barrier within PFP Zone; covers Z ditches and vicinity
ABAR2W11	aggregated barrier within 200 W Ponds Zone; covers 216-S-17 pond and vicinity
ABAR2W12/231-Z	aggregated barrier within PFP Zone, covers 231-Z facility and vicinity
ABAR2W13	aggregated barrier within T Farm Zone

Appendix B

Inventory Attribute Spreadsheet

Appendix B

Inventory Attribute Spreadsheet

Many of the attributes of the inventory data set are contained in a single file (Microsoft©[1] Excel format) named 'Attributes_2006-01-04_DCR-0029.xls' that is under configuration management and maintained on the System Assessment Capability (SAC) Windows File server at \\sac.pnl.gov\share\data\rev.1\inventory\. Data in the file are grouped into seven worksheets. The worksheet titles and contents are the following:

- **Cover**: The cover worksheet contains a brief history of changes to data entries in the file. It does not contain any primary data.

- **ATTRIBUTE Keywords**: This worksheet contains the data required to generate ATTRIBUTE keywords for the INPROC computer code (Eslinger et al. 2004) (a preprocessor to the INVENTORY code). The data entries include the subsite code from the inventory database, the meaning of the subsite code, and the release model to apply for the waste type. The ATTRIBUTE keywords are developed in this worksheet as well.

- **WASTYPE Keywords**: This workbook references data in the 'ATTRIBUTE Keywords' worksheet and develops WASTYPE keywords for use in the INPROC code.

- **SELECT Keywords**: This workbook references data in the 'ATTRIBUTE Keywords' worksheet and develops SELECT keywords for use in the INVENTORY code.

- **SURROGATE Keywords**: This workbook contains the primary data needed for application of surrogate rules. The SURROGATE keywords are developed in this worksheet for use in the INPROC code.

- **AGGREGATION Site**: The inventory codes allow the inventory for multiple waste sites to be aggregated into a smaller number of sites. For this application, the inventory is developed and used for each site explicitly and no aggregation rules are applied. Information in this worksheet is used to develop the aggregation data for use in the INPROC code.

- **Estimation Rules**: The estimation rules defined in Section 4.0 are applied on a waste site basis. This workbook contains the primary data identifying which estimation rule, if any, is applied to each site. These data are extracted and exported for use in the INPROC code.

Eslinger, PW, DW Engel, LH Gerhardstein, CA Lo Presti, TB Miley, WE Nichols, DL Strenge, and SK Wurstner. 2004. *User Instructions for the Systems Assessment Capability, Rev. 1, Computer Codes. Volume 1: Inventory, Release, and Transport Modules*. PNNL-14852, Volume 1, Pacific Northwest National Laboratory, Richland, Washington.

---

[1] Microsoft Corporation, Redmond, Washington.

Appendix C

Application of Surrogate Site Rules

Appendix C

Application of Surrogate Site Rules

This appendix describes the surrogate rules applied to waste sites. The information provided here is a short summary of the detailed information in worksheet 'SURROGATE Keywords' of the attribute spreadsheet described in Appendix B. The waste stream at a site always has the same type as the waste stream at the surrogate waste site. The 'UTN' and 'STN' designators both indicate soil waste forms. The 'upr' designator (unplanned release) indicates a liquid waste form. Surrogate site rules were applied to the following sites:

- **100-B-5**: Surrogate site rules were applied for 1954 through 1956 with a volume of 24,150 m^3 each year. The surrogate site was 116-B-1 and the surrogate waste was a liquid waste stream in 1951.

- **100-D-3**: Surrogate site rules were applied for 1944 through 1967 with a volume of 434.782 m^3 each year. The surrogate site was 118-D-2 and the surrogate waste was a UTN waste stream in 1956.

- **100-D-32**: Surrogate site rules were applied for 1956 through 1967 with a volume of 434.782 m^3 each year. The surrogate site was 118-D-2 and the surrogate waste was a UTN waste stream in 1956.

- **100-D-40**: Surrogate site rules were applied for 1944 through 1967 with a volume of 434.782 m^3 each year. The surrogate site was 118-D-2 and the surrogate waste was a UTN waste stream in 1956.

- **100-D-47**: Surrogate site rules were applied for 1944 through 1967 with a volume of 434.782 m^3 each year. The surrogate site was 118-D-2 and the surrogate waste was a UTN waste stream in 1956.

- **100-F-23**: Surrogate site rules were applied for 1944 through 1965 with a volume of 6.43518 m^3 each year. The surrogate site was UPR-100-F-1 and the surrogate waste was an unplanned release waste stream in 1971.

- **100-F-25**: Surrogate site rules were applied for 1944 through 1965 with a volume of 25.903 m^3 each year. The surrogate site was 2101-M-Pond and the surrogate waste was a liquid waste stream in 1974.

- **100-F-36**: A surrogate site rule was applied for 1973 with a volume of 363.636 m^3. The surrogate site was 118-F-5 and the surrogate waste was a UTN waste stream in 1964.

- **100-H-10**: Surrogate site rules were applied for 1949 through 1965 with a volume of 25 m^3 each year. The surrogate site was 116-B-4 and the surrogate waste was a liquid waste stream in 1960.

- **100-H-7**: Surrogate site rules were applied for 1949 through 1965 with a volume of 25 m^3 each year. The surrogate site was 116-B-4 and the surrogate waste was a liquid waste stream in 1960.

- **100-H-8**: Surrogate site rules were applied for 1949 through 1965 with a volume of 25 m^3 each year. The surrogate site was 116-B-4 and the surrogate waste was a liquid waste stream in 1960.

- **100-H-9**: Surrogate site rules were applied for 1949 through 1965 with a volume of 25 m^3 each year. The surrogate site was 116-B-4 and the surrogate waste was a liquid waste stream in 1960.

- **100-K-2**: Surrogate site rules were applied for 1955 through 1971 with a volume of 7,345 m^3 each year. The surrogate site was 116-B-4 and the surrogate waste was a soil waste stream in 1953.

- **100-K-5**: Surrogate site rules were applied for 1955 through 1971 with a volume of 18.191 m^3 each year. The surrogate site was 116-K-2 and the surrogate waste was a liquid waste stream in 1963.

- **100-N-60**: Surrogate site rules were applied for 1963 through 1987 with a volume of 0.28387 m^3 each year. The surrogate site was 116-B-4 and the surrogate waste was a liquid waste stream in 1960.

- **100-DR-8**: Surrogate site rules were applied for 1960 through 1964 with a volume of 48 m^3 each year. The surrogate site was 116-F-7 and the surrogate waste was a liquid waste stream in 1963.

- **116-F-11**: Surrogate site rules were applied for 1953 through 1965 with a volume of 15.3846 m^3 each year. The surrogate site was 116-F-10 and the surrogate waste was a liquid waste stream in 1956.

- **116-F-16**: Surrogate site rules were applied for 1944 through 1965 with a volume of 2,142.857 m^3 each year. The surrogate site was 116-F-9 and the surrogate waste was a liquid waste stream in 1970.

- **116-H-9**: Surrogate site rules were applied for 1960 through 1965 with a volume of 50 m^3 each year. The surrogate site was 116-F-7 and the surrogate waste was a liquid waste stream in 1963.

- **116-KE-3**: Surrogate site rules were applied for 1955 through 1971 with a volume of 17.647 m^3 each year. The surrogate site was 116-KE-2 and the surrogate waste was a liquid waste stream in 1960.

- **116-KW-2**: Surrogate site rules were applied for 1955 through 1970 with a volume of 17.647 m^3 each year. The surrogate site was 116-KE-2 and the surrogate waste was a liquid waste stream in 1960.

- **118-B-7**: Surrogate site rules were applied for 1951 through 1968 with a volume of 434.782 m^3 each year. The surrogate site was 118-B-1 and the surrogate waste was a UTN waste stream in 1960.

- **118-C-4**: Surrogate site rules were applied for 1950 through 1969 with a volume of 434.782 m^3 each year. The surrogate site was 118-C-1 and the surrogate waste was a UTN waste stream in 1956.

- **118-D-1**: Surrogate site rules were applied for 1944 through 1967 with a volume of 416.666 m^3 each year. The surrogate site was 118-D-2 and the surrogate waste was a UTN waste stream in 1956.

- **118-D-4**: Surrogate site rules were applied for 1953 through 1967 with a volume of 1,333.333 m^3 each year. The surrogate site was 118-D-2 and the surrogate waste was a UTN waste stream in 1956.

- **118-KW-2**: Surrogate site rules were applied for 1955 through 1971 with a volume of 434.782 m^3 each year. The surrogate site was 118-C-1 and the surrogate waste was a UTN waste stream in 1956.

- **200-E-102**: A surrogate site rule was applied for 1958 with a volume of 1,661 m^3. The surrogate site was 216-A-4 and the surrogate waste was a liquid waste stream in 1956.

- **200-W-40**: A surrogate site rule was applied for 1990 with a volume of 535 m^3. The surrogate site was 218-W-3A and the surrogate waste was a liquid waste stream in 1991.

- **200-W-52**: Surrogate site rules were applied for 1948 through 1955 with a volume of 11,900 m^3 each year. The surrogate site was 216-T-19 and the surrogate waste was a liquid waste stream in 1952.

- **200-W-69**: A surrogate site rule was applied for 2000 with a volume of 535 m^3. The surrogate site was 218-W-3A and the surrogate waste was a STN waste stream in 1991.

- **216-SX-2**: Surrogate site rules were applied for 1952 through 1965 with a volume of 5,882.3 m^3 each year. The surrogate site was 216-A-11 and the surrogate waste was a liquid waste stream in 1964.

- **216-T-10**: Surrogate site rules were applied for 1951 through 1954 with a volume of 98.4 m^3 each year. The surrogate site was 216-S-18 and the surrogate waste was a liquid waste stream in 1954.

- **216-T-11**: Surrogate site rules were applied for 1951 through 1954 with a volume of 98.4 m^3 each year. The surrogate site was 216-S-18 and the surrogate waste was a liquid waste stream in 1954.

- **216-T-9**: Surrogate site rules were applied for 1951 through 1954 with a volume of 98.4 m^3 each year. The surrogate site was 216-S-18 and the surrogate waste was a liquid waste stream in 1954.

- **216-TY-201**: Surrogate site rules were applied for 1953 through 1966 with a volume of 6.2 m^3 each year. The surrogate site was 216-T-28 and the surrogate waste was a liquid waste stream in 1966.

- **218-C-9**: A surrogate site rule was applied for 1989 with a volume of 2,265 m^3. The surrogate site was 218-E-8 and the surrogate waste was a UTN waste stream in 1958.

- **218-E-2A**: Surrogate site rules were applied for 1945 through 1950 with a volume of 1,557.435 m^3 each year. The surrogate site was 218-E-5 and the surrogate waste was a UTN waste stream in 1955.

- **218-W-11**: A surrogate site rule was applied for 1960 with a volume of 1,160 m^3. The surrogate site was 218-W-4A and the surrogate waste was a UTN waste stream in 1964.

- **231-Z**: A surrogate site rule was applied for 2000 with a volume of 1 m^3. The surrogate site was 234-5Z and the surrogate waste was a PPL waste stream in 1996.

- **276-S**: A surrogate site rule was applied for 1967 with a volume of 175,000 m^3. The surrogate site was 202-S and the surrogate waste was a cement waste stream in 1968.

- **293-S**: A surrogate site rule was applied for 1967 with a volume of 175,000 m^3. The surrogate site was 202-S and the surrogate waste was a cement waste stream in 1968.

- **300-224**: Surrogate site rules were applied for 1960 through 1988 with a volume of 1,195.7 m^3 each year. The surrogate site was 316-1 and the surrogate waste was a liquid waste stream in 1966.

- **300-24**: A surrogate site rule was applied for 1994 with a volume of 15.73 m^3. The surrogate site was 618-5 and the surrogate waste was a UTN waste stream in 1954.

- **300-28**: A surrogate site rule was applied for 1994 with a volume of 15.73 m^3. The surrogate site was 618-5 and the surrogate waste was a UTN waste stream in 1954.

- **316-3**: Surrogate site rules were applied for 1953 through 1963 with a volume of 90,909.09 m^3 each year. The surrogate site was 316-2 and the surrogate waste was a liquid waste stream in 1966.

- **331_LSLT2**: Surrogate site rules were applied for 1966 through 1974 with a volume of 21,428.571 m^3 each year. The surrogate site was 116-F-9 and the surrogate waste was a liquid waste stream in 1970.

- **618-13**: A surrogate site rule was applied for 1950 with a volume of 3,398 m^3. The surrogate site was 618-3 and the surrogate waste was a UTN waste stream in 1955.

- **GTF**: A surrogate site rule was applied for 1991 with a volume of 2 m^3. The surrogate site was GTFL and the surrogate waste was a cement waste stream in 1988.

- **UPR-100-N-1**: A surrogate site rule was applied for 1974 with a volume of 113.55 m^3. The surrogate site was 116-N-1 and the surrogate waste was a liquid waste stream in 1974.

- **UPR-100-N-25**: A surrogate site rule was applied for 1975 with a volume of 1.8927 m^3. The surrogate site was 116-N-1 and the surrogate waste was a liquid waste stream in 1974.

- **UPR-100-N-30**: A surrogate site rule was applied for 1974 with a volume of 9.4635 m^3. The surrogate site was 116-N-1 and the surrogate waste was a liquid waste stream in 1974.

- **UPR-100-N-5**: A surrogate site rule was applied for 1972 with a volume of 340.65 m^3. The surrogate site was 116-N-1 and the surrogate waste was a liquid waste stream in 1974.

Appendix D

Tritium Inventories Associated with Tritium Production

Appendix D

Tritium Inventories Associated with Tritium Production

John Evans

Tritium is produced in nuclear operations by a variety of different process. The first section of this appendix discusses all significant production mechanisms of interest at Hanford. Of special interest here are the two campaigns specifically designed to produce tritium as a product. Neither of the two tritium production campaigns were documented with adequate detail to make absolutely firm estimates of residual tritium inventories; the issue is further complicated by uncertainties concerning the chemical form of the tritium containing waste. This appendix is intended to summarize what information is known and provide a crude basis for estimating inventories.

D.1   Tritium Production Mechanisms

Naturally occurring tritium is produced at low, but measurable levels, through the action of high-energy cosmic rays on the principal components of the atmosphere (nitrogen, oxygen, and argon). The process is referred to as spallation and accounts for tritium levels of 50–100 pCi/L comprising a natural background always present in surface water, shallow groundwater, or precipitation. Most of the tritium found in the Columbia River both upstream and downstream from Hanford today is from that source. In the mid 1960s, fallout from atmospheric nuclear weapons testing was responsible for elevating those background levels by several orders of magnitude; however, that signal has since decreased markedly through dispersal and decay.

On the Hanford Site, irradiation of uranium fuel elements in the plutonium production reactors produced tritium in the fuel by a process called ternary fission. The yield for ternary fission is relatively low compared to the more familiar binary fission process responsible for producing persistent fission product contaminants such as cesium-137, but is nonetheless quite significant. Ternary fissions resulting in the formation of residual tritium nuclei account for about 0.2% of all fission events. Decladding and dissolution of the fuel released the stored tritium, which equilibrated with the dissolver water. Part of the tritium was then released to the soil column through process condensate disposal to cribs or to the atmosphere as evaporator discharge with only part of the residue going to tanks. The majority of the tritium occurring in Hanford groundwater at the present time is associated with that type of process. Because of the large volumes of water involved, some of these plumes are very large and occur at numerous locations. The largest plume, which extends eastward from the Plutonium-Uranium Extraction (PUREX) Plant cribs in the 200 East Area to the Columbia River, covers a wide area including the Hanford town site and 618-11 burial ground. Tritium concentrations associated with process condensate discharges can be as high as 2,000,000 pCi/L or more near the point of discharge but are significantly reduced by decay and dispersion over the transport path. Process condensate plumes also contain co-contaminants at readily measurable levels. Nitrate and iodine-129 measured in conjunction with tritium provide the best signatures for a process condensate derived plume. Since tritium and nitrate move essentially unretarded in the groundwater system, the occurrence of tritium without a corresponding nitrate signature can provide conclusive evidence that the tritium originated from a source other than process condensate.

During reactor operation, some tritium is produced in the cooling water through neutron capture on the deuterium in the water. Because the neutron capture cross-section of deuterium is very small (0.00053 barns), that process is not very efficient. That is, of course, the main reason for using heavy water as a coolant in the first place. It is relatively transparent to thermal neutrons. Reactors such as the production reactors at Savannah River or the Canadian commercial CANDU reactors, which employ heavy water as moderator/coolant, can produce a significant inventory of tritium by neutron capture on deuterium simply because there is a lot of target and a long irradiation time; however, since the Hanford reactors used once-through cooling with light water which contains only 0.015% deuterium (relative to hydrogen), buildup of tritium was essentially negligible and relatively little tritium attributable to that source has been observed near the old reactors. Some tritium release has been observed from N Reactor though which employed a light-water, closed loop, feed-and-bleed type cooling water cycle.

Neutron bombardment of helium-3 can also produce tritium since helium-3 has an extremely large neutron capture cross-section for tritium production (5,530 barns). Tritium can, thus, be produced in surprisingly large quantities from the minute amounts of helium-3 found in ordinary helium when helium gas is used as an inert reactor blanket as was commonly the practice in the graphite reactors. Tritium plumes near the KE and KW Reactors in particular may have originated from that type of source.

Most national security applications involving tritium production for weapons use have been conducted in the past at the Savannah River Site. Technical and operational details of that work are classified. The earliest work involving tritium production by bombardment of lithium was, however, performed at Hanford using the B and H Reactors for irradiation of lithium-aluminum alloy targets. That work, referred to as Project P-10-X, was carried out during the 1949 to 1952 time period producing the tritium used in the very earliest tests of thermonuclear devices. Tritium extraction was carried out in a dedicated laboratory near the B Reactor, the 108-B Building or Chemical Pump House. That facility has since been demolished. The disposition of waste associated with that project is described in the Waste Information Data System (WIDS) under waste site 132-B-1 (also known as 108-B Tritium Separations Facility). In the mid-1960s, a project known as the Hanford Coproduct Program was undertaken that also produced some tritium for fusion energy research.

D.2   Project P-10-X (1949-1954)

History. Starting in February 1949, a pilot program for producing large quantities of tritium was transferred from Argonne National Laboratory to the 100-B Area at Hanford. The project was originally code-named P-10 and by late 1950 was renamed as Project P-10-X. All tritium production subsequent to August 1954 was done at the Savannah River Plant. Operation of Project P-10-X began in 1949 with irradiations of lithium fluoride slugs. Experiments with lithium fluoride were terminated in May 1949 as a result of "pile irradiation difficulties" that were almost certainly associated with production of hydrogen fluoride. All subsequent work starting in August 1949 was done using lithium-aluminum alloy rods. Irradiations were done in either H or B Reactor. Vacuum extraction of tritium as gaseous T_2 was performed on the irradiated rods in the modified 108-B Chemical Pump House. Palladium thimbles were used to isolate and purify the T_2 gas, which was collected in mercury driven Toepler pumps. The produced tritium gas was placed in flasks and shipped to Los Alamos for further processing and use. During its five years of operation, Project P-10-X extracted more than 11 million Ci of tritium representing a delivered amount of product of about 1.2 kg. The 108-B facility was located north of the main 105-B Reactor building and was demolished in 1985. It is described under waste site 132-B-1 in WIDS.

Curie Estimates for Waste. Throughout its history, Project P-10-X was plagued with contamination releases to the environment and to personnel. The primary release mechanism was lost product itself, which simply escaped as a gas. Estimates of such tritium atmospheric releases vary from about 9,000 to 25,000 Ci in one reference to the much larger number of 200,000 Ci released as gaseous tritium through 1954 (Heeb and Gydesen 1994). Material released in that form is no longer of concern today since it should be reduced to negligible levels through dispersion and decay. The second largest source of contamination emitted from Project P-10-X operations was the mercury used in the Toepler pumps and pressure gauges. It is estimated that hundreds of liters of contaminated mercury was disposed to the 108-B crib, with subsequent diffusion through surrounding soil and groundwater. Interestingly, no mercury contamination has ever been detected in 100-B Area groundwater; however, well coverage is very limited throughout the 100-B Area, and monitoring for mercury has been even more limited. Tritium contamination also was released via particles of broken glass and pieces of metal equipment, through the grease and oil that contacted process equipment, via liquid nitrogen that was used in the lost product reclamation mission and in the cold traps of the lines and leak detectors, and through the carbon tetrachloride and other decontaminating agents used to wash down equipment. Additionally, shipping casks used in Project P-10-X sometimes spread external contamination along travel routes and at the 105-B wash pad where they were monitored. Preliminary estimates made at the time ranged from 20,000 to 155,000 Ci buried as solid waste, ostensibly in the 118-B-1 burial ground, although there is anecdotal information suggesting that some waste may have been disposed to undocumented trenches closer to the 108-B facility. Data presented by Heeb and Gydesen (1994), using information from old formerly classified lab notebooks that have since been destroyed, suggest a much larger number in the range of 400,000 to 500,000 Ci. Using the 500,000 Ci number as a conservative upper bound, the inventory of the 118-B-1 burial ground translates to 1,780 Ci in 2050. That is a much higher number than given by Stenner et al. (1988) which calculates out to 102 Ci after correction for decay to 2050.

Data from the operational time period showed that something on the order of 5 to 10% of the tritium produced by irradiation was retained in the lithium-aluminum targets. There is no information on the disposition of the lithium-aluminum alloy targets themselves, but it is reasonable to assume that they also went to the 118-B-1 burial ground, which received a large amount of radioactive metallic waste from reactor operations. That would account for on the order of 500,000 to 1,000,000 Ci of tritium sent to ground. It is unclear if that fraction was included in the estimates of buried waste discussed above since there seems to be some disagreement in the two estimates. To include that additional degree of uncertainty it would be reasonable to use a number of 3,000 Ci as a conservative estimate for the tritium content of the 118-B-1 burial ground as of 2050. However, it is also important to note that because of the nature of Project P-10-X, which produced a gaseous product from a metallic target, very little of the tritium included in the original inventory is likely to have been initially in a form readily available for exchange with groundwater. In particular, any residual tritium not released during extraction is unlikely to represent a readily available source of tritium as temperature release experiments have shown that such tritium is very tightly bound within the metal alloy matrix at ambient temperatures. Tritium (i.e., hydrogen) is, however, a notoriously labile element so it may eventually make its way over time into an environmentally available form as water (i.e., HTO). The Stenner et al. (1988) report also shows a small quantity of tritium disposed to the 118-B-6 burial ground, which was once referred to as the 108-B Solid Waste Burial Ground. That very small facility, which is located a short distance north of the reactor building, operated from 1950 to 1953. After correction for decay to 2050, that inventory amounts to about 5 Ci.

Historical records for Project P-10-X release estimates for cribbed liquid tritium waste range from 2,500 to 6,000 Ci in one historical reference, to on the order of 10,000 Ci calculated from information in the Heeb and Gydeson (1994) report. Using the larger number then, disposal to the 116-B-5 crib corrected for decay to 2050 thus comes to about 35 Ci, about an order of magnitude higher than the number given by Stenner et al. (1988) or that currently in the Environmental Release Summary (ERS) database.

Groundwater Contamination. Given that substantial tritium inventories have existed in at least three waste sites in the 100-B Area since 1950, it is worthwhile examining what is known about groundwater contamination in that part of the site. Figure D.1 shows the main features of the 100-B Area including wells and major engineered facilities. The 118-B-1 burial ground is shown at the southwest corner of the 100-B Area in Figure D.1. The 118-B-6 burial ground is not shown on the figure; it is located approximately 100 meters southeast of the 116-B-5 crib, which was also known as the 108-B crib. As can be seen from the map, well coverage is limited. The 100-B Area has long been known to be one of the most under-monitored areas of the Hanford Site. For example, the 118-B-1 burial ground, which is the likely repository of the solid tritium waste from Project P-10-X, has only one downgradient well, 199-B8-6, installed relatively recently. Monitoring of that well for tritium began in July 1992 with a moderately low measurement of 6,300 pCi/L recorded. Tritium levels remained relatively low through the mid 1990s then suddenly shot up to a high of 91,900 pCi/L in January 1998. Subsequent to that, monitoring has only been performed on an annual basis with a generally decreasing trend in evidence. The reading taken in January of 2002 was 26,700 pCi/L, and it was essentially unchanged in January 2005 when last sampled. There is, thus, clear evidence for some tritium contamination in the area.

Well 699-65-83, located just upgradient of the burial ground, shows no indication of tritium contamination extending back to 1971 suggesting strongly that the 118-B-1 burial ground itself is the likely source of a local tritium plume moving downgradient from that location. Unfortunately, the scarcity of wells in the area and lack of good trend information makes it impossible to say more. A similar situation exists for the 116-B-5 crib with only one or two wells in potentially useful locations. Well 199-B4-1, located at one end of the crib, shows two broad pulses of tritium in the late 1970s and mid 1980s with a maximum of 130,000 pCi/L reached in December 1984. The well was monitored in April 1999 with the tritium level down to only 4,920 pCi/L. When monitored in 2004, the well showed a 6,100 pCi/L tritium concentration. Well 199-B5-2 is located approximately downgradient of the crib about 300 meters away. It has only been in use since mid-1992. It shows a broad tritium pulse ranging up to 420,000 pCi/L in early 1997 with levels declining to relatively low levels by the end of 2000. In fiscal year (FY) 2005, tritium increased sharply to 161,000 pCi/L in well 199-B5-2 after several years of gradual increase since 2000. The situation is even less satisfactory for mercury monitoring. Well 199-B8-6 was monitored intensively for mercury during 1992 to 1995 with none detected. A similar situation is seen in essentially all of the 100-B Area wells with almost all of the measurements conducted in that same time period. There are currently no mercury measurements being made in the 100-B Area groundwater.
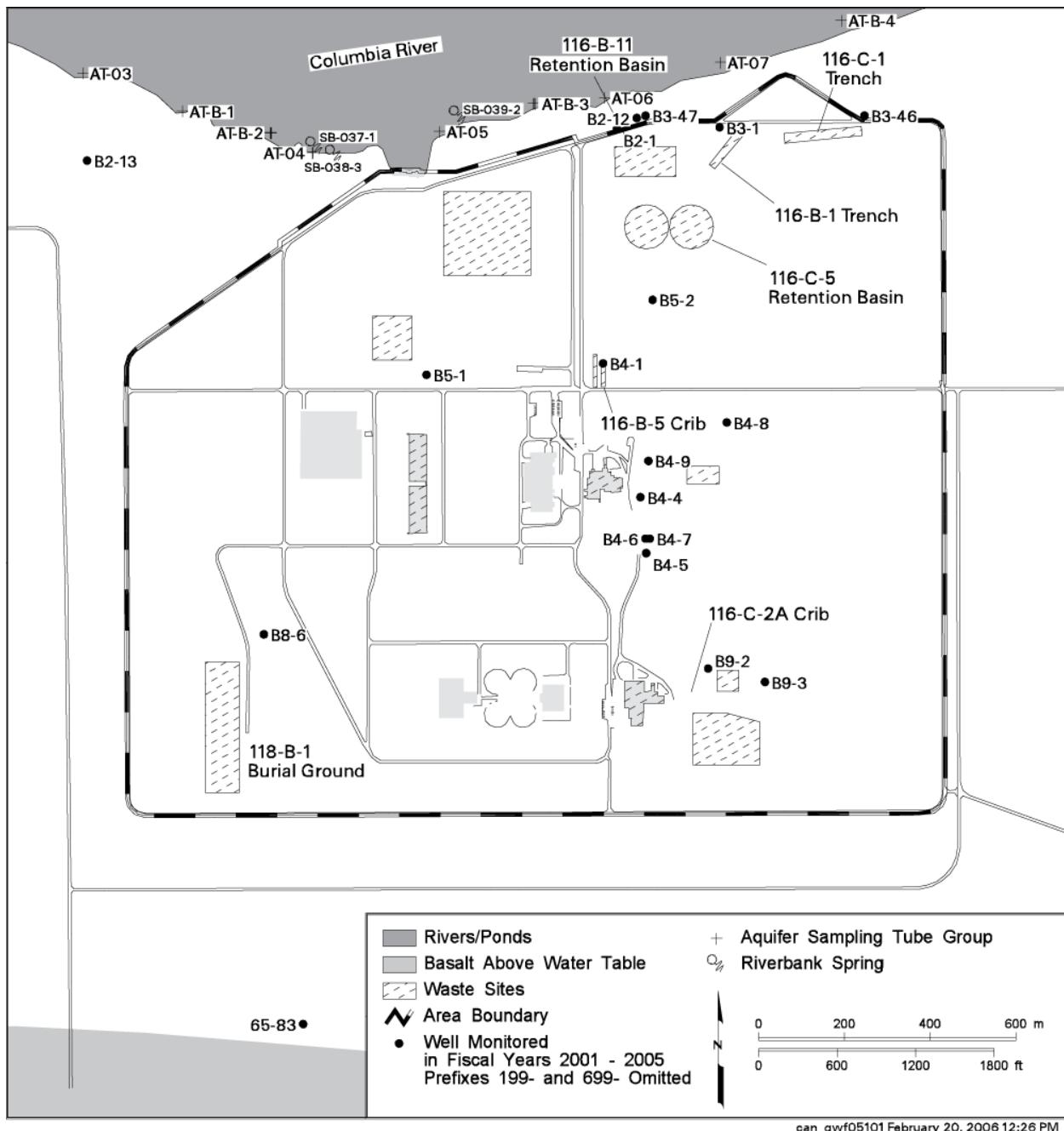
Figure D.1. Well Coverage Map for 100-B Area

D.3   Hanford Coproduct Program (1963-1967)

History. In the mid-1960s, a project known as the Hanford Coproduct Program was undertaken.
Unlike earlier tritium production activities performed at Hanford and Savannah River, the tritium end
product was intended for use in energy production by controlled fusion of deuterium-tritium mixtures
rather than for weapons applications. However, because of the obvious overlap with weapons-related
work, all research activities were classified at that time. Information associated with that work was
partially declassified in the early 1970s with technical details relevant to Savannah River tritium
production applications remaining as classified. In its early stages, which began in 1963, the program
was intended to provide comprehensive engineering data on the optimal characteristics of lithium-based
irradiation targets to be used for tritium production in parallel with both plutonium and electrical energy
production at the Hanford N Reactor. This work is documented in several unclassified reports. A good
summary of the activities performed can be found in Johnson et al. (1976).

Initial irradiations for the Coproduct Program were performed in one of the K Reactors using lithium-
aluminum rods similar to those used in the earlier Project P-10-X. All subsequent Coproduct irradiations
were performed at N Reactor during 1965 to 1967 culminating with a full scale test involving more than
1500 lithium aluminate target columns containing on the order of 17 tons of lithium aluminate. Tritium
production associated with that final test was calculated to be on the order of 60 million curies of tritium
per year. Following irradiation, the entire target load was shipped to Savannah River for extraction, so it
is unlikely that the production run itself was responsible for significant tritium releases at Hanford other
than those associated with N Reactor cooling water; however, research activities involving smaller but
still significant quantities of tritium production are almost certain to have generated some major waste
products. As part of the research program, several different materials were investigated for suitability as
targets including lithium-aluminum alloy, numerous lithium containing salts, lithium oxide, lithium
metatitanate, lithium silicate, lithium loaded glass, petalite, and lithium aluminate. Ultimately, lithium
aluminate, a highly refractory ceramic, was chosen as the most stable form and all subsequent work
involving tritium production, including the current DOE plans for tritium production using Tennessee
Valley Authority (TVA) reactors (Watts Bar and Sequoyah), employs that material. Several irradiations
were performed in support of the Coproduct work and only some of the targets were fully extracted for
tritium. In some cases the test targets were simply visually inspected or subjected to examination by
drilling to determine the amount of gas pressure buildup. All research activities including tritium
extractions in support of the Coproduct Program were performed in the Hanford 300 Area with the Post
Irradiation Test Facility in the 327 Building acting as the hub of the operation. A number of different
forms were used for irradiation of targets particularly during the early work aimed at determining
approximate yields. The predominant target form used for the later work consisted of zircaloy-2 canned
columns, 3.175 centimeters (1.250 inches) outside-diameter by 60.96 centimeters (24 inches) long with
either 0.0762- or 0.2413- centimeters (0.030- or 0.095-inch) -thick walls. Each contained two aluminum-
clad ceramic cores. The lithium used in these targets was either slightly depleted in lithium-6 (3.68%),
close to naturally abundant (6.07%), or slightly enriched (12.26%) unlike the highly lithium-6 enriched
targets used in the deuterium moderated Savannah River reactors for weapons production of large
quantities of tritium.

The fate of any waste generated by the Coproduct Program research activities, including the extracted
tritium itself, remains unknown. Record keeping during that time period was at best limited, and many of
the disposal records from that time period have been destroyed during several past space-saving records

purges. In addition, the fact that work was performed under conditions of strict classification further complicates the situation. It is, thus, possible that some record of material accountability has yet to be declassified; however, that is unlikely since researchers investigating the plutonium inventory of the burial ground have already concluded that even the safeguards related special nuclear materials records from that period have been destroyed; so, it is probable that tritium target disposal records suffered a similar fate.

Consistent with that conclusion is the fact that the rather extensive records searches performed to date on several different occasions including very recently have yielded little of value. References to lithium-aluminum were found in materials transfer Radioactive Shipment Record (RSR) records from the 327 Building starting to appear in the 1965 time frame. Unfortunately these log entries showed no indication of the final disposition of the material. The RSRs typically showed dose rates associated with the lithium-aluminum materials in the range of 100 to 200 mr/hr. That seems reasonable for materials that have been exposed to a significant reactor flux but contain no components likely to produce an unusually large inventory of neutron activation products. The lithium aluminate itself would have produced external dose only through activation of impurities while isotopes of zirconium in the zircaloy-2 cladding have relatively low neutron capture cross-sections with 65 day zirconium-95/niobium-95 as the only long-lived activation products of consequence. Impurities or minor alloy components in the zircaloy-2 including chromium, iron, niobium, and tin would also have contributed some dose most of which is long-since decayed by now. The log entries refer to the material as lithium-aluminum or lithium-aluminum columns. It appears that this was a generic term used for lithium targets most of which were actually lithium aluminate packaged as described above.

Since the Coproduct work was performed during the time period for which the 618-11 burial ground was used as the primary site for disposal of 300 Area operations waste it is quite reasonable to suppose that some, if not all, of the Coproduct Program research waste was routed to that location. The limited records associated with the 618-11 burial ground operation do, in fact, list "aluminum-lithium" as having been disposed to the burial ground. While lithium aluminate and other related materials are not specifically enumerated separately, it is unlikely that the difference in terminology is significant as discussed above. For lack of additional details, it would be prudent to assume that the term is used as a generic reference to tritium production target materials. Hydrogen gas is also included on the same list. Since it seems highly unlikely that actual high-pressure cylinders of hydrogen would be placed in a burial ground intended for low-level radioactive waste, it is possible that this is an oblique reference to gaseous tritium waste associated with the target extractions. Tritium is a very labile material with the ability to eventually diffuse through most materials and reactively exchange with normal hydrogen in water and some organics. Unless specifically packaged for long-term storage, it is quite likely that tritium-containing materials disposed to a burial ground would pose an eventual threat for groundwater contamination.

While there is clearly a high degree of likelihood that groundwater contamination recently observed near the 618-11 burial ground is in some way associated with Coproduct waste, further defining the nature and location of the waste through record searches may prove impractical. At this point, the most likely candidate for a source location appears to be a group of three caissons located near the north-central portion of the burial ground. The physical dimensions of the targets were small enough that they would have easily fit into the angled 3-foot-diameter caisson entry tubes. However, in view of the fact that the targets had relatively low external dose rates, it is also possible that they may have been disposed to the trenches in the same general area. Release of tritium is certainly easier to understand if the materials were completely uncontained in trenches. In that case, irrigation of the burial ground during the stabilization

and re-vegetation work conducted in June 1982 may have been responsible for mobilizing tritium into the groundwater system beneath the trenches. It does appear unlikely that the drum storage units on the northeastern side of the burial ground are responsible for the largest helium-3 concentrations observed in the soil-gas survey simply because of their locations; however, at this time multiple sources cannot be ruled out. There is likely to have been multiple waste disposal events over the two year period of the main Coproduct Program activities, and those materials may well have gone to different locations within the burial ground.

Helium-3 Survey. In an attempt to provide better answers for those questions, a helium-3-based soil-gas survey was conducted on the periphery of the burial ground by Pacific Northwest National Laboratory (PNNL) starting in August 2000. Helium-3 is the stable decay product of tritium. Determination of the extent of elevated helium-3 levels in soil gas can provide a measure of the location of tritium contamination in the vadose zone or groundwater. Results of that study have been documented by Olsen et al. (2001) as well as more recently in Olsen et al. (2006). Briefly, the survey showed a strong source of tritium consistent with the area of the caissons; however, because the study was confined to the area outside the fence, it was inconclusive with respect to actual location of the source or for providing an estimate of source strength.

Curie Estimates for Waste. Curie estimation for the 618-11 burial ground is fraught with considerable uncertainty. It is clear that all materials irradiated at N Reactor under the NR-75 and NR-87 tests were sent to Savannah River and, thus, have no potential impact at Hanford. Materials associated with the two earlier tests, NR-8 and NR-57, are quite likely to have contributed to the tritium inventory of the 618-11 burial ground. The disposition of the 48 columns of lithium aluminate irradiated under NR-66 remains unclear, however. It appears likely that they were added to the much larger number of columns (1400 to 1500) used in the later tests and also sent to Savannah River. Of the materials used in NR-57, it appears that 37 of the 66 canned targets contained in the two columns were also sent to Savannah River for engineering tests. Therefore, the remaining 29 were retained for tests at Hanford. The length of the irradiation was not documented in the report either, so for the purpose of estimation it is assumed to be the same as NR-66, i.e., six months at 4000 MW. Using the reported average values for retention of tritium after extraction, an approximate inventory for disposal can be estimated to be around 2,200 Ci in 2000 or 133 Ci in 2050. The estimated Curie content of the groundwater plume in 2001 according to Lindberg and Dresel (2002) is 190-225 Ci, which would be about 10% of the estimated source which seems reasonable for the purposes of initial estimation.

Groundwater Contamination. Interest in the 618-11 burial ground as a source of major tritium inventory became particularly acute following the discovery in January 1999 of very high levels of tritium in groundwater downgradient of the burial ground. Well 699-13-3A showed 1.86 million pCi/L when first monitored in January of 1999. Within a year, that level had increased to 8.14 million pCi/L, an exceptionally high value for Hanford, particularly considering the remote location on the site. Since that time, the plume has generally shown a decreasing trend at well 699-13-3A. The measurement taken, in January 2003, showed 3.6 million pCi/L. Levels in 2004 were in the 1.9 to 2.2 million pCi/L range. A full discussion of the extent of the original groundwater plume and the associated hydrologic controls can be found in Section 2.12.7.2 (Lindberg and Dresel 2002, pages 2.310-2.312). Current monitoring results can be found in Section 2.12.1.5 in the discussion of Operable Unit 300-FF-5 in the report *Hanford Site Groundwater Monitoring for Fiscal Year 2004* (Hartman et al. 2005). Tritium contamination is clearly associated with the 618-11 burial ground with the most likely source being residues from the tritium targets used in the Coproduct Program. As part of the 618-11 investigation some depth discrete samples

of groundwater were collected which provide a basis for estimation of the plume thickness. Using that and other information from the investigation, Lindberg and Dresel (2002) have estimated the groundwater plume inventory of tritium to be between 190 and 225 Ci at that location, which translates to about 14 Ci in 2050 assuming minimal movement.

D.4   References

Hartman MJ, LF Morasch, and WD Webber (eds.). 2005. *Hanford Site Groundwater Monitoring for Fiscal Year 2004*. PNNL 15070, Pacific Northwest National Laboratory, Richland, Washington.

Heeb CM and SP Gydesen. 1994. *Sources of Secondary Releases from Hanford Operations*. Section 7.0, PNWD-2254 HEDR, UC-000, Pacific Northwest National Laboratory, Richland, Washington.

Johnson AB, Jr., TJ Kabele, and WE Gurwell. 1976. *Tritium Production from Ceramic Targets: A Summary of the Hanford Coproduct Program*. BNWL-2097, UC-20, Pacific Northwest National Laboratory, Richland, Washington.

Lindberg JW and PE Dresel. 2002. "300 Area" in *Hanford Site Groundwater Monitoring for Fiscal Year 2001,* MJ Hartman, LF Morasch, and WD Webber (eds.). PNNL 13788, Pacific Northwest National Laboratory, Richland, Washington.

Olsen KB, PE Dresel, and JC Evans. 2001. *Measurement of Helium-3/Helium-4 ratios in Soil Gas at the 618-11 Burial Ground*. PNNL-13675, Pacific Northwest National Laboratory, Richland, Washington.

Olsen KB, PE Dresel, JC Evans, WJ McMahon, and R Poreda. 2006, in press. "Measurement of Helium Isotopes in Soil Gas as an Indicator of tritium Groundwater Contamination." *Env. Sci. and* Tech.

Stenner RD, KH Cramer, KA Higley, SJ Jette, DA Lamar, TJ McLaughlin, DR Sherwood, and NC Van Houten. 1988. *Hazard Ranking System Evaluation of CERCLA Inactive Waste Sites at Hanford*. PNL-6456, UC-70, Pacific Northwest National Laboratory, Richland, Washington.

Appendix E

Best Estimate Inventory – Cumulative in 2005

Appendix E

Best Estimate Inventory – Cumulative in 2005

This appendix presents the best-estimate inventory on December 31, 2005. The inventory input to the simulation is a waste site/year/analyte data file and is quite large because simulations can involve up to 690 waste sites, over 50 years of nuclear materials operations, and up to 14 analytes. The cumulative and decay corrected inventory discharged and disposed by a given date, in this case December 31, 2005, is more readily displayed. When acquiring inventory data and estimates, one often finds or is provided a best-estimate value without regard to its uncertainty distribution. In the case of the stochastic Hanford Soil Inventory Model (SIM) results, the best estimate is the mean. However, in all other cases the single value found or provided is simply interpreted as the best-estimate. The inventory compilation shown here is the best-estimate value for each waste site and analyte. This inventory was taken from the 'By_Site_2005' tab of the 'Tables_Best_2005_11_17_Inv-Data-Package.xls' file.

The best-estimate inventory shown here is a post-processed file that derives from the waste site/year/analyte file used to drive the Hanford assessment simulation. The waste site /year/analyte file is created by the INVENTORY code when it applies the uncertainty rules described in Section 6 to the 'disposal action file' of 'daf' created by INPROC. The INPROC code applies the fill-in and surrogate rules described in Section 4 to the inventory data files described in Section 5. The input file for INPROC execution is 'inproc-input_2005-11-09_DCR-0024.csv' and it is under configuration management and maintained on the SAC Windows File server at \\sac.pnl.gov\share\data\rev.1\inventory\. The 'Tables_Best…' and the 'inproc-input…' files are attached as an electronic appendix. In addition the output of the INPROC code for reference case A, (i.e., CA_Ref_A.daf), which is the basis for the best-estimate tables, is also included in the electronic appendix.

The background for table entries has been color coded to indicate the type or source of the data; Hanford SIM result, Hanford Tank Waste Operation Simulator (HTWOS) model result, record, estimated by fill-in rule, and estimated by a surrogate rule, or some combination. A key is provided at the bottom of the table.

While assembling the inventory, every effort was made to be consistent with inventories used in performance assessments being prepared for the single-shell tanks and the integrated disposal facility. Near perfect consistency was achieved by using the same simulation by the HTWOS model (Kirkbride et al. 2005). However, Kirkbride et al. (2005) shows a radium-226 inventory in tank 241-C-106 of 416 curies, decay correct to January 1, 2004. Tank 241-C-106 has been cleaned out and the HTWOS model simply used the Best Basis Inventory (BBI) for this tank as its residual. However, the BBI inventory for radium-226 was in error and has been updated to 1.39E-03 Ci, and that value is now in the draft performance assessment supporting the closure of single-shell tanks. This inconsistency was discovered during peer review of this document, and the updated value has not been promulgated into this inventory for use in Hanford assessments.

Kirkbride RA, PJ Certa, TM Hohl, AM Johnson, and RS Wittman. 2005. *Hanford Tank Waste Operations Simulator Model Data Package for the Development Run for the Refined Target Case*. RPP-RPT-23412, Revision 0A, CH2M HILL Hanford Group, Inc., Richland, Washington.

Inventory by site for waste form "All_Types" at the year 2005

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
Inventory at year 2005															
Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
All sites	716218.988	54725.32641	348.2385332	92.61255377	31699904.66	4589.830775	22.28663484	61625845.52	2026.225195	236.0601279	0.095103939	230.4405037	100.1779706	146.2612942	5189.900798
Offsite transfers - WIPP, Yucca	24856.9091	2238.506393	0	89.80157557	30386886.43	3516.759528	7.3493008	59932515.8	741.3696924	0	0	87.68176801	31.4429126	92.330789	1719.112935
	3.47%	4.09%	0.00%	96.96%	95.86%	76.62%	32.98%	97.25%	36.59%	0.00%	0.00%	38.05%	31.39%	63.13%	33.12%
US Ecology	274480	4024	3.124	0	25416	50.366	5.6442	72786	915.27	236.05	0.0013178	0	30.485	0	1783.8
	38.32%	7.35%	0.90%	0.00%	0.08%	1.10%	25.33%	0.12%	45.17%	100.00%	1.39%	0.00%	30.43%	0.00%	34.37%
All onsite DOE waste	416882.0789	48462.82002	345.1145332	2.810978204	1287602.232	1022.705247	9.293134036	1620543.72	369.5855024	0.010127942	0.093786139	142.7587357	38.25005797	53.93050516	1686.987863
	58.21%	88.56%	99.10%	3.04%	4.06%	22.28%	41.70%	2.63%	18.24%	0.00%	98.61%	61.95%	38.18%	36.87%	32.51%
IDF only	300.72	0.018012	0.00013073	0.000036311	155.59	0.4833	0.025347	100.59	0.0012336	0	0	0.00031678	0.0833	0.0011119	2.2811
	0.07%	0.00%	0.00%	0.00%	0.01%	0.05%	0.27%	0.01%	0.00%	0.00%	0.00%	0.00%	0.22%	0.00%	0.14%
River Corridor waste sites	84295.75155	47936.01407	344.984	0.015964772	15380.03709	36.56860704	0.056275385	19198.08799	359.093509	8.29335E-05	0.000329288	119.6937371	2.664533543	0.042455792	131.397097
including reactor cores	20.22%	98.91%	99.96%	0.57%	1.19%	3.58%	0.61%	1.18%	97.16%	0.82%	0.35%	83.84%	6.97%	0.08%	7.79%
CP - Other "218" waste sites	198428.4948	330.070037	0.13040252	0.556677631	826031.4697	256.6984519	1.115626121	1116404.727	6.029349297	0	0	0.525795854	32.47293767	0.114360874	1414.983426
	47.60%	0.68%	0.04%	19.80%	64.15%	25.10%	12.00%	68.89%	1.63%	0.00%	0.00%	0.37%	84.90%	0.21%	83.88%
CP - "216" waste sites	133719.1369	192.7547452	0	1.827497699	17018.43685	578.2326799	4.548182066	43371.61947	2.30076844	0.00996456	0.086025891	22.49416797	2.218471252	53.37060547	100.6171368
	32.08%	0.40%	0.00%	65.01%	1.32%	56.54%	48.94%	2.68%	0.62%	98.39%	91.73%	15.76%	5.80%	98.96%	5.96%
CP - facilities	6.10671347	0.00023945	0	0.080646659	392106.4406	38.26404273	2.757254455	270917.8942	0.784554178	0	0	1.6252E-06	0.636014009	4.7792E-09	29.88066151
	0.00%	0.00%	0.00%	2.87%	30.45%	3.74%	29.67%	16.72%	0.21%	0.00%	0.00%	0.00%	1.66%	0.00%	1.77%
CP - "200" waste sites	14.85771668	0.053940232	0	0.01441182	24317.12886	5.381578009	0.65256357	20465.71988	0.643582525	4.53294E-06	0.001081882	0.018512029	0.021266887	0.011968236	0.971270856
	0.00%	0.00%	0.00%	0.51%	1.89%	0.53%	7.02%	1.26%	0.17%	0.04%	1.15%	0.01%	0.06%	0.02%	0.06%
CP - UPR waste sites	21.14549386	0.442023263	0	0.032389224	506.3771812	10.29871133	0.03018173	19609.50403	0.087180321	7.98514E-06	0.000369379	0.012101748	0.001388495	0.044235946	0.063438694
	0.01%	0.00%	0.00%	1.15%	0.04%	1.01%	0.32%	1.21%	0.02%	0.08%	0.39%	0.01%	0.00%	0.08%	0.00%
CP - tank "241" waste sites	95.86571166	3.466949289	0	0.283354089	12086.75222	96.77787605	0.107703709	130475.5774	0.645325083	6.79309E-05	0.005979698	0.014102624	0.152146112	0.345766936	6.79373257
	0.02%	0.01%	0.00%	10.08%	0.94%	9.46%	1.16%	8.05%	0.17%	0.67%	6.38%	0.01%	0.40%	0.64%	0.40%
Subtotal onsite DOE waste	416882.0789	48462.82002	345.1145332	2.810978204	1287602.232	1022.705247	9.293134036	1620543.72	369.5855024	0.010127942	0.093786139	142.7587357	38.25005797	53.93050516	1686.987863
	416882.0789	48462.82002	345.1145332	2.810978204	1287602.232	1022.705247	9.293134036	1620543.72	369.5855024	0.010127942	0.093786139	142.7587357	38.25005797	53.93050516	1686.987863

Analyte	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
SIM Data	133702.8	197.0652	0	2.147925	45658.41	686.9426	4.725024	198315.8	3.615051	0.01012271	0.09270421	140.8692	3.097366	53.80626	142.4063
	18.67%	0.36%	0.00%	2.32%	0.14%	14.97%	21.20%	0.32%	0.18%	0.00%	97.48%	61.13%	3.09%	36.79%	2.74%
HTWOS Data	6.10656	0.000239452	0	0	1.49896E-05	7.91107E-07	1.44951E-07	2.23395E-06	9.84116E-06	0	0	1.62525E-06	5.68018E-08	4.77922E-09	2.62174E-06
	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Record Data	581455.9	54455.95	348.2397	89.81289	31557320	3875.158	16.96564	61244640	1828.43	236.0519	0.001317805	88.20773	96.15298	92.4472	5035.24
	81.18%	99.51%	100.00%	96.98%	99.55%	84.43%	76.12%	99.38%	90.26%	100.00%	1.39%	38.28%	95.98%	63.21%	97.02%
Estimated Data	0	30.97023	0	0.6433924	88093.83	23.75677	0.5872245	171850.8	35.84027	0	0	0	0.6668782	0	1.28093E-05
	0.00%	0.06%	0.00%	0.69%	0.28%	0.52%	2.63%	0.28%	1.77%	0.00%	0.00%	0.00%	0.67%	0.00%	0.00%
Surrogate Data	1053.871	41.28144	0	0.007763802	9022.727	3.911258	0.008751164	11358.43	157.9404	5.26066E-06	0.001081374	1.363194	0.2602632	0.008197827	12.27392
	0.15%	0.08%	0.00%	0.01%	0.03%	0.09%	0.04%	0.02%	7.79%	0.00%	1.14%	0.59%	0.26%	0.01%	0.24%
Total	716218.6	54725.27	348.2397	92.61197	31700090	4589.769	22.28664	61626160	2026.234	236.062	0.09510339	230.4402	100.1775	146.2617	5189.92

Color 1		SIM only
Color 2		HTWOS only
Color 3		Record only
Color 4		Estimate (fillin-rule)
Color 5		Surrogate rule
Color 6		Combination of SIM and HTWOS, e.g., all SSTs with past tank leaks
Color 7		Combination of record and HTWOS, e.g., 218-E-RCRA, 600-211 (SALDS)
Color 8		Combination of record and estimate
Color 9		Multiple rules
Color 10		Zero - no rule

E.2

Inventory by site for waste form "All_Types" at the year 2005

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
100-B-5	0.00033978	1.1834E-09	0	4.4975E-06	0.26291	0.00013888	2.8442E-07	0.33263	1.5365E-06	0	0	0	8.5987E-06	2.5796E-06	0.00019852
100-D-3	0.44661	0.31219	0	0	0.24331	0	0	0.24899	0.76629	0	0	0	0	0	0
100-D-32	0.29595	0.15621	0	0	0.13911	0	0	0.1416	0.49725	0	0	0	0	0	0
100-D-40	0.44661	0.31219	0	0	0.24331	0	0	0.24899	0.76629	0	0	0	0	0	0
100-D-47	0.44661	0.31219	0	0	0.24331	0	0	0.24899	0.76629	0	0	0	0	0	0
100-F-23	0	0	0	0	0.000026383	0	0	0	0	0	0	0	0	0	0
100-F-25	0.000045155	1.3635E-06	0	0	4.7332E-08	0	0	5.1814E-07	0	0	0	0	5.2321E-09	2.7458E-10	2.1244E-07
100-F-36	0	0	0	0	0.28337	0	0	0	0	0	0	0	0	0	0
100-H-10	0.12367	0.36454	0	0	0.018338	0	0	0.13426	0.0022684	0	0	0	0.00002023	0	0.00094889
100-H-5	0.04651	2.0698	0	0	0.093929	0	0	0.64538	5.1616	0	0	0	2.49E-09	0	2.974E-07
100-H-7	0.12367	0.36454	0	0	0.018338	0	0	0.13426	0.0022684	0	0	0	0.00002023	0	0.00094889
100-H-8	0.12367	0.36454	0	0	0.018338	0	0	0.13426	0.0022684	0	0	0	0.00002023	0	0.00094889
100-H-9	0.12367	0.36454	0	0	0.018338	0	0	0.13426	0.0022684	0	0	0	0.00002023	0	0.00094889
100-K-2	1.4412	35.23	0	0	2.0458	0	0	13.904	151.04	0	0	0	4.233E-08	0	5.0559E-06
100-K-5	1.3426E-08	2.8767E-14	0	1.0923E-10	7.7941E-06	3.3728E-09	6.9072E-12	9.7743E-06	5.7929E-11	0	0	0	2.0882E-10	6.2646E-11	4.8213E-09
100-N-60	0.0059369	0.0061005	0	0	0.00047621	0	0	0.0034201	0.000098661	0	0	0	3.3781E-07	0	0.000015845
100-N-66	38929	9539.8	74.998	0	11.559	0.032999	0	32.629	36.896	0	0	0	0	0	0
116-B-1	0.0027574	1.1548E-08	0	0.000043904	2.3714	0.0013557	2.7764E-06	3.0105	0.000012679	0	0	0	0.000083939	0.000025181	0.001938
116-B-2	0.0026536	0.14311	0	0	0.0070204	0	0	0.040696	0.00049218	0	0	0	0.00003738	0	0.0017533
116-B-3	0.073566	0.27573	0	0	0.011985	0	0	0.088958	0.0012562	0	0	0	0.00001428	0	0.0006698
116-B-4	0.11673	0.2575	0	0	0.014726	0	0	0.10724	0.0020889	0	0	0	0.00001428	0	0.0006698
116-B-5	61.276	0.0033813	0	0	0.00070496	0	0	0.0013058	0.000023484	0	0	0	0.00011634	0	0.0054569
116-B-6A	0	0.24081	0	0	0.55179	0	0	0.093995	0.001709	0	0	0	0.00003696	0	0.0017336
116-B-6B	0.00245	0.00041055	0	0	0.00011618	0	0	0.00013249	1.8729E-06	0	0	0	0.00000042	0	0.0000197
116-B-7	0.0095474	2.4528E-08	0	0.000093163	6.1713	0.0028768	5.8915E-06	7.7648	0.000041923	0	0	0	0.00017811	0.000053434	0.0041123
116-C-1	0.012053	3.5723E-08	0	0.00013573	8.451	0.0041912	8.5833E-06	10.661	0.0000533599	0	0	0	0.0002595	0.000077847	0.0059912
116-C-2A	0.10213	0.001311	0	0	0.60224	0	0	0.00052359	9.7912E-06	0	0	0	0.00004158	0	0.0019503
116-C-2C	0.091758	13.062	0	0	1.1039	0	0	5.217	0.097557	0	0	0	0.00504	0	0.2364
116-D-1A	0.28549	2.2096	0	0	0.075169	0	0	0.6814	0.0091213	0	0	0	0.00015792	0	0.0074072
116-D-1B	0.040852	0.82143	0	0	0.10056	0	0	0.32362	0.0059167	0	0	0	0.00010416	0	0.0048856
116-D-5	0.0098153	2.6217E-08	0	0.000099588	6.4836	0.0030752	6.2978E-06	8.163	0.000043243	0	0	0	0.0001904	0.000057119	0.0043959
116-DR-1%2	0.003514	1.4927E-08	0	0.000056754	3.0471	0.0017525	3.5891E-06	3.8693	0.000016179	0	0	0	0.00010851	0.000032551	0.0025052
116-DR-3	0.067418	0.064251	0	0	0.031525	0	0	0.02246	0.0003499	0	0	0	0	0	0
116-DR-4	0	0.071914	0	0	0.0026551	0	0	0.024037	0.00035546	0	0		0	0	0
116-DR-5	0.010948	3.0163E-08	0	0.00011458	7.3845	0.0035381	7.2458E-06	9.3029	0.000048419	0	0	0	0.00021906	0.000065717	0.0050576
116-DR-8	0	0	0	0	9.6966E-06	0	0	0	0	0	0	0	0	0	0
116-F-1	0.065164	1.4928	0	0	0.031567	0	0	0.57407	0.010155	0	0	0	0.0007896	0	0.037036
116-F-10	0.012027	0.0116	0	0	0.000036752	0	0	0.0042268	0.000070628	0	0	0	0.00000126	0	0.0000591
116-F-11	0.0067833	0.0058017	0	0	0.000019444	0	0	0.0022311	0.000039469	0	0	0	0.00000063	0	0.00002955
116-F-16	0	0.018392	0	0	0.13289	0	0	0.0064239	0.00010286	0	0	0	0	0	0
116-F-2	0.0027935	1.1548E-08	0	0.000043904	2.3847	0.0013557	2.7764E-06	3.0266	0.00001283	0	0	0	0.000083939	0.000025181	0.001938
116-F-3	0.00015554	0	0	0	0.00021997	0	0	0	0	0	0	0	0	0	0
116-F-4	0.0034675	3.1053	0	0	0.64808	0	0	0.99053	0.013799	0	0	0	0.00006678	0	0.0031323
116-F-5	0	0.000065686	0	0	0.000012258	0	0	0.000025234	4.4454E-07	0	0	0	0	0	0
116-F-6	0.47008	0.90546	0	0	0.10541	0	0	0.34444	0.0060222	0	0	0	0.00029106	0	0.013652
116-F-7	0	0	0	0	0.000012271	0	0	0	0	0	0	0	0	0	0
116-F-8	0.0072115	2.1139E-08	0	0.000080313	5.0337	0.00248	5.0789E-06	6.3488	0.000032059	0	0	0	0.00015355	0.000046064	0.0035451
116-F-9	0	0.11905	0	0	1.2052	0	0	0.057399	3.9365	0	0	0	0	0	0
116-H-1	0.0017875	7.4637E-09	0	0.000028377	1.5347	0.00087625	1.7945E-06	1.9482	8.2169E-06	0	0	0	0.000054254	0.000016276	0.0012526
116-H-2	0.063222	0.0031104	0	0	0.29586	0	0	0.15442	0.018097	0	0	0	9.5E-12	0	4.4718E-10
116-H-3	0.00026055	0.001846	0	0	0.000083924	0	0	0.019852	0.0022371	0	0	0	1.9E-12	0	8.9436E-11
116-H-5	0.013325	3.8756E-08	0	0.00014724	9.2631	0.0045467	9.3113E-06	11.681	0.000059202	0	0	0	0.0002815	0.00008445	0.0064993
116-H-6	0	0	0	0	0	0.01804	0	0	0	0	0	0	0.0030464	0	0.1434
116-H-7	0.24066	1.4278	0	0	0.39721	0	0	4.8076	4.1926	0	0	0	2.8536E-09	0	1.7063E-07
116-H-9	0	0	0	0	0.000012271	0	0	0	0	0	0	0	0	0	0
116-K-1	0	0	0	8.8973E-06	0.3557	0.0050949	0.000010928	11.482	0.000037661	0	0	0	0	0	0
116-K-2	0.015824	4.0879E-08	0	0.00015527	10.259	0.0047947	9.8192E-06	12.91	0.000069511	0	0	0	0.00029686	0.000089056	0.0068538
116-KE-1	18.321	0	0	0	1.3073	0	0	0.4176	0.0083531	0	0	0	0	0	0
116-KE-2	0.13879	0.98811	0	0	1.3073	0	0	0.4176	0.0083531	0	0	0	0.00008736	0	0.0040976
116-KE-3	0.013879	0.09881	0	0	0.13072	0	0	0.04176	0.0008353	0	0	0	0.00008736	0	0.00040976
116-KW-2	0.012646	0.092992	0	0	0.12147	0	0	0.038824	0.00076358	0	0	0	8.2221E-06	0	0.00038566
116-N-1	3770.3	0	0	0.00091912	1383.3	0.52634	0.0011289	1838.1	0.010613	0	0	0	0.000000272	0	0.000012803
116-N-3	230.34	0	0	0.000095184	138.84	0.05451	0.00011691	254.33	0.0020373	0	0	0	0.0023058	0	0.10815
118-B-1	1342	0.23946	0	0	0.19214	0	0	0.19585	0.89241	0	0	0	0	0	0
118-B-6	3884.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118-B-7	1032.2	0.18743	0	0	0.15192	0	0	0.15487	0.6914	0	0	0	0	0	0
118-B-8	2570.6	4592.5	41.998	0	14.618	0.0019999	0	28.419	14.319	0	0	0	0	0	0.009
118-C-1	1.236	1.2971	0	0	0.12809	0	0	0.19585	0.5044	0	0	0	0	0	0
118-C-3	2756.4	4573.8	11.999	0	10.397	0.0019999	0	22.257	14.353	0	0	0	0	0	0.004
118-C-4	1.0021	1.1277	0	0	0.10772	0	0	0.16492	0.41108	0	0	0	0	0	0
118-D-1	0.428	0.29918	0	0	0.23317	0	0	0.23861	0.73437	0	0	0	0	0	0
118-D-2	0.52973	0.29933	0	0	0.25619	0	0	0.26113	0.89241	0	0	0	0	0	0

Inventory by site for waste form "All_Types" at the year 2005

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
118-D-3	0.49442	0.19955	0	0	0.25619	0	0	0.26113	0.54319	0	0	0	0	0	0
118-D-4	1.0537	0.59869	0	0	0.51535	0	0	0.5253	1.7808	0	0	0	0	0	0
118-D-6	2384.7	4399.2	33.998	0	6.2119	0.0019999	0	18.633	14.353	0	0	0	0	0	0
118-DR-2	1517.6	3261.7	25.999	0	6.3506	0.0019999	0	19.058	14.216	0	0	0	0	0	0
118-F-1	0.52973	0.19955	0	0	0.32023	0	0	0.32641	0.85362	0	0	0	0	0	0
118-F-4	0.28252	0.019955	0	0	0	0	0	0.0060783	0.000080031	0	0	0	0	0	0
118-F-5	0	0	0	0	6.4245	0	0	0	0	0	0	0	0	0	0
118-F-6	0	0	0	0	6.4245	0	0	0	0	0	0	0	0	0	0
118-F-8	1796.3	3788.6	32.998	0	14.793	0.0019999	0	28.919	14.25	0	0	0	0	0	0.009
118-H-1	0.49442	0.19955	0	0	0.25619	0	0	0.26113	0.73723	0	0	0	0	0	0
118-H-6	1703.4	3567.3	16.999	0	14.793	0.0019999	0	28.919	14.216	0	0	0	0	0	0.009
118-K-1	1.8364	0.89798	0	0	0.89665	0	0	0.91395	1.8623	0	0	0	0	0	0
118-KE-1	9291.1	7066.6	53.997	0	6.2363	0.032998	0	18.559	14.457	0	0	0	0	0	0
118-KW-1	8362	6762.1	51.998	0	6.4111	0.032998	0	19.058	14.457	0	0	0	0	0	0
118-KW-2	1.0224	0.95895	0	0	0.09935	0	0	0.15159	0.41301	0	0	0	0	0	0
132-C-2	0.012053	3.5723E-08	0	0.00013573	8.451	0.0041912	8.5833E-06	10.661	0.000053599	0	0	0	0.0002595	0.000077848	0.0059912
1908-NE	1932	6.4065	0	0	30.082	0.09999	0	3.4763	29.864	0	0	0	0	0	0
200-E-100	1.1129E-06	3.3626E-08	0	2.0299E-09	0.00014218	8.1323E-07	7.2253E-10	0.0011959	2.9889E-09	0	5.668E-11	1.885E-11	8.8404E-10	4.3829E-09	3.9997E-08
200-E-102	14.563	0.000020045	0	8.4216E-07	0.96301	0.15312	0	1.139	0.000018065	0	0	0.018512	0.02086	7.5926E-07	0.95259
200-E-103	8.2065E-09	2.489E-10	0	2.1121E-11	1.9618E-07	6.6613E-09	1.2782E-11	0.00002463	5.8805E-11	0	2.7213E-12	1.7001E-11	0	2.6967E-11	4.0751E-12
200-E-107	5.5052E-09	1.6703E-10	0	1.417E-11	1.3161E-07	4.4687E-09	2.3475E-06	0.000016516	3.9437E-11	0	1.827E-12	1.1411E-11	0	1.81E-11	2.7369E-12
200-E-136	0	0	0	0.00014774	266.97	0.082998	0.00016	403.37	0.0033014	0	0	0	0	0	0
200-E-137	0	0	0	0	1.6124	0	0.36246	1.9541	0	0	0	0	0	0	0
200-E-25	0	0	0	0	0.0016613	0	0	0.00019693	0	0	0	0	5.1881E-10	1.0768E-08	2.1811E-08
200-E-28	0	0	0	0	0.013166	0	0	0.0015619	0	0	0	0	4.0413E-09	1.1278E-07	1.7809E-07
200-E-30	0	0	0	0.0022471	1665.5	0.5199	0.00099999	2554.5	0.0071756	0	0	0	0	0	0
200-E-4	0	0	0	0	0	0	0	0	0	0	0	0	1.4862E-10	4.2445E-12	7.0365E-09
200-E-41	4.8963E-08	1.7764E-09	0	1.2707E-10	6.0885E-06	4.7622E-08	3.8505E-11	0.00005246	2.042E-10	0	2.4274E-12	2.15E-12	3.7848E-11	2.2935E-10	1.7122E-09
200-E-54	4.1164E-07	1.2478E-08	0	1.0598E-09	9.8463E-06	3.3432E-07	6.4131E-10	0.001235	2.9487E-09	0	1.3644E-10	8.5245E-10	0	1.3523E-09	2.0471E-10
200-E-55	0.000030764	7.8742E-07	0	3.8044E-08	0.0084325	0.000016813	1.676E-08	0.03366	4.7823E-08	1.2523E-10	1.5993E-09	0	2.6205E-08	1.4477E-07	1.1836E-06
200-E-56	0.018658	0.010689	0	0.0013205	6541	0.4135	0.000024725	1477.4	0.2321	5.4722E-08	3.3678E-07	0	0.000033	0.0017471	0.0015601
200-E-57	0.027975	0.016033	0	0.0019806	9812.7	0.62025	0.000037097	2216.2	0.3481	8.2099E-08	5.0527E-07	0	0.000049502	0.002621	0.0023401
200-E-60	7.1582E-09	2.1713E-10	0	1.8424E-11	1.7114E-07	5.8101E-09	3.0505E-06	0.000021486	5.1303E-11	0	2.3736E-12	1.4832E-11	0	2.352E-11	3.5571E-12
200-E-61	3.6931E-06	1.1202E-07	0	9.5052E-09	0.000088285	2.9978E-06	5.7521E-09	0.011085	2.646E-08	0	1.2247E-09	7.6527E-09	0	1.2136E-08	1.8352E-09
200-E-62	0	7.1677E-07	0	0	3.9204E-08	0	1.0145E-08	0	0	1.5161E-10	1.1831E-09	5.7906E-10	1.5389E-07	8.2118E-08	6.6985E-06
200-E-63	0	7.1678E-07	0	0	3.9201E-08	0	1.0145E-08	0	0	1.5235E-10	1.1853E-09	6.017E-10	1.538E-07	8.3381E-08	6.6953E-06
200-E-64	0	7.1677E-07	0	0	3.9204E-08	0	1.0145E-08	0	0	1.5235E-10	1.1854E-09	6.0175E-10	1.5379E-07	8.338E-08	6.6948E-06
200-E-65	0	7.1681E-07	0	0	3.9204E-08	0	1.0145E-08	0	0	1.5235E-10	1.1855E-09	6.0173E-10	1.5379E-07	8.3378E-08	6.6946E-06
200-E-67	0	7.1678E-07	0	0	3.9206E-08	0	1.0145E-08	0	0	1.5235E-10	1.1854E-09	6.0173E-10	1.538E-07	8.3379E-08	0.000006695
200-E-68	0	7.1684E-07	0	0	3.9204E-08	0	1.0145E-08	0	0	1.5235E-10	1.1854E-09	6.017E-10	1.538E-07	8.3382E-08	6.6952E-06
200-E-69	0	7.3384E-07	0	0	4.0139E-08	0	1.0386E-08	0	0	1.5474E-10	1.2127E-09	6.124E-10	1.5771E-07	8.5271E-08	6.8675E-06
200-E-70	0	7.3389E-07	0	0	4.0137E-08	0	1.0387E-08	0	0	1.5474E-10	1.2129E-09	6.1241E-10	1.5771E-07	8.5276E-08	6.8674E-06
200-E-71	0	7.3384E-07	0	0	4.0138E-08	0	1.0386E-08	0	0	1.5473E-10	1.2128E-09	6.1242E-10	1.5772E-07	8.5276E-08	6.8675E-06
200-E-72	0	7.3382E-07	0	0	4.0138E-08	0	1.0386E-08	0	0	1.5474E-10	1.2128E-09	6.1241E-10	1.5772E-07	8.5273E-08	6.8677E-06
200-E-73	0	7.1677E-07	0	0	3.9204E-08	0	1.0145E-08	0	0	1.5234E-10	1.1854E-09	6.0174E-10	1.5379E-07	8.3378E-08	6.6948E-06
200-E-74	0	7.3388E-07	0	0	4.0137E-08	0	1.0387E-08	0	0	1.5474E-10	1.2127E-09	6.1243E-10	1.577E-07	8.5275E-08	6.8675E-06
200-E-75	0	7.3384E-07	0	0	4.0135E-08	0	1.0386E-08	0	0	1.5475E-10	1.2129E-09	6.1239E-10	1.5771E-07	8.5269E-08	6.8672E-06
200-E-76	0	7.3385E-07	0	0	4.0138E-08	0	1.0387E-08	0	0	1.5475E-10	1.2128E-09	6.1241E-10	1.5772E-07	8.5272E-08	6.8672E-06
200-E-77	0	7.3386E-07	0	0	4.014E-08	0	1.0386E-08	0	0	1.5474E-10	1.2129E-09	6.1241E-10	1.5772E-07	8.5271E-08	6.8672E-06
200-E-78	0	7.168E-07	0	0	3.9203E-08	0	1.0145E-08	0	0	1.5236E-10	1.1854E-09	6.0175E-10	1.5382E-07	8.3379E-08	6.6953E-06
200-E-79	0	7.3383E-07	0	0	4.0139E-08	0	1.0387E-08	0	0	1.5474E-10	1.2128E-09	6.124E-10	1.5771E-07	8.5272E-08	6.8677E-06
200-E-80	0	7.168E-07	0	0	3.9203E-08	0	1.0146E-08	0	0	1.5235E-10	1.1854E-09	6.0176E-10	1.538E-07	8.3376E-08	6.6951E-06
200-E-81	9.3536E-07	2.837E-08	0	2.4071E-09	0.000022358	7.5924E-07	1.4568E-09	0.0028074	6.7014E-09	0	3.1015E-10	1.9382E-09	0	3.0735E-09	4.6484E-10
200-E-82	0	7.3384E-07	0	0	4.0135E-08	0	1.0386E-08	0	0	1.5475E-10	1.2128E-09	6.124E-10	1.5772E-07	8.5278E-08	6.8674E-06
200-E-84	0	9.8704E-07	0	0	5.3989E-08	0	1.3971E-08	0	0	2.0981E-10	1.6325E-09	8.2864E-10	2.1181E-07	1.1482E-07	9.2205E-06
200-E-85	2.9252E-06	8.8714E-08	0	7.5287E-09	0.000069928	2.3744E-06	4.556E-09	0.0087798	2.0959E-08	0	9.7005E-10	6.0613E-09	0	9.6113E-09	1.4534E-09
200-E-88	1.1123E-06	3.3502E-08	0	2.0151E-09	0.00014218	8.0847E-07	7.1975E-10	0.0011954	2.9608E-09	0	5.6678E-11	1.8323E-11	8.8408E-10	4.3675E-09	3.9996E-08
200-E-89	1.1123E-06	3.3501E-08	0	2.0151E-09	0.00014218	8.085E-07	7.1973E-10	0.0011954	2.9606E-09	0	5.6681E-11	1.8325E-11	8.8406E-10	4.3675E-09	3.9997E-08
200-E-90	1.1123E-06	3.3501E-08	0	2.0151E-09	0.00014218	8.0851E-07	7.1973E-10	0.0011954	2.9607E-09	0	5.6681E-11	1.8325E-11	8.8405E-10	4.3675E-09	3.9997E-08
200-E-91	1.1123E-06	3.3502E-08	0	2.0151E-09	0.00014218	8.0849E-07	7.1975E-10	0.0011954	2.9606E-09	0	5.6681E-11	1.8324E-11	8.8404E-10	4.3675E-09	3.9996E-08
200-E-92	1.1123E-06	3.3502E-08	0	2.0151E-09	0.00014218	8.0852E-07	7.1973E-10	0.0011954	2.9606E-09	0	5.668E-11	1.8324E-11	8.8403E-10	4.3675E-09	3.9996E-08
200-E-93	1.1123E-06	3.3501E-08	0	2.0151E-09	0.00014218	8.0852E-07	7.1975E-10	0.0011954	2.9607E-09	0	5.6682E-11	1.8323E-11	8.8404E-10	4.3675E-09	3.9997E-08
200-E-94	1.1123E-06	3.3501E-08	0	2.0151E-09	0.00014218	8.0851E-07	7.1975E-10	0.0011954	2.9608E-09	0	5.6679E-11	1.8326E-11	8.8407E-10	4.3675E-09	3.9996E-08
200-E-95	0.000031419	8.0418E-07	0	3.8853E-08	0.0082309	0.000017171	1.7117E-08	0.03433	4.8844E-08	1.279E-10	1.6333E-09	0	2.6648E-08	1.4451E-07	1.2037E-06
200-E-97	0.000031419	8.0417E-07	0	3.8853E-08	0.0085259	0.000017171	1.7117E-08	0.034366	4.8846E-08	1.279E-10	1.6333E-09	0	2.6738E-08	1.4704E-07	1.2077E-06
200-E-98	0.000026183	6.7015E-07	0	3.2378E-08	0.0070709	0.000014309	1.4264E-08	0.028634	4.0702E-08	1.0658E-10	1.3611E-09	0	2.2271E-08	1.2224E-07	0.000001006
200-E-99	1.1128E-06	3.3625E-08	0	2.0299E-09	0.00014218	8.1323E-07	7.2253E-10	0.0011959	2.9886E-09	0	5.668E-11	1.8849E-11	8.8402E-10	4.3829E-09	3.9996E-08
200-W-22	0.00068038	0	0	0	0	2.1305E-06	0	0	0	0	0	1.0847E-11	4.0128E-07	0	0.000018319
200-W-40	0	0.00013076	0	0.0002325	107.55	0.13307	0.0002856	606.03	0.0024176	0	0	0	1.3949E-07	0	6.5878E-06
200-W-42	0.2412	0	0	0	0	0	0	0	0	1.0011E-11	6.8672E-11	2.5075E-11	8.2603E-09	1.1123E-09	3.5512E-07
200-W-43	0	0	0	0.0027801	3420.6	1.592	0.0034148	3914.8	0.014528	0	0	0	0	0	0
200-W-44	0	0	0	0.0042485	672.83	1.1998	0.00047	5943	0.021505	0	0	0	0	0	0

E.4

Inventory by site for waste form "All_Types" at the year 2005

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200-W-45	0	0	0	0	1666.7	0.5199	0.28442	2556	0	0	0	0	0	0	0
200-W-52	0.0059436	0.026915	0	0.0012211	23.799	0.013812	0	27.888	0.010403	0.000004392	0.001081	0	0.00032031	0.0075965	0.014601
200-W-69	0	0.00013092	0	0.0002325	136.84	0.13308	0.0002856	763.14	0.0040334	0	0	0	1.3949E-07	0	6.5878E-06
200-W-72	0	0	0	8.2925E-12	0	0	0	1.9231E-11	0	0	0	0	1.9992E-10	0	8.8446E-09
200-W-9	0.00012187	3.1191E-06	0	1.507E-07	0.015887	0.000066598	6.6392E-08	0.13125	1.8937E-07	4.9605E-10	6.4305E-09	0	9.8808E-08	4.1071E-07	4.4703E-06
202-S	0	0	0	0.0027791	4217.7	1.5915	0.0034137	4785.2	0.022313	0	0	0	0	0	0
2101-M-POND	0.11346	0.0032499	0	0.00014964	0	0	0.000014285	0.0010258	0	2.4602E-07	1.4082E-06	0.000001917	0.0001818	0.00021396	0.0085699
216-A-1	0	0	0	0	0	0	0	0	0	0	0	5.2994E-07	0.0019825	0	0.090795
216-A-10	43618	0.011132	0	0.0015698	16.301	0.489	1.735	25.319	0.0036354	0.00025832	0.0021852	1.7305E-06	0.0052291	2.4969	0.24486
216-A-11	0	3.8962E-07	0	0	2.1311E-08	0	5.5149E-09	0	0	9.2752E-11	5.9748E-10	4.3563E-10	7.4887E-08	5.6943E-08	3.3626E-06
216-A-12	0	3.8965E-07	0	0	2.1311E-08	0	5.5146E-09	0	0	9.2864E-11	5.9428E-10	4.525E-10	7.4456E-08	5.8355E-08	3.3522E-06
216-A-13	2.0537E-08	6.2289E-10	0	5.2854E-11	4.9093E-07	1.667E-08	3.1987E-11	0.000061642	1.4715E-10	0	6.8098E-12	4.2548E-11	0	6.7484E-11	1.0197E-11
216-A-14	2.0508E-09	6.2199E-11	0	5.2777E-12	4.9024E-08	1.6647E-09	3.1944E-12	6.1556E-06	1.4694E-11	0	6.8004E-13	4.2489E-12	0	6.7387E-12	1.0186E-12
216-A-15	0	0.000038964	0	0	2.1312E-06	0	5.5142E-07	0	0	9.2867E-09	5.9435E-08	4.525E-08	7.4447E-06	5.8356E-06	0.00033525
216-A-16	2.5029E-07	7.5913E-09	0	6.4416E-10	0.000005983	2.0317E-07	3.8984E-10	0.00075125	1.7934E-09	0	8.2994E-11	5.1854E-10	0	8.2244E-10	1.243E-10
216-A-17	1.2309E-07	3.7338E-09	0	3.1682E-10	2.9427E-06	9.9918E-08	1.9173E-10	0.00036945	8.8204E-10	0	4.082E-11	2.5505E-10	0	4.045E-10	6.113E-11
216-A-18	0	0	0	0	0	0	0	0	0	0	0	2.6273E-06	0.0098648	0	0.45047
216-A-19	0	0	0	0	0	0	0	0	0	0	0	0.000021869	0.62881	0	28.697
216-A-2	0.001055	0.0022106	0	0.000086034	0.79063	0.026989	0.000017552	1.6558	0.0031505	4.5057E-06	0.000025878	0.00024636	0.0031803	0.062298	0.15054
216-A-20	1.7602	0.0033646	0	0	0.00036793	0	0	0	0	0	0	8.9602E-07	0.0089909	2.1274E-06	0.4114
216-A-21	37.35	0	0	0.00013107	5.3755	0.0075344	0	56.798	0.000076084	3.1595E-06	0.000020165	0	0.0027767	0.023696	0.13136
216-A-22	0.060004	9.1638E-09	0	0	5.0128E-10	0.00048656	1.2974E-10	0	0	3.9631E-12	0	1.8236E-09	0.000066303	2.4299E-09	0.0030265
216-A-23A	0.11698	5.6275E-06	0	6.1536E-07	0	0	0	0	0	0	0	0	1.0094E-11	6.3486E-10	4.7681E-10
216-A-23B	0.11217	5.6274E-06	0	6.1537E-07	0	0	0	0	0	0	0	0	1.0095E-11	6.6021E-09	4.768E-10
216-A-24	6638.7	3.0289	0	0.000027485	1.5454	0.0085859	5.6242E-06	357.65	0.00041146	1.3959E-06	0.000010333	2.9599E-06	0.0012388	0.0022688	0.050356
216-A-25	664.05	35.091	0	0.0054634	162.57	1.71	0.014037	6479.7	0.008807	0.00021429	0	0.00056922	0.2065	0.11722	9.0116
216-A-26	7.922E-09	2.4027E-10	0	2.0388E-11	1.8937E-07	6.4293E-09	1.2338E-11	0.000023776	5.6757E-11	0	2.627E-12	1.6414E-11	0	2.6028E-11	3.9369E-12
216-A-26A	2.0536E-09	6.2293E-11	0	5.2853E-12	4.9091E-08	1.667E-09	3.1987E-12	6.1644E-06	1.4715E-11	0	6.8104E-13	4.255E-12	0	6.7482E-12	1.0197E-12
216-A-27	0.037893	0.00048359	0	0.000020386	22.068	0.0086305	7.3976E-08	26.242	0.00039208	5.8274E-10	6.3981E-06	0.44404	0.001243	0.000018342	0.054005
216-A-28	0.2762	0	0	0	0	0.0024814	0	0	0	0	0	2.5617E-07	0.0094885	0	0.43413
216-A-3	31.138	4.0423E-07	0	1.6996E-08	0.018514	0.27348	0	0.021902	3.2853E-07	0	0	5.2601E-06	0.038225	1.5246E-08	1.745
216-A-30	0.013672	0.028877	0	2.0444E-06	0.97742	0.00074086	0.0089232	2.4939	0.000020309	5.6298E-06	0.000043275	2.0572	0.01187	0.0033151	0.51844
216-A-31	0.00041701	0.00035063	0	0.000025403	1.1222	0.0079358	5.1975E-06	330.54	0.0003804	9.703E-07	6.2513E-06	2.8354E-06	0.00085271	0.00038954	0.040351
216-A-32	8.2148E-09	2.4917E-10	0	2.114E-11	1.9638E-07	6.668E-09	1.2794E-11	0.000024657	5.8863E-11	0	2.7239E-12	1.702E-11	0	2.6994E-11	4.08E-12
216-A-35	2.0513E-08	6.2232E-10	0	5.2809E-11	4.9046E-07	1.6653E-08	3.1947E-11	0.000061584	1.4703E-10	0	6.8038E-12	4.2495E-11	0	6.7419E-11	1.019E-11
216-A-36A	75.484	0	0	0.0085167	699.41	0.48898	0	612.34	0.0059723	3.1334E-06	0.000022747	5.7974E-06	0.0027686	0.0059602	0.11238
216-A-36B	151	0	0	0.0010984	243.87	0.063226	0.0086405	259.75	0.00084191	1.3852E-06	0.000015107	6.1732E-06	0.0022656	0.0002425	0.099853
216-A-37-1	447.1	1.5012	0	0.16418	0	0	0	0	0	0	0	3.6138E-06	0.0004311	0	0.00015462
216-A-37-2	7.1798	0.45237	0	0	0.049251	0	0.000054377	0	0	5.3866E-07	5.9884E-06	2.3833E-06	0.00088202	0.00057574	0.038861
216-A-39	0.00017828	0.000059596	0	0.000010859	0.043985	0.0033927	2.0372E-07	12.954	0.000015779	4.7817E-10	3.381E-09	0	8.8506E-09	9.1338E-06	4.1836E-07
216-A-4	48.645	0.0098018	0	3.3683E-06	3.6735	0.57243	0	4.3472	0.000065197	5.3057E-11	0	0.074077	0.078011	3.0357E-06	3.561
216-A-40	1.0555E-07	2.6847E-08	0	3.1999E-09	1.5395E-07	1.0205E-06	6.0353E-10	0.00010094	6.075E-09	0	0	1.1298E-10	0	3.3243E-09	0
216-A-41	0.078442	8.9118E-09	0	1.5809E-09	6.5982E-06	4.9404E-07	1.6844E-06	0.000062432	2.3477E-09	2.6232E-10	1.8589E-09	3.0396E-11	4.8511E-09	2.5043E-06	2.2929E-07
216-A-45	2429.3	0.000039603	0	0.000019779	0.061982	0.0058457	0.032591	1.4209	0.00010426	9.6026E-06	0.00013071	0	0.00014563	0.043488	0.0063742
216-A-5	12889	0.0099725	0	0.00097712	26.89	0.30653	0.96323	10.346	0.0034687	0.000060349	0.00038153	0	0.0027604	1.3114	0.13058
216-A-6	880.44	0.013143	0	0.000067013	1.8583	0.021043	0.073079	0.98195	0.00023837	7.1019E-06	0.000043685	0.027427	0.0024638	0.092038	0.11474
216-A-7	0.17573	0.0031531	0	0.00020457	9.0361	0.063907	0.000041863	2662.4	0.0030624	7.8162E-06	0.00005041	0.000022833	0.0068657	0.0031366	0.32515
216-A-8	18540	3.5243	0	0.00016671	7.7362	0.051981	0.000037721	2169.2	0.0024928	8.5037E-06	0.000063114	0.000018353	0.0075292	0.0037781	0.30606
216-A-9	607.7	1.1652	0	5.4131E-06	6.0421	0.0022995	0.0012193	6.9967	0.00010459	6.4498E-07	3.6789E-06	12.594	0.03586	0.0012959	1.5473
216-B-10A	0.048537	0.00022903	0	0.000011066	1.1666	0.0053552	4.8752E-06	9.6378	0.000013911	3.6423E-08	4.1484E-07	6.1879E-10	0.00007063	0.00003016	0.0032216
216-B-10B	3.8548E-08	1.1692E-09	0	9.9187E-11	9.2144E-07	3.1289E-08	0.000016427	0.00011472	2.7611E-10	0	1.2783E-11	7.9846E-11	0	1.2667E-10	1.9149E-11
216-B-11A%B	12.032	0.00027737	0	0.000010925	2.6974	0.003254	4.5525E-06	8.6317	0.000013061	5.388E-08	7.2725E-07	0	6.1098E-07	0.000030455	0.000027824
216-B-12	1766.7	0.0095854	0	0.00037047	106.95	1.655	0.00015511	290.77	0.00044568	1.9621E-06	8.1408E-06	6.5268E-06	0.2195	0.00099642	10.025
216-B-13	4.7075E-06	1.2049E-07	0	5.8213E-09	0.00096771	2.5727E-06	2.5646E-06	0.0051122	7.3183E-09	1.9162E-11	2.4472E-10	0	3.9103E-09	1.9703E-08	1.7682E-07
216-B-14	40.797	2.0935	0	0.094538	527.6	32.941	0.042241	271.09	0.099149	0.00045018	0.000015137	0	0.0039306	0.26137	0.17773
216-B-15	29.738	1.5266	0	0.068942	149.05	24.019	0.030804	197.69	0.072295	0.00032818	0.000011054	0	0.0028647	0.19056	0.12962
216-B-16	26.387	1.3116	0	0.057377	128.63	19.728	0.029797	175.19	0.061171	0.00027394	0.00037788	0	0.0025224	0.15776	0.11412
216-B-17	16.107	0.74055	0	0.029708	73.495	9.8348	0.021663	106.72	0.033157	0.00014295	0.00074981	0	0.0015139	0.08039	0.068517
216-B-18	40.104	2.0577	0	0.092938	200.9	32.376	0.041527	266.51	0.097457	0.00044248	0.000014892	0	0.0038598	0.2569	0.17469
216-B-19	29.968	1.4265	0	0.059591	140.77	20.098	0.037463	198.7	0.065088	0.00028561	0.00097201	0	0.0028373	0.16244	0.1284
216-B-20	22.077	1.0613	0	0.044815	273.03	15.179	0.027012	489.2	0.048653	0.00021453	0.00062777	0	0.0021597	0.12239	0.09778
216-B-21	21.984	1.1117	0	0.049462	108.74	17.129	0.023751	146.11	0.052258	0.0002357	0.00015522	0	0.0021113	0.13638	0.095493
216-B-2-1	0	0	0	1.2238E-07	301.88	0.00012867	1.5031E-07	0.22059	1.0877E-06	0	0	0	0	0	0
216-B-22	22.35	1.1004	0	0.04766	108.04	16.328	0.025826	148.26	0.051051	0.00022779	0.00041045	0	0.0021317	0.13079	0.096446
216-B-2-2	0	0	0	1.2238E-07	102.89	0.000029775	1.5031E-07	0.22059	1.0877E-06	0	0	0	6.5972E-07	0	0.000037223
216-B-23	21.3	1.048	0	0.045348	102.92	15.524	0.024695	141.43	0.048607	0.00021654	0.00040105	0	0.0020325	0.12442	0.091925
216-B-24	22.921	1.1765	0	0.053132	114.86	18.509	0.023742	152.35	0.055703	0.00025286	8.5093E-06	0	0.0022072	0.14684	0.099871
216-B-25	23.106	1.1861	0	0.053549	115.78	18.657	0.023931	153.57	0.05614	0.00025489	8.5736E-06	0	0.0022254	0.14806	0.10068
216-B-26	22.336	1.1466	0	0.051785	432.16	18.039	0.023129	520.6	0.054286	0.0002465	8.1616E-06	0	0.0023204	0.14315	0.10495
216-B-27	20.801	1.0677	0	0.04822	104.23	16.796	0.021541	138.23	0.050552	0.00022945	0.000007763	0	0.0020032	0.13327	0.090658
216-B-28	23.799	1.1774	0	0.051274	115.54	17.605	0.027168	157.96	0.054812	0.00024488	0.00038703	0	0.0022732	0.14093	0.10288
216-B-29	22.73	1.1667	0	0.052683	221.04	18.352	0.023535	151.09	0.055242	0.0002508	8.4816E-06	0	0.0021881	0.14559	0.099014

E.6

Inventory by site for waste form "All_Types" at the year 2005

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
216-B-3	15201	99.01	0	0.00081658	118.99	0.31978	0.0031994	378.62	0.0013162	0.000033552	0.00033782	0.0001837	0.048866	0.086582	2.1694
216-B-30	22.556	1.0697	0	0.044492	105.62	14.97	0.02845	149.56	0.04869	0.00021339	0.00076882	0	0.0021337	0.12119	0.096584
216-B-31	22.888	1.0867	0	0.045247	107.33	15.238	0.028795	151.74	0.049488	0.00021693	0.00076916	0	0.0021663	0.12337	0.097978
216-B-32	22.441	1.0599	0	0.0439	133.89	14.744	0.028531	148.76	0.048159	0.00021057	0.00079923	0	0.0021211	0.11949	0.096004
216-B-33	22.425	1.0437	0	0.04248	150.98	14.159	0.029441	148.65	0.047025	0.0002041	0.0009352	0	0.0021137	0.11528	0.095693
216-B-34	23.036	1.0695	0	0.043444	146.74	14.46	0.030352	152.65	0.048159	0.00020875	0.00097907	0	0.0021695	0.1178	0.098244
216-B-35	4.877	0.085631	0	0.0028182	67.608	0.21434	0.0018703	432.05	0.0095304	9.2552E-06	0.0006136	0	0.00052192	0.0049295	0.023946
216-B-36	8.9259	0.15675	0	0.0051581	123.71	0.39226	0.0034234	790.79	0.017443	0.000016951	0.0011227	0	0.00095593	0.0090207	0.043869
216-B-37	19.877	0.34904	0	0.011487	275.39	0.87357	0.0076244	1760.8	0.038844	0.000037732	0.0025015	0	0.0021285	0.020089	0.097631
216-B-38	6.5796	0.11553	0	0.0038021	91.187	0.28914	0.0025233	582.9	0.012856	0.000012492	0.00082752	0	0.00070422	0.0066501	0.032322
216-B-39	7.0865	0.12443	0	0.0040943	98.182	0.3114	0.0027173	627.65	0.013849	0.000013451	0.00089103	0	0.00075829	0.0071614	0.034808
216-B-4	8.9665E-06	2.295E-07	0	1.1088E-08	0.001169	4.9005E-06	4.885E-09	0.0096576	1.3937E-08	3.65E-11	4.659E-10	0	7.2702E-09	3.0222E-08	3.2892E-07
216-B-40	7.5469	0.13252	0	0.0043603	104.57	0.33165	0.0028937	668.51	0.014745	0.000014323	0.00094907	0	0.00080778	0.0076268	0.037055
216-B-41	6.6259	0.11635	0	0.0038284	91.805	0.29121	0.0025405	587	0.012952	0.0001258	0.00083338	0	0.00070921	0.0066958	0.03253
216-B-42	7.059	0.36229	0	0.016361	178.21	5.6991	0.0073086	46.908	0.017151	0.000077838	2.5906E-06	0	0.00067986	0.045209	0.030754
216-B-43	9.9726	0.51204	0	0.023123	251.81	8.0533	0.010331	66.306	0.024242	0.00011007	3.6615E-06	0	0.0009607	0.063904	0.043463
216-B-44	26.351	1.3525	0	0.061076	665.2	21.275	0.027288	175.14	0.064042	0.00029062	0.000009696	0	0.0025378	0.1688	0.11482
216-B-45	23.141	1.1876	0	0.05365	912.99	18.684	0.023967	540.84	0.056212	0.00025534	8.3781E-06	0	0.0024038	0.14829	0.10876
216-B-46	31.521	1.6182	0	0.073079	796	25.459	0.032634	209.57	0.076547	0.00034768	0.000011636	0	0.0030364	0.20201	0.13735
216-B-47	17.316	0.8886	0	0.040136	291.28	13.983	0.017937	115.12	0.042095	0.00019098	6.3906E-06	0	0.0016681	0.11093	0.075443
216-B-48	19.242	0.98775	0	0.044602	485.91	15.541	0.019933	127.92	0.046758	0.00021225	7.1022E-06	0	0.0018532	0.12329	0.08385
216-B-49	31.519	1.6181	0	0.073061	795.78	25.451	0.032654	209.57	0.076624	0.00034772	0.000011634	0	0.0030368	0.20194	0.13733
216-B-5	0.000081038	0.011125	0	0.00049731	6.6935	0.0042513	1.8816E-06	7.7224	0.0018038	3.6461E-06	0.0015499	0	0.00156	0.005718	0.0069488
216-B-50	95.326	0.0030384	0	0.00020811	1.3499	0.06596	0.000093498	48.973	0.000036966	2.0998E-08	0.00078715	0.000064473	4.5335E-07	0.00026086	0.000020989
216-B-51	0.0047061	0.00024148	0	0.000010908	0.02358	0.0037998	4.8735E-06	0.03128	0.000011442	5.1919E-08	1.7524E-09	0	4.5327E-07	0.000030155	0.000020509
216-B-52	40.266	1.8927	0	0.077923	343.3	26.101	0.051767	266.87	0.085742	0.00037398	0.001519	0	0.003802	0.21184	0.17209
216-B-53A	0.013529	0.014351	0	7.2387E-06	7.8873	0.0030712		9.3313	0.00013998	4.6866E-06	2.4887E-06	0.18978	0.00057362	0.00043558	0.025036
216-B-53B	0.0078908	0.00049633	0	4.2225E-06	4.5899	0.0017903		5.4402	0.000081645	1.7941E-09	1.3939E-06	0.055748	0.00015761	0.000018992	0.006823
216-B-54	0.0078987	0.02618	0	4.2277E-06	4.6039	0.0017932	0	5.4579	0.000081719	8.5444E-08	0.000000194	0.055872	0.00023108	0.00079284	0.010319
216-B-55	0.00013357	0.000033965	0	4.0489E-06	0.00019479	0.0012912	7.635E-07	0.12771	7.6851E-06	0	0	1.4298E-07	0	4.2064E-06	0
216-B-57	146.88	0.0091283	0	0.00062554	3.1542	0.19803	0.00028061	147.02	0.00011148	6.2539E-08	0.00023636	0.00019341	9.2692E-07	0.000063106	0.000043525
216-B-58	0.0063121	0.010906	0	3.3791E-06	3.6812	0.0014332		4.357	0.000065346	3.5607E-08	0.00001342	0.044523	0.00015627	0.00033064	0.006887
216-B-59	5.323E-08	1.3542E-10	0	1.6135E-09	7.7611E-08	5.1431E-07	3.0433E-10	0.000050885	3.0637E-09			5.6902E-11	0	1.6755E-09	0
216-B-6	0.0053762	0.00013761	0	6.6484E-06	0.70092	0.0029381	0.000002929	5.7906	0.00008358	2.1884E-08	2.7936E-07	0	0.000004359	0.00001812	0.00019721
216-B-60	3.5125E-06	4.48E-08	0	1.9526E-09	0.0020152	8.1233E-07	0.000011087	0.0024729	3.5971E-08	0	0	0.0043188	0.000012094	1.7609E-09	0.00052822
216-B-62	0.26804	0.064151	0	0.0077333	73.247	2.4288	0.0012875	8644.6	0.027016	3.2719E-07	4.6008E-06	0	0.00041461	0.0099293	0.00069389
216-B-63	98.039	0.033546	0	3.1265E-07	0.61278	0.016473	5.8911E-08	0.083171	5.9323E-07	0	0	2.6023E-08	0.0025867	0.00010409	0.11788
216-B-7A%B	0.0057892	0.021438	0	0.0011467	1408.7	0.092529	0.00066796	325.09	0.063287	4.3748E-06	0.0034632	1.2901	0.0036853	0.018309	0.15952
216-B-8	0.010018	0.14963	0	0.0067127	129.43	0.080101	0.000026644	149.97	0.022964	0.000042963	0.0078278	0	0.0028235	0.032943	0.12656
216-B-9	0.0012709	0.010969	0	0.00049392	9.5051	0.0057451	1.3227E-06	11.052	0.0026198	2.7112E-06	0.00054455	0	0.00018101	0.0027309	0.0081442
216-BY-201	0.19593	0.010054	0	0.00045401	4.9455	0.1582	0.00020284	1.3019	0.00047623	2.1613E-06	7.2264E-08	0	0.000018868	0.0012553	0.00085354
216-C-1	0.00015289	0.000074349	0	9.1562E-06	45.317	0.0028711	7.7129E-06	10.257	0.001605	0	0	0.029456	0.012841	0.000012113	0.60065
216-C-10	0.000049464	0.000028331	0	3.5043E-06	17.365	0.0010975	6.566E-08	3.9248	0.00061548	2.9209E-11	9.3965E-10	0		4.8486E-06	4.3637E-06
216-C-2	0		0	0.070879				0.0084024					1.9847E-06	6.7119E-07	8.6392E-07
216-C-3	59.81	0.000014805	0	1.8303E-06	9.0567	0.00072808	3.4249E-08	2.0492	0.00032136	1.4903E-09	0	1.4932E-08	0.000068527	3.3567E-06	0.0031301
216-C-4	0.00013307	0.000012779	0	2.7445E-06	6.8297	0.00084134	5.1686E-08	0.0004529	0.000092932	1.5531E-10	1.1698E-09	0	4.9719E-08	2.6233E-06	2.2729E-06
216-C-5			0									1.9668E-07	0.0002987		0.013656
216-C-6	9.4398	0.000033086	0	0.000018638	18.268	0.0028519	1.3375E-07	0.34581	0.00024503	7.3682E-08	4.2254E-07	1.6183E-07	0.00003212	0.0001356	0.0014397
216-C-7			0										5.6102E-10	9.0426E-12	2.5352E-08
216-C-8			0	0.00022475				0.000026645					5.3211E-11	2.3843E-09	2.5142E-09
216-C-9	0.0064662	0.0002511	0	3.1532E-06	1.2021	0.0010054	5.9455E-07	0.24209	5.9862E-06	0	0	9.6599E-08	7.2329E-07	0.000019865	0.0000333
216-N-1			0										8.4667E-06		0.00038155
216-N-2	0.00032283	8.2622E-06	0	3.9902E-07	0.042077	0.0001764	1.7579E-07	0.34734	5.0218E-07	0	1.677E-08	0	3.2675E-07	1.0882E-06	0.000014742
216-N-3	0.00032274	8.2593E-06	0	3.9882E-07	0.042103	0.0001764	1.7581E-07	0.34761	5.0116E-07	1.3203E-09	1.68E-08	0	3.2503E-07	1.0886E-06	0.000014727
216-N-4	0.00033756	8.6425E-06	0	4.1736E-07	0.044043	0.00018451	8.1653E-08	0.36351	5.2466E-07	0	1.9402E-09	0	8.7135E-06	1.1857E-06	0.0003937
216-N-5	0.00033522	8.5774E-06	0	4.141E-07	0.043678	0.00018344	1.8264E-07	0.36115	5.208E-07	1.3686E-09	1.7456E-08	0	3.3507E-07	1.1305E-06	0.000015193
216-N-6	0.0003375	0.000008643	0	4.1763E-07	0.044011	0.00018448	8.1666E-08	0.36368	5.2528E-07	0	1.9374E-09	0	8.7365E-06	1.1858E-06	0.000039377
216-N-7	0.00033539	8.5953E-06	0	4.1545E-07	0.043788	0.00018366	1.8279E-07	0.36171	0.000000522	1.3733E-09	1.7463E-08	0	3.3544E-07	1.1316E-06	0.000015212
216-S-1%2	1919.1	0	0	0.045595	853.84	2.6134	0.13715	740.91	0.016973	0.000015255	0.000066888	0.00041783	0.031301	0.51655	1.4717
216-S-10P	0.79102	2.5663	0	0.000030717	0.73935	0.011582	0.000018178	33.741	0.000090725	8.9692E-06	0.00075957	0.00021294	0.0097175	0.046353	0.4079
216-S-12	0.076288	1.6225E-07	0	0.000063481	1.1901	0.0036226	0.00038315	1.0436	0.000023648	2.1208E-08	9.2874E-08	5.7553E-08	0.00043295	0.00072115	0.0020464
216-S-13	32.595	0.00018653	0	0	0.37545	0.44401	0	130.06	0.00031643	4.6059E-09	2.6624E-07	1.8701E-07	0.00004341	0.012532	0.0020303
216-S-14			0									4.7992E-09	1.0307E-06		0.000048528
216-S-15	0.21965	0	0	0	1.6028E-09	0	0	3.9547E-09	0	0	0	0	4.2373E-11	3.7996E-08	1.9762E-09
216-S-16P	1.9619	0.00084654	0	0.000059136	1.2152	0.028765	0.000034982	63.036	0.00017544				0.0095268	0.00013689	0.43505
216-S-17	0.55401	0.00163	0	0.000078153	6.3247	0.029721	0.000047281	75.364	0.00025479				0.000051424	0.00020766	0.0023489
216-S-19	0.17328	0.0034217	0	0	0.00014422	0	0	0.0015665	0	0	3.4139E-08	0	0.000012274	1.2586E-06	0.00052552
216-S-20	0.1167	2.6861	0	0.000061147	66.628	0.025916	0.0081461	79.999	0.001182	0.000010449	0.00001678	0.17401	0.0080157	0.12028	0.37758
216-S-21	1918	0.0088368	0	0.00055576	5.7716	0.20625	0.00031865	544.91	0.0011967	3.3179E-08	2.4945E-06	0.000014202	1.6903E-06	0.0011459	0.000076941
216-S-22	1.6854	2.0424E-09	0	1.4274E-10	2.9308E-06	5.3779E-08	6.3912E-06	1.5113E-06	4.2108E-10					2.4601E-10	3.1946E-11
216-S-23	0.000032024	7.0788E-07	0	4.9474E-08	0.0010159	0.00001864	2.9266E-08	0.052379	1.4595E-07	0	0	0	0	8.5261E-08	1.1077E-08
216-S-25	2734.1	0.000044787	0	0	0.000042995	0	0	0.000020519	0	9.8821E-09	6.7652E-08	2.9482E-08	0.00001017	0.00095952	0.00047594

Inventory by site for waste form "All_Types" at the year 2005

E.7

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
216-S-26	0.029201	0.00057686	0	0	0.000024309	0	0	0.00026408	0	0	0	0	2.1445E-06	2.0507E-07	0.000094531
216-S-3	92.3	0.00040604	0	0.000038185	0.29208	0.014215	0.000021898	37.613	0.000074075	2.2827E-09	1.4143E-07	7.4375E-07	0.000030335	0.000072299	0.0013859
216-S-4	21.944	0	0	1.6012E-07	0	0	3.9508E-07	0	0	0	0	0	4.2329E-09	3.7957E-06	1.975E-07
216-S-5	2.4918	0.0010786	0	0.000052226	28.069	0.025907	0.000031641	50.563	0.00017021	0	0	0	0.015923	0.00013781	0.72703
216-S-6	2.6818	0.000092245	0	0.00016019	5.1808	0.016027	0.0028087	10.075	0.000080357	3.4651E-07	1.4425E-06	8.5498E-07	0.012389	0.0017459	0.5656
216-S-7	6323.1	0	0	0.043426	1310.7	2.4919	0.35509	876.76	0.017093	0.000089778	0.00049973	0.00020692	0.055877	0.48961	2.5511
216-S-8	0	0	0	0	0	0	0	0	0	0	0	0.000020229	0.004346	0	0.20445
216-S-9	882.18	0	0	0.00181	105.66	0.10409	0.029784	54.061	0.00080749	0.000011462	0.000065938	0.000025636	0.0050014	0.020156	0.22422
216-SX-2	0	0.00032061	0	0.000015444	0	0	4.5419E-06	0	0	6.4214E-08	4.1288E-07	1.8502E-07	0.000056558	0.000044138	0.002677
216-T-1	0.031943	0.00062627	0	2.1858E-06	2.3956	0.00096599	9.6294E-07	2.1605	2.7476E-06	7.1851E-09	9.1715E-08	0	3.3918E-06	0.000020445	0.00014972
216-T-12	59.812	0.00040809	0	0.00001342	0.32171	0.0085156	8.8996E-06	2.0559	0.000045406	4.5529E-08	0	9.3543E-08	0.0031667	0.000024349	0.14467
216-T-14	4.6288	0.081289	0	0.0026749	64.143	0.20339	0.001775	410.13	0.0090439	8.7864E-06	0.00058223	0	0.00049489	0.0046786	0.022739
216-T-15	4.794	0.084194	0	0.0027703	66.47	0.21071	0.0018386	424.77	0.0093688	9.1001E-06	0.00060305	0	0.00051316	0.004845	0.023546
216-T-16	4.6927	0.082411	0	0.0027119	65.044	0.20627	0.0017997	415.84	0.0091721	8.9108E-06	0.0005905	0	0.0005023	0.0047429	0.023056
216-T-17	3.6114	0.063426	0	0.0020868	50.066	0.15872	0.0013851	319.99	0.0070579	6.8568E-06	0.00045441	0	0.00038667	0.0036506	0.017749
216-T-18	0.17827	0.26687	0	0.0021461	35.082	0.1539	0.0014845	37.599	0.0024648	0.000010932	0.00079842	0	0.00081393	0.0036433	0.036534
216-T-19	3865.4	0.0153	0	0.00069403	21.81	0.00792	0	17.105	0.0059011	2.4968E-06	0.00059482	0	0.00018659	0.0044895	0.0085058
216-T-2	0.0053869	0.00013788	0	6.6615E-06	0.7023	0.0029441	2.9348E-06	5.8021	0.000008374	2.1928E-08	2.7992E-07	0	4.3677E-06	0.000018156	0.0001976
216-T-20	0.22837	9.2443E-06	0	3.6398E-07	0.06752	0.0001093	1.5122E-07	0.28456	4.3581E-07	1.8009E-09	2.4419E-08	0	1.5471E-08	9.3492E-07	7.0454E-07
216-T-21	2.1309	0.037407	0	0.001231	29.523	0.093622	0.00081712	188.71	0.0041638	4.0434E-06	0.00026799	0	0.00022801	0.0021532	0.01046
216-T-22	7.0852	0.12441	0	0.004095	98.202	0.31141	0.0027174	627.78	0.013847	0.000013456	0.00089139	0	0.00075831	0.0071609	0.034789
216-T-23	6.8374	0.12006	0	0.0039506	94.732	0.30049	0.0026219	605.71	0.013366	0.000012982	0.00086013	0	0.00073152	0.0069112	0.033582
216-T-24	7.0853	0.12443	0	0.004095	98.185	0.31139	0.0027172	627.75	0.013848	0.000013451	0.00089129	0	0.0007584	0.0071607	0.034797
216-T-25	13.745	0.24136	0	0.0079427	190.49	0.60401	0.005271	1217.6	0.026863	0.000026098	0.0017289	0	0.001471	0.013888	0.067497
216-T-26	2.0381	3.0517	0	0.024537	402.26	1.7599	0.016974	430.39	0.028186	0.00012503	0.0091322	0	0.0093606	0.041659	0.41826
216-T-27	0.0063468	0.10959	0	3.3947E-06	3.6991	0.0014374	0	4.4244	0.000065517	3.5763E-07	3.3864E-06	0.059349	0.00047974	0.003327	0.022115
216-T-28	0.18886	0.73389	0	0.00010108	110.06	0.042888	0	130.48	0.0019564	2.3949E-06	0.000046871	2.2191	0.0082783	0.022269	0.3689
216-T-29	0.00003449	8.8277E-07	0	4.2651E-08	0.0044965	0.000018849	1.879E-08	0.037148	5.3617E-08	1.4034E-10	1.7947E-09	0	2.7965E-08	1.1648E-07	1.2652E-06
216-T-3	0.000015282	0.0041369	0	0.00018497	1.5075	0.00095748	4.2375E-07	1.739	0.0009666	0.000001356	0.00090728	0	0.000029699	0.0033466	0.0013163
216-T-32	0.00016475	0.014608	0	0.00065896	2.238	0.0013343	2.2789E-07	2.6069	0.011887	3.3203E-06	0.0030985	0	8.6408E-06	0.016169	0.00038411
216-T-33	0.60056	1.2587E-06	0	5.2936E-08	0.055796	0.0042733	0.000030491	0.067988	9.8853E-07			0.11971	0.00098486	5.1763E-08	0.044274
216-T-34	0.00027528	0.086621	0	1.8657E-07	0.15452	0.000074243	0.0082116	0.27558	2.8047E-06	3.7543E-07	2.7339E-06	0.31843	0.0012293	0.0012101	0.052241
216-T-35	0	0.14989	0	0	0.0063186	0	0	0.068651	0	6.5016E-07	4.7393E-06	1.0881E-06	0.00057477	0.0020953	0.023325
216-T-36	0.00093692	0.000011897	0	5.0381E-07	0.5482	0.00021256	0.00029781	0.64561	9.6535E-06			1.1646	0.0032599	4.5194E-07	0.14133
216-T-4A	954.8	0.00011078	0	5.3524E-06	2.5646	0.067116	0.00044317	4.9026	6.7338E-06			0.0017155	0.0088327	0.00016338	0.40306
216-T-5	0.0066192	0.027642	0	0.001254	26.095	0.014985	0	30.565	0.0094052	4.5116E-06	0.00088239	0	0.00035062	0.0062059	0.015984
216-T-6	0.00016058	0.01483	0	0.00066296	12.396	0.0078732	3.4849E-06	14.303	0.001358	4.8603E-06	0.00089559	0	0.00030815	0.0033091	0.013764
216-T-7	0.069237	0.37068	0	0.016778	325.36	0.1901	0.000014944	380.28	0.1293	0.00007091	0.016468	0	0.0049443	0.10329	0.2241
216-T-8	0.00033095	0.000078722	0	4.0516E-07	13.534	0.00019376	2.1695E-07	0.39228	5.4276E-07	1.9148E-08	0	1.8373E-08	0.00069022	1.1226E-06	0.031423
216-TY-201	0	0	0	0	1.1903E-08	0	0	0	0	0	0	0	4.7183E-10	3.2283E-07	2.08E-08
216-U-1%2	85.197	0.00011231	0	5.0702E-06	1.0405	7.2727	2.2658E-06	1.6112	5.3177E-06	0.001094	4.0841E-07	1.3936E-06	0.057581	0.0004264	2.6168
216-U-10	187.37	0.20131	0	0.000055887	1.7359	0.021282	0.21434	66	0.00017246	0.000041257	0.00025071	0.00028567	0.0313	1.209	1.4517
216-U-12	2385.5	7.6189E-07	0	0.00012961	26.475	0.6787	0.000001381	62.313	0.00032307	5.1408E-07	0.0088645	0.12237	0.093602	0.00016823	4.2723
216-U-13	0.00001343	1.1379E-06	0	1.6554E-08	0.1547	7.4814E-06	7.7346E-09	0.014882	2.1219E-08	2.5576E-10		2.2029E-10	7.8204E-06	4.5328E-08	0.0003567
216-U-14	7.3653	0.0077401	0	2.1486E-06	0.067062	0.00081883	0.0083859	2.5412	6.6364E-06	1.5825E-06	9.5898E-06	0.000011126	0.0011963	0.0013495	0.055602
216-U-15	0.00048167	1.5138E-06	0	7.1373E-08	0.010044	0.035272	3.159E-08	0.048143	8.4433E-08	0.000005457	9.7831E-08	2.8929E-09	0.00014544	2.2387E-06	0.0065808
216-U-16	3155.7	0.00092797	0		5.9556E-08		7.5241E-08	0.000076169					2.3253E-06	3.6504E-07	0.00010253
216-U-17	140.7	0	0	0	0	0	0	0	0	2.7805E-09	3.1345E-08	0	4.5465E-06	6.5174E-07	0.00020043
216-U-3	17.173	0	0	0	1.2354E-07	0.00059924	0	3.0482E-07	0	0	0	6.2754E-09	0.00025327	2.9285E-06	0.01155
216-U-4	0.00026854	6.9904E-06	0	3.3732E-07	0.035027	0.00014677	1.463E-07	0.28926	4.5265E-07	1.1316E-09	4.8468E-08	0	2.1782E-07	1.0323E-06	0.000009855
216-U-4A	4.294E-07	0.014283	0	5.3097E-10	0.00065803	2.3466E-07	2.3393E-10	0.0070012	6.6749E-10	5.5767E-08	3.9151E-07	9.3741E-08	0.000049159	0.000029444	0.002107
216-U-4B	0	0.00086563	0	0	0.000036485	0	0	0.0003963	0	3.3009E-09	2.2087E-08	8.0725E-09	2.8005E-06	0.000023189	0.00012372
216-U-5	0	0	0	0	0	0	0	0	0	0	0	0.0001116	0.0091647	0	0.41836
216-U-6	0	0	0	0	0	0	0	0	0	0	0	0.00001116	0.0090953	0	0.41792
216-U-7	1.4361E-08	4.3558E-10	0	3.6961E-11	3.4331E-07	1.1658E-08	2.2368E-11	0.000043106	1.0291E-08	0	4.7622E-12	2.9754E-11	0	4.7191E-11	7.1298E-12
216-U-8	3488.1	6.8199E-06	0	3.6359E-07	0.028946	2.7235	0.004945	0.04581	6.4393E-07	2.1545E-07	0	0.00011739	0.3713	0.000056191	16.947
216-W-LWC	0.000033199	0	0	0	0.16993	0	0.050731	0.23106	0	0	3.8439E-07	9.0174E-09	0.000053572	0.00092279	0.002318
216-Z-1%2	0	0	0	8.3077E-08	0.014939	4.7681E-06	0	0.0095387	4.5638E-08	3.0828E-11	2.0316E-10	0	1.5624E-07	0.50017	3.4676E-06
216-Z-10	0	0	0	1.6382E-06	4.2749	0.000094231	0	4.4156	1.1601E-06	5.5604E-10	0	0	4.4046E-06	0.023214	0.00018706
216-Z-12	0	0	0	3.6821E-06	0.62614	0.00021163	0	0.63334	2.4611E-06	0	2.453E-08	0	3.1647E-06	10.892	0.00006496
216-Z-13	0	0	0	0	1.3379E-08	0	0	3.1029E-08	0	0	0	0	3.1324E-07	0	0.00013928
216-Z-14	0	0	0	0	1.3923E-08	0	0	3.2295E-08	0	0	0	0	3.2639E-07	0	0.000014509
216-Z-15	0	0	0	0	1.4422E-08	0	0	3.3454E-08	0	0	0	0	3.3681E-07	0	0.000014988
216-Z-16	0	0	0	9.4853E-08	0.000038913	5.4508E-06	0	0.000043151	8.1727E-08	0	5.8752E-08	0	6.8372E-06	0.010641	0.00028029
216-Z-17	0	0	0	3.4246E-08	0.000014038	1.9673E-06	0	0.000015562	2.9473E-08	0	0	0	2.4669E-06	0.0038419	0.000099994
216-Z-18	0	0	0	5.7928E-07	0.05032	0.000033306	0	0.052863	4.0065E-07	5.101E-10	3.3921E-09	0	3.935E-07	6.8992	7.9827E-06
216-Z-1A	0	0	0	0.000001237	0.87893	0.000071149	0	0.90938	8.6044E-07	6.9056E-10	5.4045E-09	0	1.4539E-06	12.369	0.000048082
216-Z-20	0	0	0	0	4.6978E-08	0	0	3.9299E-07	0	0	0	0	0.000004151	0.008686	0.00017527
216-Z-21	0	0	0	0	4.2757E-07	0	0	9.9194E-07	0	0	0	0	0.00001031	0	0.0004562
216-Z-3	0	0	0	1.4603E-07	0.28349	8.3924E-06	0	0.28492	9.3268E-07	0	0	0	2.4076E-07	0.42621	5.4822E-06
216-Z-4	0	0	0	7.8183E-08	0.20423	4.5054E-06	0	0.211	5.5392E-08	2.655E-11	0	0	2.1032E-07	0.0010717	8.9519E-06
216-Z-5	0	0	0	1.2658E-06	3.3055	0.000072853	0	3.4137	8.9632E-07	0	0	0	3.3697E-06	0.047801	0.00013104

Inventory by site for waste form "All_Types" at the year 2005

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
216-Z-6	0	0	0	1.6667E-07	0.43527	9.5979E-06	0	0.44929	1.1813E-07	5.6566E-11	0	0	4.4799E-07	0.0023604	0.000019035
216-Z-7	0.0011653	0.00001502	0	0.000053317	138.15	0.0033018	0.0037061	142.81	0.000049366	1.7865E-08	2.0379E-09	1.4464	0.00415	0.7878	0.18117
216-Z-8	0	0	0	0	2.6253E-12	0	0	6.0869E-12	0	0	0	0	6.8384E-11	0.015939	1.5791E-09
216-Z-9	0	0	0	6.0823E-07	0.052823	0.000034977	0	0.055441	4.2057E-07	0	0	0	3.6536E-07	9.9467	8.3985E-06
218-C-9	0	0	0	5.1981E-08	0.1336	0.000030306	6.3844E-08	0.14519	1.2178E-06	0	0	0	0.000027894	0	0.0013174
218-E-1	0	0	0	5.1988E-07	0.50944	0.000030307	6.3854E-07	0.57696	1.5744E-06	0	0	0	0.0055797	0	0.26351
218-E-10	0	0	0	0.33596	531510	24.944	0.41272	652210	3.2681	0	0	0	0.011174	0.0010535	0.52769
218-E-12A	0	0	0	0.000004627	6.3935	0.0026974	0.000005683	7.1341	0.000029263	0	0	0	0.01381	0	0.6522
218-E-12B	0.00013907	241.04	0.127	0.009384	17516	3.9774	0.011535	18132	0.098099	0	0	0.00002283	0.0070761	0.000003974	0.30388
218-E-14	0	0	0	0.00045646	597.38	0.2661	0.00056064	668.24	0.0025497	0	0	0	0	0	0
218-E-15	0	0	0	0.0022035	5213.1	1.5958	0.0027063	5766.7	0.034209	0	0	0	0	0	0
218-E-2	0	0	0	0.00012997	133.24	0.075768	0.00015964	150.61	0.0004326	0	0	0	0.0041848	0	0.19764
218-E-2A	0	0	0	0.000062385	59.069	0.036368	0.000076625	66.998	0.00017538	0	0	0	0	0	0
218-E-4	0	0	0	5.1988E-08	0.05892	0.000030307	6.3854E-08	0.066317	2.1372E-07	0	0	0	0.000013949	0	0.00065878
218-E-5	0	0	0	0.000038991	44.412	0.022731	0.000047891	49.977	0.00016209	0	0	0	0.0016739	0	0.079054
218-E-5A	0	0	0	0.00008578	104.07	0.050006	0.00010536	116.8	0.00040786	0	0	0	0.0016739	0	0.079054
218-E-7	0	0	0	3.1193E-06	3.0992	0.0018184	3.8313E-06	3.508	0.000009714	0	0	0	0.000013949	0	0.00065878
218-E-8	0	0	0	5.1988E-08	0.064106	0.000030308	6.3854E-08	0.071894	2.5574E-07	0	0	0	0.000027899	0	0.0013176
218-E-9	0	0	0	1.9416E-06	8.2557	0.000016976	2.3858E-06	5.1803	0.000044616	0	0	0	0	0	0
218-E-LLW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
218-E-RCRA	300.72	0.018012	0.00013073	0.000036311	155.59	0.4833	0.025347	100.59	0.0012336	0	0	0.00031678	0.0833	0.0011119	2.2811
218-W-1	0	0	0	1.0397E-06	1.0204	0.00060614	1.2771E-06	1.1555	3.1605E-06	0	0	0	0.0097645	0	0.46115
218-W-11	0	0	0	1.0154E-06	1.298	0.00059194	1.2471E-06	1.4535	5.3916E-06	0	0	0	0.20258	0	9.5675
218-W-1A	0	0	0	0.00024954	254.92	0.14547	0.0003065	288.18	0.00082557	0	0	0	0.012554	0	0.5929
218-W-2	0	0	0	2.5994E-06	2.9371	0.0015154	3.1927E-06	3.3062	0.000010626	0	0	0	0.019529	0	0.9223
218-W-2A	0	0	0	0.0013668	1741	0.7953	0.0016788	1951.6	0.0074033	0	0	0	0.037524	0	1.7721
218-W-3	0	0	0	4.6789E-06	5.7704	0.0027277	5.7469E-06	6.4714	0.00002304	0	0	0	0.97645	0	46.115
218-W-3A	80283	0.098137	5.2998E-08	0.093723	55791	4.5813	0.02442	191360	0.69779	0	0	0	0.82466	0.023082	38.946
218-W-3AE	35889	14.414	0.0013489	0.038421	60892	36.544	0.034533	77572	0.76847	0	0	0.2019	4.0101	0.063327	246.92
218-W-4A	0	0	0	0.000017237	25.052	0.010049	0.000021171	27.896	0.00012072	0	0	0	6.9705	0	329.19
218-W-4B	29929	0	0	0.0034101	5963.3	1.9968	0.50406	6694.9	0.034909	0	0	0	0.053831	0	2.5423
218-W-4C	18682	68.599	0.000016067	0.028546	69296	17.329	0.03527	76082	0.5925	0	0	0.000003024	0.78547	0.0030734	77.5
218-W-5	33645	5.9189	0.0020375	0.0020707	3595.3	140.95	0.037534	4546.5	0.040766	0	0	0.32387	18.404	0.023821	657.25
221-B	0	0	0	0.037248	37323	13.999	0.028	70314	0.3668	0	0	0	0	0	0
221-T	0	0	0	0.0018702	1419.3	0.99998	0.0021	5225	0.043984	0	0	0	0	0	0
221-U	0	0	0	0.00012457	170.99	6.399	0.000069	174.26	0.00063054	0	0	0	0.63	0	29.55
222-SD	0	0	0	0.000024954	28.679	0.014548	0.00003065	32.257	0.00010634	0	0	0	0.000013949	0	0.00065878
224-B	0	0	0	5.1945E-07	13.184	0.0027996	0.00000028	0.69389	2.3734E-06	0	0	0	0	0	0
224-T	0	0	0	5.1945E-07	13.184	0.0027996	0.00000028	0.69389	2.3734E-06	0	0	0	0	0	0
224-U	0	0	0	0.00012535	301.59	0.071996	0.00015444	335.4	0.0026694	0	0	0	0.006	0	0.33
225-B	0	0	0	0	209610	0	0	120250	0	0	0	0	0	0	0
241-A-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-A-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-A-103	0.47806	0.17652	0	0.015812	45.772	5.1133	0.0052865	5827.5	0.017594	1.2873E-06	0.0019396	0.0013701	9.6809E-06	0.0097583	0.00045439
241-A-104	0.060756	0.01456	0	0.0017472	16.592	0.54721	0.000291	1959.1	0.006143	7.5335E-08	1.2677E-06	0.000030921	3.3123E-06	0.0022531	0.00015671
241-A-105	0.025978	0.010169	0	0.001637	7.9106	0.51187	0.000064033	1922.5	0.0028614	7.2113E-08	5.0325E-07	0	2.6207E-06	0.0015783	0.00011746
241-A-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AN-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AN-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AN-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AN-104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AN-105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AN-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AN-107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AP-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AP-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AP-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AP-104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AP-105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AP-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AP-107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AP-108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AW-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AW-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AW-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AW-104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AW-105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AW-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AX-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AX-102	0.13323	0.011881	0	0.0026227	23.976	0.80445	0.000069432	363.59	0.0095081	1.4916E-07	1.2399E-06	0.000029296	6.4675E-06	0.0024201	0.00026427
241-AX-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AX-104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

E.9

Inventory by site for waste form "All_Types" at the year 2005

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
241-AY-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AY-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AZ-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-AZ-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-B-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-B-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-B-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-B-104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-B-105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-B-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-B-107	5.2396	0.057139	0	0.00089647	32.626	0.283	0.0082386	970.52	0.0027673	2.539E-07	0.000061071	0.0027068	0.000021113	0.0014056	0.0010179
241-B-108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-B-109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-B-110	0.090455	0.016816	0	0.0017129	7.686	0.54181	0.0004095	586.85	0.0022006	1.1318E-07	0.00023606	0.00021536	1.6874E-06	0.0015188	0.000078234
241-B-111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-B-112	0.13647	0.026831	0	0.0032183	15.038	1.0209	0.00060491	1005.9	0.0053295	1.6498E-07	0.00011185	0.00016731	0.000003218	0.0031122	0.00014978
241-B-201	4.4552E-10	1.3214E-06	0	5.8873E-08	0.00018767	1.1921E-07	1.1559E-10	0.00021654	3.9547E-07	4.3256E-10	3.8729E-07		1.8083E-09	1.4287E-06	8.288E-08
241-B-202	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-B-203	1.8234E-10	3.9977E-07	0	1.7858E-08	0.000056931	3.6194E-08	2.0134E-08	0.000065821	1.1995E-07	1.31E-10	1.1746E-07		3.5866E-10	4.3316E-07	1.6151E-08
241-B-204	1.2413E-09	5.379E-09	0	1.365E-10	4.5472E-07	1.2766E-09	5.285E-07	0.000004213	9.0403E-10	1.4507E-12	8.8024E-10	3.4381E-12	4.1808E-10	3.5613E-09	1.9795E-08
241-BX-101	0.036289	0.0052123	0	0.00079084	888.58	0.24749	0.000090616	14.579	0.012899	4.0762E-08	7.495E-07	0.000024277	6.8652E-06	0.00078225	0.00031306
241-BX-102	2.9024	0.10374	0	0.0047023	2093.4	2.2752	0.001007	4133.6	0.0017072	0.000027181			0.14883	0.012832	6.6424
241-BX-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BX-104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BX-105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BX-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BX-107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BX-108	0.25037	0.03235	0	0.0037034	18.607	1.1813	0.00088791	116.69	0.0069133	1.7957E-07	0.00001479	0.00021637	0.000004246	0.0038408	0.00019809
241-BX-109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BX-110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BX-111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BX-112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BY-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BY-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BY-103	0.088342	0.013781	0	0.0009443	3.331	0.29929	0.00042418	221.84	0.00016797	9.3671E-08	0.0003568	0.00029224	7.0982E-07	0.0007101	0.000034705
241-BY-104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BY-105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BY-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BY-107	0.26506	0.041341	0	0.0028325	9.9945	0.89792	0.0012725	665.54	0.00050409	2.8107E-07	0.0010709	0.00087654	2.1282E-06	0.0021297	0.00010412
241-BY-108	0.088346	0.013782	0	0.00094406	3.332	0.29935	0.00042419	221.8	0.00016803	9.3675E-08	0.00035685	0.00029208	7.0998E-07	0.00070999	0.000034711
241-BY-109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BY-110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BY-111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-BY-112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-C-101	0.030846	0.0076747	0	0.00071635	6.8676	0.22475	0.00012081	759.37	0.0025273	2.9021E-08	4.8974E-07	0.00001982	1.6155E-06	0.0012207	0.000076576
241-C-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-C-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-C-104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-C-105	0.031607	0.0050016	0	0.00072388	7.9731	0.22638	0.000088527	553.27	0.0018666	3.4934E-08	0.000001409	0.00011259	1.5669E-06	0.00078347	0.000070489
241-C-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-C-107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-C-108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-C-109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-C-110	0.032334	0.0016401	0	0.000071592	14.491	0.024323	0.000031067	66.414	0.000074508	3.4657E-07	0.000001031		3.4355E-06	0.00019548	0.00015518
241-C-111	1.1895	0.01627	0	0.00016878	746.32	0.053835	0.0026366	173.74	0.026339	7.7102E-08	4.5223E-07		8.4386E-06	0.00025122	0.0003984
241-C-112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-C-201	0.00048402	0.00027743	0	0.000034265	169.74	0.010731	6.4166E-07	38.332	0.0060221	1.4203E-09	8.8856E-09		8.5633E-07	0.00004534	0.000040504
241-C-202	0.00039564	0.00022674	0	0.000028001	138.72	0.0087704	5.2455E-07	31.329	0.0049223	1.1609E-09	7.2643E-09		7.0014E-07	0.000037065	0.000033106
241-C-203	0.00037409	0.00021437	0	0.000026478	131.16	0.0082922	4.9585E-07	29.623	0.0046533	1.0972E-09	6.7543E-09		6.6171E-07	0.000035039	0.000031268
241-C-204	0.00031764	0.00018205	0	0.000022487	111.38	0.0070419	4.2102E-07	25.159	0.003952	9.3196E-10	5.7371E-09		5.6229E-07	0.00002975	0.000026566
241-S-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-S-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-S-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-S-104	19.195	0.17293	0	0.000092026	90.285	0.039489	0.000055712	105.55	0.00071763	1.0805E-07	1.1282E-06		0.000051087	0.00025728	0.0022832
241-S-105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-S-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-S-107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-S-108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-S-109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-S-110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-S-111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-S-112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Inventory by site for waste form "All_Types" at the year 2005

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
241-SX-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-SX-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-SX-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-SX-104	0.46615	0.14599	0	0.013665	51.048	4.5061	0.0043874	5287.2	0.013726	1.1844E-06	0.00037496	0.00043723	9.9416E-06	0.01005	0.00046074
241-SX-105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-SX-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-SX-107	3.1732	0.17288	0	0.016206	124.78	6.0147	0.0092813	15966	0.031513	9.6464E-07	0.000072462	0.00031644	0.000027576	0.023965	0.0012682
241-SX-108	7.4078	0.40353	0	0.03782	291.26	14.038	0.021665	37238	0.073496	2.2505E-06	0.00016906	0.00073916	0.00006435	0.055931	0.0029583
241-SX-109	0.42334	0.023056	0	0.0021617	16.645	0.80134	0.0012375	2128.3	0.0042057	1.286E-07	0.000009663	0.00042247	3.6814E-06	0.003196	0.00016906
241-SX-110	0.062333	0.0096415	0	0.001046	16.142	0.335	0.00025854	126.31	0.0019701	6.6962E-08	0.000037632	0.00078925	1.2927E-06	0.001069	0.000060052
241-SX-111	0.03668	0.0060501	0	0.00071008	6.9677	0.22753	0.00015565	46.883	0.0013844	3.3754E-08	1.4363E-06	0.00041902	8.2898E-07	0.00074494	0.000038319
241-SX-112	0.21161	0.011533	0	0.001081	8.3209	0.40086	0.00061879	1063.6	0.0021008	6.4305E-08	4.8308E-06	0.00002114	1.8395E-06	0.0015979	0.000084508
241-SX-113	1.1763	0.085002	0	0.0039381	123.95	1.495	0.0023927	3768.1	0.012984	2.2565E-07	1.4181E-06	0	0.000024515	0.010886	0.0011526
241-SX-114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-SX-115	28.937	0.30477	0	0.012059	275.74	4.5334	0.0070437	13278	0.03386	8.5585E-07	7.3679E-06	5.4858E-06	0.00010106	0.01539	0.0045547
241-SY-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-SY-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-SY-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-T-101	4.6168	0.058351	0	0.00081459	27.728	0.30394	0.00046754	804.54	0.001685	8.1052E-08	0.000003862	0.000015391	0.000015359	0.0012429	0.00070015
241-T-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-T-103	0.29609	0.025788	0	0.0029083	125.05	0.93869	0.00070866	290.82	0.0069625	1.4075E-07	4.0463E-06	0.00014685	4.4905E-06	0.0030779	0.00020738
241-T-104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-T-105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-T-106	11.61	1.0532	0	0.11629	5281.5	37.403	0.024617	10059	0.28146	5.7257E-06	0.00019852	0.0042212	0.0001801	0.1234	0.0082862
241-T-107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-T-108	0.013843	0.0010226	0	0.000040693	7.6597	0.012336	0.00001708	32.592	0.000048127	2.0011E-07	2.4685E-06	0	1.7083E-06	0.00010568	0.000077728
241-T-109	0.059298	0.0087184	0	0.00095382	24.333	0.30607	0.00023714	122.64	0.002038	9.1319E-08	0.000010155	0.00057857	1.4516E-06	0.0010071	0.000067083
241-T-110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-T-111	3.2668E-06	0.000013652	0	6.189E-07	0.012879	7.3958E-06	1.2316E-10	0.015086	4.6713E-06	2.2279E-09	4.358E-07	0	1.7458E-07	3.0642E-06	0.000007968
241-T-112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-T-201	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-T-202	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-T-203	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-T-204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-107	0.84588	0.14911	0	0.013256	66.017	4.3716	0.0048071	7185.3	0.02579	1.7856E-06	0.0005884	0.001031	0.000014173	0.014042	0.00065222
241-TX-108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TX-118	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TY-101	0.11375	0.014912	0	0.0013406	7.8956	0.4447	0.0005006	763.63	0.0026477	1.9149E-07	0.000056456	0.000098821	1.7238E-06	0.0014406	0.000079052
241-TY-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-TY-103	0.31772	0.055974	0	0.00499	25.585	1.6455	0.0018054	2694.9	0.0097172	6.7162E-07	0.00022653	0.00040891	5.3457E-06	0.0052846	0.00024609
241-TY-104	0	2.0648E-08	0	0	1.1293E-09	0	2.922E-10	0	0	4.1422E-12	2.5734E-11	1.1771E-11	3.6389E-09	2.8399E-09	1.7234E-07
241-TY-105	0.6126	0.031436	0	0.0014198	291.22	0.49471	0.00063453	1354	0.0014891	6.7599E-06	2.2768E-07	0	0.000060027	0.0039246	0.0027147
241-TY-106	0.35012	0.01797	0	0.0008114	166.45	0.28267	0.00036256	773.66	0.0008511	3.8601E-06	1.3166E-07	0	0.000034297	0.002243	0.0015513
241-U-101	0.36171	0.02615	0	0.0012114	38.126	0.45968	0.00073617	1158.6	0.0039925	6.9378E-08	4.3619E-07	0	7.5404E-06	0.0033483	0.00035457
241-U-102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-U-103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-U-104	3.5617	0.079823	0	0.0043815	414.22	2.1202	0.0023656	4308.6	0.0057962	0.000011655	0	0	0.002598	0.012178	0.11846
241-U-105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-U-106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-U-107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-U-108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-U-109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-U-110	0.30015	0.016154	0	0.0011299	7.2554	0.37447	0.00041507	620.95	0.0022262	1.5377E-07	0.00004938	0.000086361	2.2708E-06	0.0012335	0.00010484
241-U-111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-U-112	0.63542	0.037333	0	0.0016287	53.768	0.61763	0.00098227	1552.4	0.0053254	1.8169E-07	3.0928E-06	0	0.000022676	0.0044974	0.0010378
241-U-201	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-U-202	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

E.11

Inventory by site for waste form "All_Types" at the year 2005

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
241-U-203	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-U-204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-WR-VAULT	0	0	0	0.000041981	51.296	0.02404	0.00000069	58.741	0.00021264	0	0	0	0	0	0
276-S	0	0	0	0.0027791	4117.3	1.5915	0.0034137	4676.2	0.0212	0	0	0	0	0	0
276-U	0	0	1.2457E-06	1.7099	0.00034995	1.5301E-06	1.7426	6.3054E-06	0	0	0	0	0	0	0
291-S-1	0	0	0	0.48114	0	0	0.099157	0.61491	0	0	0	0	0	0	0
291-WTP	6.1066	0.00023945	0	0	0.00001499	7.9111E-07	1.4495E-07	2.2339E-06	9.8412E-06	0	0	1.6252E-06	5.6802E-08	4.7792E-09	2.6217E-06
293-S	0	0	0	0.0027791	4117.3	1.5915	0.0034137	4676.2	0.0212	0	0	0	0	0	0
296-A-13	0	0	0	0	2.0225	8.0359E-06	2.5975	2.6314	0	0	0	0	0	0	0
300-224	9.08E-08	0.00013498	0	0	0.000010661	4.2175E-08	0.000023971	0.0001915	0	2.7154E-08	0	0.045155	0.0002772	0.000018548	0.013462
300-24	0	0	2.4756E-06	7.0301	0.0014179	3.0414E-06	7.7618	0.000075216	0	0	0	0	0.00015334	0	0.0072836
300-28	0	0	2.4756E-06	7.0301	0.0014179	3.0414E-06	7.7618	0.000075216	0	0	0	0	0.00015334	0	0.0072836
316-1	0.79667	0.12247	0	0.00098513	103.86	0.43541	0.018632	858.17	0.0012385	0.000024742	0.000032162	68.591	0.39691	0.015923	19.261
316-2	0.3541	0.11115	0	0.00043784	46.167	0.19353	0.018389	381.47	0.00055045	0.000024741	0.000032266	49.758	0.29533	0.014432	14.293
316-3	9.6922E-07	0.0038864	0	0.00020558	1.2158E-06	0.00069227	0.0037546	0	0	7.773E-07	0	1.2995	0.008117	0.00053494	0.39115
316-4	0	0	0	0	0	0	0	0	0	0	0	1.2636E-08	2.7161E-06	0	0.00012775
316-5	0	0.14129	0	0	0.0077298	0	0.0020001	0	0	0.000032646	0.00026486	0.000082064	0.033102	0.010894	1.3764
331_LSLT2	0	0.07538	0	0	0.782	0	0	0.037233	0.00089075	0	0	0	0	0	0
4843	1039.8	304.96	0	0	0	27.2	0	0	0	0	0	0	0.216	0	14.64
600-211	134.55	0	0	0	0.77275	0.0031251	0.00013	14.014	0	0	0	0	0	0	0
618-1	0	0	0	8.7996E-06	8.2126	0.0050551	0.000010791	9.3126	0.000027281	0	0	0	0.20013	0	9.5061
618-10	0	0	0	0.000020512	24.311	0.011784	0.000025153	27.284	0.0001061	0	0	0	0.000027605	0	0.0013112
618-11	1658.1	0	0	7.5547E-06	10.679	0.0043402	9.2643E-06	11.895	0.000056568	0	0	0	0.73566	0	34.943
618-13	0	0	0	0.00044564	438.58	0.2552	0.00054751	506.75	0.0014241	0	0	0	0.027605	0	1.3112
618-2	0	0	0	0.000013273	13.821	0.0076253	0.000016277	15.599	0.00005185	0	0	0	0.00096617	0	0.045892
618-3	0	0	0	0.00044564	494.71	0.25521	0.00054751	568.66	0.0018394	0	0	0	0.027605	0	1.3112
618-4	0	0	0	0.000066846	79.812	0.038281	0.000082126	91.455	0.00032255	0	0	0	0.0041407	0	0.19668
618-5	0	0	0	0.0044564	4808.9	2.5521	0.0054751	5532.7	0.017642	0	0	0	0.27605	0	13.112
618-7	0	0	0	0.00044565	663.17	0.25522	0.00054751	752.66	0.0034623	0	0	0	0.027605	0	1.3112
618-8	0	0	0	0.0044564	4829.3	2.5521	0.0054751	5557	0.017476	0	0	0	0.27605	0	13.112
618-9	0	0	0	0.0020054	2097.9	1.1484	0.0024638	2417.5	0.007311	0	0	0	0.12422	0	5.9004
B_PLANT_FILTER	0	0	0	0.032914	130770	11.999	0.02	60443	0.30563	0	0	0	0	0	0
GTF	0.00011347	0	0	1.7779E-10	0.000035016	0.000060752	2.9811E-08	0.00050829	4.4017E-09	0	0	0	3.4264E-09	0	1.1132E-07
GTFL	0.25399	0	0	4.7113E-07	0.086323	0.16099	0.000079	1.257	0.000010004	0	0	0	0.0000908	0	0.000295
RMWSF	0.24065		0	0.040532	73266	23.207	0.049788	80690	0.48229	0	0	0	0.12071	0	1.0969
SNM_234-5Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UPR-100-F-1	0	0	0	0	0.000017637	0	0	0	0	0	0	0	0	0	0
UPR-100-N-1	0.0047754	0	0	1.2469E-09	0.0018529	7.1405E-07	1.5315E-09	0.0024647	1.3601E-08	0	0	0	3.69E-13	0	1.7369E-11
UPR-100-N-12	0	0.42665	0	0	0	0	0	0.21967	0.0055284	0	0	0	0	0	0
UPR-100-N-25	0.000084205	0	0	2.0784E-11	0.000031637	1.1902E-08	2.5527E-11	0.00004204	2.3861E-10	0	0	0	6.1507E-15	0	2.8951E-13
UPR-100-N-30	0.00039799	0	0	1.0392E-10	0.00015442	5.951E-08	1.2764E-10	0.00020541	1.1335E-09	0	0	0	3.0753E-14	0	1.4476E-12
UPR-100-N-35	0	0.36276	0	0	0	0	0	0.25814	0.0096196	0	0	0	0	0	0
UPR-100-N-5	0.012802	0	0	3.7407E-09	0.0052972	2.1421E-06	4.5944E-09	0.0070608	3.6832E-08	0	0	0	1.107E-12	0	5.2107E-11
UPR-100-N-7	0	0	0	0	0	0	0.79995	0	0	0	0	0	0	0	0
UPR-200-E-1	0.044741	0.0019423	0	0.000041489	4.9188	0.0031244	1.5402E-06	5.6757	0.000033289	3.0361E-07	0.000018886	0	9.3581E-06	0.000070832	0.00041835
UPR-200-E-105	0.40091	0.0070396	0	0.00023173	5.1701	0.01762	0.00015376	35.518	0.00078345	7.6116E-07	0.000050436	0	0.000038846	0.00040517	0.0017825
UPR-200-E-107	0.000087498	4.4906E-06	0	2.0286E-07	0.041608	0.000070659	9.0615E-08	0.19333	2.126E-07	9.6503E-10	3.1608E-11	0	8.5783E-09	5.6068E-07	3.8782E-07
UPR-200-E-108	0.014493	0.00031976	0	0.000017679	1.6313	0.0085536	9.7594E-06	17.446	0.000024014	4.5901E-08	0	0	0.000049153	0	0.00046653
UPR-200-E-109	0.002625	0.00013475	0	6.0849E-06	1.2481	0.0021201	0.000002719	5.8008	6.3823E-06	2.897E-08	9.5435E-10	0	2.5719E-07	0.000016823	0.000011633
UPR-200-E-110	0.088653	0.0015566	0	0.000051231	1.1434	0.0038964	0.000034	7.8546	0.00017329	1.6833E-07	0.000011153	0	8.5891E-06	0.000089602	0.00039409
UPR-200-E-117	0.0026409	0.00063538	0	0.000076209	0.7257	0.023851	0.000012686	85.706	0.00026841	3.2842E-09	4.5605E-08	1.3068E-06	1.4446E-07	0.000098308	6.8345E-06
UPR-200-E-141	0.0049076	0	0	0	0	0.0000277	0	0	0	0	0	7.0537E-11	2.6096E-06	0	0.00011924
UPR-200-E-145	0.14729	0	0	0	0	0.00083039	0	0	0	0	0	2.1176E-09	0.000078305	0	0.0035772
UPR-200-E-16	0.023835	0.00029758	0	1.2336E-07	0.10685	0.000053789	0.000052985	0.12736	5.521E-07	1.6192E-10	1.6699E-09	0	8.1394E-08	3.6082E-07	3.8636E-06
UPR-200-E-3	0.0015199	0.000026687	0	8.7831E-07	0.019601	0.000066803	5.8276E-07	0.13466	0.00000297	2.8856E-09	1.9116E-07	0	1.4723E-07	1.5358E-06	6.7558E-06
UPR-200-E-38	0.30358	0.077481	0	0.0092213	44.912	2.9406	0.0017422	273.48	0.017324	4.2905E-07	6.9646E-06	0.00032625	9.4008E-06	0.0095795	0.00043584
UPR-200-E-39	0.10717	0	0	0.000012099	0.99353	0.00069458	0	0.8696	8.4781E-06	4.4459E-09	3.2487E-08	8.3293E-09	3.9315E-06	8.4613E-06	0.00015963
UPR-200-E-40	0.0082444	0.00021806	0	9.3104E-07	0.076411	0.000053413	0	0.066887	6.5207E-07	3.4222E-10	2.499E-09	6.4057E-10	3.1806E-06	6.5118E-07	0.000012279
UPR-200-E-6	0.017734	0.00031138	0	0.000010248	0.22865	0.00077921	6.8001E-06	1.5707	0.000034658	3.3665E-08	2.2308E-06	0	1.7174E-06	0.000017921	0.00007884
UPR-200-E-7	0.000001205	5.3507E-06	0	2.4277E-07	0.0047811	2.7453E-06	0	0.0056008	2.1071E-06	8.7318E-11	2.1493E-07	0	6.3671E-08	1.5102E-06	2.9028E-06
UPR-200-E-73	0.006777	0.00014944	0	8.2639E-06	0.76262	0.003998	4.5605E-06	8.1554	0.000011224	2.1455E-08	0	0	4.7775E-06	0.000022977	0.00021811
UPR-200-E-74	3.4498E-08	8.8295E-10	0	4.2659E-11	4.4975E-06	1.8854E-08	1.8793E-11	0.000037156	5.363E-11	1.4042E-13	1.7963E-12	0	2.7973E-11	1.1627E-10	1.2655E-09
UPR-200-E-75	0.017731	0.00031136	0	0.000010247	0.22865	0.00077921	6.7996E-06	1.5708	0.000034651	3.3659E-08	0.000022231	0	1.7179E-06	0.00001792	0.00078825
UPR-200-E-77	0.00030388	0.000010721	0	4.9244E-07	0.076244	0.0002382	1.0541E-07	0.43275	1.7864E-07	2.1457E-09	0	0	4.8874E-07	1.3435E-06	0.000021845
UPR-200-E-78	0.000038043	0.000021806	0	0.000002693	13.337	0.00084337	5.0429E-08	3.0129	0.0004733	1.1162E-06	6.8429E-10	0	6.7314E-08	3.5638E-06	0.000079067
UPR-200-E-79	0.013717	0.0010649	0	0.000041897	7.8062	0.012497	0.000017488	32.863	0.000050294	2.0648E-07	2.8009E-06	0	1.7366E-06	0.00010805	0.000079067
UPR-200-E-80	0.00094395	0.000032895	0	1.4929E-06	0.23737	0.00073028	3.1909E-07	1.3313	5.4876E-07	6.6067E-09	0	0	1.4916E-06	4.1268E-06	0.000067167
UPR-200-E-81	17.283	0.146	0	0.000065925	65.093	0.027436	0.02384	76.686	0.0054268	3.1381E-07	0.00024652	0.011308	0.000061127	0.00018228	0.0029785
UPR-200-E-82	0.14621	0.03727	0	0.0044371	21.608	1.4162	0.00083909	131.81	0.0083521	2.065E-07	3.3544E-06	0.00015749	4.5259E-06	0.0046101	0.00020991
UPR-200-E-84	0.050736	3.9349E-08	0	3.8514E-09	0.00010619	1.2083E-06	3.7958E-06	0.000040771	1.3688E-08	2.3690E-10	1.4958E-09	0	1.0881E-08	5.1669E-06	5.1446E-07
UPR-200-E-85	0.036813	0.0093906	0	0.0011173	5.4392	0.35651	0.00021125	33.16	0.0001	5.1966E-08	8.436E-07	0.00039584	1.1389E-06	0.0011618	0.000052844
UPR-200-E-86	0.54387	0.13073	0	0.015703	149.39	4.916	0.0026113	17642	0.055264	6.7572E-07	9.3859E-06	0.00026909	0.000029775	0.020259	0.0014069

E.12

Inventory by site for waste form "All_Types" at the year 2005

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
UPR-200-E-87	3.4699E-09	0.000010258	0	4.5853E-07	0.0014616	9.2863E-07	4.1092E-10	0.0016864	3.0831E-06	3.3624E-09	3.0157E-06	0	7.9853E-09	0.000011123	1.8007E-07
UPR-200-E-9	0.19252	0.0098811	0	0.00044625	91.524	0.15544	0.00019938	425.42	0.0004678	2.1234E-06	7.0766E-08	0	0.000018859	0.0012336	0.00085309
UPR-200-W-100	0.044338	0.0007785	0	0.00002562	0.57164	0.0019479	0.000016998	3.9266	0.000086612	8.4142E-08	5.5787E-06	0	4.2933E-06	0.000044802	0.00019707
UPR-200-W-101	0.053547	0	0	0	0	0.00013373	0	0	0	0	0	1.5266E-09	0.000056486	0	0.0025787
UPR-200-W-102	2.997E-07	0.000016417	0	7.4477E-07	0.0026265	1.5086E-06	0	0.0030766	0.000018735	2.6793E-09	4.6458E-14	0	5.389E-12	0.0038475	1.0954E-10
UPR-200-W-12	0.000067418	5.2344E-06	0	2.0595E-07	0.038382	0.000061407	8.5986E-08	0.16156	2.4703E-07	1.0152E-09	1.3771E-08	0	8.5335E-09	5.3115E-07	3.8876E-07
UPR-200-W-127	0.00725	0	0	0	5.2892E-11	0	0	1.3051E-10	0	0	0	0	1.8019E-12	1.2322E-09	8.0002E-11
UPR-200-W-130	0	0	0	3.0703E-13	1.2604E-10	1.7643E-11	0	1.395E-10	2.6461E-13	0	1.8855E-13	0	2.2145E-11	3.446E-08	8.9735E-10
UPR-200-W-131	0.000069911	3.5891E-06	0	1.6204E-07	0.03325	0.000056446	7.2389E-08	0.15445	1.6998E-07	7.7105E-10	2.5401E-11	0	6.8482E-09	4.4796E-07	3.0973E-07
UPR-200-W-132	0.036954	0.00081522	0	0.000045065	4.1585	0.021805	0.000024875	44.488	0.000061226	1.1701E-07	0	0	0.000026058	0.00012533	0.0011897
UPR-200-W-135	0.073929	0.00163	0	0.000090147	8.3172	0.043607	0.000049755	88.959	0.00012246	2.3403E-07	0	0	0.000052103	0.00025067	0.0023791
UPR-200-W-138	0.17674	0	0	0	0	0.00044139	0	0	0	0	0	5.0399E-09	0.00018645	0	0.008512
UPR-200-W-163	0.70634	5.4567E-10	0	2.791E-11	2.4356E-06	0.0022752	2.5866E-07	0.000011021	4.4355E-11	2.957E-12	4.7352E-13	8.737E-09	0.00032235	8.2429E-10	0.014716
UPR-200-W-19	1.5834E-08	8.1273E-10	0	3.6701E-11	7.5289E-06	0.000051139	1.6398E-11	0.000011662	3.8484E-11	7.9192E-09	1.2124E-10	4.176E-12	2.1097E-07	3.0662E-09	9.5442E-06
UPR-200-W-2	0.10771	0.0037996	0	0.00017452	27.026	0.084435	0.000037368	153.38	0.000063317	7.6054E-07	0	0	0.00017323	0.00047619	0.0077432
UPR-200-W-20	0.016913	0	0	0	1.2342E-10	0	0	3.0452E-10	0	0	0	0	4.203E-12	2.8749E-09	1.8382E-10
UPR-200-W-21	0.21654	0.0047759	0	0.00026406	24.368	0.12772	0.00014575	260.6	0.0003586	6.857E-07	0	0	0.00015266	0.00073415	0.0069688
UPR-200-W-24	0.0012036	0.000042455	0	1.9506E-06	0.30206	0.00094348	4.1754E-07	1.7138	7.073E-07	8.4994E-09	0	0	1.9359E-06	5.3219E-06	0.000086532
UPR-200-W-28	0.010681	0.00054817	0	0.000024762	5.0782	0.0086239	0.000051043	23.606	0.000025965	1.1784E-07	3.9041E-06	0	1.0467E-06	0.000068445	0.000047328
UPR-200-W-29	0.017431	0.00030612	0	0.000010074	0.22482	0.0007661	0.000006685	1.5444	0.000034066	3.309E-08	2.1933E-06	0	1.6887E-06	0.000017615	0.000077477
UPR-200-W-32	0.0058369	0	0	0	0	0.000015548	0	0	0	0	0	1.1192E-10	4.1408E-06	0	0.00018901
UPR-200-W-33	0.000045116	9.9503E-07	0	5.501E-08	0.005076	0.000026621	3.0359E-08	0.054287	7.4724E-08	1.4286E-10	0	0	3.181E-08	1.5295E-07	1.4521E-06
UPR-200-W-38	0.15037	0.0033163	0	0.00018336	16.921	0.088713	0.0001012	181	0.00024905	4.7611E-07	0	0	0.00010602	0.00050976	0.0048398
UPR-200-W-39	0.0045767	0	0	0	0	0.000011429	0	0	0	0	0	1.3049E-10	4.8283E-06	0	0.0002204
UPR-200-W-61	0.016308	0.0011775	0	0.000054617	1.717	0.020696	0.000033149	52.167	0.00017972	3.1256E-09	1.9704E-08	0	3.3923E-07	0.00015076	0.00001594
UPR-200-W-74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.451E-14
UPR-200-W-8	0	0	0	6.0307E-08	0.059694	0.000034533	7.4072E-08	0.068555	1.9258E-07	0	0	0	0	0	0
UPR-200-W-82	0.033829	0	0	0	2.4684E-10	0	0	6.0902E-10	0	0	0	0	8.405E-12	5.7501E-09	3.7339E-10
UPR-200-W-87	2.6253E-08	5.8051E-10	0	4.0562E-11	8.3319E-07	1.5287E-08	2.4003E-11	0.000042943	1.1968E-10	2.4738E-15	1.5539E-14	0	1.9687E-13	6.9893E-11	9.086E-12
UPR-200-W-95	0.00082685	0.000059757	0	2.7691E-06	0.08713	0.0010508	1.6826E-06	2.6488	9.1295E-06	1.5859E-10	9.9487E-10	0	1.7231E-08	7.6534E-06	8.0998E-07
UPR-200-W-96	1.1161E-06	2.467E-09	0	1.7244E-10	3.5408E-06	6.4967E-08	1.0202E-10	0.00018259	5.0854E-10	0	0	0	8.3652E-13	2.9717E-10	3.8604E-11
UPR-200-W-97	4.2011E-06	0.000017543	0	7.9586E-07	0.016561	0.00000951	0	0.019401	6.0064E-06	2.8633E-09	5.6034E-07	0	2.2253E-07	0.000003939	0.000010151
UPR-200-W-98	0.0028903	0.00010196	0	4.6832E-06	0.72534	0.0022656	1.0027E-06	4.1157	1.6994E-06	2.0405E-08	0	0	4.6484E-06	0.000012781	0.00020779
UPR-300-1	0	0	0	2.4759E-06	4.202	0.0014178	0.000003041	4.3612	0.000020908	0	0	0	0	0	0
UPR-300-2	0	0	0	2.4759E-09	0.002682	1.4178E-06	3.041E-09	0.0030863	9.7023E-09	0	0	0	0	0	0
US_Ecology	274480	4024	3.124	0	25416	50.366	5.6442	72786	915.27	236.05	0.0013178	0	30.485	0	1783.8
WIPP_118-KE-1	0	0	0	0.0015878	17320	53.799	0.0019471	17380	2.1447	0	0	0	0.087495	0.154	4.1185
WIPP_118-KW-1	0	0	0	0.0012839	13938	4.3399	0.0015744	14054	0.53717	0	0	0	0.053415	0.0726	2.5143
WIPP_218-E-12B	0	0	0	0	2.6883	0.00093048	0	2.9748	0.000015234	0	0	0	0	0	0
WIPP_218-W-3A	1.7135	1.5953	0	0	5.0396	0.0016573	0	8.6231	0.000037128	0	0	0.24056	0.086239	0	4.418
WIPP_218-W-3AE	0	0	0	0.000018565	21622	0.66699	0	41440	0.28869	0	0	1.12E-08	0.000166	0	0.000682
WIPP_218-W-4B	0	0	0	0	5414.9	1.854	0	6006.8	0.031113	0	0	72.834	0.38021	0.15092	0.52425
WIPP_218-W-4C	0	0	0	0	43636	14.79	0	48930	0.25527	0	0	7.5686	0.2331	0.098769	1.2337
WIPP_234-5Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WIPP_241-Z-361	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WIPP_H2-CHTRU-PKGS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WIPP_H2-RHTRU-PKGS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WIPP_RMWSF	0.044402	0.000092866	0	0.0013183	17799	69.24	0.0021613	24532	0.096287	0	0	0.087308	0.07145	0.20743	3.6707
Yucca_100-K-42	12343	346.25	0	43.1	4267800	1440	3.185	5616400	330.21	0	0	0	14.493	28.6	828.06
Yucca_100-K-43	12343	346.25	0	43.1	4267800	1440	3.185	5616400	330.21	0	0	0	14.493	28.6	828.06
Yucca_218-W-3A	12.753	55.759	0	0.010075	25890	5.6339	0.011167	28147	0.23694	0	0	0	0.069017	0.22061	0.028486
Yucca_218-W-4C	27.206	11.292	0	0.021492	21775	12.858	0.023823	60046	0.50547	0	0	0	0.34393	0.40546	0.035317
Yucca_221-T-11-R	8.2722	104.76	0	2.7677	2183.8	0.70515	0.001398	4368.4	59.023	0	0	6.9513	0.21614	1.795	12.35
Yucca_225-B	0	0	0	0	18163000	0	0	41948000	0	0	0	0	0	0	0
Yucca_4843	120.92	1372.6	0	0.7981	1171600	472.87	0.93723	3230200	17.831	0	0	0	0.9159	32.026	34.099
YUCCA_H2-HLW-CANISTER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
YUCCA_RMWSF	0	0	0	0	2347100	0	0	3276600	0	0	0	0	0	0	0
All_Sites	716220	54725	348.24	92.612	31700000	4589.8	22.287	61626000	2026.2	236.06	0.095103	230.44	100.18	146.26	5189.9
Nonzero sites	416	414	16	395	540	430	402	501	465	279	290	202	470	391	494

Appendix F

Best Estimate Inventory – Cumulative in 2035

Appendix F

Best Estimate Inventory – Cumulative in 2035

This appendix presents the best-estimate inventory on December 31, 2035. The inventory input to the simulation is a waste site/year/analyte data file and is quite large because simulations can involve up to 690 waste sites, over 50 years of nuclear materials operations, and up to 14 analytes. The cumulative and decay corrected inventory discharged and disposed by a given date, in this case December 31, 2035, is more readily displayed. When acquiring inventory data and estimates, one often finds or is provided a best-estimate value without regard to its uncertainty distribution. In the case of the stochastic Hanford Soil Inventory Model (SIM) results, the best-estimate is the mean. However, in all other cases the single value found or provided is simply interpreted as the best-estimate. The inventory compilation shown here is the best-estimate value for each waste site and analyte. This inventory was taken from the 'By_Site_2035' tab of the 'Tables_Best_2005_11_17_Inv-Data-Package.xls' file.

The best-estimate inventory shown here is a post-processed file that derives from the waste site/year/ analyte file used to drive the Hanford assessment simulation. The waste site /year/analyte file is created by the INVENTORY code when it applies the uncertainty rules described in Section 6 to the 'disposal action file' of 'daf' created by INPROC. The INPROC code applies the fill-in and surrogate rules described in Section 4 to the inventory data files described in Section 5. The input file for INPROC execution is 'inproc-input_2005-11-09_DCR-0024.csv' and it is under configuration management and maintained on the SAC Windows File server at \\sac.pnl.gov\share\data\rev.1\inventory\. The 'Tables_Best…' and the 'inproc-input…' files are attached as an electronic appendix. In addition the output of the INPROC code for reference case A, (i.e., CA_Ref_A.daf), which is the basis for the best-estimate tables, is also included in the electronic appendix.

The background for table entries has been color coded to indicate the type or source of the data; Hanford SIM result, Hanford Tank Waste Operation Simulator (HTWOS) model result, record, estimated by fill-in rule, and estimated by a surrogate rule, or some combination. A key is provided at the bottom of the table.

While assembling the inventory, every effort was made to be consistent with inventories used in performance assessments being prepared for the single-shell tanks and the integrated disposal facility. Near perfect consistency was achieved by using the same simulation by the HTWOS model (Kirkbride et al. 2005). However, Kirkbride et al. (2005) shows a radium-226 inventory in tank 241-C-106 of 416 curies, decay correct to January 1, 2004. Tank 241-C-106 has been cleaned out and the HTWOS model simply used the Best Basis Inventory (BBI) for this tank as its residual. However, the BBI inventory for radium-226 was in error and has been updated to 1.39E-03 Ci, and that value is now in the draft performance assessment supporting the closure of single-shell tanks. This inconsistency was discovered during peer review of this document, and the updated value has not been promulgated into this inventory for use in Hanford assessments.

Kirkbride RA, PJ Certa, TM Hohl, AM Johnson, and RS Wittman. 2005. *Hanford Tank Waste Operations Simulator Model Data Package for the Development Run for the Refined Target Case*. RPP-RPT-23412, Revision 0A, CH2M HILL Hanford Group, Inc., Richland, Washington.

Inventory by site for waste form "All_Types" at the year 2035

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
Inventory at year 2035															
Site	**H3**	**C14**	**Cl36**	**Se79**	**Sr90**	**Tc99**	**I129**	**Cs137**	**Eu152**	**Ra226**	**Pa231**	**U233**	**U235**	**Np237**	**U234/8**
All sites	150793.3572	56129.87404	348.369813	184.8798485	35716371.59	31323.12872	65.38037592	51485352.1	737.0875966	694.4819071	6.16445295	954.5495961	109.567882	273.6610879	5627.283141
Offsite transfers - WIPP, Yucca	4597.080361	2231.484128	0	92.62505187	33673343.25	7368.394388	9.60440062	50212986.2	420.8944401	0.010821963	4.01291133	783.1295301	40.1564356	172.801866	2124.091135
	3.05%	3.98%	0.00%	50.10%	94.28%	23.52%	14.69%	97.53%	57.10%	0.00%	65.10%	82.04%	36.65%	63.14%	37.75%
US Ecology	67442	4627.8	3.1853	0	14498	53.143	5.8347	36452	197.09	282.79	0.001317	0	30.538	0	1786.9
	44.72%	8.24%	0.91%	0.00%	0.04%	0.17%	8.92%	0.07%	26.74%	40.72%	0.02%	0.00%	27.87%	0.00%	31.75%
All onsite DOE waste	78754.27683	49270.58992	345.184513	92.25479661	2028530.339	23901.59134	49.9412753	1235913.898	119.1031565	411.6810851	2.15022462	171.420066	38.87344636	100.8592219	1716.292006
	52.23%	87.78%	99.09%	49.90%	5.68%	76.31%	76.39%	2.40%	16.16%	59.28%	34.88%	17.96%	35.48%	36.86%	30.50%
IDF only	112.65952	795.7262	0.00013072	89.30800544	734976.4024	22740.00348	40.5113583	345783.956	20.66009075	1.4009	1.9436	15.897	0.42028	43.715	18.35526
	0.14%	1.62%	0.00%	96.81%	36.23%	95.14%	81.12%	27.98%	17.35%	0.34%	90.39%	9.27%	1.08%	43.34%	1.07%
River Corridor waste sites	15587.62929	47761.92601	344.961	0.015964321	7467.295092	36.56459865	0.056275284	9614.523924	77.32681292	8.18611E-05	0.000329077	119.6776311	2.664533543	0.042454788	131.397097
including reactor cores	19.79%	96.94%	99.94%	0.02%	0.37%	0.15%	0.11%	0.78%	64.92%	0.00%	0.02%	69.82%	6.85%	0.04%	7.66%
CP - Other "218" waste sites	36707.39149	507.796381	0.22338232	0.558192984	404726.8314	259.1945119	1.137369121	583192.4216	1.408492216	0	0	0.525735851	32.47493767	0.114358874	1415.073426
	46.61%	1.03%	0.06%	0.61%	19.95%	1.08%	2.28%	47.19%	1.18%	0.00%	0.00%	0.31%	83.54%	0.11%	82.45%
CP - "216" waste sites	26310.96509	192.0557956	0	1.82743947	8262.845545	578.1745012	4.548183764	21720.74261	0.495440891	0.009835981	0.085971144	22.49195993	2.218472152	53.37042854	100.6171799
	33.41%	0.39%	0.00%	1.98%	0.41%	2.42%	9.11%	1.76%	0.42%	0.00%	4.00%	13.12%	5.71%	52.92%	5.86%
CP - facilities	10.44202098	0.0088281	0	0.080644558	190377.1397	38.35783229	2.76694461	135679.5877	0.168949104	0.000002117	0	0.00021999	0.636019773	0.00015115	29.88093227
	0.01%	0.00%	0.00%	0.09%	9.38%	0.16%	5.54%	10.98%	0.14%	0.00%	0.00%	0.00%	1.64%	0.00%	1.74%
CP - "200" waste sites	2.747497133	0.053744131	0	0.01441151	11806.55269	5.381008997	0.65256357	10249.45467	0.138588829	4.47442E-06	0.001081182	0.018510029	0.021266887	0.011968236	0.971270856
	0.00%	0.00%	0.00%	0.02%	0.58%	0.02%	1.31%	0.83%	0.12%	0.00%	0.05%	0.01%	0.05%	0.01%	0.06%
CP - UPR waste sites	3.910230374	0.440422727	0	0.032387653	245.8583319	10.29771377	0.030181728	9820.532028	0.018772844	7.88193E-06	0.000369141	0.012099642	0.001388495	0.044235719	0.063438694
	0.00%	0.00%	0.00%	0.04%	0.01%	0.04%	0.06%	0.79%	0.02%	0.00%	0.02%	0.01%	0.00%	0.04%	0.00%
CP - tank "241" waste sites	18.53168823	12.58252975	0	0.417750677	670667.414	233.6176879	0.238398924	119852.6794	18.88600899	410.2702528	0.118874076	12.79690948	0.436547836	3.560624634	19.93340141
	0.02%	0.03%	0.00%	0.45%	33.06%	0.98%	0.48%	9.70%	15.86%	99.66%	5.53%	7.47%	1.12%	3.53%	1.16%
Subtotal onsite DOE waste	78754.27683	49270.58992	345.184513	92.25479661	2028530.339	23901.59134	49.9412753	1235913.898	119.1031565	411.6810851	2.15022462	171.420066	38.87344636	100.8592219	1716.292006
	78754.27683	49270.58992	345.184513	92.25479661	2028530.339	23901.59134	49.9412753	1235913.898	119.1031565	411.6810851	2.15022462	171.420066	38.87344636	100.8592219	1716.292006
Analyte	**H3**	**C14**	**Cl36**	**Se79**	**Sr90**	**Tc99**	**I129**	**Cs137**	**Eu152**	**Ra226**	**Pa231**	**U233**	**U235**	**Np237**	**U234/8**
SIM Data	24723.61	196.3498	0	2.147856	22168.15	686.8757	4.725018	99318.05	0.7784551	0.009992014	0.09264544	140.8508	3.097366	53.80574	142.4063
	16.40%	0.35%	0.00%	1.16%	0.06%	2.19%	7.23%	0.19%	0.11%	0.00%	1.50%	14.76%	2.83%	19.66%	2.53%
HTWOS Data	1642.412	804.5786	0	92.2701	20314710	26728.12	42.87137	20595340	300.6458	411.68	6.069444	724.1431	9.317888	127.3996	433.4033
	1.09%	1.43%	0.00%	49.91%	56.88%	85.33%	65.57%	40.00%	40.79%	59.28%	98.46%	75.86%	8.50%	46.55%	7.70%
Record Data	124232.8	55057.02	348.3701	89.81152	15331980	3880.089	17.17016	30698660	393.8171	282.7906	0.00131697	88.19618	96.22503	92.4463	5039.227
	82.39%	98.09%	100.00%	48.58%	42.93%	12.39%	26.26%	59.63%	53.43%	40.72%	0.02%	9.24%	87.82%	33.78%	89.55%
Estimated Data	0	30.85774	0	0.6436884	42771.5	23.75753	0.604654	86064.14	7.83344	0	0	0	0.6668782	0	1.28093E-05
	0.00%	0.05%	0.00%	0.35%	0.12%	0.08%	0.92%	0.17%	1.06%	0.00%	0.00%	0.00%	0.61%	0.00%	0.00%
Surrogate Data	194.8767	41.13153	0	0.007763553	4380.733	3.910877	0.008751153	5688.388	34.01047	5.19274E-06	0.001080688	1.363016	0.2602632	0.008197745	12.27392
	0.13%	0.07%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	4.61%	0.00%	0.02%	0.14%	0.24%	0.00%	0.22%
Total	150793.7	56129.94	348.3701	184.8809	35716020	31322.75	65.37996	51485070	737.0853	694.4805	6.164487	954.5531	109.5674	273.6598	5627.311

Color 1	SIM only
Color 2	HTWOS only
Color 3	Record only
Color 4	Estimate (fillin-rule)
Color 5	Surrogate rule
Color 6	Combination of SIM and HTWOS, e.g., all SSTs with past tank leaks
Color 7	Combination of record and HTWOS, e.g., 218-E-RCRA, 600-211 (SALDS)
Color 8	Combination of record and estimate
Color 9	Multiple rules
Color 10	Zero - no rule

F.2

Inventory by site for waste form "All_Types" at the year 2035

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
100-B-5	0.00006283	1.1791E-09	0	4.4973E-06	0.12765	0.00013887	2.8441E-07	0.16658	3.3086E-07	0	0	0	8.5987E-06	2.5795E-06	0.00019852
100-D-3	0.082585	0.31105	0	0	0.11813	0	0	0.12469	0.16501	0	0	0	0	0	0
100-D-32	0.054725	0.15564	0	0	0.067543	0	0	0.070916	0.10708	0	0	0	0	0	0
100-D-40	0.082585	0.31105	0	0	0.11813	0	0	0.12469	0.16501	0	0	0	0	0	0
100-D-47	0.082585	0.31105	0	0	0.11813	0	0	0.12469	0.16501	0	0	0	0	0	0
100-F-23	0	0	0	0	0.00001281	0	0	0	0	0	0	0	0	0	0
100-F-25	8.3498E-06	1.3585E-06	0	0	2.2981E-06	0	0	2.5949E-07	0	0	0	0	5.2321E-09	2.7458E-10	2.1244E-07
100-F-36	0	0	0	0	0.13758	0	0	0	0	0	0	0	0	0	0
100-H-10	0.022869	0.36322	0	0	0.0089033	0	0	0.067239	0.00048848	0	0	0	0.00002023	0	0.00094889
100-H-5	0.0086004	2.0623	0	0	0.045605	0	0	0.32321	1.1115	0	0	0	2.49E-09	0	2.974E-07
100-H-7	0.022869	0.36322	0	0	0.0089033	0	0	0.067239	0.00048848	0	0	0	0.00002023	0	0.00094889
100-H-8	0.022869	0.36322	0	0	0.0089033	0	0	0.067239	0.00048848	0	0	0	0.00002023	0	0.00094889
100-H-9	0.022869	0.36322	0	0	0.0089033	0	0	0.067239	0.00048848	0	0	0	0.00002023	0	0.00094889
100-K-2	0.26649	35.102	0	0	0.99328	0	0	6.9632	32.525	0	0	0	4.233E-08	0	5.0559E-06
100-K-5	2.4826E-09	2.8663E-14	0	1.0922E-10	3.7842E-06	3.3725E-09	6.9072E-12	0.000004895	1.2474E-11	0	0	0	2.0882E-10	6.2646E-11	4.8213E-09
100-N-60	0.0010978	0.0060784	0	0	0.00023121	0	0	0.0017128	0.000021245	0	0	0	3.3781E-07	0	0.000015845
100-N-66	7198.6	9505.1	74.993	0	5.6121	0.032996	0	16.341	7.9451	0	0	0	0	0	0
116-B-1	0.00050989	1.1506E-08	0	0.000043903	1.1514	0.0013556	2.7764E-06	1.5077	2.7302E-06	0	0	0	0.000083939	0.000025181	0.001938
116-B-2	0.0004907	0.14259	0	0	0.0034086	0	0	0.020381	0.00010599	0	0	0	0.00003738	0	0.0017533
116-B-3	0.013603	0.27473	0	0	0.0058191	0	0	0.044551	0.00027051	0	0	0	0.00001428	0	0.0006698
116-B-4	0.021585	0.25656	0	0	0.0071498	0	0	0.053706	0.00044981	0	0	0	0.00001428	0	0.0006698
116-B-5	11.331	0.003369	0	0	0.00034228	0	0	0.00065398	5.0571E-06	0	0	0	0.00011634	0	0.0054569
116-B-6A	0	0.23993	0	0	0.0004368	0	0	0.047073	0.0003696	0	0	0	0	0	0.0017336
116-B-6B	0.00045305	0.00040906	0	0	0.000056409	0	0	0.000066352	4.0331E-07	0	0	0	0.0000042	0	0.0000197
116-B-7	0.0017655	2.4439E-08	0	0.00009316	2.9963	0.0028765	5.8915E-06	3.8887	9.0277E-06	0	0	0	0.00017811	0.000053433	0.0041123
116-C-1	0.0022287	3.5594E-08	0	0.00013572	4.1032	0.0041908	8.5832E-06	5.3393	0.000011542	0	0	0	0.0002595	0.000077847	0.0059912
116-C-2A	0.018886	0.0013062	0	0	0.2924	0	0	0.00026222	2.1084E-06	0	0	0	0.00004158	0	0.0019503
116-C-2C	0.016968	13.015	0	0	0.53597	0	0	2.6127	0.021008	0	0	0	0.00504	0	0.2364
116-D-1A	0.052791	2.2016	0	0	0.036496	0	0	0.34125	0.0019641	0	0	0	0.00015792	0	0.0074072
116-D-1B	0.0075541	0.81845	0	0	0.048822	0	0	0.16207	0.0012741	0	0	0	0.00010416	0	0.0048856
116-D-5	0.001815	2.6122E-08	0	0.000099585	3.148	0.0030749	6.2978E-06	4.0884	9.3118E-06	0	0	0	0.0001904	0.000057118	0.0043959
116-DR-1%2	0.0006498	1.4873E-08	0	0.000056752	1.4794	0.0017523	0.000003589	1.9378	3.4839E-06	0	0	0	0.00010851	0.000032551	0.0025052
116-DR-3	0.012467	0.064018	0	0	0.015306	0	0	0.011248	0.000075346	0	0	0	0	0	0
116-DR-4	0	0.071653	0	0	0.0012891	0	0	0.012038	0.000076545	0	0	0	0	0	0
116-DR-5	0.0020244	3.0053E-08	0	0.00011458	3.5853	0.0035378	7.2458E-06	4.659	0.000010426	0	0	0	0.00021906	0.000065717	0.0050576
116-DR-8	0	0	0	0	4.7079E-06	0	0	0	0	0	0	0	0	0	0
116-F-1	0.01205	1.4874	0	0	0.015326	0	0	0.2875	0.0021868	0	0	0	0.0007896	0	0.037036
116-F-10	0.0022239	0.011558	0	0	0.000017844	0	0	0.0021168	0.000015209	0	0	0	0.00000126	0	0.0000591
116-F-11	0.0012543	0.0057806	0	0	9.4403E-06	0	0	0.0011174	8.4991E-06	0	0	0	0.00000063	0	0.00002955
116-F-16	0	0.018325	0	0	0.064519	0	0	0.0032171	0.00002215	0	0	0	0	0	0
116-F-2	0.00051657	1.1506E-08	0	0.000043903	1.1578	0.0013556	2.7764E-06	1.5158	2.7627E-06	0	0	0	0.000083939	0.000025181	0.001938
116-F-3	0.000028762	0	0	0	0.0001068	0	0	0	0	0	0	0	0	0	0
116-F-4	0.0006412	3.094	0	0	0.31466	0	0	0.49606	0.0029713	0	0	0	0.00006678	0	0.0031323
116-F-5	0	0.000065448	0	0	5.9518E-06	0	0	0.000012637	9.5727E-08	0	0	0	0	0	0
116-F-6	0.086926	0.90217	0	0	0.05118	0	0	0.1725	0.0012968	0	0	0	0.00029106	0	0.013652
116-F-7	0	0	0	0	5.9578E-06	0	0	0	0	0	0	0	0	0	0
116-F-8	0.0013335	2.1062E-08	0	0.00008031	2.444	0.0024798	5.0788E-06	3.1795	6.9036E-06	0	0	0	0.00015355	0.000046063	0.0035451
116-F-9	0	0.11862	0	0	0.58516	0	0	0.028746	0.84768	0	0	0	0	0	0
116-H-1	0.00033054	7.4366E-09	0	0.000028376	0.74515	0.00087617	1.7945E-06	0.97569	1.7694E-06	0	0	0	0.000054254	0.000016276	0.0012526
116-H-2	0.011691	0.0030991	0	0	0.14365	0	0	0.077336	0.0038969	0	0	0	9.5E-12	0	4.4718E-10
116-H-3	0.00004818	0.0018393	0	0	0.000040747	0	0	0.0099422	0.00048174	0	0	0	1.9E-12	0	8.9436E-11
116-H-5	0.0024639	3.8615E-08	0	0.00014724	4.4974	0.0045462	9.3112E-06	5.8501	0.000012748	0	0	0	0.0002815	0.00008445	0.0064993
116-H-6	0	0	0	0	0	0.018039	0	0	0	0	0	0	0.0030464	0	0.1434
116-H-7	0.044503	1.4226	0	0	0.19286	0	0	2.4077	0.90282	0	0	0	2.8536E-09	0	1.7063E-07
116-H-9	0	0	0	0	5.9578E-06	0	0	0	0	0	0	0	0	0	0
116-K-1	0	0	0	0.000008897	0.1727	0.0050944	0.000010928	5.7503	8.1098E-06	0	0	0	0	0	0
116-K-2	0.0029261	4.0731E-08	0	0.00015527	4.981	0.0047942	9.8191E-06	6.4652	0.000014968	0	0	0	0.00029686	0.000089056	0.0068538
116-KE-1	3.3879	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116-KE-2	0.025664	0.98452	0	0	0.6347	0	0	0.20914	0.0017987	0	0	0	0.00008736	0	0.0040976
116-KE-3	0.0025664	0.098451	0	0	0.06347	0	0	0.020914	0.00017987	0	0	0	0.000008736	0	0.00040976
116-KW-2	0.0023383	0.092655	0	0	0.058974	0	0	0.019444	0.00016443	0	0	0	8.2221E-06	0	0.00038566
116-N-1	697.19	0	0	0.00091909	671.61	0.52629	0.0011289	920.51	0.0022854	0	0	0	0.000000272	0	0.000012803
116-N-3	42.593	0	0	0.000095181	67.409	0.054504	0.00011691	127.37	0.00043871	0	0	0	0.0023058	0	0.10815
118-B-1	248.15	0.23859	0	0	0.093288	0	0	0.098082	0.19217	0	0	0	0	0	0
118-B-6	718.34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118-B-7	190.86	0.18675	0	0	0.07376	0	0	0.07756	0.14888	0	0	0	0	0	0
118-B-8	475.33	4575.8	41.995	0	7.0975	0.0019997	0	14.233	3.0834	0	0	0	0	0	0.009
118-C-1	0.22856	1.2924	0	0	0.062192	0	0	0.098082	0.10862	0	0	0	0	0	0

F.3

Inventory by site for waste form "All_Types" at the year 2035

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
118-C-3	509.69	4557.2	11.999	0	5.048	0.0019997	0	11.146	3.0908	0	0	0	0	0	0.004
118-C-4	0.18531	1.1236	0	0	0.052301	0	0	0.082592	0.08852	0	0	0	0	0	0
118-D-1	0.079144	0.2981	0	0	0.11321	0	0	0.1195	0.15814	0	0	0	0	0	0
118-D-2	0.097955	0.29824	0	0	0.12438	0	0	0.13078	0.19217	0	0	0	0	0	0
118-D-3	0.091425	0.19883	0	0	0.12438	0	0	0.13078	0.11697	0	0	0	0	0	0
118-D-4	0.19485	0.59651	0	0	0.25022	0	0	0.26308	0.38347	0	0	0	0	0	0
118-D-6	440.97	4383.2	33.996	0	3.016	0.0019997	0	9.3316	3.0908	0	0	0	0	0	0
118-DR-2	280.62	3249.9	25.997	0	3.0834	0.0019997	0	9.5445	3.0612	0	0	0	0	0	0
118-F-1	0.097956	0.19883	0	0	0.15548	0	0	0.16347	0.18382	0	0	0	0	0	0
118-F-4	0.052243	0.019883	0	0	0	0	0	0.0030441	0.000017234	0	0	0	0	0	0
118-F-5	0	0	0	0	3.1192	0	0	0	0	0	0	0	0	0	0
118-F-6	0	0	0	0	3.1192	0	0	0	0	0	0	0	0	0	0
118-F-8	332.16	3774.9	32.996	0	7.1824	0.0019997	0	14.483	3.0686	0	0	0	0	0	0.009
118-H-1	0.091425	0.19883	0	0	0.12438	0	0	0.13078	0.15875	0	0	0	0	0	0
118-H-6	314.98	3554.4	16.998	0	7.1824	0.0019997	0	14.483	3.0612	0	0	0	0	0	0.009
118-K-1	0.33958	0.89472	0	0	0.43534	0	0	0.45772	0.40103	0	0	0	0	0	0
118-KE-1	1718.1	7040.9	53.993	0	3.0278	0.032995	0	9.2946	3.1131	0	0	0	0	0	0
118-KW-1	1546.3	6737.5	51.994	0	3.1128	0.032995	0	9.5445	3.1131	0	0	0	0	0	0
118-KW-2	0.18906	0.95547	0	0	0.048236	0	0	0.075916	0.088936	0	0	0	0	0	0
132-C-2	0.0022287	3.5594E-08	0	0.00013572	4.1032	0.0041908	8.5832E-06	5.3393	0.000011542	0	0	0	0.0002595	0.000077847	0.0059912
1908-NE	357.26	6.3833	0	0	14.606	0.09998	0	1.741	6.4309	0	0	0	0	0	0
200-E-100	2.0579E-07	3.3504E-08	0	2.0298E-09	0.000069034	8.1315E-07	7.2252E-10	0.0005989	6.4362E-10	0	5.6644E-11	1.8847E-11	8.8404E-10	4.3828E-09	3.9997E-08
200-E-102	2.693	0.000019972	0	8.4214E-07	0.46756	0.1531	0	0.5704	3.8901E-06	0	0	0.01851	0.02086	7.5925E-07	0.95259
200-E-103	1.5175E-09	2.48E-10	0	2.112E-11	9.5248E-08	6.6606E-09	1.2782E-11	0.000012335	1.2663E-11	0	2.7196E-12	1.6999E-11	0	2.6967E-11	4.0751E-12
200-E-107	1.018E-09	1.6642E-10	0	1.417E-11	6.3897E-08	4.4682E-09	2.3475E-06	8.2714E-06	8.4922E-12	0	1.8258E-12	1.1409E-11	0	1.81E-11	2.7369E-12
200-E-136	0	0	0	0.00014774	129.62	0.08299	0.00016	202.01	0.00071091	0	0	0	0	0	0
200-E-137	0	0	0	0	0.78284	0	0.36246	0.97864	0	0	0	0	0	0	0
200-E-25	0	0	0	0	0.00080658	0	0	0.000098623	0	0	0	0	5.1881E-10	1.0768E-08	2.1811E-08
200-E-28	0	0	0	0	0.0063922	0	0	0.0007822	0	0	0	0	4.0413E-09	1.1278E-07	1.7809E-07
200-E-30	0	0	0	0.0022471	808.63	0.51985	0.00099999	1279.3	0.0015452	0	0	0	0	0	0
200-E-4	0	0	0	0	0	0	0	0	0	0	0	0	1.4862E-10	4.2445E-12	7.0365E-09
200-E-41	9.054E-09	1.77E-09	0	1.2706E-10	2.9561E-06	4.7618E-08	3.8505E-11	0.000026273	4.3972E-11	0	2.4258E-12	2.1497E-12	3.7848E-11	2.2935E-10	1.7122E-09
200-E-54	7.6119E-08	1.2433E-08	0	1.0598E-09	4.7806E-06	3.3428E-07	6.4131E-10	0.00061848	6.3496E-10	0	1.3635E-10	8.5234E-10	0	1.3523E-09	2.0471E-10
200-E-55	5.6888E-06	7.8456E-07	0	3.8043E-08	0.0040942	0.000016812	1.676E-08	0.016857	1.0298E-08	1.2361E-10	1.5983E-09	0	2.6205E-08	1.4477E-07	1.1836E-06
200-E-56	0.0034501	0.01065	0	0.0013204	3175.8	0.41346	0.000024725	739.88	0.049981	5.4015E-08	3.3657E-07	0	0.000033	0.0017471	0.0015601
200-E-57	0.0051731	0.015975	0	0.0019806	4764.3	0.62018	0.000037097	1109.9	0.074959	8.1039E-08	5.0495E-07	0	0.000049502	0.002621	0.0023401
200-E-60	1.3237E-09	2.1634E-10	0	1.8424E-11	8.3092E-08	5.8095E-09	3.0505E-06	0.000010761	1.1047E-11	0	2.3721E-12	1.483E-11	0	2.352E-11	3.5571E-12
200-E-61	6.829E-07	1.1161E-07	0	9.5049E-09	0.000042864	2.9975E-06	5.7521E-09	0.0055517	5.6978E-09	0	1.2239E-09	7.6517E-09	0	1.2136E-08	1.8352E-09
200-E-62	0	7.1417E-07	0	0	1.9034E-08	0	1.0145E-08	0	0	1.4965E-10	1.1824E-09	5.7899E-10	1.5389E-07	8.2117E-08	6.6985E-06
200-E-63	0	7.1418E-07	0	0	1.9033E-08	0	1.0145E-08	0	0	1.5038E-10	1.1846E-09	6.0163E-10	1.538E-07	8.338E-08	6.6953E-06
200-E-64	0	7.1417E-07	0	0	1.9035E-08	0	1.0145E-08	0	0	1.5038E-10	1.1847E-09	6.0167E-10	1.5379E-07	8.3379E-08	6.6948E-06
200-E-65	0	7.1421E-07	0	0	1.9034E-08	0	1.0145E-08	0	0	1.5038E-10	1.1848E-09	6.0165E-10	1.5379E-07	8.3377E-08	6.6946E-06
200-E-67	0	7.1418E-07	0	0	1.9035E-08	0	1.0145E-08	0	0	1.5038E-10	1.1846E-09	6.0165E-10	1.538E-07	8.3379E-08	0.000006695
200-E-68	0	7.1423E-07	0	0	1.9034E-08	0	1.0145E-08	0	0	1.5038E-10	1.1846E-09	6.0163E-10	1.538E-07	8.338E-08	6.6952E-06
200-E-69	0	7.3117E-07	0	0	1.9489E-08	0	1.0386E-08	0	0	1.5274E-10	1.212E-09	6.1232E-10	1.5771E-07	8.527E-08	6.8675E-06
200-E-70	0	7.3122E-07	0	0	1.9488E-08	0	1.0387E-08	0	0	1.5274E-10	1.2121E-09	6.1233E-10	1.5771E-07	8.5276E-08	6.8675E-06
200-E-71	0	7.3118E-07	0	0	1.9488E-08	0	1.0386E-08	0	0	1.5273E-10	1.212E-09	6.1234E-10	1.5772E-07	8.5275E-08	6.8674E-06
200-E-72	0	7.3115E-07	0	0	1.9488E-08	0	1.0386E-08	0	0	1.5274E-10	1.2121E-09	6.1233E-10	1.5772E-07	8.5272E-08	6.8677E-06
200-E-73	0	7.1416E-07	0	0	1.9035E-08	0	1.0145E-08	0	0	1.5037E-10	1.1847E-09	6.0166E-10	1.5379E-07	8.3377E-08	6.6948E-06
200-E-74	0	7.3122E-07	0	0	1.9488E-08	0	1.0387E-08	0	0	1.5274E-10	1.212E-09	6.1235E-10	1.577E-07	8.5275E-08	6.8673E-06
200-E-75	0	7.3118E-07	0	0	1.9487E-08	0	1.0386E-08	0	0	1.5275E-10	1.2121E-09	6.1231E-10	1.5771E-07	8.5268E-08	6.8672E-06
200-E-76	0	7.3119E-07	0	0	1.9488E-08	0	1.0387E-08	0	0	1.5275E-10	1.2121E-09	6.1235E-10	1.5772E-07	8.5271E-08	6.8675E-06
200-E-77	0	7.3119E-07	0	0	1.9489E-08	0	1.0386E-08	0	0	1.5275E-10	1.2122E-09	6.1233E-10	1.5772E-07	8.5271E-08	6.8672E-06
200-E-78	0	7.142E-07	0	0	1.9034E-08	0	1.0145E-08	0	0	1.504E-10	1.1847E-09	6.0168E-10	1.5382E-07	8.3378E-08	6.6953E-06
200-E-79	0	7.3117E-07	0	0	1.9489E-08	0	1.0387E-08	0	0	1.5274E-10	1.212E-09	6.1232E-10	1.5771E-07	8.5272E-08	6.8677E-06
200-E-80	0	7.142E-07	0	0	1.9034E-08	0	1.0146E-08	0	0	1.5039E-10	1.1846E-09	6.0168E-10	1.538E-07	8.3375E-08	6.6951E-06
200-E-81	1.7296E-07	2.8267E-08	0	2.407E-09	0.000010855	7.5917E-07	1.4568E-09	0.001406	1.4431E-09	0	3.0996E-10	1.9379E-09	0	3.0735E-09	4.6484E-10
200-E-82	0	7.3117E-07	0	0	1.9487E-08	0	1.0386E-08	0	0	1.5275E-10	1.212E-09	6.1232E-10	1.5772E-07	8.5277E-08	6.8674E-06
200-E-84	0	9.8345E-07	0	0	2.6213E-08	0	1.3971E-08	0	0	2.071E-10	1.6314E-09	8.2854E-10	2.1181E-07	1.1482E-07	9.2205E-06
200-E-85	5.4091E-07	8.8391E-08	0	7.5285E-09	0.000033951	2.3741E-06	4.556E-09	0.004397	4.5133E-09	0	9.6944E-10	6.0605E-09	0	9.6112E-09	1.4534E-09
200-E-88	2.0569E-07	3.338E-08	0	2.0151E-09	0.000069033	8.0839E-07	7.1975E-10	0.00059866	6.3757E-10	0	5.6642E-11	1.8321E-11	8.8408E-10	4.3675E-09	3.9996E-08
200-E-89	2.0569E-07	3.3379E-08	0	2.015E-09	0.000069033	8.0842E-07	7.1973E-10	0.00059867	6.3753E-10	0	5.6645E-11	1.8322E-11	8.8406E-10	4.3675E-09	3.9997E-08
200-E-90	2.0569E-07	3.338E-08	0	2.0151E-09	0.000069034	8.0843E-07	7.1973E-10	0.00059866	6.3755E-10	0	5.6645E-11	1.8322E-11	8.8405E-10	4.3674E-09	3.9997E-08
200-E-91	2.0569E-07	3.338E-08	0	2.015E-09	0.000069034	8.0841E-07	7.1974E-10	0.00059866	6.3754E-10	0	5.6645E-11	1.8322E-11	8.8404E-10	4.3675E-09	3.9996E-08
200-E-92	2.0569E-07	3.338E-08	0	2.015E-09	0.000069031	8.0844E-07	7.1973E-10	0.00059867	6.3752E-10	0	5.6644E-11	1.8322E-11	8.8403E-10	4.3675E-09	3.9996E-08
200-E-93	2.0568E-07	3.3379E-08	0	2.015E-09	0.000069033	8.0843E-07	7.1975E-10	0.00059867	6.3755E-10	0	5.6646E-11	1.832E-11	8.8404E-10	4.3675E-09	3.9997E-08
200-E-94	2.0569E-07	3.3379E-08	0	2.0151E-09	0.000069033	8.0843E-07	7.1975E-10	0.00059867	6.3757E-10	0	5.6643E-11	1.8323E-11	8.8407E-10	4.3675E-09	3.9996E-08
200-E-95	5.8098E-06	8.0126E-07	0	3.8852E-08	0.0039963	0.00001717	1.7117E-08	0.017193	1.0518E-08	1.2625E-10	1.6323E-09	0	2.6648E-08	1.4451E-07	1.2037E-06

F.4

Inventory by site for waste form "All_Types" at the year 2035

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
200-E-97	5.8098E-06	8.0125E-07	0	3.8852E-08	0.0041395	0.00001717	1.7117E-08	0.017211	1.0518E-08	1.2625E-10	1.6323E-09		2.6738E-08	1.4704E-07	1.2077E-06
200-E-98	4.8416E-06	6.6772E-07	0	3.2377E-08	0.0034331	0.000014308	1.4264E-08	0.01434	8.7646E-09	1.052E-10	1.3602E-09		2.2271E-08	1.2224E-07	0.000001006
200-E-99	2.0577E-07	3.3503E-08	0	2.0298E-09	0.000069032	8.1315E-07	7.2253E-10	0.0005989	6.4355E-10		5.6644E-11	1.8847E-11	8.8402E-10	4.3829E-09	3.9996E-08
200-W-22	0.00012581	0	0	0	0	2.1303E-06	0	0	0			1.0846E-11	4.0128E-07	0	0.000018319
200-W-40	0	0.00013029	0	0.00023249	52.218	0.13306	0.0002856	303.51	0.00052059	0	0		1.3949E-07	0	6.5878E-06
200-W-42	0.044601	0	0	0	0	0	0	0	0	9.8818E-12	6.8628E-11	2.5071E-11	8.2603E-09	1.1123E-09	3.5512E-07
200-W-43			0	0.00278	1660.8	1.5918	0.0034148	1960.6	0.0031285						
200-W-44	0	0	0	0.0042484	326.67	1.1997	0.00047	2976.3	0.0046308	0	0	0	0	0	0
200-W-45	0	0	0		809.24	0.51985	0.28442	1280.1							
200-W-52	0.0010991	0.026817	0	0.0012211	11.555	0.013811	0	13.966	0.0022403	4.3353E-06	0.0010803	0	0.00032031	0.0075965	0.014601
200-W-69	0	0.00013044	0	0.0002325	66.438	0.13306	0.0002856	382.19	0.00086854	0	0	0	1.3949E-07	0	6.5878E-06
200-W-72	0	0	0	4.0262E-12			9.6312E-12					1.9992E-10			8.8446E-09
200-W-9	0.000022536	3.1078E-06	0	1.5069E-07	0.0077136	0.000066592	6.6392E-08	0.065733	4.0779E-08	4.8965E-10	6.4264E-09	0	9.8808E-08	4.1071E-07	4.4703E-06
202-S	0	0	0	0.0027791	2047.8	1.5913	0.0034137	2396.5	0.0048048	0	0	0	0	0	0
2101-M-POND	0.02098	0.0032381	0	0	0.000072655	0	0.000014285	0.00051373	0	2.4285E-07	1.4074E-06	1.9167E-06	0.0001818	0.00021396	0.0085699
216-A-1	0	0	0	0	0	0	0	0	0	0	0	5.2987E-07	0.0019825	0	0.090795
216-A-10	8065.6	0.011092	0	0.0015698	7.9147	0.48895	1.735	12.68	0.00078285	0.00025498	0.0021838	1.7303E-06	0.0052291	2.4969	0.24486
216-A-11	0	3.882E-07	0	0	1.0347E-08	0	5.5149E-09	0	0	9.1554E-11	5.971E-10	4.3558E-10	7.4887E-08	5.6943E-08	3.3626E-06
216-A-12	0	3.8823E-07	0	0	1.0347E-08	0	5.5146E-09	0	0	9.1665E-11	5.9391E-10	4.5244E-10	7.4456E-08	5.8355E-08	3.3522E-06
216-A-13	3.7975E-09	6.2063E-10	0	5.2852E-11	2.3836E-07	1.6668E-08	3.1986E-11	3.1944E-12	3.1687E-11	0	6.8055E-12	4.2543E-11	0	6.7484E-11	1.0197E-11
216-A-14	3.7923E-10	6.1974E-11	0	5.2775E-12	2.3802E-08	1.6646E-09	3.1944E-12	3.0828E-06	3.1642E-12	0	6.7961E-13	4.2483E-12	0	6.7386E-12	1.0186E-12
216-A-15	0	0.000038822	0	0	1.0347E-06	0	5.5142E-07	0	0	9.1668E-09	5.9398E-08	4.5244E-08	7.4447E-06	5.8355E-06	0.00033525
216-A-16	4.6282E-08	7.5637E-09	0	6.4414E-10	2.9049E-06	2.0315E-07	3.8964E-10	0.00037623	3.8619E-10	0	8.2942E-11	5.1847E-10	0	8.2244E-10	1.243E-10
216-A-17	2.2761E-08	3.7202E-09	0	3.1681E-10	1.4287E-06	9.9908E-08	1.9173E-10	0.00018502	1.8993E-10	0	4.0794E-11	2.5502E-10	0	4.0449E-10	6.113E-11
216-A-18	0	0	0	0	0	0	0	0	0	0	0	0.000002627	0.0098648	0	0.45047
216-A-19	0	0	0	0	0	0	0	0	0	0	0	0.000021866	0.62881	0	28.697
216-A-2	0.00019508	0.0022026	0	0.000086031	0.38387	0.026987	0.000017552	0.82923	0.00067841	4.4475E-06	0.000025861	0.000024633	0.0031803	0.062297	0.15054
216-A-20	0.32548	0.0033523	0	0.00017864	0	0	0	0	0	0	8.959E-07		0.0089909	2.1274E-06	0.4114
216-A-21	6.9066	0	0	0.00013107	2.6099	0.0075337	0	28.445	0.000016384	3.1187E-06	0.000020152	5.5244E-06	0.0027767	0.023696	0.13136
216-A-22	0.011096	9.1306E-09	0	0	2.4338E-10	0.00048651	1.2974E-10	0	0	3.9119E-12	0	1.8234E-09	0.000066303	2.4298E-09	0.0030265
216-A-23A	0.021631	5.6071E-06	0	0	2.9877E-07	0	0	0	0	0	0		1.0094E-11	6.3485E-09	4.7681E-10
216-A-23B	0.020742	0.000005607	0	0	2.9877E-07	0	0	0	0	0	0		1.0095E-11	6.6021E-09	4.768E-10
216-A-24	1227.6	3.0179	0	0.000027485	0.75032	0.0085851	5.6242E-06	179.11	0.000088603	1.3779E-06	0.000010326	2.9595E-06	0.0012388	0.0022688	0.050356
216-A-25	122.79	34.964	0	0.0054632	78.929	1.7098	0.014037	3245.1	0.0018965	0.00021152	0.0015879	0.00056915	0.2065	0.11722	9.0116
216-A-26	1.4649E-09	2.3939E-10	0	2.0387E-11	9.1941E-08	6.4287E-09	1.2338E-11	0.000011907	1.2222E-11	0	2.6253E-12	1.6412E-11	0	2.6028E-11	3.9369E-12
216-A-26A	3.7974E-10	6.2066E-11	0	5.2851E-12	2.3835E-08	1.6668E-09	3.1987E-12	3.0872E-06	3.1687E-12	0	6.8061E-13	4.2544E-12	0	6.7482E-12	1.0197E-12
216-A-27	0.0070069	0.00048183	0	0.000020385	10.715	0.0086297	7.3976E-08	13.142	0.000084429	5.7521E-10	0.000006394	0.44398	0.001243	0.000018342	0.054005
216-A-28	0.051074	0	0	0	0	0.0024812	0	0	0	0	0	2.5614E-07	0.0094885	0	0.43413
216-A-3	5.7579	4.0276E-07	0	1.6995E-08	0.008989	0.27345	0	0.010969	7.0745E-08	0	0	5.2594E-06	0.038225	1.5246E-08	1.745
216-A-30	0.0025282	0.028772	0	2.0444E-06	0.47456	0.00074079	0.0089232	1.249	4.3732E-06	5.5571E-06	0.000043247	2.0569	0.01187	0.0033151	0.51844
216-A-31	0.000077111	0.00034936	0	0.000025403	0.54485	0.007935	5.1975E-06	165.54	0.000081914	9.5777E-07	6.2473E-06	0.000002835	0.00085271	0.00038954	0.040351
216-A-32	1.519E-09	2.4827E-10	0	2.1139E-11	9.5347E-08	6.6673E-09	1.2794E-11	0.000012348	1.2675E-11	0	2.7222E-12	1.7017E-11	0	2.6994E-11	4.08E-12
216-A-35	3.7932E-09	6.2006E-10	0	5.2807E-11	2.3813E-07	1.6651E-08	3.1947E-11	0.000030842	3.166E-11	0	6.7995E-12	4.2489E-11	0	6.7419E-11	1.019E-11
216-A-36A	13.958	0	0	0.0085164	339.58	0.48893	0	306.66	0.0012862	3.0929E-06	0.000022712	5.7967E-06	0.0027686	0.0059601	0.11238
216-A-36B	27.921	0	0	0.0010983	118.41	0.06322	0.0086405	130.09	0.00018129	1.3673E-06	0.000015097	6.1724E-06	0.0022656	0.0002425	0.099853
216-A-37-1	82.675	1.4957	0		0.079711	0	0	0	0	0	0		3.6138E-06	0.0004311	0.00015462
216-A-37-2	1.3276	0.45072	0	0	0.023912	0	0.000054377	0	0	5.3171E-07	5.9846E-06	0.000002383	0.00088202	0.00057573	0.038861
216-A-39	0.000032966	0.00005938	0	0.000010859	0.021356	0.0033923	2.0372E-07	6.4875	3.3978E-06	4.7199E-10	3.3788E-09		8.8506E-09	9.1337E-06	4.1836E-07
216-A-4	8.9952	0.000079888	0	3.3682E-06	1.7836	0.57237	0	2.1771	0.000014039	5.2372E-11	0	0.074067	0.078011	3.0357E-06	3.561
216-A-40	1.9518E-08	2.6749E-08	0	3.1998E-09	7.4749E-08	1.0204E-06	6.0353E-10	0.000050552	1.3082E-09	0			1.1296E-10		3.3243E-09
216-A-41	0.014505	8.8794E-09	0	1.5808E-09	3.2036E-06	4.9399E-07	1.6844E-06	0.000031266	5.0554E-08	2.5894E-10	1.8577E-09	3.0392E-11	4.8511E-09	2.5043E-06	2.2929E-07
216-A-45	449.21	0.000039459	0	0.000019779	0.030094	0.0058451	0.032591	0.7116	0.00002452	9.4786E-06	0.00013063	0	0.00014563	0.043488	0.0063742
216-A-5	2383.4	0.0099363	0	0.00097709	13.056	0.3065	0.96322	5.1813	0.00074693	0.000059569	0.00038128	0	0.0027604	1.3114	0.13058
216-A-6	162.81	0.013095	0	0.00006701	0.90223	0.021041	0.073079	0.49177	0.00005133	7.0102E-06	0.000043657	0.027423	0.0024638	0.092037	0.11474
216-A-7	0.032494	0.0031416	0	0.00020456	4.3872	0.0639	0.000041863	1333.3	0.00065944	7.7153E-06	0.000050378	0.00002283	0.0068657	0.0031365	0.32515
216-A-8	3428.3	3.5115	0	0.0001667	3.7561	0.051976	0.000037721	1086.3	0.0005368	8.3939E-06	0.000063074	0.00001835	0.0075292	0.0037781	0.30606
216-A-9	112.37	1.161	0	5.4129E-06	2.9336	0.0022993	0.0012193	3.504	0.0013172	3.6665E-07	3.6766E-06	12.593	0.03586	0.0012959	1.5473
216-B-10A	0.0089751	0.0002282	0	0.000011066	0.56642	0.0053546	4.8752E-06	4.8267	2.9955E-06	3.5952E-08	4.1458E-07	6.1871E-10	0.00007063	0.00003016	0.0032216
216-B-10B	7.1281E-09	1.165E-09	0	9.9184E-11	4.4738E-07	3.1286E-08	0.000016426	0.000057953	5.9457E-11	0	1.2775E-11	7.9836E-11	0	1.2667E-10	1.9149E-11
216-B-11A%B	2.2248	0.00027636	0	0.000010924	1.3097	0.0032537	4.5525E-06	4.3228	2.8126E-06	5.3184E-08	7.2679E-07	0	6.1098E-07	0.000030454	0.000027824
216-B-12	326.68	0.0095506	0	0.00037045	51.929	1.6549	0.00015511	145.62	0.000095971	1.9368E-06	8.1357E-06	6.5259E-06	0.2195	0.00099641	10.025
216-B-13	8.7049E-07	1.2005E-07	0	5.8212E-09	0.00046985	2.5724E-06	2.5646E-09	0.0025602	1.5759E-09	1.8914E-11	2.4456E-10	0	3.9103E-09	1.9703E-08	1.7682E-07
216-B-14	7.5439	2.0859	0	0.094535	256.16	32.938	0.042241	135.76	0.021351	0.00044437	0.000015127	0	0.0039306	0.26137	0.17773
216-B-15	5.499	1.521	0	0.06894	72.366	24.016	0.030804	99.007	0.015568	0.00032394	0.000011047	0	0.0028647	0.19056	0.12962
216-B-16	4.8793	1.3069	0	0.057375	62.453	19.726	0.029797	87.736	0.013172	0.0002704	0.00037764	0	0.0025224	0.15776	0.11412
216-B-17	2.9784	0.73786	0	0.029707	35.683	9.8338	0.021663	53.444	0.0071399	0.00014111	0.00074933	0	0.0015139	0.080389	0.068517
216-B-18	7.4158	2.0502	0	0.092936	97.54	32.373	0.041527	133.47	0.020986	0.00043676	0.000014883	0	0.0038598	0.2569	0.17469
216-B-19	5.5415	1.4213	0	0.059589	68.348	20.096	0.037463	99.51	0.014016	0.00028192	0.0009714	0	0.0028373	0.16244	0.1284

F.5

Inventory by site for waste form "All_Types" at the year 2035

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
216-B-20	4.0825	1.0574	0	0.044814	132.56	15.177	0.027012	244.99	0.010477	0.00021176	0.00062737	0	0.0021597	0.12239	0.09778
216-B-21	4.0651	1.1077	0	0.04946	52.797	17.127	0.023751	73.173	0.011253	0.00023266	0.00015512	0	0.0021113	0.13637	0.095493
216-B-2-1	0	0	0	1.2238E-07	146.57	0.00012866	1.5031E-07	0.11047	2.3423E-07			0	0	0	0
216-B-22	4.1329	1.0964	0	0.047658	52.457	16.326	0.025826	74.248	0.010993	0.00022484	0.00041019	0	0.0021317	0.13079	0.096446
216-B-2-2	0	0	0	1.2238E-07	49.957	0.000029772	1.5031E-07	0.11047	2.3423E-07			0	6.5972E-07	0	0.000037223
216-B-23	3.9387	1.0442	0	0.045347	49.968	15.523	0.024695	70.83	0.010467	0.00021374	0.0004008	0	0.0020325	0.12442	0.091925
216-B-24	4.2384	1.1722	0	0.05313	55.768	18.507	0.023742	76.299	0.011995	0.0002496	8.5039E-06	0	0.0022072	0.14684	0.099871
216-B-25	4.2727	1.1818	0	0.053547	56.215	18.655	0.023931	76.907	0.012089	0.0002516	8.5681E-06	0	0.0022254	0.14806	0.10068
216-B-26	4.1302	1.1424	0	0.051783	209.82	18.037	0.023128	260.72	0.01169	0.00024331	8.1564E-06	0	0.0023204	0.14315	0.10495
216-B-27	3.8465	1.0638	0	0.048218	50.605	16.794	0.02154	69.225	0.010886	0.00022649	7.7581E-06	0	0.0020032	0.13327	0.090658
216-B-28	4.4008	1.1732	0	0.051272	56.099	17.603	0.027168	79.105	0.011803	0.00024172	0.00038679	0	0.0022732	0.14093	0.10288
216-B-29	4.2032	1.1625	0	0.052682	107.32	18.35	0.023534	75.666	0.011896	0.00024756	8.4762E-06	0	0.0021881	0.14559	0.099014
216-B-3	2810.8	98.651	0	0.00081655	57.774	0.31975	0.0031994	189.62	0.00028342	0.000033119	0.0003376	0.00018368	0.048866	0.086581	2.1694
216-B-30	4.171	1.0658	0	0.044491	51.281	14.968	0.02845	74.899	0.010485	0.00021064	0.00076833	0	0.0021337	0.12119	0.096584
216-B-31	4.2324	1.0828	0	0.045245	52.112	15.237	0.028795	75.993	0.010657	0.00021413	0.00076867	0	0.0021663	0.12337	0.097978
216-B-32	4.1497	1.056	0	0.043898	65.006	14.742	0.028531	74.5	0.01037	0.00020785	0.00079872	0	0.0021211	0.11948	0.096004
216-B-33	4.1467	1.04	0	0.042479	73.303	14.158	0.029441	74.443	0.010126	0.00020146	0.0009344	0	0.0021137	0.11528	0.095693
216-B-34	4.2597	1.0656	0	0.043442	71.245	14.459	0.030352	76.45	0.01037	0.00020606	0.00097845	0	0.0021695	0.1178	0.098244
216-B-35	0.90183	0.08532	0	0.0028181	32.825	0.21432	0.0018703	216.38	0.0020522	9.1357E-06	0.00061321	0	0.00052192	0.0049294	0.023946
216-B-36	1.6505	0.15618	0	0.0051579	60.062	0.39223	0.0034234	396.03	0.003756	0.000016732	0.001122	0	0.00095593	0.0090206	0.043869
216-B-37	3.6756	0.34778	0	0.011487	133.71	0.87349	0.0076244	881.81	0.0083645	0.000037245	0.0024999	0	0.0021285	0.020089	0.097631
216-B-38	1.2167	0.11511	0	0.003802	44.273	0.28911	0.0025233	291.92	0.0027684	0.00001233	0.00082699	0	0.00070422	0.00665	0.032322
216-B-39	1.3104	0.12398	0	0.0040942	47.669	0.31137	0.0027173	314.33	0.0029822	0.000013278	0.00089047	0	0.00075829	0.0071614	0.034808
216-B-4	0.000001658	2.2866E-07	0	1.1088E-08	0.00056757	0.0000049	4.885E-09	0.0048366	3.0012E-09	3.6029E-11	4.656E-10	0	7.2702E-09	3.0221E-08	3.2892E-07
216-B-40	1.3955	0.13204	0	0.0043601	50.77	0.33162	0.0028937	334.8	0.0031751	0.000014138	0.00094846	0	0.00080778	0.0076267	0.037055
216-B-41	1.2252	0.11593	0	0.0038283	44.573	0.29118	0.0025405	293.97	0.002789	0.000012417	0.00083285	0	0.00070921	0.0066957	0.03253
216-B-42	1.3053	0.36097	0	0.016361	86.525	5.6985	0.0073086	23.492	0.0036932	0.000076833	2.5889E-06	0	0.00067986	0.045208	0.030754
216-B-43	1.8441	0.51018	0	0.023123	122.26	8.0525	0.010331	33.207	0.0052203	0.00010865	3.6591E-06	0	0.0009607	0.063904	0.043463
216-B-44	4.8727	1.3476	0	0.061074	322.97	21.273	0.027288	87.71	0.013791	0.00028687	9.6898E-06	0	0.0025378	0.1688	0.11482
216-B-45	4.2791	1.1833	0	0.053649	443.28	18.682	0.023967	270.86	0.012104	0.00025205	8.3727E-06	0	0.0024038	0.14828	0.10876
216-B-46	5.8287	1.6123	0	0.073076	386.47	25.456	0.032634	104.95	0.016483	0.00034319	0.000011628	0	0.0030364	0.202	0.13735
216-B-47	3.202	0.88537	0	0.040135	141.42	13.982	0.017937	57.653	0.0090645	0.00018852	6.3865E-06	0	0.0016681	0.11093	0.075443
216-B-48	3.5581	0.98416	0	0.044601	235.92	15.54	0.019932	64.062	0.010069	0.00020951	7.0977E-06	0	0.0018532	0.12329	0.08385
216-B-49	5.8283	1.6122	0	0.073058	386.37	25.449	0.032654	104.96	0.0165	0.00034323	0.000011627	0	0.0030368	0.20194	0.13733
216-B-5	0.000014985	0.011085	0	0.00049729	3.2498	0.0042509	1.8816E-06	3.8674	0.00038843	3.5991E-06	0.0015489	0	0.000156	0.0057179	0.0069488
216-B-50	17.627	0.0030274	0	0.0002081	0.65543	0.065953	0.000093498	24.526	7.9601E-06	2.0727E-08	0.000078665	0.000064464	4.5335E-07	0.00026086	0.000020989
216-B-51	0.00087022	0.0002406	0	0.000010907	0.011448	0.0037994	4.8735E-06	0.015665	2.4639E-06	5.1248E-08	1.7513E-09	0	4.5327E-07	0.000030155	0.000020509
216-B-52	7.4457	1.8859	0	0.077921	166.68	26.098	0.051767	133.65	0.018463	0.00036915	0.001518	0	0.003802	0.21184	0.17209
216-B-53A	0.0025016	0.014299	0	7.2385E-06	3.8295	0.0030709	0	4.6732	0.000030144	4.6261E-08	2.4871E-06	0.18975	0.00057362	0.00043558	0.025036
216-B-53B	0.0014591	0.00049453	0	4.2224E-06	2.2329	0.0017901	0	2.7245	0.000017581	1.7709E-09	0.000001393	0.055741	0.00015761	0.000018992	0.006823
216-B-54	0.0014606	0.026085	0	4.2275E-06	2.2353	0.001793	0	2.7334	0.000017606	8.4341E-08	1.9388E-06	0.055864	0.00023108	0.00079283	0.010319
216-B-55	0.0000247	0.000033842	0	4.0488E-06	0.00094576	0.001291	7.635E-07	0.06396	1.6549E-06	0	0	1.4296E-07	0	4.2064E-06	0
216-B-57	27.161	0.0090952	0	0.00062552	1.5314	0.19801	0.00028061	73.631	0.000024006	6.1731E-08	0.00023621	0.00019338	9.2692E-07	0.00063106	0.000043525
216-B-58	0.0011672	0.010867	0	3.3789E-06	1.7873	0.001433	0	2.182	0.000014611	3.5147E-08	1.3412E-06	0.044517	0.00015627	0.00033064	0.006887
216-B-59	9.843E-09	1.3493E-08	0	1.6134E-09	3.7682E-08	5.1426E-07	3.0433E-10	0.000025483	6.5973E-10	0	0	5.6895E-11	0	1.6755E-09	0
216-B-6	0.00099413	0.00013711	0	6.6481E-06	0.34031	0.0029398	0.000002929	2.9	1.7998E-06	2.1602E-08	2.7918E-07	0	0.00004359	0.00001812	0.00019721
216-B-60	6.4951E-07	4.4638E-08	0	1.9526E-09	0.00097844	8.1224E-07	0.000011087	0.0012384	7.746E-09	0	0	0.0043183	0.000012094	1.7609E-09	0.00052822
216-B-62	0.049565	0.063918	0	0.007733	35.563	2.4286	0.0012875	4329.3	0.0058176	3.2296E-07	4.5978E-06	0.00013134	0.00001461	0.0099293	0.00069389
216-B-63	18.129	0.033424	0	3.1264E-07	0.29752	0.016471	5.8911E-08	0.041652	1.2775E-07	0	0	2.602E-08	0.0025867	0.00010409	0.11788
216-B-7A%B	0.0010705	0.02136	0	0.0011466	683.95	0.09252	0.00066795	162.81	0.013628	4.3183E-06	0.003461	1.29	0.0036853	0.018309	0.15952
216-B-8	0.0018524	0.14908	0	0.0067125	62.842	0.080094	0.000026644	75.104	0.0049451	0.000024081	0.0078228	0	0.0028235	0.032943	0.12656
216-B-9	0.000235	0.010929	0	0.0004939	4.615	0.0057445	1.3227E-06	5.5349	0.00056414	2.6762E-06	0.00054421	0	0.00018101	0.0027308	0.0081442
216-BY-201	0.036231	0.010018	0	0.00045399	2.4012	0.15818	0.00020284	0.65201	0.00010255	2.1334E-06	7.2218E-08	0	0.000018868	0.0012553	0.00085354
216-C-1	0.000028272	0.000074079	0	9.1559E-06	22.003	0.0028707	7.7129E-06	5.137	0.00034562	0	0	0.029452	0.012841	0.000012113	0.60065
216-C-10	9.1466E-06	0.000028228	0	3.5042E-06	8.4312	0.0010973	6.5659E-08	1.9656	0.00013253	2.8832E-11	9.3905E-10	0	9.2317E-08	4.8486E-06	4.3637E-06
216-C-2	0	0	0	0	0.034414	0	0	0.004208	0	0	0	0	1.9847E-08	6.7118E-07	8.6392E-07
216-C-3	11.06	0.000014752	0	1.8303E-06	4.3972	0.00072801	3.4249E-08	1.0263	0.0000692	1.4711E-09	0	1.493E-08	0.000068527	3.3567E-06	0.0031301
216-C-4	0.000024606	0.000012733	0	2.7444E-06	3.316	0.00084126	5.1686E-08	0.00022681	0.000020012	1.5331E-10	1.1691E-09	0	4.9719E-08	2.6233E-06	2.2729E-06
216-C-5			0									1.9666E-07	0.0002987		0.013656
216-C-6	1.7456	0.000032966	0	0.000018638	8.8695	0.0028516	1.3374E-07	0.17318	0.000052764	7.273E-08	4.2228E-07	1.6181E-07	0.00003212	0.0001356	0.0014397
216-C-7	0	0	0	0	0	0	0	0	0	0	0	0	5.6102E-10	9.0425E-12	2.5352E-08
216-C-8	0	0	0	0	0.00010912	0	0	0.000013344	0	0	0	0	5.3211E-11	2.3843E-09	2.5142E-09
216-C-9	0.0011957	0.00025019	0	0.000003153	0.58363	0.0010053	5.9455E-07	0.12124	0.000001289	0	0	9.6587E-08	7.2329E-07	0.000019864	0.0000333
216-N-1	0	0	0	0	0	0	0	0	0	0	0	0	8.4667E-06	0	0.00038155
216-N-2	0.000059696	8.2322E-06	0	3.9901E-07	0.02043	0.00017638	1.7579E-07	0.17397	1.0814E-07	0	1.6759E-08	0	3.2675E-07	1.0881E-06	0.000014742
216-N-3	0.00005968	8.2293E-06	0	3.988E-07	0.020442	0.00017638	1.7581E-07	0.17408	1.0792E-07	1.3032E-09	1.6789E-08	0	3.2503E-07	1.0886E-06	0.000014727
216-N-4	0.00006242	8.6111E-06	0	4.1735E-07	0.021384	0.00018449	8.1652E-08	0.18205	1.1298E-07	0	1.939E-09	0	8.7135E-06	1.1857E-06	0.0003937
216-N-5	0.000061987	8.5463E-06	0	4.1408E-07	0.021207	0.00018342	1.8264E-07	0.18086	1.1215E-07	1.3509E-09	1.7445E-08	0	3.3507E-07	1.1305E-06	0.000015193

F.6

Inventory by site for waste form "All_Types" at the year 2035

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
216-N-6	0.000062409	8.6117E-06	0	4.1762E-07	0.021368	0.00018447	8.1666E-08	0.18214	1.1311E-07	0	1.9362E-09	0	8.7365E-06	1.1858E-06	0.00039377
216-N-7	0.000062018	8.5641E-06	0	4.1544E-07	0.02126	0.00018365	1.8279E-07	0.18115	1.1241E-07	1.3556E-09	1.7452E-08	0	3.3544E-07	1.1316E-06	0.000015212
216-S-1%2	354.87	0	0	0.045593	414.56	2.6131	0.13715	371.05	0.003655	0.000015058	0.000066846	0.000041778	0.031301	0.51655	1.4717
216-S-10P	0.14627	2.5569	0	0.000030716	0.35897	0.011581	0.000018178	16.898	0.000019536	8.8534E-06	0.000075909	0.000021291	0.0097175	0.046352	0.4079
216-S-12	0.014107	1.6166E-07	0	0.000063479	0.5778	0.0036223	0.00038315	0.52265	5.0923E-06	2.0934E-08	9.2815E-08	5.7546E-08	0.000043295	0.00072214	0.0020464
216-S-13	6.0273	0.00018586	0	0	0.18229	0.44396	0	65.136	0.000068139	4.5464E-09	2.6607E-07	1.8698E-07	0.00004341	0.012531	0.0020303
216-S-14	0	0	0	0	0	0	0	0	0	0	0	4.7986E-09	1.0307E-06	0	0.000048528
216-S-15	0.040617	0	0	0	7.7822E-10	0	0	1.9806E-09	0	0	0	0	4.2373E-11	3.7995E-08	1.9762E-09
216-S-16P	0.36278	0.00084346	0	0.000059134	0.59001	0.028762	0.000034982	31.569	0.000037778	0	0	0	0.0095268	0.0013689	0.43505
216-S-17	0.10244	0.0016241	0	0.00007815	3.0708	0.029718	0.000047281	37.743	0.000054865	0	0	0	0.000051424	0.00020766	0.0023489
216-S-19	0.032041	0.0034093	0	0	0.000070021	0	0	0.00078452	0	0	3.4117E-08	0	0.000012274	1.2586E-06	0.00052552
216-S-20	0.02158	2.6764	0	0.000061145	32.349	0.025914	0.0081461	40.064	0.00025452	0.000010314	0.000081627	0.17399	0.0080157	0.12028	0.37758
216-S-21	354.67	0.0088047	0	0.00055574	2.8022	0.20623	0.00031865	272.89	0.0002577	3.275E-08	2.4929E-06	0.0000142	1.6903E-06	0.0011458	0.000076941
216-S-22	0.31165	2.0349E-09	0	1.4274E-10	0.000001423	5.3774E-08	6.3912E-06	7.5686E-07	9.0674E-11	0	0	0	0	2.46E-10	3.1946E-11
216-S-23	5.9217E-06	7.0531E-07	0	4.9472E-08	0.00049322	0.00018638	2.9266E-08	0.026232	3.1428E-08	0	0	0	0	8.526E-08	1.1077E-08
216-S-25	505.58	0.000044624	0	0	0.000020875	0	0	0.000010276	0	9.7545E-09	6.7609E-08	2.9478E-08	0.00001017	0.00095951	0.00047594
216-S-26	0.0053997	0.00057477	0	0	0.000011803	0	0	0.00013225	0	0	0	0	2.1445E-06	2.0507E-07	0.000094531
216-S-3	17.068	0.00040457	0	0.000038184	0.14243	0.014214	0.000021898	18.837	0.000015951	2.2532E-09	1.4134E-07	7.4365E-07	0.000030335	0.000072298	0.0013859
216-S-4	4.0578	0	0	0	7.7742E-08	0	0	1.9786E-07	0	0	0	0	4.2329E-09	3.7956E-06	1.975E-07
216-S-5	0.46077	0.0010747	0	0.000052224	13.628	0.025904	0.000031641	25.322	0.000036652	0	0	0	0.015923	0.0001378	0.72703
216-S-6	0.49591	0.00009191	0	0.00016019	2.5154	0.016026	0.0028087	5.0455	0.000017304	3.4204E-07	1.4416E-06	8.5487E-07	0.012389	0.0017459	0.5656
216-S-7	1169.2	0	0	0.043424	636.39	2.4916	0.35509	439.09	0.0036807	0.000088619	0.00049941	0.00020689	0.055877	0.48961	2.5511
216-S-8	0	0	0	0	0	0	0	0	0	0	0	0.000020226	0.004346	0	0.20445
216-S-9	163.13	0	0	0.0018099	51.299	0.10408	0.029784	27.074	0.00017388	0.000011314	0.000065896	0.000025633	0.0050014	0.020156	0.22422
216-SX-2	0	0.00031944	0	0	7.4986E-06	0	4.5419E-06	0	0	6.3385E-08	4.1262E-07	0.000000185	0.000056558	0.000044138	0.002677
216-T-1	0.0059068	0.000624	0	2.1857E-06	1.1631	0.0009659	9.6294E-07	1.082	5.9166E-07	7.0923E-09	9.1656E-08	0	3.3918E-06	0.00020445	0.00014972
216-T-12	11.06	0.00040661	0	0.000013419	0.1562	0.0085148	8.8995E-06	1.0296	9.7776E-06	4.4941E-08	0	9.3531E-08	0.0031667	0.000024349	0.14467
216-T-14	0.85594	0.080993	0	0.0026748	31.143	0.20337	0.001775	205.4	0.0019475	0.000008673	0.00058186	0	0.00049489	0.0046785	0.022739
216-T-15	0.88649	0.083888	0	0.0027702	32.273	0.21069	0.0018386	212.73	0.0020174	8.9826E-06	0.00060267	0	0.00051316	0.0048449	0.023546
216-T-16	0.86774	0.082112	0	0.0027119	31.58	0.20625	0.0017997	208.25	0.0019751	8.7958E-06	0.00059012	0	0.0005023	0.0047428	0.023056
216-T-17	0.66781	0.063196	0	0.0020867	24.308	0.1587	0.0013851	160.25	0.0015198	6.7682E-06	0.00045412	0	0.00038667	0.0036506	0.017749
216-T-18	0.032964	0.2659	0	0.002146	17.033	0.15388	0.0014845	18.83	0.00053075	0.000010791	0.00079791	0	0.00081393	0.0036433	0.036534
216-T-19	714.77	0.015245	0	0.00069401	10.589	0.0079192	0	8.5663	0.0012707	2.4646E-06	0.00059444	0	0.00018659	0.0044895	0.0085058
216-T-2	0.00099612	0.00013738	0	6.6612E-06	0.34098	0.0029438	2.9348E-06	2.9057	1.8032E-06	2.1645E-08	2.7974E-07	0	4.3677E-06	0.000018156	0.0001976
216-T-20	0.04223	9.2107E-06	0	3.6397E-07	0.032782	0.00010929	1.5122E-07	0.14251	9.3845E-08	1.7776E-09	2.4404E-08	0	1.5471E-08	9.3491E-07	7.0454E-07
216-T-21	0.39403	0.037271	0	0.001231	14.334	0.093613	0.00081712	94.506	0.00089662	3.9912E-06	0.00026782	0	0.00022801	0.0021531	0.01046
216-T-22	1.3102	0.12396	0	0.0040949	47.679	0.31137	0.0027174	314.39	0.0029818	0.000013282	0.00089082	0	0.00075831	0.0071608	0.034789
216-T-23	1.2643	0.11962	0	0.0039505	45.995	0.30046	0.0026219	303.35	0.0028783	0.000012815	0.00085958	0	0.00073152	0.0069111	0.033582
216-T-24	1.3102	0.12398	0	0.0040948	47.671	0.31136	0.0027172	314.38	0.0029819	0.000013277	0.00089073	0	0.0007584	0.0071607	0.034797
216-T-25	2.5417	0.24048	0	0.0079424	92.488	0.60395	0.0052709	609.78	0.0057847	0.000025761	0.0017278	0	0.001471	0.013888	0.067497
216-T-26	0.37688	3.0406	0	0.024536	195.31	1.7597	0.016974	215.55	0.0060694	0.0002462	0.0091264	0	0.0093606	0.041569	0.41826
216-T-27	0.0011736	0.10919	0	3.3945E-06	1.796	0.0014373	0	2.2158	0.000014108	3.5301E-07	3.3842E-06	0.059341	0.00047974	0.0033269	0.022115
216-T-28	0.034924	0.73122	0	0.00010108	53.435	0.042883	0	65.346	0.00042129	0.000002364	0.000046841	2.2188	0.0082783	0.022269	0.3689
216-T-29	6.3777E-06	8.7956E-07	0	4.265E-08	0.0021831	0.000018847	1.879E-08	0.018604	1.1546E-08	3.3853E-10	1.7935E-09	0	2.7965E-08	1.1648E-07	1.2652E-06
216-T-3	2.8259E-06	0.0041219	0	0.00018496	0.73193	0.00095738	4.2375E-07	0.8709	0.00020815	1.3385E-06	0.0009067	0	0.000029699	0.0033465	0.0013163
216-T-32	0.000030465	0.014555	0	0.00065894	1.0866	0.0013342	2.2789E-07	1.3055	0.0025598	3.2775E-06	0.0030966	0	8.6408E-06	0.016169	0.00038411
216-T-33	0.11105	1.2541E-06	0	5.2935E-08	0.02709	0.0042729	0.00003049	0.034049	2.1287E-07	0	0	0.11969	0.00098486	5.1763E-08	0.044274
216-T-34	0.000050903	0.086306	0	1.8657E-07	0.075023	0.000074236	0.0082116	0.13801	6.0396E-07	3.7058E-07	2.7322E-06	0.31839	0.0012293	0.0012101	0.052241
216-T-35	0	0.14934	0	0	0.0030678	0	0	0.034381	0	6.4177E-07	4.7363E-06	0.000001088	0.00057477	0.000020953	0.023325
216-T-36	0.00017325	0.000011854	0	5.0379E-07	0.26616	0.00021254	0.00029781	0.32333	2.0788E-06	0	0	1.1644	0.0032599	4.5194E-07	0.14133
216-T-4A	176.56	0.00011038	0	5.3522E-06	1.2452	0.067109	0.00044317	2.4553	0.00000145	0	0	0.0017153	0.0088327	0.00016338	0.40306
216-T-5	0.001224	0.027542	0	0.0012539	12.669	0.014984	0	15.307	0.0020382	4.4534E-06	0.00088183	0	0.00035062	0.0062059	0.015984
216-T-6	0.000029694	0.014776	0	0.00066294	6.0187	0.0078724	3.4849E-06	7.1633	0.00029242	4.7976E-06	0.00089502	0	0.00030815	0.0033091	0.013764
216-T-7	0.012803	0.36934	0	0.016778	157.97	0.19008	0.000014944	190.45	0.027843	0.00069968	0.016457	0	0.0094443	0.10329	0.2241
216-T-8	0.000061198	0.000078436	0	4.0515E-07	6.5709	0.00019375	2.1695E-07	0.19646	1.1688E-07	1.8901E-08	0	1.837E-08	0.00069022	1.1226E-06	0.031423
216-TY-201	0	0	0	0	5.7792E-09	0	0	0	0	0	0	0	4.7183E-10	3.2282E-07	2.08E-08
216-U-1%2	15.754	0.00011191	0	0.00000507	0.50518	7.272	2.2658E-06	0.80691	1.1451E-06	0.0010799	4.0815E-07	1.3934E-06	0.057581	0.00042639	2.6168
216-U-10	34.647	0.20057	0	0.000055885	0.84282	0.02128	0.21434	33.053	0.000037137	0.000040724	0.00025055	0.00028564	0.0313	1.209	1.4517
216-U-12	441.12	7.5912E-07	0	0.0001296	12.854	0.67863	0.000001381	31.207	0.000069568	5.0744E-07	0.0088589	0.12235	0.093602	0.000016823	4.2723
216-U-13	2.4834E-06	1.1338E-06	0	1.6554E-08	0.075112	7.4806E-06	7.7346E-09	0.007453	4.5693E-09	2.5245E-10	2.0206E-10	7.8204E-06	4.5327E-08	0.0003567
216-U-14	1.3619	0.007712	0	2.1486E-06	0.03256	0.00081875	0.0083859	1.2727	1.4291E-06	1.5621E-06	9.5837E-06	0.000011124	0.0011963	0.0013495	0.055602
216-U-15	8.9068E-06	1.5083E-06	0	7.137E-08	0.0048766	0.035269	3.159E-08	0.02411	1.8182E-08	5.3865E-06	9.7769E-08	2.8925E-09	0.00014544	2.2387E-06	0.0065808
216-U-16	583.54	0.0009246	0	0	2.8916E-08	0	7.524E-08	0.000038146	0	0	0	0	2.3253E-06	3.6504E-07	0.00010253
216-U-17	26.018	0	0	0	0	0	0	0	0	2.7446E-09	3.1325E-08	1.2404E-08	4.5465E-06	6.5173E-07	0.00020043
216-U-3	3.1756	0	0	0	5.9984E-08	0.00059918	0	1.5266E-07	0	0	0	6.2746E-09	0.00025327	2.9285E-06	0.01155
216-U-4	0.000049657	0.000006965	0	3.3731E-07	0.017006	0.00014676	1.463E-07	0.14486	9.7472E-08	1.117E-09	4.8437E-08	0	2.1782E-07	1.0323E-06	0.000009855
216-U-4A	7.9402E-08	0.014231	0	5.3096E-10	0.00031949	2.3464E-07	2.3392E-10	0.0035063	1.4374E-10	5.5047E-08	3.9127E-07	9.3728E-08	0.000049159	0.00029443	0.002107
216-U-4B	0	0.00086248	0	0	0.000017714	0	0	0.00019847	0	3.2583E-09	2.2073E-08	8.0715E-09	2.8005E-06	0.000023189	0.00012372

F.7

Inventory by site for waste form "All_Types" at the year 2035

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
216-U-5	0	0	0	0	0	0	0	0	0	0	0	0.000011159	0.0091647	0	0.41836
216-U-6	0	0	0	0	0	0	0	0	0	0	0	0.000011159	0.0090953	0	0.41792
216-U-7	2.6556E-09	4.34E-10	0	3.696E-11	1.6668E-07	1.1656E-08	2.2368E-11	0.000021588	2.216E-11	0	4.7592E-12	2.975E-11	0	4.7191E-11	7.1298E-12
216-U-8	645.01	6.7952E-06	0	3.6358E-07	0.014054	2.7232	0.004945	0.022942	1.3866E-07	2.1267E-07	0	3.8415E-07	0.3713	0.00055619	16.947
216-W-LWC	0.000006139	0	0	0	0.082506	0	0.050731	0.11572	0	0	3.8415E-07	9.0162E-09	0.000053572	0.00092278	0.002318
216-Z-1%2	0	0	0	8.3074E-08	0.0072532	4.7676E-06	0	0.0047771	9.8276E-09	3.043E-11	2.0303E-10	0	1.5624E-07	0.50017	3.4676E-06
216-Z-10	0	0	0	1.6381E-06	2.0756	0.000094222	0	2.2114	2.4981E-07	5.4886E-10	0	0	4.4046E-06	0.023214	0.00018706
216-Z-12	0	0	0	0.000003682	0.30401	0.0002116	0	0.31718	5.2996E-07	0	2.4514E-08	0	3.1647E-06	10.892	0.00006496
216-Z-13	0	0	0	0	6.4957E-09	0	0	1.554E-08	0	0	0	0	3.1324E-07	0	0.000013928
216-Z-14	0	0	0	0	6.7602E-09	0	0	1.6173E-08	0	0	0	0	3.2639E-07	0	0.000014509
216-Z-15	0	0	0	0	7.0024E-09	0	0	1.6754E-08	0	0	0	0	3.3681E-07	0	0.000014988
216-Z-16	0	0	0	9.485E-08	0.000018893	5.4503E-06	0	0.00002161	1.7599E-08	0	5.8715E-08	0	6.8372E-06	0.010641	0.00028029
216-Z-17	0	0	0	3.4245E-08	6.8159E-06	1.9671E-06	0	7.7934E-06	6.3465E-09	0	2.1018E-08	0	2.4669E-06	0.0038418	0.000099994
216-Z-18	0	0	0	5.7926E-07	0.024431	0.000033303	0	0.026474	8.6274E-08	5.0352E-10	3.39E-09	0	3.935E-07	6.8991	7.9827E-06
216-Z-1A	0	0	0	0.000001237	0.42674	0.000071142	0	0.45542	1.8529E-07	6.8164E-10	5.4011E-09	0	1.4539E-06	12.369	0.000048082
216-Z-20	0	0	0	0	2.2809E-08	0	0	1.9681E-07	0	0	0	0	0.000004151	0.0086859	0.00017527
216-Z-21	0	0	0	0	2.076E-07	0	0	4.9677E-07	0	0	0	0	0.00001031	0	0.0004562
216-Z-3	0	0	0	1.4602E-07	0.13764	8.3916E-06	0	0.14269	2.0084E-08	0	0	0	2.4076E-07	0.4262	5.4822E-06
216-Z-4	0	0	0	7.8181E-08	0.099159	4.5049E-06	0	0.10567	1.1928E-08	2.6208E-11	0	0	2.1032E-07	0.0010717	8.9519E-06
216-Z-5	0	0	0	1.2657E-06	1.6049	0.000072846	0	1.7096	1.9301E-07	0	0	0	3.3697E-06	0.047801	0.00013104
216-Z-6	0	0	0	1.6667E-07	0.21133	0.000009597	0	0.22501	2.5437E-08	5.5835E-11	0	0	4.4799E-07	0.0023604	0.000019035
216-Z-7	0.00021547	0.000014965	0	0.000053315	67.076	0.0033014	0.0037061	71.52	0.00001063	1.7635E-08	2.0366E-09	1.4463	0.00415	0.78779	0.18117
216-Z-8	0	0	0	0	1.2746E-12	0	0	3.0484E-12	0	0	0	0	6.8384E-11	0.015938	1.5791E-09
216-Z-9	0	0	0	6.0821E-07	0.025647	0.000034973	0	0.027765	9.0564E-08	0	0	0	3.6536E-07	9.9466	8.3985E-06
218-C-9	0	0	0	5.198E-08	0.064868	0.000030303	6.3844E-08	0.072711	2.6224E-07	0	0	0	0.000027894	0	0.0013174
218-E-1	0	0	0	5.1986E-07	0.24735	0.00030304	6.3854E-07	0.28895	3.3903E-07	0	0	0	0.0055797	0	0.26351
218-E-10	0	0	0	0.33595	258060	24.941	0.41272	326630	0.70375	0	0	0	0.011174	0.0010535	0.52769
218-E-12A	0	0	0	4.6268E-06	3.1042	0.0026972	0.000005683	3.5728	6.3014E-06	0	0	0	0.01381	0	0.6522
218-E-12B	0.000025716	416.37	0.21998	0.0093837	8504.3	6.2943	0.011541	9080.6	0.021124	0	0	0.000022827	0.0070761	0.000003974	0.30388
218-E-14	0	0	0	0.00045644	290.04	0.26608	0.00056064	334.66	0.00054904	0	0	0	0	0	0
218-E-15	0	0	0	0.0022034	2531.1	1.5957	0.0027063	2888	0.0073664	0	0	0	0	0	0
218-E-2	0	0	0	0.00012996	64.692	0.075761	0.00015964	75.428	0.000093156	0	0	0	0.0041848	0	0.19764
218-E-2A	0	0	0	0.000062383	28.679	0.036365	0.000076625	33.553	0.000037765	0	0	0	0	0	0
218-E-4	0	0	0	5.1986E-08	0.028607	0.000030304	6.3854E-08	0.033212	4.6022E-08	0	0	0	0.000013949	0	0.00065878
218-E-5	0	0	0	0.00003899	21.563	0.022728	0.000047891	25.029	0.000034904	0	0	0	0.0016739	0	0.079054
218-E-5A	0	0	0	0.000085777	50.53	0.050055	0.00010536	58.493	0.000087828	0	0	0	0.0016739	0	0.079054
218-E-7	0	0	0	3.1192E-06	1.5047	0.0018182	3.8312E-06	1.7568	2.0918E-06	0	0	0	0.000013949	0	0.00065878
218-E-8	0	0	0	5.1986E-08	0.031125	0.000030305	6.3854E-08	0.036005	5.507E-08	0	0	0	0.000027899	0	0.0013176
218-E-9	0	0	0	1.9415E-06	4.0083	0.000016975	2.3858E-06	2.5943	9.6075E-06	0	0	0	0	0	0
218-E-LLW	0.17952	1.3062	0	5.4356E-06	6.4024	0.003481	0.0043583	13.956	0.000090749	0	0	0	0.01653	1.34E-10	0.77626
218-E-RCRA	112.48	794.42	0.00013072	89.308	734970	22740	40.507	345770	20.66	1.4009	1.9436	15.897	0.40375	43.715	17.579
218-W-1	0	0	0	1.0397E-06	0.49541	0.00060608	1.2771E-06	0.57869	6.8057E-07	0	0	0	0.0097645	0	0.46115
218-W-11	0	0	0	1.0153E-06	0.63022	0.00059188	1.2471E-06	0.72791	0.000001161	0	0	0	0.20258	0	9.5675
218-W-1A	0	0	0	0.00024953	123.77	0.14546	0.0003065	144.33	0.0017778	0	0	0	0.012554	0	0.5929
218-W-2	0	0	0	2.5993E-06	1.426	0.0015152	3.1927E-06	1.6558	2.2881E-06	0	0	0	0.019529	0	0.9223
218-W-2A	0	0	0	0.0013667	845.31	0.79522	0.0016788	977.37	0.0015942	0	0	0	0.037524	0	1.7721
218-W-3	0	0	0	4.6788E-06	2.8017	0.0027274	5.7469E-06	3.2409	4.9613E-06	0	0	0	0.97645	0	46.115
218-W-3A	14845	0.097781	5.2995E-08	0.09372	27088	4.5809	0.02442	95834	0.15026	0	0	0	0.82466	0.023081	38.946
218-W-3AE	6636.4	14.362	0.0013488	0.038419	29564	36.541	0.034532	38869	0.16548	0	0	0.20188	4.0101	0.063326	246.92
218-W-4A	0	0	0	0.000017236	12.163	0.010048	0.000021171	13.971	0.000025995	0	0	0	6.9705	0	329.19
218-W-4B	5534.2	0	0	0.00341	2895.3	1.9966	0.50406	3352.9	0.0075172	0	0	0	0.053831	0	2.5423
218-W-4C	3454.6	68.35	1.6066E-05	0.028545	33645	17.327	0.03527	38102	0.12759	0	0	3.0236E-06	0.78547	0.0030734	77.5
218-W-5	6237.1	8.6166	0.0020374	0.0021027	1765	141.09	0.04185	2345.9	0.009084	0	0	0.32383	18.406	0.023821	657.34
221-B	0	0	0	0.037247	18121	13.997	0.028	35214	0.078965	0	0	0	0	0	0
221-T	0	0	0	0.0018701	689.12	0.99988	0.0021	2616.7	0.0094714	0	0	0	0	0	0
221-U	0	0	0	0.00012457	83.017	6.3984	0.000069	87.269	0.00013578	0	0	0	0.63	0	29.55
222-SD	0	0	0	0.000024953	13.924	0.014546	0.00003065	16.155	0.0000022899	0	0	0	0.000013949	0	0.00065878
224-B	0	0	0	5.1943E-07	6.4013	0.0027993	0.00000028	0.3475	5.1109E-07	0	0	0	0	0	0
224-T	0	0	0	5.1943E-07	6.4013	0.0027993	0.00000028	0.3475	5.1109E-07	0	0	0	0	0	0
224-U	0	0	0	0.00012535	146.43	0.071989	0.00015444	167.97	0.00057481	0	0	0	0.006	0	0.33
225-B	0	0	0	0	101770	0	0	60224	0	0	0	0	0	0	0
241-A-101	0.0040885	0.0082405	0	0.0019926	6264.7	0.28847	0.00029306	181.84	0.17889	0.000006619	0.0001039	0.37876	0.0027605	0.15041	0.12929
241-A-102	0.006118	0.0043605	0	0.0021766	6648.7	3.3895	0.00037005	848.87	0.0085047	1.3186E-06	0.0015061	2.5259	0.017901	0.027372	0.83815
241-A-103	0.09178	0.18127	0	0.020055	2635	6.4557	0.0057916	3142.5	0.022698	3.6602E-06	0.0046257	0.22245	0.0016169	0.063136	0.07573
241-A-104	0.011845	0.022107	0	0.0018464	48066	0.57811	0.00030643	1121.6	0.045836	1.0159E-07	1.8119E-06	0.0044981	0.00050341	0.0034433	0.023864
241-A-105	0.0062745	0.028295	0	0.0021226	64888	0.66327	0.000073129	1238.5	1.1836	0.000000215	1.7779E-06	6.032E-09	4.4061E-06	0.0052762	0.00020192
241-A-106	0.0024572	0.0015895	0	0.00039394	5842.4	0.22215	0.00019441	229.54	0.33785	2.5976E-07	0.00020532	0.010802	0.00019331	0.0057709	0.0090738
241-AN-101	0.00041133	0.00074694	0	0.000052128	4.9766	0.017322	0.000016346	8.2759	0.000024065	4.1106E-09	1.2975E-06	0.000079164	4.1814E-06	0.0001245	0.00019159

F.9

Inventory by site for waste form "All_Types" at the year 2035

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
241-AN-102	0.000078869	0.0002043	0	0.000014133	12.417	0.0052883	6.7497E-06	3.2461	0.000094719	1.1571E-08	0.000011056	0.000092566	4.3722E-06	0.00038668	0.00020086
241-AN-103	0.000034852	0.000040238	0	1.5285E-06	14.985	0.0005991	4.5892E-06	0.80243	0.00025207	9.8002E-10	7.5111E-08	0.0019586	0.000013079	2.0243E-06	0.00062849
241-AN-104	0.00038946	0.0045306	0	0.000057223	11.235	0.016924	0.000016352	8.6096	0.000018527	3.5887E-09	1.1343E-06	0.00003243	1.6413E-06	0.00010397	0.000075196
241-AN-105	0.00034406	0.00035827	0	0.000027937	3.5223	0.011104	0.000014739	5.7126	0.000027591	3.5236E-09	1.5284E-06	0.00016134	6.4293E-06	0.000066695	0.00029495
241-AN-106	0.00031032	0.00026177	0	0.000017624	0.21912	0.0055567	0.000029709	2.2522	0.000011874	2.0934E-09	6.2564E-06	0.00047589	2.8311E-06	0.000019001	0.00013603
241-AN-107	0.00015679	0.0019308	0	7.2466E-06	4.5843	0.0060853	5.4154E-06	2.7469	0.000071663	4.4903E-09	0.000001928	0.00012525	0.000021644	0.000055327	0.0009754
241-AP-101	0.00018415	0.00021743	0	7.0906E-06	6.8634	0.002066	3.4722E-06	2.0303	0.000011175	3.7586E-09	1.3571E-07	0.000007227	3.2739E-06	0.000017362	0.00015238
241-AP-102	0.00037809	0.00071631	0	0.000055953	44.857	0.018574	0.000013707	16.495	0.00016269	2.5184E-08	7.2785E-06	0.00053171	0.000039319	0.00075932	0.0017893
241-AP-103	0.00035297	0.00049966	0	0.000045857	5.329	0.023412	0.000016574	8.4367	0.000092697	1.0938E-08	3.3359E-06	0.00011549	6.6171E-06	0.00035255	0.00030346
241-AP-104	0.00038669	0.00063438	0	0.000045205	5.4139	0.01492	0.000014344	7.0188	0.000022046	3.6849E-09	1.1415E-06	0.000065347	3.9371E-06	0.00010311	0.00018056
241-AP-105	0.00047076	0.00056475	0	0.000041132	7.6629	0.013466	0.000014143	6.8834	0.000021373	3.5228E-09	1.1469E-06	0.000089887	7.0692E-06	0.000079431	0.00032157
241-AP-106	0.00043383	0.00032812	0	0.000014098	3.2477	0.0070979	8.4908E-06	4.1663	0.000002106	2.4789E-09	1.1164E-06	0.000091713	5.1557E-06	0.000034224	0.00023427
241-AP-107	0.000012344	0.00002502	0	8.4145E-06	0.010188	0.0018507	2.2461E-06	1.0275	1.9363E-06	5.8056E-10	1.8025E-08	5.1887E-08	1.0596E-09	4.7103E-06	4.934E-08
241-AP-108	0.00048492	0.00091881	0	0.00023262	0.23176	0.067929	0.000098097	42.332	0.00016136	4.6885E-08	1.3028E-06	5.5365E-06	1.5441E-07	0.000037134	7.0441E-06
241-AW-101	0.00019764	0.00015279	0	0.000011018	8.0861	0.0043465	4.1643E-06	2.6874	0.000077241	2.0581E-09	5.5883E-07	0.000026324	3.1304E-06	0.000047294	0.00014618
241-AW-102	0.00041645	0.0001516	0	0.000011365	4.2847	0.0050904	3.1821E-06	2.7972	0.000027808	3.7588E-09	1.1424E-06	0.000049837	5.9148E-06	0.00010189	0.00026951
241-AW-103	0.00043472	0.00042175	0	8.4156E-06	4.4072	0.0060583	0.000014342	3.4654	0.000035467	2.5831E-09	4.8023E-06	0.0001549	6.6785E-06	0.000039589	0.00030406
241-AW-104	0.00033648	0.0018176	0	0.000035213	5.3595	0.011565	0.000017798	5.676	0.000019767	3.0032E-09	2.4096E-06	0.00016243	3.081E-06	0.000067298	0.00014271
241-AW-105	0.000072759	0.000024115	0	1.1903E-07	16.792	0.0024408	0.000001999	4.2094	0.0018042	1.0309E-09	6.8066E-08	9.4296E-06	0.000028672	0.000016818	0.0012661
241-AW-106	0.00025395	0.00022922	0	0.000012234	5.8294	0.0082139	0.00001005	3.0335	0.000053976	4.2879E-09	4.0302E-06	0.00022346	6.0803E-06	0.000073414	0.00027996
241-AX-101	0.0045567	0.009992	0	0.011341	10305	0.32398	0.00033037	217.66	0.11433	8.1447E-06	0.0087447	0.24496	0.0025153	0.17128	0.1177
241-AX-102	0.031312	0.013281	0	0.0033182	25427	0.82371	0.0004366	437.86	0.98563	1.5203E-06	0.00064417	0.25702	0.0019929	0.06759	0.092234
241-AX-103	0.0041131	0.008547	0	0.0011653	31636	0.3377	0.00032541	265.59	0.48678	2.5737E-06	0.0026707	0.01403	0.00042275	0.0068301	0.025969
241-AX-104	0.00072216	0.012444	0	0.00060113	111880	1.1432	4.4665E-06	290.34	0.61164	6.9395E-08	7.1636E-07	9.3885E-07	0.00027788	0.0019319	0.013145
241-AY-101	0.00011581	0.0019855	0	0.000037341	539.94	0.011632	8.7432E-07	21.486	0.0091496	1.6063E-09	1.0781E-07	8.9307E-06	4.6764E-07	0.000030758	0.000022146
241-AY-102	0.00045369	0.00053577	0	0.000039415	33.563	0.012996	0.000013972	7.6877	0.00014086	2.0594E-06	1.0982E-06	0.000085432	6.9432E-06	0.00011252	0.00031616
241-AZ-101	0.00037872	0.000614	0	0.000049335	30.747	0.015162	0.000017302	8.7891	0.00029382	4.512E-09	1.1021E-06	0.000063159	4.0256E-06	0.00015343	0.00018455
241-AZ-102	0.00042857	0.00034748	0	0.000025942	51.178	0.011153	0.000014342	10.252	0.00078829	3.3936E-09	1.1001E-06	0.000093937	7.2872E-06	0.00052521	0.00032645
241-B-101	0.00055164	0.00023649	0	0.000030842	5967	0.012157	3.0743E-06	3.7719	0.19582	4.0398E-07	2.5545E-06	6.1358E-06	0.0060296	0.00028811	0.26711
241-B-102	0.00048589	0.0002029	0	0.000010952	0.67294	0.0023537	3.2658E-06	17.535	0.000016129	2.359E-07	3.9669E-06	2.8292E-08	0.0011776	0.00015771	0.053275
241-B-103	0.00037633	0.00015637	0	9.1078E-06	1.2002	0.0018171	2.4833E-06	16.826	0.000015321	3.2679E-07	3.7317E-06	7.6136E-08	0.0039836	0.00014856	0.17868
241-B-104	0.00021331	0.00038342	0	6.9793E-06	31.265	0.03522	1.5682E-06	205.53	0.000025388	2.7065E-07	0.00001592	4.201E-08	0.0018932	0.0001224	0.085497
241-B-105	0.00034834	0.00016382	0	0.000010142	0.65713	0.0038424	2.3497E-06	44.36	0.000022359	2.7115E-08	5.9516E-06	4.2006E-08	0.0017546	0.00021498	0.079375
241-B-106	0.00031113	0.00025209	0	0.000015877	960.87	0.020052	0.000001874	167.68	0.000023047	3.7697E-07	5.1628E-06	1.4823E-07	0.0065057	0.00020147	0.29408
241-B-107	0.97014	0.058627	0	0.00091512	52.08	0.39953	0.0083228	566.38	0.00061708	5.139E-07	0.000074177	0.0054519	0.00082659	0.0015189	0.037502
241-B-108	0.00040411	0.00042123	0	5.1263E-06	0.92458	0.00086261	0.000059031	94.206	0.000013497	1.2811E-07	0.000001268	0.030923	0.00078318	0.000087556	0.036103
241-B-109	0.00035912	0.0003945	0	2.7262E-06	0.24692	0.00067915	0.000056956	7.3079	0.000010959	9.3172E-08	0.000011844	0.51839	0.0032187	0.00006376	0.15536
241-B-110	0.018048	0.026809	0	0.0017297	1387.5	0.70384	0.00041477	403.19	0.2527	4.6363E-07	0.00023977	0.00021573	0.00012028	0.0057901	0.005416
241-B-111	0.0017889	0.012198	0	0.00052382	3475	1.0812	2.7719E-06	1328.1	0.31364	2.9456E-08	3.2092E-06	3.9734E-07	0.000033706	0.0008167	0.0014981
241-B-112	0.029421	0.030818	0	0.0034632	23.059	1.1436	0.0010008	653	0.0047481	4.6363E-07	0.00089527	0.028824	0.00013359	0.0063233	0.0062993
241-B-201	0.0027502	1.4674E-06	0	6.5637E-08	0.87608	1.3288E-07	1.2166E-10	0.072115	9.495E-08	4.3158E-07	4.3773E-11	2.5413E-06	1.5923E-06		0.00011519
241-B-202	7.0777E-10	2.0861E-07	0	9.5181E-09	1.4767	0.0055371	0	0.03886	5.1572E-08	3.3755E-11	3.3494E-08	1.3443E-10	5.1342E-06	2.3527E-07	0.00026522
241-B-203	7.2906E-10	6.0326E-07	0	2.7208E-08	0.03325	5.5081E-08	2.0134E-08	0.0033189	7.6496E-08	1.6247E-10	1.503E-07	3.37E-12	1.2516E-07	1.2814E-06	5.7117E-06
241-B-204	8.7944E-10	1.9691E-07	0	8.8762E-09	0.0012571	1.8932E-08	5.285E-07	0.013005	4.755E-08	3.2427E-11	3.1635E-08	3.4401E-12	5.0903E-10	2.196E-07	2.3948E-08
241-BX-101	0.0069446	0.0055893	0	0.00079204	566.05	0.24871	0.00040417	22.384	0.0027844	9.4036E-08	0.000010832	0.084058	0.00097395	0.00081311	0.045625
241-BX-102	0.53681	0.10356	0	0.0047023	1016.4	2.2752	0.0011686	2070.8	0.00037007	0.000026837	5.2202E-06	0.043512	0.14907	0.012836	6.6538
241-BX-103	0.0029312	0.0005847	0	1.8949E-06	230.65	0.0018654	0.00038	2.1297	8.7205E-06	8.1079E-08	0.000011752	0.092419	0.0012932	0.000044433	0.060213
241-BX-104	0.0023643	0.00011593	0	8.3427E-07	788.87	0.10894	0.000021887	98.039	2.6723E-06	9.1773E-07	1.8658E-06	0.20385	0.0080262	0.000034067	0.36957
241-BX-105	0.012719	0.0011941	0	1.6475E-06	736.62	0.19445	0.000016148	48.419	0.0019529	4.6176E-07	9.2249E-08	1.7204E-07	0.008517	0.000086724	0.38278
241-BX-106	0.0050941	0.0004664	0	2.1328E-06	579.62	0.13902	0.000070247	197.01	6.5911E-06	8.4444E-08	4.3185E-08	3.1524E-08	0.00085047	0.000054306	0.039378
241-BX-107	0.000055739	0.00042247	0	3.5489E-06	47.683	0.10189	6.0933E-07	118.93	0.000015093	7.8053E-08	9.5048E-06	1.3305E-08	0.00057362	0.000044656	0.025939
241-BX-108	0.046578	0.0325	0	0.0037072	1099.9	1.2164	0.00088957	150.76	0.0015092	5.2639E-07	0.000019045	0.00021643	0.0038209	0.0040139	0.17273
241-BX-109	0.00056351	0.00030242	0	0.000016779	2338	0.031095	3.1401E-06	246.54	0.000030462	6.2125E-07	2.6797E-08	2.2971E-07	0.010099	0.00036246	0.45652
241-BX-110	0.0066493	0.0094654	0	0.00096036	145.64	1.3466	0.00088656	678.85	0.0090492	5.3644E-07	0.0017705	0.067399	0.005866	0.0078914	0.02714
241-BX-111	0.0080097	0.065954	0	0.0038012	271.36	3.0396	0.010708	846	0.018932	1.4233E-06	0.0038923	0.0071048	0.00027495	0.017496	0.012497
241-BX-112	0.000075383	0.00032115	0	0.000025633	35.156	0.06071	5.3947E-07	437.09	0.000012694	1.2404E-07	8.1206E-06	8.8275E-09	0.00038056	0.000044247	0.017208
241-BY-101	0.0085773	0.056486	0	0.0012391	1552.3	2.4258	0.0093679	1334	0.016144	1.3503E-06	0.0033093	0.0065505	0.00091998	0.015003	0.041654
241-BY-102	0.0078942	0.008901	0	0.00071731	234.91	0.9387	0.010335	502.93	0.018347	1.3574E-06	0.0038458	0.15068	0.00036557	0.016679	0.017905
241-BY-103	0.025101	0.06857	0	0.0021763	177.3	2.6344	0.0095067	784.99	0.015567	0.000001218	0.0035559	0.13382	0.00035385	0.015072	0.017318
241-BY-104	0.0086056	0.10573	0	0.0011347	6858.1	4.6949	0.017177	1948.1	0.031429	2.6369E-06	0.0065613	0.40826	0.0064815	0.030542	0.29685
241-BY-105	0.0098111	0.056972	0	0.0010399	853.86	0.3948	0.0095228	431.07	0.016132	1.2053E-06	0.0033153	0.087879	0.0016976	0.0023425	0.077578
241-BY-106	0.0084754	0.050932	0	0.001296	6288.6	11.933	0.0015762	907.92	0.10729	5.0316E-06	0.022029	0.27524	0.0096929	0.084467	0.44088
241-BY-107	0.056597	0.054058	0	0.0038861	1181.4	2.7853	0.0024028	1297.2	0.016517	1.1292E-06	0.0042215	0.23976	0.0022918	0.015208	0.10583
241-BY-108	0.025982	0.026086	0	0.0015355	1994.8	1.6295	0.0017577	681.76	0.011158	1.0647E-06	0.0025326	0.092558	0.0056676	0.011513	0.25717
241-BY-109	0.0087138	0.036183	0	0.00073867	117.91	1.4261	0.0058894	420.02	0.0092877	6.8736E-07	0.001947	0.076963	0.00019546	0.0086544	0.0095692
241-BY-110	0.0080526	0.074969	0	0.00083524	2464.1	3.2892	0.012267	156.75	0.021967	1.5116E-06	0.0045875	0.34687	0.0047268	0.019473	0.21693
241-BY-111	0.007899	0.010834	0	0.00080934	137.71	1.272	0.0012407	302.31	0.010869	5.5815E-07	0.0020995	0.08839	0.00021444	0.0087122	0.010503
241-BY-112	0.0062607	0.0069094	0	0.0015286	172.33	0.69006	0.0076634	369.94	0.013397	1.0186E-06	0.0027982	0.11004	0.0014105	0.012167	0.06534

Inventory by site for waste form "All_Types" at the year 2035

F.10

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
241-C-101	0.054147	0.011279	0	0.00072284	299.8	0.22752	0.0018045	497.14	0.00055243	1.1297E-07	5.5707E-07	0.000019932	0.0027372	0.0012795	0.12762
241-C-102	0.018188	0.0046976	0	8.3457E-06	116.63	0.0031977	0.0015826	57.974	0.00027916	1.4431E-07	0.0010647	0.1943	0.0021524	0.000026131	0.10642
241-C-103	0.03051	0.0039293	0	0.00022952	11489	0.071693	0.00046314	312.5	0.015	2.3322E-08	3.2139E-07	0.00098029	0.00063435	0.00050425	0.030097
241-C-104	0.029617	0.0071952	0	0.024234	1443.6	0.23503	0.0042337	220.88	0.020876	9.0865E-07	0.0011878	2.876	0.0041961	0.030551	0.2263
241-C-105	0.11698	0.0082519	0	0.00072837	1547.5	0.7828	0.00068744	550.37	0.00040583	4.6997E-08	1.4597E-06	0.00011262	0.0010336	0.00079858	0.048802
241-C-106	0.0016936	0.008194	0	0.0095725	30596	0.16472	0.0006305	692.29	12.233	410.27	0	0.001829	0.000038601	0.054111	0.0018428
241-C-107	0.0019725	0.003448	0	0.00020024	8164.9	0.21306	0.0027225	190.45	0.22404	7.2344E-08	0.000004512	0.034766	0.000099055	0.00038926	0.045682
241-C-108	0.0013474	0.00058784	0	0.000011904	163.89	0.040451	7.0293E-06	1677.5	0.000021172	3.6586E-07	0.000005052	2.4282E-09	0.000097466	0.00018075	0.0044066
241-C-109	0.0015264	0.00012963	0	0.000031033	3910.2	0.4959	0.00042825	2745.5	0.0011629	3.9675E-07	2.7905E-06	4.8036E-06	0.0020684	0.0035242	0.10043
241-C-110	0.006257	0.0028145	0	0.000075261	49.062	0.19133	0.000032247	132.17	0.00002831	4.6187E-07	0.00001051	2.0923E-08	0.00089309	0.00024552	0.040384
241-C-111	0.23486	0.017517	0	0.0001854	13318	0.069667	0.002837	145.5	0.0064129	3.7252E-07	2.7249E-06	1.5179E-06	0.0020442	0.00044632	0.094401
241-C-112	0.0060187	0.022813	0	0.0040734	7980.7	0.72293	0.00034077	3140.2	0.000031689	5.8176E-07	0.000004146	2.6561E-07	0.0097241	0.020879	0.44306
241-C-201	0.00018558	0.0012817	0	0.000071148	132.38	0.022878	0.00000133	25.228	0.002691	2.9067E-09	1.9096E-08	0.000017396	0.0023407	0.0014462	0.11109
241-C-202	0.00016613	0.00051418	0	0.000063693	161.6	0.020051	1.1906E-06	20.87	0.0024091	2.602E-09	1.7146E-08	0.000015157	0.0021856	0.0012036	0.10076
241-C-203	0.00016138	0.00049949	0	0.000061877	76.53	0.010176	1.1565E-06	15.803	0.0023401	2.5272E-09	1.6555E-08	0.000022616	0.0030163	0.000081868	0.14379
241-C-204	0.0001279	0.00041132	0	0.000050956	61.125	0.01306	9.5234E-07	15.766	0.0019272	2.0814E-09	1.3619E-08	9.1209E-06	0.00069199	0.00067413	0.044598
241-S-101	0.0027734	0.0019475	0	0.00036929	1495.2	0.067644	0.00084068	68.388	0.0025573	1.3481E-07	0.000033865	0.0038268	0.0010413	0.0037352	0.048833
241-S-102	0.0024171	0.043038	0	0.00084933	4839.4	0.58728	0.00018394	2934	0.089071	4.0645E-06	0.0017657	0.10595	0.0099902	0.099945	0.46824
241-S-103	0.0020003	0.0038385	0	0.00050903	2652.9	0.70978	0.00014196	81.297	0.052899	3.8989E-06	0.00064035	0.044335	0.0016613	0.10044	0.077477
241-S-104	3.55	0.17332	0	0.00014302	1328.4	0.067483	0.00033931	92.114	0.0018407	1.5426E-07	4.0931E-06	0.0001984	0.00016631	0.0016631	0.028939
241-S-105	0.003058	0.0051388	0	0.00057495	159.54	2.1478	0.00017112	615.99	0.077492	0.000012083	0.0027565	0.055643	0.0016492	0.47544	0.076727
241-S-106	0.0040745	0.0068614	0	0.0040088	854.51	0.72653	0.00022707	362.93	0.0203	3.3842E-06	0.00087438	0.019697	0.00052079	0.10295	0.024198
241-S-107	0.0050816	0.00088455	0	0.0000118789	571.94	0.0097686	0.000089712	87.606	0.00030455	2.7784E-08	6.2852E-06	0.0014842	0.0010839	0.00074024	0.049089
241-S-108	0.0042031	0.0070054	0	0.0026013	1449.1	0.70011	0.0002124	376.73	0.020823	3.4663E-06	0.00089467	0.043226	0.0012419	0.10555	0.05776
241-S-109	0.0039139	0.062249	0	0.0013617	2280.7	1.2131	0.00019971	14.644	0.044978	4.9238E-06	0.0023031	0.010873	0.00090067	0.22649	0.042191
241-S-110	0.0041743	0.0047786	0	0.00084357	1371.8	0.21111	0.00015907	59.308	0.0036679	6.0139E-07	0.00015386	0.0046172	0.0011169	0.018446	0.05234
241-S-111	0.0048993	0.010979	0	0.0012427	3642.9	0.32806	0.00022151	986.35	0.0042846	4.7926E-07	0.0002133	0.0033476	0.00010614	0.019198	0.0049403
241-S-112	0.00021034	0.070283	0	0.000014925	8126.4	0.0048356	0.001053	11.696	0.1606	0.000051049	0.0011762	0.096207	0.0035156	0.21739	0.16191
241-SX-101	0.0084257	0.0048095	0	0.001588	8944.2	0.19323	0.00018571	573.2	0.03858	1.9451E-06	0.00038306	0.063064	0.0037609	0.052314	0.17487
241-SX-102	0.0039945	0.0060202	0	0.0020188	5470.7	0.97957	0.00022214	181.34	0.018286	2.3248E-06	0.00059406	0.035388	0.0010697	0.065418	0.049778
241-SX-103	0.0044716	0.0056848	0	0.0011919	2926.4	0.2087	0.00018806	133.37	0.0046834	6.9144E-07	0.00017465	0.0069973	0.00029786	0.021168	0.013883
241-SX-104	0.089517	0.14825	0	0.013922	1609	4.6415	0.0044797	2733.7	0.0056859	1.4882E-06	0.00045011	0.00408	0.00060718	0.019834	0.028484
241-SX-105	0.0042619	0.0060265	0	0.0016352	4090.6	0.42742	0.00021539	262.36	0.010158	1.6536E-06	0.00041926	0.01529	0.00095084	0.050684	0.044484
241-SX-106	0.004913	0.032082	0	0.0019316	761.59	0.73339	0.00028942	980.63	0.064686	2.4186E-06	0.0011347	0.034795	0.00076756	0.052828	0.035597
241-SX-107	0.58798	0.17295	0	0.016238	1507.8	6.0292	0.009446	8076.2	0.0074217	9.7838E-07	0.000073322	0.00037262	0.00054831	0.024987	0.02575
241-SX-108	1.3781	0.4062	0	0.037989	34697	14.108	0.022173	19658	0.016777	2.2855E-06	0.00016944	0.00074884	0.0021635	0.059647	0.10166
241-SX-109	0.082265	0.024903	0	0.0022892	825.09	0.86136	0.0019258	1224.7	0.0055691	2.4265E-06	0.00018022	0.00060888	0.00030526	0.0062507	0.014302
241-SX-110	0.01509	0.011129	0	0.0011315	1434.7	0.38197	0.00030814	93.5	0.0031917	1.414E-07	0.000041549	0.00040408	0.0005134	0.0033522	0.024113
241-SX-111	0.008798	0.0074071	0	0.00075622	1527.2	0.25329	0.00018261	44.949	0.0016916	7.7895E-08	3.2996E-06	0.00019246	0.00055443	0.0022811	0.026057
241-SX-112	0.040778	0.012687	0	0.0011174	1563.6	0.42182	0.00064015	551.46	0.0014696	9.9423E-08	6.1107E-06	0.00012401	0.00056784	0.0029255	0.026691
241-SX-113	0.21758	0.084916	0	0.0039392	118.89	1.4956	0.0023935	1955.7	0.0028143	2.2415E-07	1.4266E-06	6.3341E-08	0.000038116	0.010956	0.0017921
241-SX-114	0.0042972	0.0019211	0	0.00013076	948.9	0.058654	0.00059202	154.07	0.0038295	9.8326E-08	6.9052E-06	0.00046011	0.00034833	0.0026641	0.01634
241-SX-115	5.3583	0.30438	0	0.012131	92841	4.5755	0.0070858	6658	0.095533	9.2278E-07	7.7446E-06	0.0000148	0.0017293	0.016598	0.077518
241-SY-101	0.00054579	7.683	0	0.000060955	15.958	0.0184	0.00001779	11.445	0.000020187	3.9114E-09	1.2169E-06	0.000024741	0.0000066663	0.00011495	0.00017276
241-SY-102	0.00025194	0.0004108	0	0.000045701	0.13301	0.0078798	7.7977E-06	0.46856	5.3667E-07	8.5598E-10	4.2624E-07	6.3577E-08	7.0345E-09	6.1886E-07	3.1847E-07
241-SY-103	0.00039705	0.00079314	0	0.000053582	3.7827	0.018017	0.000016825	8.4264	0.00002541	4.2868E-09	1.3684E-06	0.000081962	3.7921E-06	0.00013281	0.00017425
241-T-101	0.87405	0.061974	0	0.001373	14.215	0.64628	0.00061755	585.59	0.0027234	3.9122E-07	0.00010776	0.0102	0.00297	0.0050299	0.13285
241-T-102	0.0010312	0.02551	0	0.00010962	440.58	0.068361	0.00012017	23.121	0.00004945	1.0299E-07	9.9282E-06	0.047869	0.0032869	0.0027825	0.15019
241-T-103	0.057501	0.026601	0	0.0029507	63.493	0.95474	0.00079373	148.46	0.0015207	1.9465E-07	0.000011676	0.065889	0.0020239	0.0031315	0.093616
241-T-104	0.00016783	0.00018646	0	3.5302E-06	17.612	0.0026397	0.000001383	1.8856	0.00001144	8.7526E-08	7.1675E-06	8.5749E-09	0.00036909	0.00040034	0.01989
241-T-105	0.00054342	0.0033515	0	6.2472E-07	434.69	0.54986	6.4935E-08	12.783	2.4129E-06	1.0566E-08	1.7286E-06	1.0455E-08	0.00055636	8.9741E-06	0.025972
241-T-106	2.1555	1.0498	0	0.11629	2567.6	37.466	0.024618	5062.1	0.060616	5.6971E-06	0.0020115	0.0042207	0.0010946	0.12343	0.04944
241-T-107	0.00057737	0.0011318	0	0.000023364	1046.6	0.30036	0.000036955	68.226	0.000016483	1.3325E-07	0.000010051	0.022506	0.0025039	0.000068552	0.11365
241-T-108	0.0030781	0.0014054	0	0.000075294	8.6837	0.034981	0.000020644	65.759	0.000025804	4.4519E-07	0.000008346	5.0992E-06	0.00021764	0.00017175	0.0098356
241-T-109	0.011558	0.0089963	0	0.00097222	12.344	0.32057	0.00025905	82.984	0.00047999	8.0834E-07	0.000021013	0.0057864	0.00063795	0.0013911	0.028814
241-T-110	1.7268E-07	0.000025159	0	4.3357E-07	0.070462	0.000011043	2.4852E-09	0.23679	2.8542E-06	1.375E-08	2.2112E-06	3.0478E-10	0.000014346	0.0014264	0.00064724
241-T-111	6.8989E-07	0.000025303	0	8.299E-07	52.509	0.10645	1.1213E-06	1.3877	3.0149E-06	7.9979E-09	1.7765E-06	4.4756E-08	0.0018471	0.000012319	0.083856
241-T-112	9.9172E-08	0.00001149	0	3.4593E-07	0.0022268	4.6996E-06	8.7507E-10	0.037554	0.000001824	6.1114E-09	1.2238E-06	5.3521E-09	0.00025319	8.2278E-06	0.01142
241-T-201	8.8747E-12	1.412E-07	0	6.3351E-09	0.035638	1.2807E-06	5.6835E-12	0.012116	9.1685E-06	4.5843E-11	4.1709E-08	1.8866E-15	1.1035E-10	1.5324E-07	4.94E-09
241-T-202	7.034E-10	2.0732E-07	0	9.4593E-09	0.001092	1.9109E-08	0	0.0034117	5.1254E-08	3.3547E-11	3.3287E-08	4.3959E-11	0.000001628	2.3382E-07	0.000074332
241-T-203	6.9998E-10	2.0631E-07	0	9.4134E-09	0.0010925	1.9017E-08	0	0.0033951	5.1005E-08	3.3384E-11	3.3126E-08	1.3436E-12	4.9758E-08	7.3681E-07	2.2719E-06
241-T-204	7.2619E-10	2.1403E-07	0	9.7658E-09	0.0019659	1.9729E-08	0	0.0034506	5.2914E-08	3.4633E-11	3.4366E-08	4.6278E-13	1.7139E-08	6.3593E-07	7.8255E-07
241-TX-101	0.0086216	0.0052116	0	0.00040178	4935.9	0.16709	0.00059555	343.09	0.0016272	2.8607E-07	0.000041945	0.0040176	0.0058768	0.0040267	0.27088
241-TX-102	0.0054922	0.014313	0	0.0010949	7.8742	3.506	0.00022667	797.57	0.017106	1.4287E-06	0.00066118	0.071489	0.0047424	0.022306	0.21696
241-TX-103	0.005523	0.014843	0	0.0010663	0.89611	3.6949	0.000216	831.98	0.018114	1.4525E-06	0.00069936	0.075722	0.001058	0.023622	0.048567
241-TX-104	0.0059861	0.0066824	0	0.0007627	4763	1.0468	0.00020194	482.16	0.0042057	3.3777E-07	0.00014273	0.045268	0.00075292	0.0067697	0.034719
241-TX-105	0.005948	0.014449	0	0.00093783	21.129	3.3921	0.00019979	758.31	0.016711	1.4106E-06	0.00064359	0.069908	0.005785	0.02182	0.26461
241-TX-106	0.0054204	0.0051383	0	0.00065629	285.77	0.19584	0.0002079	100.64	0.025546	3.0426E-06	0.00058986	0.10892	0.0033355	0.040433	0.15291

Inventory by site for waste form "All_Types" at the year 2035

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
241-TX-107	0.16428	0.16548	0	0.014433	269.68	9.1336	0.0050422	4742.2	0.034377	3.3691E-06	0.0013109	0.078661	0.0011719	0.043082	0.053825
241-TX-108	0.0056876	0.013611	0	0.00095803	148.07	3.1748	0.00020624	721.8	0.015548	1.3575E-06	0.00059982	0.065011	0.0069914	0.020314	0.31953
241-TX-109	0.00030694	0.0011292	0	6.3109E-06	105.66	0.1198	2.5294E-06	37.408	0.000034277	3.3235E-07	0.000015626	3.4503E-08	0.0014875	0.00012086	0.067263
241-TX-110	0.0058531	0.013918	0	0.0008741	1.2914	3.2915	0.000189	727.3	0.015796	1.2754E-06	0.00061002	0.066082	0.0010582	0.020635	0.048482
241-TX-111	0.0057871	0.013256	0	0.00082411	1.4949	3.0914	0.00018275	680.93	0.014617	1.1923E-06	0.00056536	0.061147	0.0010553	0.019107	0.048307
241-TX-112	0.0058016	0.015029	0	0.00093649	0.87946	3.661	0.00019108	811.75	0.018093	1.4555E-06	0.00069669	0.075687	0.0010729	0.023618	0.049239
241-TX-113	0.0057085	0.016837	0	0.00094045	1.42	4.4621	0.00017584	86.445	0.02127	1.7217E-06	0.00082141	0.01732	0.00055191	0.027739	0.025123
241-TX-114	0.0055111	0.010891	0	0.00071205	0.88445	2.2481	0.00017144	510.79	0.010997	9.2284E-07	0.00042443	0.046015	0.00070384	0.014423	0.032265
241-TX-115	0.0059375	0.015278	0	0.00097308	28.21	3.7108	0.00019983	826.44	0.018318	1.4604E-06	0.0007052	0.076627	0.0012476	0.023905	0.057145
241-TX-116	0.0026539	0.0051256	0	0.0005335	0.38631	1.5414	0.00010652	755.93	0.0051919	7.5013E-07	0.00024775	0.020403	0.00063956	0.0066736	0.029096
241-TX-117	0.0037726	0.0078852	0	0.00047956	0.60314	1.6996	0.00011033	385.13	0.008345	8.5903E-07	0.00032435	0.034862	0.00076951	0.011027	0.035115
241-TX-118	0.0042807	0.011242	0	0.0009025	5138	2.7756	0.00018668	347.61	0.013502	1.0773E-06	0.00052247	0.08226	0.0011276	0.017599	0.051779
241-TY-101	0.021064	0.017646	0	0.0013415	16.163	0.4734	0.00050117	383.08	0.00057492	2.8363E-07	0.000061598	0.000098814	0.00029314	0.0014783	0.013184
241-TY-102	0.0030507	0.0033267	0	0.00065842	70.009	0.093375	0.000072142	55.467	0.0095958	1.0616E-06	0.00023833	0.0083745	0.00020587	0.01466	0.0093844
241-TY-103	0.059379	0.060257	0	0.0051407	735.45	1.7833	0.0018353	1486.1	0.0030087	9.6898E-07	0.00052682	0.12448	0.0059638	0.0068034	0.27014
241-TY-104	0.000078807	0.01986	0	0.000010772	689.19	0.17413	0.000001226	190.13	9.7848E-06	1.9902E-07	9.4889E-06	3.7024E-07	0.0053456	0.000085025	0.24031
241-TY-105	0.11368	0.031431	0	0.00143	2052.3	0.54177	0.0006838	708.14	0.00034256	7.0262E-06	2.4695E-07	5.0756E-08	0.0022915	0.0041952	0.10359
241-TY-106	0.064769	0.017914	0	0.0008121	503.1	0.29944	0.00036354	561.76	0.00018481	3.8404E-06	1.3294E-07	1.5863E-08	0.00073172	0.0044326	0.033077
241-U-101	0.071055	0.029522	0	0.0012868	6656.5	0.48826	0.00078201	642.8	0.0017684	0.00000014	8.1009E-07	0.000011007	0.002371	0.0069005	0.11149
241-U-102	0.0058333	0.015748	0	0.0018749	3410.1	3.6627	0.00024026	1551.5	0.022335	1.1883E-06	0.00055929	0.022645	0.0011673	0.020955	0.054551
241-U-103	0.0040328	0.006698	0	0.0054429	1713.9	1.3149	0.00022856	138.25	0.038093	3.4637E-06	0.00089587	0.02162	0.00068197	0.052656	0.031753
241-U-104	0.66158	0.080793	0	0.004435	2078	2.1403	0.0023982	2190.2	0.0019697	0.000011562	2.5069E-07	3.1487E-06	0.0032741	0.014994	0.15026
241-U-105	0.0076997	0.0082049	0	0.001716	178.09	0.97454	0.0020205	549.63	0.028024	0.000001415	0.00040057	0.043493	0.0049918	0.022676	0.23197
241-U-106	0.0035719	0.0061175	0	0.0018599	3540.5	0.29318	0.00027839	193.07	0.014276	6.3312E-07	0.00075775	0.050194	0.0013271	0.087425	0.061663
241-U-107	0.0067748	0.025582	0	0.0010518	38.256	6.6177	0.00031372	838.89	0.0073389	1.7661E-06	0.00082573	0.016702	0.00046741	0.03193	0.021678
241-U-108	0.008509	0.015467	0	0.00084028	148.8	3.0693	0.00025664	860.86	0.014749	3.4685E-07	0.00034648	0.0051493	0.0014461	0.022942	0.064808
241-U-109	0.006631	0.024696	0	0.0015934	272.69	6.7342	0.00026811	1486.3	0.033524	1.6569E-06	0.00077151	0.0078682	0.00024407	0.050187	0.011334
241-U-110	0.055592	0.016293	0	0.0011489	977.74	0.41973	0.00042226	401.99	0.00064614	1.8293E-07	0.000050523	0.0000957	0.0026598	0.0019001	0.12444
241-U-111	0.0046844	0.023036	0	0.0015575	1893.3	6.2262	0.0027445	1628.4	0.035529	1.5598E-06	0.00071475	0.023372	0.0011661	0.040821	0.054219
241-U-112	0.12024	0.037477	0	0.0016379	1515.3	0.625	0.00098784	786.38	0.0013535	2.2639E-07	4.8816E-06	2.4586E-06	0.00083537	0.005304	0.038951
241-U-201	0.013655	0.00042076	0	4.5304E-07	0.092582	0.0037546	2.7798E-07	3.1268	3.5419E-07	7.7927E-10	7.986E-09	1.2471E-11	2.7327E-07	1.3084E-06	0.000012686
241-U-202	0.01253	0.00030529	0	4.1572E-07	0.036631	0.0034088	2.5508E-07	2.5339	3.2501E-07	7.1507E-10	7.3281E-09	1.225E-11	2.6843E-07	1.2006E-06	0.000012459
241-U-203	0.010936	0.00026646	0	3.6285E-07	0.078648	0.0033435	2.2264E-07	2.5164	2.8368E-07	6.2413E-10	6.3961E-09	6.2203E-12	1.363E-07	1.0479E-06	6.3225E-06
241-U-204	0.012467	0.00030377	0	4.1365E-07	2.2036	0.0019902	2.5381E-07	2.9731	3.2339E-07	7.1151E-10	7.2916E-09	8.6808E-10	0.000019022	0.000027772	0.00088474
241-WR-VAULT	0	0	0	0.00004198	24.905	0.024038	0.00000069	29.418	0.000045789	0	0	0	0	0	0
276-S	0	0	0	0.0027791	1999	1.5913	0.0034137	2341.9	0.0045651	0	0	0	0	0	0
276-U	0	0	0	1.2457E-06	0.83017	0.00034991	1.5301E-06	0.87269	1.3578E-06	0	0	0	0	0	0
291-S-1	0	0	0	0	0.23361	0	0.099157	0.30795	0	0	0	0	0	0	0
291-WTP	10.442	0.0088281	0	0	0.00032591	0.0981	0.0096903	0.000015118	8.8341E-06	0.000002117	0	0.00021999	5.8208E-06	0.00015115	0.00027338
293-S	0	0	0	0.0027791	1999	1.5913	0.0034137	2341.9	0.0045651	0	0	0	0	0	0
296-A-13	0	0	0	0	0.98197	8.0351E-06	2.5975	1.3178	0	0	0	0	0	0	0
300-224	1.679E-08	0.00013449	0	0	5.1763E-06	4.2171E-08	0.00002397	0.000095905	0	2.6803E-08	0	0.045149	0.0002772	0.000018548	0.013462
300-24	0	0	0	2.4756E-06	3.4133	0.0014177	3.0414E-06	3.8872	0.000016197	0	0	0	0.00015334	0	0.0072836
300-28	0	0	0	2.4756E-06	3.4133	0.0014177	3.0414E-06	3.8872	0.000016197	0	0	0	0.00015334	0	0.0072836
316-1	0.14732	0.12203	0	0.0009851	50.428	0.43537	0.018632	429.78	0.0002667	0.000024422	0.000032141	68.582	0.39691	0.015923	19.261
316-2	0.065479	0.11075	0	0.00043783	22.415	0.19351	0.018389	191.04	0.00011853	0.000024421	0.000032246	49.751	0.29533	0.014431	14.293
316-3	1.7922E-07	0.0038722	0	0	0.000099814	1.2157E-06	0.00069227	0.0018803	0	7.6726E-07	0	1.2994	0.008117	0.00053494	0.39115
316-4	0	0	0	0	0	0	0	0	0	0	0	1.2634E-08	2.7161E-06	0	0.00012775
316-5	0	0.14077	0	0	0.003753	0	0.0020001	0	0	0.000032224	0.00026469	0.000082054	0.033102	0.010894	1.3764
331_LSLT2	0	0.075106	0	0	0.37968	0	0	0.018646	0.00019181	0	0	0	0	0	0
4843	192.28	303.86	0	0	0	0	27.197	0	0	0	0	0	0.216	0	14.64
600-211	1609.3	0.000053164	0	3.9172E-07	0.3752	0.0037183	0.00014581	7.0185	2.4509E-07	6.4678E-08	4.4377E-07	0.000029913	9.0024E-07	0.000093172	0.000043126
618-1	0	0	0	8.7993E-06	3.9874	0.0050546	0.000010791	4.6638	5.8746E-06	0	0	0	0.20013	0	9.5061
618-10	0	0	0	0.000020511	11.804	0.011782	0.000025153	13.664	0.000022847	0	0	0	0.000027605	0	0.0013112
618-11	306.6	0	0	7.5545E-06	5.1848	0.0043397	9.2643E-06	5.9573	0.000012181	0	0	0	0.73566	0	34.943
618-13	0	0	0	0.00044563	212.94	0.25518	0.00054751	253.79	0.00030666	0	0	0	0.027605	0	1.3112
618-2	0	0	0	0.000013273	6.7104	0.0076245	0.000016277	7.8122	0.000011165	0	0	0	0.00096617	0	0.045892
618-3	0	0	0	0.00044563	240.19	0.25518	0.00054751	284.79	0.00039609	0	0	0	0.027605	0	1.3112
618-4	0	0	0	0.000066844	38.751	0.038278	0.000082126	45.801	0.000069457	0	0	0	0.0041407	0	0.19668
618-5	0	0	0	0.0044563	2334.8	2.5518	0.005475	2770.8	0.0037989	0	0	0	0.27605	0	13.112
618-7	0	0	0	0.00044563	321.98	0.25519	0.00054751	376.94	0.00074557	0	0	0	0.027605	0	1.3112
618-8	0	0	0	0.0044563	2344.7	2.5518	0.0054751	2783	0.0037633	0	0	0	0.27605	0	13.112
618-9	0	0	0	0.0020053	1018.6	1.1483	0.0024638	1210.7	0.0015743	0	0	0	0.12422	0	5.9004
B_PLANT_FILTER	0	0	0	0.032913	63493	11.998	0.02	30270	0.065813	0	0	0	0	0	0
GTF	0.000020982	0	0	1.7778E-10	0.000017001	0.000060746	2.9811E-08	0.00025456	9.4785E-10	0	0	0	3.4264E-09	0	1.1132E-07
GTFL	0.046967	0	0	4.7111E-07	0.041912	0.16098	0.000079	0.6295	2.1543E-06	0	0	0	0.00000908	0	0.000295
RMWSF	0.0445	0	0	0.042032	39223	23.255	0.06721	64432	0.21369	0	0	0	0.12071	0	1.0969
SNM_234-5Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

F.12

Inventory by site for waste form "All_Types" at the year 2035

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
UPR-100-F-1	0	0	0	0	8.5633E-06	0	0	0	0	0	0	0	0	0	0
UPR-100-N-1	0.00088304	0	0	1.2469E-09	0.0008996	7.1398E-07	1.5315E-09	0.0012343	2.9287E-09				3.69E-13	0	1.7369E-11
UPR-100-N-12	0	0.4251	0	0	0	0	0	0.11001	0.0011905				0	0	0
UPR-100-N-25	0.000015571	0	0	2.0783E-11	0.00001536	1.1901E-08	2.5527E-11	0.000021054	5.1381E-11				6.1507E-15	0	2.8951E-13
UPR-100-N-30	0.000073595	0	0	1.0392E-10	0.000074975	5.9505E-08	1.2764E-10	0.00010287	2.4409E-10				3.0753E-14	0	1.4476E-12
UPR-100-N-35	0	0.36145	0	0	0	0	0	0.12928	0.0020715				0	0	0
UPR-100-N-5	0.0023672	0	0	3.7406E-09	0.0025719	2.1419E-06	4.5944E-09	0.0035361	7.9312E-09				1.107E-12	0	5.2107E-11
UPR-100-N-7	0	0	0	0	0	0.79987	0	0	0				0	0	0
UPR-200-E-1	0.0082734	0.0019353	0	0.000041488	2.3882	0.0031241	1.5402E-06	2.8424	7.1683E-06	2.9969E-07	0.000018874	0	9.3581E-06	0.000070832	0.00041835
UPR-200-E-105	0.074134	0.007014	0	0.00023172	2.5102	0.017619	0.00015376	17.788	0.00016871	7.5133E-07	0.000050404	0	0.000038846	0.00040517	0.0017825
UPR-200-E-107	0.00001618	4.4743E-06	0	2.0285E-07	0.020202	0.000070652	9.0615E-08	0.096821	4.5782E-08	9.5257E-10	3.1588E-11	0	8.5783E-09	5.6067E-07	3.8782E-07
UPR-200-E-108	0.0026799	0.0003186	0	0.000017679	0.79201	0.0085528	9.7594E-06	8.7371	0.000005172	4.5309E-08		0	0.000010224	0.000049152	0.00046653
UPR-200-E-109	0.00048539	0.00013426	0	6.0847E-06	0.60598	0.0021199	0.000002719	2.9051	1.3744E-06	2.8596E-08	9.5375E-10	0	2.5719E-07	0.00016822	0.000011633
UPR-200-E-110	0.016393	0.001551	0	0.000051229	0.55516	0.003896	0.000034	3.9336	0.000037316	1.6616E-07	0.000011146	0	8.5891E-06	0.000089601	0.00039409
UPR-200-E-117	0.00048834	0.00063308	0	0.000076206	0.35235	0.023848	0.000012686	42.922	0.000057799	3.2418E-09	4.5576E-08	1.3066E-06	1.4446E-07	0.000098307	6.8345E-06
UPR-200-E-141	0.0009075	0	0	0	0	0.000027697	0	0	0	0	0	7.0528E-11	2.6096E-06	0	0.00011924
UPR-200-E-145	0.027237	0	0	0	0	0.00083031	0	0	0	0	0	2.1173E-09	0.00078305	0	0.0035772
UPR-200-E-16	0.0044074	0.0002965	0	1.2336E-07	0.051879	0.000053784	0.000052985	0.063781	1.1889E-07	1.5983E-10	1.6688E-09	0	8.1394E-08	3.6082E-07	3.8636E-06
UPR-200-E-3	0.00028105	0.00002659	0	8.7828E-07	0.0095166	0.000066796	5.8275E-07	0.067438	6.3955E-07	2.8484E-09	1.9103E-07	0	1.4723E-07	1.5358E-06	6.7558E-06
UPR-200-E-38	0.056137	0.077199	0	0.009221	21.806	2.9403	0.0017422	136.96	0.0037306	4.2351E-07	6.9602E-06	0.00032621	9.4008E-06	0.0095795	0.00043584
UPR-200-E-39	0.019817	0	0	0.000012099	0.48238	0.00069451	0	0.4355	1.8256E-06	4.3885E-09	3.2466E-08	8.3282E-09	3.9315E-06	8.4612E-06	0.00015963
UPR-200-E-40	0.0015245	0	0	9.3101E-07	0.037099	0.000053408	0	0.033498	1.4041E-07	3.378E-10	2.4975E-09	6.4049E-10	3.0242E-07	6.5118E-07	0.000012279
UPR-200-E-6	0.0032793	0.00031025	0	0.000010247	0.11102	0.00077913	0.0000068	0.78664	7.4632E-06	3.3231E-08	2.2294E-06	0	1.7174E-06	0.000017921	0.00007884
UPR-200-E-7	2.2283E-07	5.3313E-06	0	2.4276E-07	0.0023213	0.000002745	0	0.0028049	4.5375E-07	8.619E-10	2.1479E-07	0	6.3671E-08	1.5102E-06	2.9028E-06
UPR-200-E-73	0.0012532	0.00014889	0	8.2636E-06	0.37027	0.0039976	4.5605E-06	4.0843	0.000002417	2.1178E-08		0	4.7775E-06	0.000022977	0.00021811
UPR-200-E-74	6.3791E-09	8.7974E-10	0	4.2657E-11	2.1836E-06	1.8852E-08	1.8793E-11	0.000018608	1.1549E-11	1.386E-13	1.7951E-12	0	2.7973E-11	1.1627E-10	1.2655E-09
UPR-200-E-75	0.0032786	0.00031023	0	0.000010247	0.11101	0.00077913	6.7995E-06	0.78668	7.4617E-06	3.3225E-08	2.2295E-06	0	1.7179E-06	0.000017919	0.000078825
UPR-200-E-77	0.000056191	0.000010682	0	4.9242E-07	0.037018	0.00023818	1.0541E-07	0.21673	3.8468E-08	2.118E-09		0	4.8874E-07	1.3435E-06	0.000021845
UPR-200-E-78	7.0347E-06	0.000021727	0	2.6929E-06	6.4754	0.00084329	5.0429E-08	1.5089	0.00010192	1.1018E-10	6.8385E-10	0	6.7314E-08	3.5638E-06	3.1806E-06
UPR-200-E-79	0.0025364	0.001061	0	0.000041895	3.7901	0.012495	0.000017488	16.458	0.00010083	1.2318E-07	2.7991E-06	0	1.7366E-06	0.00010805	0.000079067
UPR-200-E-80	0.00017455	0.000032776	0	1.4929E-06	0.11525	0.00073021	3.1909E-07	0.66674	1.1817E-07	6.5214E-09		0	1.4916E-06	4.1268E-06	0.000067167
UPR-200-E-81	3.196	0.14547	0	0.000065922	31.604	0.027434	0.02384	38.405	0.00011686	3.0975E-07	0.00024636	0.011306	0.000061127	0.00018228	0.0029785
UPR-200-E-82	0.027036	0.037135	0	0.004437	10.491	1.4161	0.00083909	66.009	0.0017985	2.0384E-07	3.3523E-06	0.00015746	4.5259E-06	0.00461	0.00020991
UPR-200-E-84	0.0093818	3.9206E-08	0	3.8513E-09	0.000051556	1.2081E-06	3.7958E-06	0.000020418	2.9476E-09	2.3393E-10	1.4949E-09	0	1.0881E-08	5.1668E-06	5.1446E-07
UPR-200-E-85	0.0068072	0.0093565	0	0.0011172	2.6408	0.35647	0.00021125	16.607	0.0004522	5.1295E-08	8.4307E-07	0.000039579	1.1389E-06	0.0011618	0.000052844
UPR-200-E-86	0.10057	0.13026	0	0.015702	72.533	4.9155	0.0026113	8835.2	0.0119	6.6699E-07	9.3799E-06	0.00026906	0.020259		0.0014069
UPR-200-E-87	6.4164E-10	0.000010221	0	4.5852E-07	0.00070962	9.2854E-07	4.1092E-10	0.00084458	6.639E-07	3.319E-09	3.0138E-06	0	7.9853E-09	0.000011123	1.8007E-07
UPR-200-E-9	0.035599	0.0098452	0	0.00044623	44.437	0.15543	0.00019938	213.05	0.00010073	2.0959E-06	7.0721E-08	0	0.000018859	0.0012335	0.00085309
UPR-200-W-100	0.0081987	0.00077567	0	0.000025619	0.27754	0.0019477	0.000016998	1.9665	0.000018651	8.3055E-08	5.5752E-06	0	4.2933E-06	0.000044802	0.00019707
UPR-200-W-101	0.0099017	0	0	0	0	0.00013371	0	0	0	0	0	1.5264E-09	0.000056486	0	0.0025787
UPR-200-W-102	5.5419E-08	0.000016358	0	7.4475E-07	0.0012752	1.5084E-06	0	0.0015408	4.0343E-06	2.6447E-09	2.6226E-06	0	7.7476E-09	0.000018407	1.7864E-07
UPR-200-W-103	0	0	0	0	0	0	0	0	0	0	4.6428E-14	0	5.389E-12	0.0038475	1.0954E-10
UPR-200-W-12	0.000012467	5.2154E-06	0	2.0594E-07	0.018635	0.000061401	8.5986E-08	0.080911	5.3195E-08	1.002E-09	1.3762E-08	0	8.5335E-09	5.3115E-07	3.8876E-07
UPR-200-W-127	0.0013406	0	0	0	2.568E-11	0	0	6.536E-11	0	0	0	0	1.8019E-12	1.2322E-09	8.0002E-11
UPR-200-W-130	0	0	0	3.0702E-13	6.1195E-11	1.7642E-11	0	6.9861E-11	5.6981E-14	0	1.8843E-13	0	2.2145E-11	3.446E-08	8.9735E-10
UPR-200-W-131	0.000012928	3.5761E-06	0	1.6203E-07	0.016144	0.000056644	7.2389E-08	0.077348	3.6603E-08	7.611E-10	2.5385E-11	0	6.8482E-09	4.4795E-07	3.0973E-07
UPR-200-W-132	0.0068333	0.00081226	0	0.000045064	2.019	0.021803	0.000024875	22.28	0.000013184	1.155E-07		0	0.000026058	0.00012533	0.0011897
UPR-200-W-135	0.013671	0.0016241	0	0.000090144	4.0382	0.043603	0.000049755	44.551	0.00002637	0.000000231		0	0.000052103	0.00025067	0.0023791
UPR-200-W-138	0.032683	0	0	0	0	0.00044135	0	0	0	0	0	0	0.00018645	0	0.008512
UPR-200-W-163	0.13061	5.4369E-10	0	2.791E-11	1.1826E-06	0.002275	2.5866E-07	5.5194E-06	9.5513E-12	2.9188E-12	4.7322E-13	8.7359E-09	0.00032235	8.2429E-10	0.014716
UPR-200-W-19	2.928E-09	8.0978E-10	0	3.6699E-11	3.6555E-06	0.000051134	1.6398E-11	5.8404E-06	8.287E-12	7.8169E-09	1.2116E-10	4.1755E-12	2.1097E-07	3.0662E-09	9.5442E-06
UPR-200-W-2	0.019917	0.0037858	0	0.00017451	13.122	0.084426	0.000037367	76.812	0.000013634	7.5072E-07		0	0.00017323	0.00047619	0.0077432
UPR-200-W-20	0.0031275	0	0	0	5.9922E-11	0	0	1.525E-10	0	0	0	0	4.203E-12	2.8749E-09	1.8382E-10
UPR-200-W-21	0.040041	0.0047586	0	0.00026405	11.831	0.12771	0.00014575	130.51	0.000077221	6.7684E-07		0	0.00015266	0.00073415	0.0069688
UPR-200-W-24	0.00022256	0.0000423	0	1.9506E-06	0.14666	0.00094339	4.1754E-07	0.85829	1.5231E-07	8.3897E-09		0	1.9359E-06	5.3218E-06	0.000086532
UPR-200-W-28	0.001975	0.00054618	0	0.000024761	2.4656	0.0086231	0.000011063	11.822	5.5913E-06	1.1632E-07	3.9017E-09	0	1.0467E-06	0.000068445	0.000047328
UPR-200-W-29	0.0032232	0.00030501	0	0.000010074	0.10915	0.00076603	0.000006685	0.77346	7.3357E-06	3.2663E-08	2.1919E-06	0	1.6887E-06	0.000017614	0.000077477
UPR-200-W-32	0.0010793	0	0	0	0	0.000015547	0	0	0	0	0	1.1191E-10	4.1408E-06	0	0.00018901
UPR-200-W-33	8.3427E-06	9.9141E-07	0	5.5009E-08	0.0024645	0.000026946	3.0359E-08	0.027188	1.6091E-06	1.4101E-10		0	3.181E-08	1.5295E-07	1.4521E-06
UPR-200-W-38	0.027806	0.0033042	0	0.00018336	8.2156	0.088705	0.0001012	90.646	0.000053629	4.6996E-07		0	0.00010602	0.00050975	0.0048398
UPR-200-W-39	0.00084629	0	0	0	0	0.000011428	0	0	0	0	0	1.3047E-10	4.8283E-06	0	0.0002204
UPR-200-W-61	0.0030156	0.0011732	0	0.000054615	0.83363	0.020694	0.000033149	26.126	0.0000387	3.0853E-09	1.9691E-08	0	3.3923E-07	0.00015075	0.00001594
UPR-200-W-74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.451E-14
UPR-200-W-8	0	0	0	6.0305E-08	0.028983	0.00003453	7.4072E-08	0.034333	4.1469E-08	0	0	0	0	0	0
UPR-200-W-82	0.0062555	0	0	0	1.1985E-10	0	0	3.05E-10	0	0	0	0	8.405E-12	5.7501E-08	3.7339E-10
UPR-200-W-87	4.8545E-09	5.784E-10	0	4.0561E-11	4.0453E-07	1.5286E-08	2.4003E-11	0.000021506	2.5771E-11	2.4419E-15	1.5529E-14	0	1.9687E-13	6.9892E-11	9.086E-12
UPR-200-W-95	0.0001529	0.00005954	0	0.000002769	0.042303	0.0010506	1.6825E-06	1.3265	1.9659E-06	1.5654E-10	9.9424E-10	0	1.7231E-08	7.6533E-06	8.0998E-07

Inventory by site for waste form "All_Types" at the year 2035

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
UPR-200-W-96	2.0639E-08	2.458E-09	0	1.7243E-10	1.7191E-06	6.4961E-08	1.0202E-10	0.000091443	1.0951E-10	0	0	0	8.3652E-13	2.9716E-10	3.8604E-11
UPR-200-W-97	7.7684E-07	0.00001748	0	7.9583E-07	0.008041	9.5091E-06	0	0.0097159	1.2934E-06	2.8264E-09	5.5999E-07	0	2.2253E-07	3.9389E-06	0.000010151
UPR-200-W-98	0.00053446	0.00010159	0	0.000004683	0.35217	0.0022653	1.0027E-06	2.0612	3.6595E-07	2.0141E-08	0	0	4.6484E-06	0.000012781	0.00020779
UPR-300-1	0	0	0	2.4758E-06	2.0401	0.0014177	0.000003041	2.1841	4.5023E-06	0	0	0	0	0	0
UPR-300-2	0	0	0	2.4758E-09	0.0013021	1.4176E-06	3.041E-09	0.0015457	2.0893E-09	0	0	0	0	0	0
US_Ecology	67442	4627.8	3.1853	0	14498	53.143	5.8347	36452	197.09	282.79	0.001317	0	30.538	0	1786.9
WIPP_118-KE-1	0	0	0	0.0015878	8409.1	53.793	0.0019471	8704.2	0.46183	0	0	0	0.087495	0.154	4.1185
WIPP_118-KW-1	0	0	0	0.0012839	6767.3	4.3395	0.0015744	7038.3	0.11567	0	0	0	0.053415	0.072599	2.5143
WIPP_218-E-12B	0	0	0	0	1.3052	0.00093039	0	1.4898	3.2804E-06	0	0	0	0	0	0
WIPP_218-W-3A	0.31686	1.5896	0	0	2.4468	0.0016572	0	4.3185	0.000007995	0	0	0.24053	0.086239	0	4.418
WIPP_218-W-3AE	0	0	0	0.000018565	10498	0.66692	0	20753	0.062166	0	0	1.1198E-08	0.0000166	0	0.000682
WIPP_218-W-4B	0	0	0	0	2629.1	1.8539	0	3008.3	0.0066998	0	0	72.824	0.38021	0.15092	0.52425
WIPP_218-W-4C	0	0	0	0	21186	14.788	0	24504	0.054968	0	0	7.5676	0.2331	0.098768	1.2337
WIPP_234-5Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WIPP_241-Z-361	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WIPP_H2-CHTRU-PKGS	0.16765	0.072135	0	0.0014423	5667.7	18.142	0.00013282	245.89	0.00088901	7.0334E-06	0.00063133	3.0654E-06	0.1274	0.056379	5.9562
WIPP_H2-RHTRU-PKGS	0.30894	1.0543	0	0.079065	310060	156.16	0.063167	105910	17.788	0.00026993	0.90138	2.5997	0.68042	2.3888	30.386
WIPP_RMWSF	0.0082105	0.000092528	0	0.0013183	11680	69.233	0.0021613	14262	0.020734	0	0	0.087297	0.071953	0.20743	3.6867
Yucca_100-K-42	2282.5	344.99	0	43.098	2072100	1439.8	3.185	2812800	71.107	0	0	0	14.493	28.6	828.06
Yucca_100-K-43	2282.5	344.99	0	43.098	2072100	1439.8	3.185	2812800	71.107	0	0	0	14.493	28.6	828.06
Yucca_218-W-3A	2.3582	55.557	0	0.010074	12570	5.6334	0.011167	14096	0.051022	0	0	0	0.069017	0.22061	0.028486
Yucca_218-W-4C	5.0308	11.251	0	0.021492	10572	12.857	0.023823	30071	0.10885	0	0	0	0.34393	0.40546	0.035317
Yucca_221-T-11-R	1.5297	104.38	0	2.7676	1060.3	0.70508	0.001398	12.71	0	0	0	6.9504	0.21614	1.7949	12.35
Yucca_225-B	0	0	0	0	8818600	0	0	21008000	0	0	0	0	0	0	0
Yucca_4843	22.36	1367.6	0	0.79807	568840	472.82	0.93723	1617700	3.8396	0	0	0	0.9159	32.026	34.099
YUCCA_H2-HLW-CANISTER	0	0	0	2.7471	18601000	3677.8	2.1918	20090000	243.46	0.010545	3.1109	692.86	7.9052	78.026	368.62
YUCCA_RMWSF	0	0	0	0	1139600	0	0	1640900	0	0	0	0	0	0	0
All_Sites	150790	56130	348.37	184.88	35716000	31323	65.38	51485000	737.08	694.48	6.1645	954.55	109.57	273.66	5627.3
Nonzero sites	547	545	16	528	671	562	529	633	598	412	423	352	602	523	626

F.13

Appendix G

Best Estimate Inventory – Cumulative in 2070

Appendix G

Best Estimate Inventory – Cumulative in 2070

This appendix presents the best-estimate inventory on December 31, 2070. The inventory input to the simulation is a waste site/year/analyte data file and is quite large because simulations can involve up to 690 waste sites, over 50 years of nuclear materials operations, and up to 14 analytes. The cumulative and decay corrected inventory discharged and disposed by a given date, in this case December 31, 2070, is more readily displayed. When acquiring inventory data and estimates, one often finds or is provided a best-estimate value without regard to its uncertainty distribution. In the case of the stochastic Hanford Soil Inventory Model (SIM) results, the best-estimate is the mean. However, in all other cases the single value found or provided is simply interpreted as the best-estimate. The inventory compilation shown here is the best-estimate value for each waste site and analyte. This inventory was taken from the 'By_Site_2070' tab of the 'Tables_Best_2005_11_17_Inv-Data-Package.xls' file.

The best-estimate inventory shown here is a post-processed file that derives from the waste site/year/ analyte file used to drive the Hanford assessment simulation. The waste site /year/analyte file is created by the INVENTORY code when it applies the uncertainty rules described in Section 6 to the 'disposal action file' of 'daf' created by INPROC. The INPROC code applies the fill-in and surrogate rules described in Section 4 to the inventory data files described in Section 5. The input file for INPROC execution is 'inproc-input_2005-11-09_DCR-0024.csv' and it is under configuration management and maintained on the SAC Windows File server at \\sac.pnl.gov\share\data\rev.1\inventory\. The 'Tables_Best…' and the 'inproc-input…' files are attached as an electronic appendix. In addition the output of the INPROC code for reference case A, (i.e., CA_Ref_A.daf), which is the basis for the best-estimate tables, is also included in the electronic appendix.

The background for table entries has been color coded to indicate the type or source of the data; Hanford SIM result, Hanford Tank Waste Operation Simulator (HTWOS) model result, record, estimated by fill-in rule, and estimated by a surrogate rule, or some combination. A key is provided at the bottom of the table.

While assembling the inventory, every effort was made to be consistent with inventories used in performance assessments being prepared for the single-shell tanks and the integrated disposal facility. Near perfect consistency was achieved by using the same simulation by the HTWOS model (Kirkbride et al. 2005). However, Kirkbride et al. (2005) shows a radium-226 inventory in tank 241-C-106 of 416 curies, decay correct to January 1, 2004. Tank 241-C-106 has been cleaned out and the HTWOS model simply used the Best Basis Inventory (BBI) for this tank as its residual. However, the BBI inventory for radium-226 was in error and has been updated to 1.39E-03 Ci, and that value is now in the draft performance assessment supporting the closure of single-shell tanks. This inconsistency was discovered during peer review of this document, and the updated value has not been promulgated into this inventory for use in Hanford assessments.

Kirkbride RA, PJ Certa, TM Hohl, AM Johnson, and RS Wittman. 2005. *Hanford Tank Waste Operations Simulator Model Data Package for the Development Run for the Refined Target Case*. RPP-RPT-23412, Revision 0A, CH2M HILL Hanford Group, Inc., Richland, Washington.

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
Inventory at year 2070															
Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
All sites	27502.53195	56324.49949	348.384603	184.8745118	15374737.46	31321.24268	65.51366761	22977138.17	122.8828584	718.7304906	6.159929073	954.4093132	109.605882	273.6566098	5629.483141
Offsite transfers - WIPP, Yucca	641.617491	2222.018522	0	92.62282746	14494148.81	7367.702737	9.60440062	22409299.89	70.16870199	0.010658798	4.00994087	783.0159861	40.1564356	172.798743	2124.091135
	2.33%	3.95%	0.00%	50.10%	94.27%	23.52%	14.66%	97.53%	57.10%	0.00%	65.10%	82.04%	36.64%	63.14%	37.73%
US Ecology	15869	5040.7	3.2281	0	7429	55.084	5.968	16268	32.858	313.24	0.001316	0	30.576	0	1789.1
	57.70%	8.95%	0.93%	0.00%	0.05%	0.18%	9.11%	0.07%	26.74%	43.58%	0.02%	0.00%	27.90%	0.00%	31.78%
All onsite DOE waste	10991.91446	49061.78096	345.156503	92.25168433	873159.6556	23898.45594	49.94126699	551570.276	19.85615645	405.4798318	2.148672203	171.3933271	38.87344636	100.8578668	1716.292006
	39.97%	87.11%	99.07%	49.90%	5.68%	76.30%	76.23%	2.40%	16.16%	56.42%	34.88%	17.96%	35.47%	36.86%	30.49%
IDF only	15.724056	792.3607	0.00013071	89.30500544	316362.7558	22737.00348	40.5113583	154316.2285	3.444415129	1.3798	1.9422	15.894	0.42028	43.714	18.35526
	0.14%	1.62%	0.00%	96.81%	36.23%	95.14%	81.12%	27.98%	17.35%	0.34%	90.39%	9.27%	1.08%	43.34%	1.07%
River Corridor waste sites	2175.581149	47559.50034	344.933	0.015963624	3214.262922	36.56054193	0.056275154	4290.86059	12.89137488	8.06301E-05	0.00032884	119.6594241	2.664533543	0.042454772	131.397097
including reactor cores	19.79%	96.94%	99.94%	0.02%	0.37%	0.15%	0.11%	0.78%	64.92%	0.00%	0.02%	69.82%	6.85%	0.04%	7.66%
CP - Other "218" waste sites	5123.39277	505.648467	0.22337202	0.558165446	174211.7239	259.1605277	1.13736912	260271.6761	0.234819953	0	0	0.525655846	32.47493767	0.114357774	1415.073426
	46.61%	1.03%	0.06%	0.61%	19.95%	1.08%	2.28%	47.19%	1.18%	0.00%	0.00%	0.31%	83.54%	0.11%	82.45%
CP - "216" waste sites	3672.243341	191.2413125	0	1.827369539	3556.643569	578.1089582	4.548179123	9693.817603	0.082597046	0.009687972	0.08590767	22.48848672	2.218472152	53.37013883	100.6171799
	33.41%	0.39%	0.00%	1.98%	0.41%	2.42%	9.11%	1.76%	0.42%	0.00%	4.00%	13.12%	5.71%	52.92%	5.86%
CP - facilities	1.457402929	0.0087907	0	0.080642037	81946.14812	38.35340064	2.766943309	60552.04494	0.028166332	2.0851E-06	0	0.00021995	0.636019773	0.00015115	29.88093227
	0.01%	0.00%	0.00%	0.09%	9.39%	0.16%	5.54%	10.98%	0.14%	0.00%	0.00%	0.00%	1.64%	0.00%	1.74%
CP - "200" waste sites	0.383476313	0.053515847	0	0.01441089	5081.96439	5.380416979	0.652563568	4574.1862	0.023104925	4.40703E-06	0.001080381	0.018507029	0.021266887	0.011967936	0.971270856
	0.00%	0.00%	0.00%	0.02%	0.58%	0.02%	1.31%	0.02%	0.12%	0.00%	0.05%	0.01%	0.05%	0.01%	0.06%
CP - UPR waste sites	0.545757481	0.438544346	0	0.032386981	105.8268197	10.29649958	0.030181726	4382.844366	0.003129801	7.76338E-06	0.000368871	0.012098516	0.001388495	0.044235482	0.063438694
	0.00%	0.00%	0.00%	0.04%	0.01%	0.04%	0.06%	0.79%	0.02%	0.00%	0.02%	0.01%	0.00%	0.04%	0.00%
CP - tank "241" waste sites	2.586510641	12.52929317	0	0.417740382	288680.3301	233.592119	0.238396692	53488.61773	3.148548387	404.090249	0.11878644	12.79493498	0.436547836	3.560560814	19.93340141
	0.02%	0.03%	0.00%	0.45%	33.06%	0.98%	0.48%	9.70%	15.86%	99.66%	5.53%	7.47%	1.12%	3.53%	1.16%
Subtotal onsite DOE waste	10991.91446	49061.78096	345.156503	92.25168433	873159.6556	23898.45594	49.94126699	551570.276	19.85615645	405.4798318	2.148672203	171.3933271	38.87344636	100.8578668	1716.292006
	10991.91446	49061.78096	345.156503	92.25168433	873159.6556	23898.45594	49.94126699	551570.276	19.85615645	405.4798318	2.148672203	171.3933271	38.87344636	100.8578668	1716.292006
Analyte	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
SIM Data	3450.748	195.5178	0	2.147775	9542.021	686.7971	4.72501	44324.51	0.1297795	0.009841645	0.09257697	140.8294	3.097366	53.80514	142.4063
	12.55%	0.35%	0.00%	1.16%	0.06%	2.19%	7.21%	0.19%	0.11%	0.00%	1.50%	14.76%	2.83%	19.66%	2.53%
HTWOS Data	229.2363	801.1704	0	92.26665	8744225	26725.08	42.8713	9191466	50.12193	405.485	6.064957	724.0328	9.317887	127.3981	433.4033
	0.83%	1.42%	0.00%	49.91%	56.87%	85.33%	65.44%	40.00%	40.79%	56.42%	98.46%	75.86%	8.50%	46.55%	7.70%
Record Data	23795.06	55256.23	348.3849	89.80818	6600659	3881.595	17.30348	13700460	65.6549	313.2424	0.001315997	88.18273	96.26219	92.44525	5041.401
	86.52%	98.10%	100.00%	48.58%	42.93%	12.39%	26.41%	59.63%	53.43%	43.58%	0.02%	9.24%	87.83%	33.78%	89.55%
Estimated Data	0	30.72702	0	0.6436647	18410.49	23.75482	0.6046531	38409.46	1.305945	0	0	0	0.6668782	0	1.28093E-05
	0.00%	0.05%	0.00%	0.35%	0.12%	0.08%	0.92%	0.17%	1.06%	0.00%	0.00%	0.00%	0.61%	0.00%	0.00%
Surrogate Data	27.19952	40.95726	0	0.007763264	1885.635	3.910432	0.00875114	2538.663	5.670026	5.1146E-06	0.00107989	1.362808	0.2602631	0.008197639	12.27392
	0.10%	0.07%	0.00%	0.00%	0.01%	0.01%	0.01%	0.01%	4.61%	0.00%	0.02%	0.14%	0.24%	0.00%	0.22%
Total	27502.24	56324.6	348.3849	184.874	15374720	31321.14	65.51318	22977200	122.8826	718.7372	6.15993	954.4077	109.6046	273.6567	5629.484

Color 1		SIM only
Color 2		HTWOS only
Color 3		Record only
Color 4		Estimate (fillin-rule)
Color 5		Surrogate rule
Color 6		Combination of SIM and HTWOS, e.g., all SSTs with past tank leaks
Color 7		Combination of record and HTWOS, e.g., 218-E-RCRA, 600-211 (SALDS)
Color 8		Combination of record and estimate
Color 9		Multiple rules
Color 10		Zero - no rule

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
100-B-5	8.7694E-06	1.1741E-09	0	4.4972E-06	0.054944	0.00013885	2.8441E-07	0.074344	5.5158E-08	0	0	0	8.5987E-06	2.5795E-06	0.00019852
100-D-3	0.011527	0.30974	0	0	0.050849	0	0	0.05565	0.02751	0	0	0	0	0	0
100-D-32	0.0076382	0.15498	0	0	0.029073	0	0	0.031649	0.017851	0	0	0	0	0	0
100-D-40	0.011527	0.30974	0	0	0.050849	0	0	0.05565	0.02751	0	0	0	0	0	0
100-D-47	0.011527	0.30974	0	0	0.050849	0	0	0.05565	0.02751	0	0	0	0	0	0
100-F-23	0	0	0	0	5.5137E-06	0	0	0	0	0	0	0	0	0	0
100-F-25	1.1654E-06	1.3527E-06	0	0	9.8917E-09	0	0	1.1581E-07	0	0	0	0	5.2321E-09	2.7458E-10	2.1244E-07
100-F-36	0	0	0	0	0.059221	0	0	0	0	0	0	0	0	0	0
100-H-10	0.0031919	0.36168	0	0	0.0038323	0	0	0.030008	0.000081436	0	0	0	0.00002023	0	0.00094889
100-H-5	0.0012004	2.0536	0	0	0.01963	0	0	0.14425	0.1853	0	0	0	2.49E-09	0	2.974E-07
100-H-7	0.0031919	0.36168	0	0	0.0038323	0	0	0.030008	0.000081436	0	0	0	0.00002023	0	0.00094889
100-H-8	0.0031919	0.36168	0	0	0.0038323	0	0	0.030008	0.000081436	0	0	0	0.00002023	0	0.00094889
100-H-9	0.0031919	0.36168	0	0	0.0038323	0	0	0.030008	0.000081436	0	0	0	0.00002023	0	0.00094889
100-K-2	0.037195	34.953	0	0	0.42755	0	0	3.1076	5.4223	0	0	0	4.233E-08	0	5.0559E-06
100-K-5	3.465E-10	2.8541E-14	0	1.0922E-10	1.6289E-06	3.3721E-09	6.9072E-12	2.1846E-06	2.0796E-12	0	0	0	2.0882E-10	6.2645E-11	4.8213E-09
100-N-60	0.00015323	0.0060526	0	0	0.000099522	0	0	0.00076441	3.5419E-06	0	0	0	3.3781E-07	0	0.000015845
100-N-66	1004.7	9464.8	74.987	0	2.4157	0.032992	0	7.2927	1.3246	0	0	0	0	0	0
116-B-1	0.000071166	1.1457E-08	0	0.000043901	0.4956	0.0013554	2.7764E-06	0.67286	4.5516E-07	0	0	0	0.000083939	0.000025181	0.001938
116-B-2	0.000068488	0.14198	0	0	0.0014672	0	0	0.0090958	0.000017669	0	0	0	0.00003738	0	0.0017533
116-B-3	0.0018987	0.27357	0	0	0.0025047	0	0	0.019882	0.000045098	0	0	0	0.00001428	0	0.0006698
116-B-4	0.0030127	0.25547	0	0	0.0030776	0	0	0.023968	0.00007499	0	0	0	0.00001428	0	0.0006698
116-B-5	1.5815	0.0033547	0	0	0.00014733	0	0	0.00029186	8.4308E-07	0	0	0	0.00011634	0	0.0054569
116-B-6A	0	0.23892	0	0	0.11532	0	0	0.021008	0.000061351	0	0	0	0.00003696	0	0.0017336
116-B-6B	0.000063233	0.00040733	0	0	0.000042281	0	0	0.000029612	6.7238E-08	0	0	0	0.00000042	0	0.0000197
116-B-7	0.00024641	2.4335E-08	0	0.000093157	1.2897	0.0028762	5.8914E-06	1.7355	0.000001505	0	0	0	0.00017811	0.000053433	0.0041123
116-C-1	0.00031107	3.5443E-08	0	0.00013572	1.7662	0.0041903	8.5832E-06	2.3829	1.9242E-06	0	0	0	0.0002595	0.000077846	0.0059912
116-C-2A	0.002636	0.0013007	0	0	0.12586	0	0	0.00011703	3.515E-07	0	0	0	0.00004158	0	0.0019503
116-C-2C	0.0023682	12.96	0	0	0.2307	0	0	1.166	0.0035023	0	0	0	0.00504	0	0.2364
116-D-1A	0.0073682	2.1922	0	0	0.015709	0	0	0.1523	0.00032745	0	0	0	0.00015792	0	0.0074072
116-D-1B	0.0010543	0.81498	0	0	0.021015	0	0	0.072331	0.00021241	0	0	0	0.00010416	0	0.0048856
116-D-5	0.00025332	2.6011E-08	0	0.000099581	1.355	0.0030746	6.2978E-06	1.8246	1.5524E-06	0	0	0	0.0001904	0.000057118	0.0043959
116-DR-1%2	0.000090694	1.481E-08	0	0.00005675	0.6368	0.0017521	0.000003589	0.8648	5.8081E-07	0	0	0	0.00010851	0.000032551	0.0025052
116-DR-3	0.00174	0.063747	0	0	0.0065883	0	0	0.0050198	0.000012561	0	0	0	0	0	0
116-DR-4	0	0.07135	0	0	0.00055489	0	0	0.0053724	0.000012761	0	0	0	0	0	0
116-DR-5	0.00028256	2.9926E-08	0	0.00011457	1.5433	0.0035374	7.2458E-06	2.0793	1.7382E-06	0	0	0	0.00021906	0.000065716	0.0050576
116-DR-8	0	0	0	0	2.0265E-06	0	0	0	0	0	0	0	0	0	0
116-F-1	0.0016818	1.4811	0	0	0.006597	0	0	0.12831	0.00036458	0	0	0	0.0007896	0	0.037036
116-F-10	0.0003104	0.011509	0	0	7.6807E-06	0	0	0.00094471	2.5355E-06	0	0	0	0.00000126	0	0.0000591
116-F-11	0.00017507	0.0057561	0	0	4.0635E-06	0	0	0.00049866	1.4169E-06	0	0	0	0.00000063	0	0.00002955
116-F-16	0	0.018247	0	0	0.027772	0	0	0.0014358	3.6927E-06	0	0	0	0	0	0
116-F-2	0.000072099	1.1457E-08	0	0.000043901	0.49837	0.0013554	2.7764E-06	0.67647	4.6058E-07	0	0	0	0.000083939	0.000025181	0.001938
116-F-3	4.0144E-06	0	0	0	0.000045971	0	0	0	0	0	0	0	0	0	0
116-F-4	0.000089494	3.0809	0	0	0.13544	0	0	0.22139	0.00049536	0	0	0	0.00006678	0	0.0031323
116-F-5	0	0.00006517	0	0	2.5619E-06	0	0	5.6399E-06	1.5959E-08	0	0	0	0	0	0
116-F-6	0.012132	0.89835	0	0	0.02203	0	0	0.076985	0.00021619	0	0	0	0.00029106	0	0.013652
116-F-7	0	0	0	0	2.5645E-06	0	0	0	0	0	0	0	0	0	0
116-F-8	0.00018612	2.0973E-08	0	0.000080307	1.052	0.0024795	5.0788E-06	1.419	1.1509E-06	0	0	0	0.00015355	0.000046063	0.0035451
116-F-9	0	0.11811	0	0	0.25188	0	0	0.012829	0.14132	0	0	0	0	0	0
116-H-1	0.000046135	7.4051E-09	0	0.000028375	0.32074	0.00087607	1.7945E-06	0.43544	2.9498E-07	0	0	0	0.000054254	0.000016275	0.0012526
116-H-2	0.0016317	0.003086	0	0	0.061831	0	0	0.034514	0.00064967	0	0	0	9.5E-12	0	4.4718E-10
116-H-3	6.7246E-06	0.0018315	0	0	0.000017539	0	0	0.0044371	0.000080312	0	0	0	1.9E-12	0	8.9436E-11
116-H-5	0.0003439	3.8451E-08	0	0.00014723	1.9359	0.0045457	9.3112E-06	2.6108	2.1253E-06	0	0	0	0.0002815	0.000084449	0.0064993
116-H-6	0	0	0	0	0	0.018036	0	0	0	0	0	0	0.0030464	0	0.1434
116-H-7	0.0062113	1.4166	0	0	0.083013	0	0	1.0745	0.15051	0	0	0	2.8536E-09	0	1.7063E-07
116-H-9	0	0	0	0	2.5645E-06	0	0	0	0	0	0	0	0	0	0
116-K-1	0	0	0	8.8967E-06	0.074338	0.0050938	0.000010928	2.5663	0.000001352	0	0	0	0	0	0
116-K-2	0.0004084	4.0558E-08	0	0.00015526	2.144	0.0047937	9.8191E-06	2.8854	2.4954E-06	0	0	0	0.00029686	0.000089055	0.0068538
116-KE-1	0.47285	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116-KE-2	0.003582	0.98035	0	0	0.2732	0	0	0.093335	0.00029987	0	0	0	0.00008736	0	0.0040976
116-KE-3	0.00035819	0.098034	0	0	0.02732	0	0	0.0093335	0.000029987	0	0	0	0.000008736	0	0.00040976
116-KW-2	0.00032637	0.092262	0	0	0.025385	0	0	0.0086775	0.000027412	0	0	0	8.2221E-06	0	0.00038566
116-N-1	97.309	0	0	0.00091906	289.09	0.52623	0.0011289	410.82	0.00038101	0	0	0	0.000000272	0	0.000012803
116-N-3	5.9448	0	0	0.000095177	29.015	0.054498	0.00011691	56.844	0.000073138	0	0	0	0.0023058	0	0.10815
118-B-1	34.635	0.23758	0	0	0.040155	0	0	0.043773	0.032037	0	0	0	0	0	0
118-B-6	100.26	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118-B-7	26.639	0.18595	0	0	0.031749	0	0	0.034614	0.024821	0	0	0	0	0	0
118-B-8	66.344	4556.4	41.991	0	3.055	0.0019994	0	6.3519	0.51405	0	0	0	0	0	0.009
118-C-1	0.031901	1.2869	0	0	0.02677	0	0	0.043773	0.018108	0	0	0	0	0	0

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
118-C-3	71.14	4537.8	11.998	0	2.1728	0.0019994	0	4.9745	0.51528	0	0	0	0	0	0.004
118-C-4	0.025864	1.1188	0	0	0.022512	0	0	0.03686	0.014757	0	0	0	0	0	0
118-D-1	0.011046	0.29683	0	0	0.04873	0	0	0.053331	0.026364	0	0	0	0	0	0
118-D-2	0.013672	0.29698	0	0	0.05354	0	0	0.058364	0.032037	0	0	0	0	0	0
118-D-3	0.01276	0.19798	0	0	0.05354	0	0	0.058364	0.0195	0	0	0	0	0	0
118-D-4	0.027196	0.59399	0	0	0.1077	0	0	0.11741	0.06393	0	0	0	0	0	0
118-D-6	61.548	4364.7	33.993	0	1.2982	0.0019994	0	4.1646	0.51528	0	0	0	0	0	0
118-DR-2	39.167	3236.1	25.995	0	1.3272	0.0019994	0	4.2596	0.51034	0	0	0	0	0	0
118-F-1	0.013672	0.19799	0	0	0.066925	0	0	0.072955	0.030645	0	0	0	0	0	0
118-F-4	0.0072917	0.019798	0	0	0	0	0	0.0013585	2.8731E-06	0	0	0	0	0	0
118-F-5	0	0	0	0	1.3426	0	0	0	0	0	0	0	0	0	0
118-F-6	0	0	0	0	1.3426	0	0	0	0	0	0	0	0	0	0
118-F-8	46.36	3758.9	32.993	0	3.0916	0.0019994	0	6.4634	0.51157	0	0	0	0	0	0.009
118-H-1	0.01276	0.19798	0	0	0.05354	0	0	0.058364	0.026466	0	0	0	0	0	0
118-H-6	43.963	3539.3	16.997	0	3.0916	0.0019994	0	6.4634	0.51034	0	0	0	0	0	0.009
118-K-1	0.047396	0.89093	0	0	0.18739	0	0	0.20427	0.066858	0	0	0	0	0	0
118-KE-1	239.8	7011.1	53.989	0	1.3033	0.032991	0	4.1481	0.51899	0	0	0	0	0	0
118-KW-1	215.82	6709	51.99	0	1.3398	0.032991	0	4.2596	0.51899	0	0	0	0	0	0
118-KW-2	0.026387	0.95142	0	0	0.020763	0	0	0.03388	0.014827	0	0	0	0	0	0
132-C-2	0.00031107	3.5443E-08	0	0.00013572	1.7662	0.0041903	8.5832E-06	2.3829	1.9242E-06	0	0	0	0.0002595	0.000077846	0.0059912
1908-NE	49.864	6.3562	0	0	6.2868	0.099969	0	0.77698	1.0721						
200-E-100	2.8722E-08	3.3362E-08	0	2.0297E-09	0.000029715	8.1306E-07	7.2252E-10	0.00026728	1.073E-10	0	5.6602E-11	1.8845E-11	8.8404E-10	4.3828E-09	3.9997E-08
200-E-102	0.37587	0.000019888	0	8.4211E-07	0.20126	0.15308	0	0.25456	6.4853E-07	0	0.018507	0.02086		7.5924E-07	0.95259
200-E-103	2.118E-10	2.4695E-10	0	2.1119E-11	4.0998E-08	6.6598E-09	1.2782E-11	0.000005505	2.1111E-12	0	2.7176E-12	1.6996E-11	0	2.6966E-11	4.0751E-12
200-E-107	1.4209E-10	1.6572E-10	0	1.4169E-11	2.7504E-08	4.4677E-09	2.3474E-06	3.6914E-06	1.4158E-12	0	1.8245E-12	1.1407E-11	0	1.81E-11	2.7369E-12
200-E-136	0	0	0	0.00014773	55.794	0.08298	0.00016	90.155	0.00011852	0	0	0	0	0	0
200-E-137	0	0	0	0	0.33696	0	0.36246	0.43676	0	0	0	0	0	0	0
200-E-25	0	0	0	0	0.00034718	0	0	0.000044014	0	0	0	0	5.1881E-10	1.0768E-08	2.1811E-08
200-E-28	0	0	0	0	0.0027514	0	0	0.00034909	0	0	0	0	4.0413E-09	1.1278E-07	1.7809E-07
200-E-30	0	0	0	0.002247	348.07	0.51979	0.00099999	570.93	0.0002576	0	0	0	0	0	0
200-E-4	0	0	0	0	0	0	0	0	0	0	0	0	1.4862E-10	4.2445E-12	7.0365E-09
200-E-41	1.2637E-09	1.7625E-09	0	1.2706E-10	1.2724E-06	4.7612E-08	3.8505E-11	0.000011745	7.3308E-12	0	2.424E-12	2.1494E-12	3.7848E-11	2.2935E-10	1.7122E-06
200-E-54	1.0624E-08	1.238E-08	0	1.0597E-09	2.0578E-06	3.3424E-07	6.4131E-10	0.00027602	1.0586E-10	0	1.3625E-10	8.5221E-10	0	1.3523E-09	2.0471E-10
200-E-55	0.000000794	7.8124E-07	0	3.8042E-08	0.0017623	0.00001681	1.676E-08	0.0075231	1.7168E-06	0	1.5971E-06	0	2.6205E-08	1.4477E-07	1.1836E-06
200-E-56	0.00048153	0.010605	0	0.0013204	1367	0.41341	0.000024724	330.2	0.0083325	5.3202E-08	3.3632E-07	0	0.000033	0.001747	0.0015601
200-E-57	0.00072202	0.015907	0	0.0019805	2050.7	0.62011	0.000037096	495.34	0.012497	7.9819E-08	5.0457E-07	0	0.000049502	0.0026209	0.0023401
200-E-60	1.8475E-10	2.1543E-10	0	1.8423E-11	3.5766E-08	5.8088E-09	3.0504E-06	4.8023E-06	1.8417E-12	0	2.3703E-12	1.4828E-11	0	2.352E-11	3.5571E-12
200-E-61	9.5315E-08	1.1114E-07	0	9.5046E-09	0.00001845	2.9972E-06	5.7521E-09	0.0024777	9.499E-10	0	1.223E-09	7.6506E-09	0	1.2136E-08	1.8352E-09
200-E-62	0	7.1114E-07	0	0	8.1931E-09	0	1.0145E-08	0	0	1.474E-10	1.1815E-09	5.789E-10	1.5389E-07	8.2116E-08	6.6985E-06
200-E-63	0	7.1115E-07	0	0	8.1926E-09	0	1.0145E-08	0	0	1.4812E-10	1.1837E-09	6.0153E-10	1.538E-07	8.338E-08	6.6953E-06
200-E-64	0	7.1114E-07	0	0	8.1932E-09	0	1.0145E-08	0	0	1.4811E-10	1.1838E-09	6.0158E-10	1.5379E-07	8.3378E-08	6.6948E-06
200-E-65	0	7.1118E-07	0	0	8.1932E-09	0	1.0145E-08	0	0	1.4812E-10	1.1839E-09	6.0156E-10	1.5379E-07	8.3377E-08	6.6946E-06
200-E-67	0	7.1115E-07	0	0	8.1936E-09	0	1.0145E-08	0	0	1.4812E-10	1.1837E-09	6.0156E-10	1.538E-07	8.3378E-08	0.000006695
200-E-68	0	7.1121E-07	0	0	8.1931E-09	0	1.0145E-08	0	0	1.4812E-10	1.1837E-09	6.0153E-10	1.538E-07	8.3381E-08	6.6952E-06
200-E-69	0	7.2807E-07	0	0	8.3886E-09	0	1.0386E-08	0	0	1.5044E-10	1.2111E-09	6.1223E-10	1.5771E-07	8.5269E-08	6.8675E-06
200-E-70	0	7.2812E-07	0	0	8.3882E-09	0	1.0387E-08	0	0	1.5044E-10	1.2112E-09	6.1223E-10	1.5771E-07	8.5275E-08	6.8674E-06
200-E-71	0	7.2808E-07	0	0	8.3883E-09	0	1.0386E-08	0	0	1.5043E-10	1.2111E-09	6.1225E-10	1.5772E-07	8.5274E-08	6.8674E-06
200-E-72	0	7.2805E-07	0	0	8.3884E-09	0	1.0386E-08	0	0	1.5044E-10	1.2112E-09	6.1224E-10	1.5772E-07	8.5271E-08	6.8677E-06
200-E-73	0	7.1114E-07	0	0	8.1932E-09	0	1.0145E-08	0	0	1.4811E-10	1.1838E-09	6.0157E-10	1.5379E-07	8.3376E-08	6.6948E-06
200-E-74	0	7.2812E-07	0	0	8.3882E-09	0	1.0387E-08	0	0	1.5044E-10	1.2111E-09	6.1226E-10	1.577E-07	8.5274E-08	6.8673E-06
200-E-75	0	7.2808E-07	0	0	8.3877E-09	0	1.0386E-08	0	0	1.5045E-10	1.2112E-09	6.1221E-10	1.5771E-07	8.5267E-08	6.8672E-06
200-E-76	0	7.2809E-07	0	0	8.3882E-09	0	1.0387E-08	0	0	1.5045E-10	1.2112E-09	6.1225E-10	1.5772E-07	8.527E-08	6.8675E-06
200-E-77	0	7.2809E-07	0	0	8.3887E-09	0	1.0386E-08	0	0	1.5045E-10	1.2113E-09	6.1224E-10	1.5772E-07	8.527E-08	6.8672E-06
200-E-78	0	7.1117E-07	0	0	8.193E-09	0	1.0145E-08	0	0	1.4813E-10	1.1838E-09	6.0158E-10	1.5382E-07	8.3377E-08	6.6953E-06
200-E-79	0	7.2807E-07	0	0	8.3886E-09	0	1.0387E-08	0	0	1.5044E-10	1.2111E-09	6.1222E-10	1.5771E-07	8.5271E-08	6.8677E-06
200-E-80	0	7.1117E-07	0	0	8.193E-09	0	1.0146E-08	0	0	1.4812E-10	1.1837E-09	6.0159E-10	1.538E-07	8.3375E-08	6.6951E-06
200-E-81	2.4141E-08	2.8147E-08	0	2.4069E-09	4.6725E-06	7.5908E-07	1.4568E-09	0.00062748	2.4058E-10	0	3.0973E-10	1.9376E-09	0	3.0735E-09	4.6484E-10
200-E-82	0	7.2807E-07	0	0	8.3878E-09	0	1.0386E-08	0	0	1.5045E-10	1.2111E-09	6.1223E-10	1.5772E-07	8.5276E-08	6.8674E-06
200-E-84	0	9.7929E-07	0	0	1.1283E-08	0	1.3971E-08	0	0	2.0398E-10	1.6302E-09	8.2841E-10	2.1181E-07	1.1482E-07	9.2205E-06
200-E-85	7.5496E-08	8.8017E-08	0	7.5282E-09	0.000014614	2.3739E-06	4.556E-09	0.0019623	7.5242E-10	0	9.6872E-10	6.0596E-09	0	9.6111E-09	1.4534E-09
200-E-88	2.8708E-08	3.3239E-08	0	2.015E-09	0.000029714	8.083E-07	7.1975E-10	0.00026718	1.0629E-10	0	5.66E-11	1.8318E-11	8.8408E-10	4.3674E-09	3.9996E-08
200-E-89	2.8708E-08	3.3238E-08	0	2.0149E-09	0.000029714	8.0832E-07	7.1973E-10	0.00026718	1.0628E-10	0	5.6603E-11	1.832E-11	8.8406E-10	4.3674E-09	3.9997E-08
200-E-90	2.8708E-08	3.3238E-08	0	2.015E-09	0.000029715	8.0833E-07	7.1973E-10	0.00026717	1.0629E-10	0	5.6603E-11	1.8319E-11	8.8405E-10	4.3674E-09	3.9997E-08
200-E-91	2.8708E-08	3.3238E-08	0	2.0149E-09	0.000029714	8.0832E-07	7.1974E-10	0.00026717	1.0629E-10	0	5.6603E-11	1.8319E-11	8.8404E-10	4.3674E-09	3.9996E-08
200-E-92	2.8708E-08	3.3239E-08	0	2.0149E-09	0.000029714	8.0835E-07	7.1973E-10	0.00026718	1.0628E-10	0	5.6602E-11	1.8319E-11	8.8403E-10	4.3674E-09	3.9996E-08
200-E-93	2.8708E-08	3.3237E-08	0	2.0149E-09	0.000029715	8.0834E-07	7.1974E-10	0.00026718	1.0629E-10	0	5.6605E-11	1.8318E-11	8.8404E-10	4.3674E-09	3.9997E-08
200-E-94	2.8708E-08	3.3238E-08	0	2.015E-09	0.000029715	8.0833E-07	7.1975E-10	0.00026718	1.0629E-10	0	5.6601E-11	1.832E-11	8.8407E-10	4.3674E-09	3.9996E-08
200-E-95	8.1088E-07	7.9787E-07	0	3.885E-08	0.0017202	0.000017168	1.7117E-08	0.007673	1.7535E-09	1.2435E-10	1.6311E-09	0	2.6648E-08	1.4451E-07	1.2037E-06

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
200-E-97	8.1089E-07	7.9786E-07	0	3.8851E-08	0.0017818	0.000017168	1.7117E-08	0.007681	1.7535E-09	1.2435E-10	1.6311E-09	0	2.6738E-08	1.4704E-07	1.2077E-06
200-E-98	6.7576E-07	6.6489E-07	0	3.2375E-08	0.0014777	0.000014306	1.4264E-08	0.0063998	1.4612E-09	1.0362E-10	1.3592E-09	0	2.2271E-08	1.2224E-07	0.000001006
200-E-99	2.872E-08	3.3361E-08	0	2.0298E-09	0.000029714	8.1305E-07	7.2253E-10	0.00026728	1.0729E-10	0	5.6602E-11	1.8844E-11	8.8402E-10	4.3828E-09	3.9996E-08
200-W-22	0.00001756	0	0	0	0	2.1301E-06	0	0	0	0	0	1.0844E-11	4.0128E-07	0	0.000018319
200-W-40	0	0.00012973	0	0.00023249	22.477	0.13305	0.0002856	135.45	0.00008679	0	0	0	1.3949E-07	0	6.5878E-06
200-W-42	0.0062251	0	0	0	0	0	0	0	0	9.7331E-12	6.8577E-11	2.5068E-11	8.2603E-09	1.1123E-09	3.5512E-07
200-W-43	0	0	0	0.0027799	714.86	1.5916	0.0034148	874.98	0.00052156	0	0	0	0	0	0
200-W-44	0	0	0	0.0042482	140.61	1.1996	0.00047	1328.3	0.00077201	0	0	0	0	0	0
200-W-45	0	0	0	0	348.33	0.51979	0.28442	571.27	0	0	0	0	0	0	0
200-W-52	0.0001534	0.026703	0	0.001221	4.9737	0.013809		6.2331	0.00037348	0.00000427	0.0010795		0.00032031	0.0075964	0.014601
200-W-69	0	0.00012989	0	0.00023249	28.598	0.13305	0.0002856	170.57	0.0001448	0	0	0	1.3949E-07	0	6.5878E-06
200-W-72	0	0	0	0	1.733E-12	0	4.2983E-12	0	0	0	0	0	1.9992E-10	0	8.8446E-09
200-W-9	3.1454E-06	3.0946E-06	0	1.5069E-07	0.0033202	0.000066584	6.6392E-08	0.029336	6.7984E-09	4.8228E-10	6.4216E-09	0	9.8808E-08	4.1071E-07	4.4703E-06
202-S	0	0	0	0.002779	881.44	1.5911	0.0034136	1069.5	0.00080104	0	0	0	0	0	0
2101-M-POND	0.0029283	0.0032244	0	0.000031273		0.000014285		0.00022927		2.3919E-07	1.4063E-06	1.9164E-06	0.0001818	0.00021396	0.0085699
216-A-1	0	0	0	0	0	0	0	0	0	0	0	5.2978E-07	0.0019825	0	0.090795
216-A-10	1125.7	0.011045	0	0.0015697	3.4068	0.4889	1.735	5.6588	0.00013051	0.00025115	0.0021822	0.00000173	0.0052291	2.4969	0.24486
216-A-11	0	3.8656E-07	0	0	4.4538E-09	0	5.5149E-09	0	0	9.0176E-11	5.9666E-10	4.3551E-10	7.4887E-08	5.6942E-08	3.3626E-06
216-A-12	0	3.8659E-07	0	0	4.4538E-09	0	5.5146E-09	0	0	9.0286E-11	5.9347E-10	4.5237E-10	7.4456E-08	5.8354E-08	3.3522E-06
216-A-13	5.3003E-10	6.18E-10	0	5.285E-11	1.026E-07	1.6666E-08	3.1986E-11	0.000013777	5.2827E-12	0	6.8005E-12	4.2536E-11	0	6.7483E-11	1.0197E-11
216-A-14	5.293E-11	6.1711E-11	0	5.2773E-12	1.0245E-08	1.6644E-09	3.1944E-12	1.3758E-06	5.2752E-13	0	6.791E-13	4.2477E-12	0	6.7385E-12	1.0186E-12
216-A-15	0	0.000038658	0		4.4538E-09		5.5142E-07			9.0288E-09	5.9354E-08	4.5237E-08	7.4447E-06	5.8355E-06	0.00033525
216-A-16	6.4597E-09	7.5316E-09	0	6.4412E-10	1.2504E-06	2.0313E-07	3.8984E-10	0.00016791	6.4383E-11	0	8.288E-11	5.1839E-10	0	8.2243E-10	1.243E-10
216-A-17	3.1769E-09	3.7045E-09	0	3.168E-10	6.1499E-07	9.9897E-08	1.9173E-10	0.000082574	3.1665E-11	0	4.0764E-11	2.5498E-10	0	4.0449E-10	6.113E-11
216-A-18	0	0	0	0	0	0	0	0	0	0	0	2.6266E-06	0.0098648	0	0.45047
216-A-19	0	0	0	0	0	0	0	0	0	0	0	0.000021863	0.62881	0	28.697
216-A-2	0.000027228	0.0021932	0	0.000086028	0.16523	0.026984	0.000017552	0.37008	0.0001131	4.3806E-06	0.000025842	0.00002463	0.0031803	0.062297	0.15054
216-A-20	0.045428	0.0033381	0	0	0.000076893	0	0	0	0	0	0	8.9577E-07	0.0089909	2.1274E-06	0.4114
216-A-21	0.96398	0	0	0.00013107	1.1234	0.0075328	0	12.695	2.7314E-06	3.0718E-06	0.000020137	5.5235E-06	0.0027767	0.023696	0.13136
216-A-22	0.0015487	9.0919E-09	0	0	1.0476E-10	0.00048645	1.2974E-10	0	0	3.8531E-12	0	1.8231E-09	0.000066303	2.4298E-09	0.0030265
216-A-23A	0.0030191	5.5833E-06	0	0	1.286E-07	0	0	0	0	0	0	0	1.0094E-11	6.3485E-09	4.7681E-10
216-A-23B	0.002895	5.5832E-06	0	0	1.286E-07	0	0	0	0	0	0	0	1.0095E-11	6.602E-09	4.768E-10
216-A-24	171.34	3.0051	0	0.000027484	0.32297	0.0085841	5.6242E-06	79.937	0.000014771	1.3572E-06	0.000010319	2.9591E-06	0.0012388	0.0022687	0.050356
216-A-25	17.138	34.815	0	0.005463	33.974	1.7096	0.014037	1448.3	0.00031617	0.00020833	0.0015868	0.00056906	0.2065	0.11721	0.038861
216-A-26	2.0446E-10	2.3838E-10	0	2.0386E-11	3.9575E-08	6.428E-09	1.2338E-11	5.3141E-06	2.0376E-12	0	2.6233E-12	1.6409E-11	0	2.6027E-11	3.9369E-12
216-A-26A	5.3002E-11	6.1803E-11	0	5.2849E-12	1.0259E-08	1.6666E-09	3.1987E-12	1.3778E-06	5.2827E-13	0	6.801E-13	4.2538E-12	0	6.7481E-12	1.0197E-12
216-A-27	0.00097798	0.00047979	0	0.000020385	4.612	0.0086287	7.3975E-08	5.8653	0.000014076	5.6655E-10	6.3893E-06	0	0.001243	0.000018342	0.054005
216-A-28	0.0071286	0	0	0	0	0.0024809	0	0	0	0	0	2.561E-07	0.0094885	0	0.43413
216-A-3	0.80364	4.0106E-07	0	1.6994E-06	0.0038692	0.27342	0.0048952	1.1794E-08				5.2586E-06	0.038225	1.5246E-08	1.745
216-A-30	0.00035286	0.02865	0	2.0443E-06	0.20427	0.0007407	0.0089231	0.5574	7.2908E-07	5.4735E-06	0.000043215	2.0566	0.01187	0.003315	0.51844
216-A-31	0.000010763	0.00034788	0	0.000025402	0.23452	0.0079341	5.1975E-06	73.877	0.000013656	9.4336E-07	6.2427E-06	2.8346E-06	0.00085271	0.00038953	0.040351
216-A-32	2.1202E-10	2.4721E-10	0	2.1138E-11	4.1041E-08	6.6666E-09	1.2794E-11	5.5109E-06	2.1132E-12	0	2.7202E-12	1.7015E-11	0	2.6994E-11	4.08E-12
216-A-35	5.2943E-10	6.1743E-10	0	5.2805E-11	1.025E-07	1.6649E-08	3.1947E-11	0.000013764	5.2782E-12	0	6.7945E-12	4.2483E-11	0	6.7418E-11	1.019E-11
216-A-36A	1.9482	0	0	0.0085161	146.17	0.48897	0	136.86	0.00021443	3.0464E-06	0.000022696	5.7958E-06	0.0027686	0.0059601	0.11238
216-A-36B	3.8971	0	0	0.0010983	50.966	0.063212	0.0086404	58.056	0.00030224	1.3467E-06	0.000015086	6.1714E-06	0.0022656	0.0002425	0.099853
216-A-37-1	11.539	1.4894	0	0	0.034311	0	0	0	0	0	0	0	3.6138E-06	0.00043109	0.00015462
216-A-37-2	0.1853	0.44881	0	0	0.010293	0	0.000054377			5.237E-07	5.9802E-06	2.3826E-06		0.00057573	0.038861
216-A-39	4.6012E-06	0.000059128	0	0.000010859	0.0091923	0.0033919	2.0372E-07	2.8953	5.6647E-07	4.6489E-10	3.3763E-09	0	8.8506E-09	9.1336E-06	4.1836E-07
216-A-4	1.2555	0.00007955	0	3.3681E-06	0.76772	0.57231	0.97162	2.3406E-06	5.1583E-11	0		0.074056	0.078011	3.0357E-06	3.561
216-A-40	2.7242E-09	2.6636E-08	0	3.1997E-09	3.2175E-08	1.0203E-06	6.0353E-10	0.000022561	2.1809E-10	0		1.1295E-10		3.3243E-09	
216-A-41	0.0020245	8.8418E-09	0	1.5808E-09	1.3789E-06	4.9394E-07	1.6843E-06	0.000013954	8.4281E-11	2.5504E-10	1.8564E-09	3.0387E-11	4.8511E-09	2.5042E-06	2.2929E-07
216-A-45	62.697	0.00039292	0	0.00010978	0.012954	0.0058445	0.032591	0.31758	0.000003743	0.00009336	0.00013053	0	0.00014563	0.043487	0.0063742
216-A-5	332.66	0.0098942	0	0.00097705	5.6196	0.30646	0.96322	2.3124	0.00012452	0.000058673	0.000381	0	0.0027604	1.3114	0.13058
216-A-6	22.723	0.013039	0	0.000067008	0.38635	0.021039	0.073079	0.21947	8.5575E-06	6.9047E-06	0.000043625	0.027419	0.0024638	0.092036	0.11474
216-A-7	0.0045353	0.0031283	0	0.00020455	1.8884	0.063893	0.000041862	595.06	0.00010994	7.5992E-06	0.000050341	0.000022827	0.0068657	0.0031365	0.32515
216-A-8	478.49	3.4966	0	0.00016669	1.6168	0.05197	0.000037721	484.82	0.000089492	8.2676E-06	0.000063027	0.000018348	0.0075292	0.0037781	0.30606
216-A-9	15.684	1.1561	0	5.4127E-06	1.2627	0.002299	0.0012192	1.5638	3.7546E-06	6.2707E-07	6.2739E-06	12.591	0.03586	0.0012959	1.5473
216-B-10A	0.0012527	0.00022724	0	0.000011065	0.24381	0.005354	4.8752E-06	2.1541	4.9939E-07	3.5411E-08	4.1427E-07	6.1862E-10	0.00007063	0.00003016	0.0032216
216-B-10B	9.9489E-10	1.16E-09	0	9.9181E-11	1.9257E-07	3.1283E-08	0.000016426	0.000025864	9.9123E-12		1.2765E-11	7.9824E-11		1.2667E-10	1.9149E-11
216-B-11A%B	0.31053	0.00027519	0	0.000010924	0.56373	0.0032533	4.5525E-06	1.9292	4.689E-07	5.2384E-08	7.2625E-07	0	6.1098E-07	0.000030454	0.000027824
216-B-12	45.596	0.0095101	0	0.00037044	22.352	1.6547	0.00015511	64.989	0.000016	1.9076E-06	8.1296E-06	6.5249E-06	0.2195	0.0009964	10.025
216-B-13	1.215E-07	1.1954E-07	0	5.8209E-09	0.00020224	2.5721E-06	2.5646E-09	0.0011426	2.6272E-10	1.8629E-11	2.4438E-10	0	3.9103E-09	1.9703E-08	1.7682E-07
216-B-14	1.0529	2.0771	0	0.094531	110.26	32.934	0.042241	60.589	0.0035594	0.00043768	0.000015116	0	0.0039306	0.26136	0.17773
216-B-15	0.76751	1.5146	0	0.068927	31.149	24.014	0.030804	44.186	0.0025954	0.00031906	0.000011039	0	0.0028647	0.19056	0.12962
216-B-16	0.68101	1.3013	0	0.057373	26.882	19.724	0.029797	39.156	0.002196	0.00026633	0.00037736	0	0.0025224	0.15776	0.11412
216-B-17	0.4157	0.73474	0	0.029706	15.359	9.8327	0.021663	23.852	0.0011903	0.00013898	0.00074878	0	0.0015139	0.080388	0.068517
216-B-18	1.035	2.0415	0	0.092932	41.985	32.369	0.041527	59.567	0.0034987	0.00043019	0.000014872	0	0.0038598	0.2569	0.17469
216-B-19	0.77344	1.4153	0	0.059587	29.42	20.094	0.037462	44.41	0.0023367	0.00027767	0.00097068	0	0.0028373	0.16244	0.1284

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
216-B-20	0.5698	1.053	0	0.044812	57.06	15.176	0.027011	109.34	0.0017466	0.00020858	0.00062691	0	0.0021597	0.12239	0.09778
216-B-21	0.56738	1.103	0	0.049459	22.726	17.125	0.023751	32.656	0.001876	0.00022916	0.000155	0	0.0021113	0.13637	0.095493
216-B-2-1	0	0	0	1.2237E-07	63.089	0.00012864	1.5031E-07	0.049303	3.9049E-08	0	0	0	0	0	0
216-B-22	0.57684	1.0918	0	0.047656	22.58	16.324	0.025825	33.136	0.0018327	0.00022146	0.00040989	0	0.0021317	0.13079	0.096446
216-B-2-2	0	0	0	1.2237E-07	21.503	0.000029769	1.5031E-07	0.049303	3.9049E-08	0	0	0	6.5972E-07	0	0.000037223
216-B-23	0.54974	1.0398	0	0.045345	21.508	15.521	0.024695	31.611	0.001745	0.00021052	0.0004005	0	0.0020325	0.12441	0.091925
216-B-24	0.59156	1.1673	0	0.053128	24.005	18.505	0.023742	34.052	0.0019997	0.00024584	8.4976E-06	0	0.0022072	0.14684	0.099871
216-B-25	0.59635	1.1768	0	0.053546	24.197	18.653	0.023931	34.323	0.0020154	0.00024782	8.5618E-06	0	0.0022254	0.14806	0.10068
216-B-26	0.57647	1.1376	0	0.051781	90.315	18.035	0.023128	116.36	0.0019489	0.00023965	8.1504E-06	0	0.0023204	0.14315	0.10495
216-B-27	0.53686	1.0593	0	0.048216	21.782	16.792	0.02154	30.894	0.0018148	0.00022308	7.7524E-06	0	0.0020032	0.13327	0.090658
216-B-28	0.61424	1.1682	0	0.05127	24.147	17.601	0.027168	35.304	0.0019677	0.00023808	0.0003865	0	0.0022732	0.14093	0.10288
216-B-29	0.58665	1.1576	0	0.05268	46.195	18.348	0.023534	33.769	0.0019832	0.00024383	8.4699E-06	0	0.0021881	0.14559	0.099014
216-B-3	392.31	98.233	0	0.00081652	24.868	0.31971	0.0031994	84.624	0.00004725	0.00003262	0.00033735	0.00018365	0.048866	0.08658	2.1694
216-B-30	0.58216	1.0613	0	0.044489	22.073	14.967	0.02845	33.427	0.001748	0.00020747	0.00076776	0	0.0021337	0.12119	0.096584
216-B-31	0.59073	1.0782	0	0.045244	22.431	15.235	0.028795	33.915	0.0017766	0.00021091	0.0007681	0	0.0021663	0.12337	0.097978
216-B-32	0.57919	1.0516	0	0.043896	27.981	14.741	0.028531	33.248	0.0017289	0.00020472	0.00079813	0	0.0021211	0.11948	0.096004
216-B-33	0.57877	1.0355	0	0.042477	31.553	14.156	0.029441	33.223	0.0016882	0.00019843	0.00093391	0	0.0021137	0.11528	0.095693
216-B-34	0.59453	1.0611	0	0.043441	30.666	14.457	0.030352	34.119	0.0017289	0.00020296	0.00097772	0	0.0021695	0.1178	0.098244
216-B-35	0.12587	0.084958	0	0.002818	14.129	0.2143	0.0018703	96.566	0.00034214	8.9982E-06	0.00061275	0	0.00052192	0.0049294	0.023946
216-B-36	0.23037	0.15552	0	0.0051577	25.853	0.39218	0.0034234	176.75	0.00062618	0.00001648	0.0011212	0	0.00095593	0.0090205	0.043869
216-B-37	0.51301	0.3463	0	0.011486	57.554	0.87339	0.0076244	393.54	0.0013945	0.000036684	0.002498	0	0.0021285	0.020089	0.097631
216-B-38	0.16981	0.11462	0	0.0038018	19.057	0.28908	0.0025233	130.28	0.00046153	0.000012145	0.00082638	0	0.00070422	0.0066499	0.032322
216-B-39	0.1829	0.12345	0	0.004094	20.519	0.31133	0.0027173	140.28	0.00049717	0.000013078	0.00088981	0	0.00075829	0.0071613	0.034808
216-B-4	2.3142E-07	2.277E-07	0	1.1087E-08	0.0002443	4.8994E-06	4.885E-09	0.0021585	5.0034E-10	3.5487E-11	4.6526E-10	0	7.2702E-09	3.0221E-08	3.2892E-07
216-B-40	0.19478	0.13148	0	0.00436	21.853	0.33158	0.0028937	149.42	0.00052933	0.000013925	0.00094776	0	0.00080778	0.0076266	0.037055
216-B-41	0.17101	0.11544	0	0.0038281	19.186	0.29114	0.0025405	131.2	0.00046496	0.00001223	0.00083224	0	0.00070921	0.0066957	0.03253
216-B-42	0.18219	0.35944	0	0.01636	37.244	5.6979	0.0073086	10.484	0.0006157	0.000075676	0.00002587	0	0.00067986	0.045208	0.030754
216-B-43	0.25738	0.50802	0	0.023122	52.626	8.0516	0.010331	14.82	0.00087029	0.00010701	3.6564E-06	0	0.0009607	0.063903	0.043463
216-B-44	0.6801	1.3418	0	0.061072	139.02	21.27	0.027287	39.144	0.0022991	0.00028253	9.6827E-06	0	0.0025378	0.1688	0.11482
216-B-45	0.59725	1.1783	0	0.053647	190.8	18.68	0.023967	120.88	0.002018	0.00024825	8.3665E-06	0	0.0024038	0.14828	0.10876
216-B-46	0.81352	1.6055	0	0.073074	166.35	25.453	0.032634	46.839	0.002748	0.00033802	0.00001162	0	0.0030364	0.202	0.13735
216-B-47	0.44692	0.88162	0	0.040133	60.873	13.98	0.017937	25.73	0.0015112	0.00018568	6.3818E-06	0	0.0016681	0.11093	0.075443
216-B-48	0.49662	0.97999	0	0.044599	101.55	15.538	0.019932	28.59	0.0016786	0.00020636	7.0925E-06	0	0.0018532	0.12329	0.08385
216-B-49	0.81347	1.6053	0	0.073055	166.31	25.446	0.032654	46.84	0.0027508	0.00033806	0.000011618	0	0.0030368	0.20194	0.13733
216-B-5	2.0915E-06	0.011038	0	0.00049727	1.3989	0.0042504	1.8816E-06	1.726	0.000064756	3.5449E-06	0.0015478	0	0.000156	0.0057179	0.0069488
216-B-50	2.4603	0.0030146	0	0.00020809	0.28212	0.065945	0.000093498	10.946	1.3271E-06	2.0415E-08	0.000078607	0.000064454	4.5335E-07	0.00026085	0.000020989
216-B-51	0.00012146	0.00023958	0	0.000010907	0.0049278	0.003799	4.8735E-06	0.0069913	4.1076E-07	5.0477E-08	1.75E-09	0	4.5327E-07	0.000030155	0.000020509
216-B-52	1.0392	1.8779	0	0.077918	71.746	26.095	0.051767	59.646	0.0030781	0.0003636	0.0015169	0	0.003802	0.21183	0.17209
216-B-53A	0.00034916	0.014239	0	7.2382E-06	1.6483	0.0030706	0	2.0856	5.0254E-06	4.5565E-08	2.4853E-06	0.18972	0.00057362	0.00043557	0.025036
216-B-53B	0.00020365	0.00049243	0	4.2222E-06	0.96112	0.0017899	0	1.2159	0.000002931	1.7443E-09	0.000001392	0.055732	0.00015761	0.000018992	0.006823
216-B-54	0.00020386	0.025974	0	4.2274E-06	0.96215	0.0017928	0	1.2199	2.9337E-06	8.3072E-08	1.9374E-06	0.055856	0.00023108	0.00079283	0.010319
216-B-55	3.4474E-06	0.000033698	0	4.0486E-06	0.000040709	0.0012909	7.6349E-07	0.028545	2.7589E-07	0	0	1.4294E-07	0	4.2064E-06	0
216-B-57	3.7909	0.0090566	0	0.0006255	0.65918	0.19799	0.00028061	32.861	4.0022E-06	6.0802E-08	0.00023604	0.00019335	9.2692E-07	0.00063105	0.000043525
216-B-58	0.00016291	0.010821	0	3.3788E-06	0.76932	0.0041495	0	0.97381	2.3459E-06	3.4618E-08	1.3402E-06	0.044511	0.00015627	0.00033063	0.006887
216-B-59	1.3738E-09	1.3436E-08	0	1.6134E-09	1.622E-08	5.142E-07	3.0433E-10	0.000011373	1.0999E-10	0	0	5.6886E-11	0	1.6755E-09	0
216-B-6	0.00013875	0.00013653	0	6.6479E-06	0.14648	0.0029375	0.000002929	1.2942	3.0005E-07	2.1277E-08	2.7897E-07	0	0.000004359	0.00001812	0.00019721
216-B-60	9.0654E-08	4.4449E-08	0	1.9525E-06	0.00042176	8.1215E-07	0.000011087	0.0005527	1.2914E-09	0	0	0.0043176	0.000012094	1.7608E-09	0.00052822
216-B-62	0.0069179	0.063647	0	0.0077327	15.308	2.4283	0.0012875	1932.1	0.00096987	3.181E-07	4.5944E-06	0.00013132	0.00001461	0.0099292	0.00069389
216-B-63	2.5303	0.033282	0	3.1262E-07	0.12806	0.016469	5.8911E-08	0.018589	2.1297E-08	0	0	2.6016E-08	0.0025867	0.0010409	0.11788
216-B-7A%B	0.00014941	0.021269	0	0.0011466	294.4	0.09251	0.00066795	72.66	0.002272	4.2533E-06	0.0034584	1.2898	0.0036853	0.018309	0.15952
216-B-8	0.00025855	0.14845	0	0.0067122	27.05	0.080085	0.000026644	33.518	0.00082441	0.00004177	0.007817	0	0.0028235	0.032942	0.12656
216-B-9	0.0000328	0.010883	0	0.00049388	1.9865	0.0057439	1.3227E-06	2.4701	0.00009405	2.6359E-06	0.0005438	0	0.00018101	0.0027308	0.0081342
216-BY-201	0.0050569	0.0099751	0	0.00045398	1.0336	0.15816	0.00020284	0.29098	0.000017096	2.1012E-06	7.2165E-08	0	0.000018868	0.0012553	0.00085354
216-C-1	0.000003946	0.000073766	0	9.1555E-06	9.4708	0.0028705	7.7128E-06	2.2926	0.000057619	0	0	0.029447	0.012841	0.000012113	0.0008155
216-C-10	1.2766E-06	0.000028109	0	3.5041E-06	3.6291	0.0010972	6.5659E-08	0.87722	0.000022095	2.8398E-11	9.3836E-10	0	9.2317E-08	4.8485E-06	4.3637E-06
216-C-2	0	0	0	0	0.014813	0	0	0.001878	0	0	0	0	1.9847E-08	6.7117E-07	8.6392E-07
216-C-3	1.5436	0.000014689	0	1.8302E-06	1.8927	0.000792792	3.4249E-08	0.45801	0.000011537	1.4489E-09	0	1.4928E-08	0.000068527	3.3567E-06	0.0031301
216-C-4	3.4344E-06	0.000012679	0	2.7443E-06	1.4273	0.00084116	5.1686E-08	0.00010122	3.3362E-06	1.51E-10	1.1682E-09	0	4.9719E-08	2.6233E-06	2.2729E-06
216-C-5	0	0	0	0	0	0	0	0	0	0	0	1.9663E-07	0.0002987	0	0.013656
216-C-6	0.24363	0.000032826	0	0.000018637	3.8178	0.0028513	1.3374E-07	0.07729	8.7965E-06	7.1636E-08	4.2196E-07	1.6179E-07	0.00003212	0.0001356	0.0014397
216-C-7	0	0	0	0	0	0	0	0	0	0	0	0	5.6102E-10	9.0424E-12	2.5352E-08
216-C-8	0	0	0	0.00004697	0	0	0	5.9553E-06	0	0	0	0	5.3211E-11	2.3842E-09	2.5142E-09
216-C-9	0.00016689	0.00024913	0	3.1529E-06	0.25122	0.0010052	5.9455E-07	0.054108	2.149E-07	0	0	9.6572E-08	7.2329E-07	0.000019864	0.0000333
216-N-1	0	0	0	0	0	0	0	0	0	0	0	0	8.4667E-06	0	0.00038155
216-N-2	8.3319E-06	8.1974E-06	0	0.000000399	0.0087937	0.00017636	1.7579E-07	0.077642	1.8028E-08	0	1.6747E-08	0	3.2675E-07	1.0881E-06	0.000014742
216-N-3	8.3296E-06	8.1944E-06	0	3.9879E-07	0.0087991	0.00017636	1.7581E-07	0.077692	1.7991E-08	1.2836E-09	1.6777E-08	0	3.2503E-07	1.0886E-06	0.000014727
216-N-4	8.7122E-06	8.5746E-06	0	4.1733E-07	0.0092044	0.00018447	8.1652E-08	0.081246	1.8835E-08	0	1.9376E-09	0	8.7135E-06	1.1857E-06	0.0003937
216-N-5	8.6517E-06	0.00000851	0	4.1407E-07	0.0091282	0.0001834	1.8264E-07	0.080718	1.8697E-08	1.3306E-09	1.7432E-08	0	3.3507E-07	1.1305E-06	0.000015193

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
216-N-6	8.7106E-06	8.5752E-06	0	4.176E-07	0.0091978	0.00018444	8.1665E-08	0.081275	1.8857E-08	0	1.9347E-09	0	8.7365E-06	1.1858E-06	0.00039377
216-N-7	0.000008656	8.5278E-06	0	4.1542E-07	0.0091511	0.00018363	1.8279E-07	0.080845	1.874E-08	1.3352E-09	1.7439E-08	0	3.3544E-07	1.1316E-06	0.000015212
216-S-1%2	49.53	0	0	0.045591	178.44	2.6128	0.13715	165.6	0.00060934	0.000014831	0.000006796	0.000041771	0.031301	0.51654	1.4717
216-S-10P	0.020416	2.5461	0	0.000030715	0.15452	0.01158	0.000018178	7.5414	0.000003257	8.7201E-06	0.000075853	0.000021288	0.0097175	0.046352	0.4079
216-S-12	0.0019689	1.6097E-07	0	0.000063477	0.24871	0.0036219	0.00038314	0.23325	8.4896E-07	2.0619E-08	9.2746E-08	5.7537E-08	0.000043295	0.00072113	0.0020464
216-S-13	0.84125	0.00018507	0	0	0.078464	0.44391	0	29.069	0.00001136	4.478E-09	2.6587E-07	1.8696E-07	0.00004341	0.012531	0.0020303
216-S-14	0	0	0	0	0	0	0	0	0	0	0	4.7979E-09	1.0307E-06	0	0.000048528
216-S-15	0.005669	0	0	0	3.3497E-10	0	0	8.839E-10	0	0	0	0	4.2373E-11	3.7995E-08	1.9762E-09
216-S-16P	0.050634	0.00083989	0	0.000059132	0.25396	0.028758	0.000034982	14.089	6.2981E-06	0	0	0	0.0095268	0.00013689	0.43505
216-S-17	0.014298	0.0016172	0	0.000078147	1.3218	0.029714	0.000047281	16.844	9.1467E-06	0	0	0	0.000051424	0.00020765	0.0023489
216-S-19	0.0044721	0.0033949	0	0.00003014	0	0	0	0.00035012	0	0	3.4092E-08	0	0.000012274	1.2586E-06	0.00052552
216-S-20	0.003012	2.665	0	0.000061143	13.924	0.025911	0.008146	17.88	0.000042432	0.000010159	0.000081566	0.17396	0.0080157	0.12028	0.37758
216-S-21	49.502	0.0087674	0	0.00055572	1.2062	0.20621	0.00031864	121.79	0.000042962	3.2257E-08	2.4911E-06	0.000014198	1.6903E-06	0.0011458	0.000076941
216-S-22	0.043498	2.0263E-09	0	1.4273E-10	6.125E-07	5.3768E-08	6.3912E-06	3.3778E-07	1.5117E-11	0	0	0	0	2.46E-10	3.1946E-11
216-S-23	8.2651E-07	7.0232E-07	0	4.9471E-08	0.0002123	0.000018636	2.9266E-08	0.011707	5.2395E-09	0	0	0	0	8.5259E-08	1.1077E-08
216-S-25	70.565	0.000044435	0	0	8.9854E-06	0	0	4.5862E-06	0	9.6077E-09	6.7559E-08	2.9473E-08	0.00001017	0.0009595	0.00047594
216-S-26	0.00075365	0.00057233	0	0	5.0803E-06	0	0	0.000059023	0	0	0	0	2.1445E-06	2.0507E-07	0.000094531
216-S-3	2.3822	0.00040285	0	0.000038183	0.061309	0.014212	0.000021898	8.4067	2.6593E-06	2.2193E-09	1.4124E-07	7.4353E-07	0.000030335	0.000072297	0.0013859
216-S-4	0.56636	0	0	0	3.3463E-08	0	0	8.8303E-08	0	0	0	0	4.2329E-09	3.7956E-06	1.975E-07
216-S-5	0.064311	0.0010701	0	0.000052222	5.866	0.025901	0.000031641	11.301	6.1105E-06	0	0	0	0.015923	0.0001378	0.72703
216-S-6	0.069215	0.000091521	0	0.00016018	1.0827	0.016024	0.0028087	2.2518	2.8848E-06	3.3689E-07	1.4405E-06	8.5474E-07	0.012389	0.0017459	0.5656
216-S-7	163.19	0	0	0.043423	273.93	2.4913	0.35509	195.96	0.00061362	0.000087285	0.00049904	0.00020686	0.055877	0.4896	2.5511
216-S-8	0	0	0	0	0	0	0	0	0	0	0	0.000020223	0.004346	0	0.20445
216-S-9	22.768	0	0	0.0018098	22.081	0.10406	0.029784	12.083	0.000028988	0.000011143	0.000065847	0.000025629	0.0050014	0.020156	0.22422
216-SX-2	0	0.00031809	0	0	3.2277E-06		4.5419E-06	0		6.2431E-08	4.1232E-07	1.8497E-07	0.000056558	0.000044137	0.002677
216-T-1	0.00082443	0.00062135	0	2.1856E-06	0.50064	0.00096579	9.6293E-07	0.48288	9.8637E-08	6.9856E-09	9.1589E-08	0	3.3918E-06	0.00020445	0.00014972
216-T-12	1.5437	0.00040489	0	0.000013419	0.067232	0.0085148	8.8995E-06	0.45951	1.6301E-06	4.4265E-08	0	9.3517E-08	0.0031667	0.000024348	0.14467
216-T-14	0.11947	0.08065	0	0.0026747	13.405	0.20335	0.0017749	91.666	0.00032467	8.5424E-06	0.00058143	0	0.00049489	0.0046785	0.022739
216-T-15	0.12373	0.083533	0	0.0027701	13.891	0.21066	0.0018386	94.938	0.00033643	8.8474E-06	0.00060222	0	0.00051316	0.0048449	0.023546
216-T-16	0.12111	0.081764	0	0.0027118	13.593	0.20622	0.0017997	92.941	0.00032928	8.6634E-06	0.00058969	0	0.0005023	0.0047428	0.023056
216-T-17	0.093208	0.062928	0	0.0020866	10.463	0.15868	0.0013851	71.52	0.00025338	6.6664E-06	0.00045378	0	0.00038667	0.0036506	0.017749
216-T-18	0.0046009	0.26477	0	0.0021459	7.3316	0.15386	0.0014845	8.4035	0.000088484	4.1949E-06	0.00079732	0	0.00081393	0.0036432	0.036534
216-T-19	99.762	0.01518	0	0.00069399	4.5581	0.0079183	0	3.823	0.00021185	2.4275E-06	0.000594	0	0.00018659	0.0044894	0.0085058
216-T-2	0.00013903	0.00001368	0	0.000006661	0.14677	0.0029434	2.9348E-06	1.2968	3.0063E-07	2.1319E-08	2.7953E-07	0	4.3677E-06	0.000018156	0.0001709
216-T-20	0.0058941	9.1717E-06	0	3.6396E-07	0.014111	0.00010928	1.5122E-07	0.063601	1.5645E-08	1.7508E-09	2.4386E-08	0	1.5471E-08	9.349E-07	7.0454E-07
216-T-21	0.054996	0.037113	0	0.001231	6.17	0.093602	0.00081711	42.177	0.00014948	3.9311E-06	0.00026762	0	0.00022801	0.0021531	0.01046
216-T-22	0.18286	0.12344	0	0.0040947	20.523	0.31134	0.0027174	140.31	0.00049711	0.000012622	0.00089016	0	0.00075831	0.0071607	0.034789
216-T-23	0.17647	0.11911	0	0.0039503	19.798	0.30042	0.0026219	135.38	0.00047985	0.000012622	0.00085895	0	0.00073152	0.006911	0.033582
216-T-24	0.18286	0.12345	0	0.0040947	20.519	0.31133	0.0027172	140.31	0.00049713	0.000013077	0.00089007	0	0.0007584	0.0071606	0.034797
216-T-25	0.35475	0.23946	0	0.0079421	39.81	0.60388	0.0052709	272.14	0.00096438	0.000025373	0.0017265	0	0.001471	0.013887	0.067497
216-T-26	0.052603	3.0277	0	0.024535	84.067	1.7595	0.016974	96.195	0.0010119	0.00012155	0.0091196	0	0.0093606	0.041659	0.41826
216-T-27	0.00016381	0.10873	0	3.3944E-06	0.77308	0.0014371	0	0.98888	0.000002352	3.477E-07	3.3817E-06	0.059332	0.00047974	0.0033269	0.022115
216-T-28	0.0048744	0.72812	0	0.00010107	23	0.042878	0	29.163	0.000070235	2.3284E-06	0.000046807	2.2185	0.0082783	0.022269	0.3689
216-T-29	8.9015E-07	8.7583E-07	0	4.2648E-08	0.0009397	0.000018845	1.879E-08	0.0083028	1.9248E-09	1.3644E-10	1.7922E-09	0	2.7965E-08	1.1648E-07	1.2652E-06
216-T-3	3.9442E-07	0.0041044	0	0.00018495	0.31505	0.00095727	4.2375E-07	0.38867	0.000034701	1.3184E-06	0.00090603	0	0.000029699	0.0033465	0.0013163
216-T-32	4.2521E-06	0.014494	0	0.00065891	0.46771	0.0013341	2.2789E-07	0.58265	0.00042675	3.2281E-06	0.0030943	0	8.6408E-06	0.016169	0.00038411
216-T-33	0.0155	1.2488E-06	0	5.2933E-08	0.011661	0.0042724	0.00003049	0.015196	3.5488E-08	0	0	0.11967	0.00098486	5.1762E-08	0.044274
216-T-34	7.1046E-06	0.085941	0	1.8656E-07	0.032293	0.000074228	0.0082116	0.061594	1.0069E-07	0.000000365	2.7302E-06	0.31834	0.0012293	0.0012101	0.052241
216-T-35	0	0.14871	0	0	0.0013205	0	0	0.015344	0	6.3211E-07	4.7328E-06	1.0878E-06	0.00057477	0.0020952	0.023325
216-T-36	0.000024181	0.000011804	0	5.0377E-07	0.11457	0.00021251	0.00029781	0.1443	3.4656E-07	0	0	1.1643	0.0032599	4.5193E-07	0.14133
216-T-4A	24.642	0.00010991	0	0.000005352	0.53597	0.067101	0.00044316	1.0958	2.4174E-07	0	0	0.0017151	0.0088327	0.00016338	0.40306
216-T-5	0.00017084	0.027425	0	0.0012539	5.4534	0.014982	0	6.8315	0.0003398	4.3864E-06	0.00088118	0	0.00035062	0.0062058	0.015984
216-T-6	4.1445E-06	0.014713	0	0.00066292	2.5907	0.0078715	3.4849E-06	3.1969	0.000048751	4.7254E-06	0.00089436	0	0.00030815	0.003309	0.013764
216-T-7	0.0017869	0.36777	0	0.016777	67.907	0.19006	0.000014944	84.995	0.0046418	0.00068941	0.016445	0	0.0049443	0.10329	0.2241
216-T-8	8.5416E-06	0.000078103	0	4.0514E-07	2.8284	0.00019372	2.1695E-07	0.087677	1.9485E-08	1.8616E-08	0	1.8368E-08	0.00069022	1.1225E-06	0.031423
216-TY-201	0	0	0	0	2.4876E-09	0	0	0	0	0	0	0	4.7183E-10	3.2282E-07	2.08E-08
216-U-1%2	2.1989	0.00011143	0	5.0698E-06	0.21745	7.2711	2.2658E-06	0.36012	1.9091E-07	0.0010637	4.0785E-07	1.3932E-06	0.057581	0.00042639	2.6168
216-U-10	4.8358	0.19972	0	0.000055883	0.36278	0.021277	0.21434	14.751	6.1913E-06	0.000040111	0.00025036	0.00028559	0.0313	1.209	1.4517
216-U-12	61.568	7.559E-07	0	0.0001296	5.5329	0.67855	0.000001381	13.927	0.000011598	4.9981E-07	0.0088523	0.12233	0.093602	0.000016823	4.2723
216-U-13	3.4661E-07	0.000001129	0	1.6553E-08	0.032331	7.4798E-06	7.7345E-09	0.0033262	7.6176E-10	2.4865E-10	2.0203E-10		7.8204E-06	4.5327E-08	0.0003567
216-U-14	0.19009	0.0076793	0	2.1485E-06	0.014015	0.00081866	0.0083858	0.56797	2.3824E-07	1.5386E-06	9.5766E-06	0.000011123	0.0011963	0.0013495	0.055602
216-U-15	1.2432E-06	1.5019E-06	0	7.1368E-08	0.0020991	0.035265	3.159E-08	0.01076	3.0311E-09	5.3054E-06	9.7696E-08	2.892E-09	0.00014544	2.2386E-06	0.0065808
216-U-16	81.446	0.00092068	0	0	1.2446E-08	0	7.524E-08	0.000017024	0	0	0	0	2.3253E-06	3.6504E-07	0.00010253
216-U-17	3.6313	0	0	0	0	0	0	0	0	2.7033E-09	3.1302E-08	1.2402E-08	4.5465E-06	6.5173E-07	0.00020043
216-U-3	0.44322	0	0	0	2.5819E-08	0.00059911	0	6.813E-08	0	0	6.2736E-09	0	0.00025327	2.9285E-06	0.01155
216-U-4	6.9308E-06	6.9355E-06	0	3.373E-07	0.0073201	0.00014674	1.463E-07	0.06465	1.625E-08	1.1002E-09	4.8401E-08	0	2.1782E-07	1.0323E-06	0.000009855
216-U-4A	1.1082E-08	0.01417	0	5.3094E-10	0.00013752	2.3461E-07	2.3392E-10	0.0015648	2.3963E-11	5.4219E-08	3.9098E-07	9.3714E-08	0.000049159	0.00029443	0.002107
216-U-4B	0	0.00085883	0	0	7.6249E-06	0	0	0.000088575	0	3.2092E-09	2.2057E-08	8.0702E-09	2.8005E-06	0.000023189	0.00012372

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
216-U-5	0	0	0	0	0	0	0	0	0	0	0	0.000011157	0.0091647	0	0.41836
216-U-6	0	0	0	0	0	0	0	0	0	0	0	0.000011157	0.0090953	0	0.41792
216-U-7	3.7065E-10	4.3216E-10	0	3.6959E-11	7.1747E-08	1.1655E-08	2.2368E-11	9.6345E-06	3.6943E-12	0	4.7557E-12	2.9746E-11	0	4.7191E-11	7.1298E-12
216-U-8	90.026	6.7664E-06	0	3.6356E-07	0.0060493	2.7229	0.004945	0.010239	2.3117E-08	2.0946E-07					16.947
216-W-LWC	8.5683E-07	0	0	0	0.035514	0	0.050731	0.051643	0	0	3.8386E-07	9.0148E-09	0.000053572	0.00092277	0.002318
216-Z-1%2	0	0	0	8.3071E-08	0.0031221	4.7671E-06	0	0.002132	1.6384E-09	2.9972E-11	2.0288E-10	0	1.5624E-07	0.50016	3.4676E-06
216-Z-10	0	0	0	1.6381E-06	0.8934	0.000094211	0	0.9869	4.1646E-08	5.406E-10	0	0	4.4046E-06	0.023214	0.00018706
216-Z-12	0	0	0	3.6819E-06	0.13086	0.00021158	0	0.14155	8.8352E-08	0	2.4496E-08	0	3.1647E-06	10.892	0.00006496
216-Z-13	0	0	0	0	2.796E-09	0	0	6.9352E-09	0	0	0	0	3.1324E-07	0	0.000013928
216-Z-14	0	0	0	0	2.9098E-09	0	0	7.218E-09	0	0	0	0	3.2639E-07	0	0.000014509
216-Z-15	0	0	0	0	3.0141E-09	0	0	7.4772E-09	0	0	0	0	3.3681E-07	0	0.000014988
216-Z-16	0	0	0	9.4846E-08	8.1324E-06	5.4496E-06	0	9.6444E-06	2.934E-09	0	5.8671E-08	0	6.8372E-06	0.010641	0.00028029
216-Z-17	0	0	0	3.4244E-08	2.9338E-06	1.9669E-06	0	3.4781E-06	1.0581E-09	0	2.1002E-08	0	2.4669E-06	0.0038418	0.000099994
216-Z-18	0	0	0	5.7924E-07	0.010516	0.000033299	0	0.011815	1.4383E-08	4.9594E-10	3.3875E-09	0	3.935E-07	6.899	7.9827E-06
216-Z-1A	0	0	0	1.2369E-06	0.18369	0.000071134	0	0.20325	3.089E-08	6.7138E-10	5.3971E-09	0	1.4539E-06	12.369	0.000048082
216-Z-20	0	0	0	9.8179E-08	0	0	0	8.7834E-08	0	0	0	0	0.000004151	0.0086858	0.00017527
216-Z-21	0	0	0	8.9358E-08	0	0	0	2.217E-07	0	0	0	0	0.00001031	0	0.0004562
216-Z-3	0	0	0	1.4602E-07	0.059247	8.3907E-06	0	0.06368	3.3483E-09	0	0	0	2.4076E-07	0.4262	5.4822E-06
216-Z-4	0	0	0	7.8178E-08	0.042682	4.5044E-06	0	0.047161	1.9886E-09	2.5813E-11	0	0	2.1032E-07	0.0010717	8.9519E-06
216-Z-5	0	0	0	1.2657E-06	0.69081	0.000072838	0	0.76297	3.2178E-08	0	0	0	3.3697E-06	0.0478	0.00013104
216-Z-6	0	0	0	1.6666E-07	0.090965	9.5959E-06	0	0.10042	4.2407E-09	5.4995E-11	0	0	4.4799E-07	0.0023604	0.000019035
216-Z-7	0.000030074	0.000014902	0	0.000053313	28.872	0.0033011	0.0037061	31.919	1.7722E-06	1.7369E-08	2.0351E-09	1.446	0.00415	0.78778	0.18117
216-Z-8	0	0	0	0	5.4865E-13	0	0	1.3604E-12	0	0	0	0	6.8384E-11	0.015938	1.5791E-09
216-Z-9	0	0	0	6.0819E-07	0.011039	0.000034969	0	0.012391	1.5098E-08	0	0	0	3.6536E-07	9.9465	8.3985E-06
218-C-9	0	0	0	5.1978E-08	0.027922	0.000030299	6.3844E-08	0.03245	4.3719E-08	0	0	0	0.000027894	0	0.0013174
218-E-1	0	0	0	5.1984E-07	0.10647	0.000303	6.3854E-07	0.12895	5.6521E-08	0	0	0	0.0055797	0	0.26351
218-E-10	0	0	0	0.33593	111080	24.938	0.41272	145770		0	0	0	0.011174	0.0010535	0.52769
218-E-12A	0	0	0	4.6266E-06	1.3362	0.0026969	0.000005683	1.5945	1.0505E-06	0	0	0	0.01381	0	0.6522
218-E-12B	3.5892E-06	414.61	0.21997	0.0093834	3660.6	6.2936	0.011541	4052.6	0.0035217	0	0	0.000022823	0.0070761	3.9739E-06	0.30388
218-E-14	0	0	0	0.00045642	124.84	0.26605	0.00056064	149.35	0.000091532	0	0	0	0	0	0
218-E-15	0	0	0	0.0022033	1089.5	1.5955	0.0027063	1288.9	0.0012281	0	0	0	0	0	0
218-E-2	0	0	0	0.00012996	27.846	0.075752	0.00015964	33.663	0.00001553	0	0	0	0.0041848	0	0.19764
218-E-2A	0	0	0	0.000062381	12.345	0.03636	0.000076625	14.974	0.000006296	0	0	0	0	0	0
218-E-4	0	0	0	5.1984E-08	0.012313	0.000030301	6.3854E-08	0.014822	7.6726E-09	0	0	0	0.000013949	0	0.00065878
218-E-5	0	0	0	0.000038989	9.2816	0.022726	0.00004789	11.17	5.8189E-06	0	0	0	0.0016739	0	0.079054
218-E-5A	0	0	0	0.000085774	21.75	0.049997	0.00010536	26.105	0.000014642	0	0	0	0.0016739	0	0.079054
218-E-7	0	0	0	0.000003119	0.6477	0.000030301	6.3854E-08	0.78405	3.4873E-07	0	0	0	0.000013949	0	0.00065878
218-E-8	0	0	0	5.1984E-08	0.013397	0.000030301	6.3854E-08	0.016069	9.1809E-09	0	0	0	0.000027899	0	0.0013176
218-E-9	0	0	0	1.9415E-06	1.7253	0.0016973	2.3858E-06	1.1578	1.6017E-06	0	0	0	0	0	0
218-E-LLW	0.025056	1.3007	0	5.4354E-06	2.7558	0.0034806	0.0043583	6.2285	0.000015129	0	0	0	0.01653	1.34E-10	0.77626
218-E-RCRA	15.699	791.06	0.00013071	89.305	316360	22737	40.507	154310	3.4444	1.3798	1.9422	15.894	0.40375	43.714	17.579
218-W-1	0	0	0	1.0397E-06	0.21324	0.00060601	1.2771E-06	0.25826	1.1346E-07	0	0	0	0.0097645	0	0.46115
218-W-11	0	0	0	1.0153E-06	0.27127	0.00059182	1.2471E-06	0.32486	1.9356E-07	0	0	0	0.20258	0	9.5675
218-W-1A	0	0	0	0.00024952	53.274	0.14544	0.0003065	64.411	0.000029638	0	0	0	0.012554	0	0.5929
218-W-2	0	0	0	2.5992E-06	0.61381	0.001515	3.1927E-06	0.73895	3.8147E-07	0	0	0	0.019529	0	0.9223
218-W-2A	0	0	0	0.0013667	363.85	0.79513	0.0016788	436.19	0.00026577	0	0	0	0.037524	0	1.7721
218-W-3	0	0	0	4.6786E-06	1.206	0.0027271	5.7468E-06	1.4464	8.2712E-07	0	0	0	0.97645	0	46.115
218-W-3A	2072	0.097367	5.299E-08	0.093716	11660	4.5803	0.02442	42770	0.02505	0	0	0	0.82466	0.023081	38.946
218-W-3AE	926.25	14.301	0.0013487	0.038418	12726	36.537	0.034532	17338	0.027588	0	0	0.20185	4.0101	0.063325	246.92
218-W-4A	0	0	0	0.000017235	5.2356	0.010047	0.000021171	6.235	4.3337E-06	0	0	0	6.9705	0	329.19
218-W-4B	772.43	0	0	0.0034099	1246.3	1.9963	0.50406	1496.3	0.0012532	0	0	0	0.053831	0	2.5423
218-W-4C	482.17	68.06	1.6065E-05	0.028544	14482	17.325	0.03527	17005	0.021271	0	0	3.0231E-06	0.78547	0.0030733	77.5
218-W-5	870.53	8.5801	0.0020372	0.0021027	759.71	141.07	0.04185	1047	0.0015144	0	0	0.32378	18.406	0.023821	657.34
221-B	0	0	0	0.037246	7800	13.996	0.028	15716	0.013168	0	0	0	0	0	0
221-T	0	0	0	0.0018701	296.62	0.99977	0.0021	1167.8	0.001579	0	0	0	0	0	0
221-U	0	0	0	0.00012456	35.734	6.3977	0.000068999	38.947	0.000022636	0	0	0	0.63	0	29.55
222-SD	0	0	0	0.00024952	5.9936	0.014545	0.00003065	7.2096	3.8175E-06	0	0	0	0.00013949	0	0.00065878
224-B	0	0	0	5.1941E-07	2.7554	0.002799	0.00000028	0.15509	8.5206E-08	0	0	0	0	0	0
224-T	0	0	0	5.1941E-07	2.7554	0.002799	0.00000028	0.15509	8.5206E-08	0	0	0	0	0	0
224-U	0	0	0	0.00012534	63.029	0.071981	0.00015444	74.963	0.000095829	0	0	0	0.006	0	0.33
225-B	0	0	0	0	43806	0	0	26877	0	0	0	0	0	0	0
241-A-101	0.00057065	0.0082055	0	0.0019925	2696.6	0.28843	0.00029306	81.154	0.029824	6.5194E-06	0.00010383	0.3787	0.0027605	0.15041	0.12929
241-A-102	0.00085391	0.004342	0	0.0021765	2861.9	3.3891	0.00037005	378.84	0.0014178	1.2988E-06	0.001505	2.5255	0.017901	0.027372	0.83815
241-A-103	0.01281	0.1805	0	0.020055	1134.2	6.455	0.0057916	1402.5	0.0037841	3.6051E-06	0.0046223	0.22241	0.0016169	0.063135	0.07573
241-A-104	0.0016532	0.022013	0	0.0018463	20689	0.57804	0.00030642	500.57	0.0076415	1.0006E-07	1.8106E-06	0.0044975	0.00050341	0.0034432	0.023864
241-A-105	0.00087575	0.028175	0	0.0021225	27930	0.66319	0.000073129	552.71	0.19732	2.1177E-07	1.7765E-06	6.0311E-09	4.4061E-06	0.0052762	0.00020192
241-A-106	0.00034296	0.0015827	0	0.00039393	2514.8	0.22212	0.00019441	102.44	0.056325	2.5585E-07	0.00020516	0.0108	0.00019331	0.0057708	0.0090738
241-AN-101	0.00005741	0.00074377	0	0.000052126	2.1421	0.01732	0.000016346	3.6935	4.0119E-06	4.0487E-09	1.2965E-06	0.000079152	4.1814E-06	0.0001245	0.00019159

G.9

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
241-AN-102	0.000011008	0.00020343	0	0.000014133	5.3446	0.0052877	6.7497E-06	1.4487	0.000015791	1.1397E-08	0.000092552	0.000011048	4.3722E-06	0.00038667	0.00020086
241-AN-103	4.8644E-06	0.000040067	0	1.5284E-06	6.4501	0.00059903	4.5891E-06	0.35812	0.000042024	9.6527E-10	7.5055E-08	0.0019583	0.000013079	2.0243E-06	0.00062849
241-AN-104	0.000054358	0.0045114	0	0.000057221	4.8361	0.016922	0.000016352	3.8424	3.0887E-06	3.5347E-09	1.1335E-06	0.000032425	1.6413E-06	0.00010397	0.000075196
241-AN-105	0.000048021	0.00035675	0	0.000027936	1.5161	0.011103	0.000014739	2.5495	4.5998E-06	3.4705E-09	1.5273E-06	0.00016131	6.4293E-06	0.000066949	0.00029495
241-AN-106	0.000043312	0.00026066	0	0.000017624	0.094317	0.0055561	0.000029709	1.0052	1.9796E-06	2.0618E-09	6.2517E-06	0.00047581	2.8311E-06	0.000019001	0.00013603
241-AN-107	0.000021884	0.0019226	0	7.2464E-06	1.9733	0.0060845	5.4154E-06	1.2259	0.000011947	4.4228E-09	1.9266E-06	0.00012523	0.000021644	0.000055326	0.0009754
241-AP-101	0.000025703	0.00021651	0	7.0904E-06	2.9543	0.0020658	3.4722E-06	0.90612	0.000001863	3.702E-09	1.3561E-07	7.2259E-06	3.2739E-06	0.000017362	0.00015238
241-AP-102	0.000052771	0.00071327	0	0.000055951	19.308	0.018572	0.000013707	7.3617	0.000027123	2.4805E-08	7.2731E-06	0.00053163	0.000039319	0.00075931	0.0017893
241-AP-103	0.000049265	0.00049754	0	0.000045855	2.2938	0.02341	0.000016574	3.7652	0.000015454	1.0773E-08	3.3335E-06	0.00011547	6.6171E-06	0.00035255	0.00030346
241-AP-104	0.000053971	0.00063169	0	0.000045203	2.3303	0.014918	0.000014344	3.1324	3.6754E-06	3.6294E-09	1.1407E-06	0.000065337	3.9371E-06	0.00010311	0.00018056
241-AP-105	0.000065706	0.00056235	0	0.000041131	3.2984	0.013464	0.000014143	3.072	3.5631E-06	3.4698E-09	1.1461E-06	0.000089873	7.0692E-06	0.000079431	0.00032157
241-AP-106	0.00006055	0.00032673	0	0.000014097	1.398	0.0070971	8.4907E-06	1.8594	3.5109E-06	2.4416E-09	1.1155E-06	0.000091699	5.1557E-06	0.000034223	0.00023427
241-AP-107	1.7229E-06	0.000024914	0	8.4142E-06	0.0043853	0.0018505	2.2461E-06	0.45855	3.2281E-07	5.7182E-10	1.8012E-08	5.1879E-08	1.0596E-09	4.7103E-06	4.934E-08
241-AP-108	0.000067681	0.00091492	0	0.00023261	0.099757	0.067921	0.000098097	18.892	0.000026901	4.6179E-08	1.3019E-06	5.5357E-06	1.5441E-07	0.000037134	7.0441E-06
241-AW-101	0.000027585	0.00015214	0	0.000011017	3.4806	0.0043459	4.1642E-06	1.1994	2.8743E-06	2.0271E-09	5.5841E-07	0.00002632	3.1304E-06	0.000047294	0.00014618
241-AW-102	0.000058126	0.00015096	0	0.000011365	1.8443	0.0050898	3.1821E-06	1.2484	4.6359E-06	3.7022E-09	1.1415E-06	0.000049829	5.9148E-06	0.00010189	0.00026951
241-AW-103	0.000060675	0.00041996	0	8.4153E-06	1.897	0.0060576	0.000014342	1.5466	5.9129E-06	2.5443E-09	4.7987E-06	0.00015987	6.6785E-06	0.000039589	0.00030406
241-AW-104	0.000046963	0.0018099	0	0.000035212	2.3069	0.011564	0.000017798	2.5331	3.2955E-06	2.958E-09	2.4079E-06	0.0001624	0.000003081	0.000067297	0.00014271
241-AW-105	0.000010155	0.000024012	0	1.1903E-07	7.2278	0.0024405	0.000001999	1.8786	0.00030079	1.0154E-09	6.8015E-08	9.4282E-06	0.000028672	0.000016817	0.0012661
241-AW-106	0.000035445	0.00022825	0	0.000012234	2.5092	0.008213	0.00001005	1.3538	8.9985E-06	4.2234E-09	4.0272E-06	0.00022343	6.0803E-06	0.000073413	0.00027996
241-AX-101	0.00063599	0.0099497	0	0.011341	4435.8	0.32394	0.00033037	97.138	0.01906	8.0222E-06	0.0087382	0.24492	0.0025153	0.17127	0.1177
241-AX-102	0.0043703	0.013225	0	0.0033181	10945	0.82361	0.0004366	195.41	0.16432	1.4974E-06	0.00064369	0.25698	0.0019929	0.06759	0.092234
241-AX-103	0.00057408	0.0085108	0	0.0011653	13617	0.33766	0.00032541	118.53	0.081153	0.000002535	0.0026687	0.014028	0.00042275	0.0068301	0.025969
241-AX-104	0.00010079	0.012391	0	0.00060111	48157	1.143	4.4665E-06	129.57	0.10197	6.835E-08	7.1583E-07	9.387E-07	0.00027788	0.0019319	0.013143
241-AY-101	0.000016164	0.00019771	0	0.000037339	232.41	0.011631	8.7432E-07	9.5887	0.0015254	1.5821E-09	1.0773E-07	8.9294E-06	4.6764E-07	0.000030757	0.000022146
241-AY-102	0.000063322	0.0005335	0	0.000039413	14.447	0.012994	0.000013972	3.4309	0.000023483	2.0284E-06	1.0974E-06	0.000085419	6.9432E-06	0.00011252	0.00031616
241-AZ-101	0.000052858	0.0006114	0	0.000049333	13.235	0.01516	0.000017302	3.9225	0.000048983	4.4441E-09	1.1013E-06	0.000063149	4.0256E-06	0.00015343	0.00018455
241-AZ-102	0.000059817	0.00034601	0	0.000025941	22.029	0.011152	0.000010078	4.5753	0.00013142	3.047E-09	1.0993E-06	0.000093922	7.2872E-06	0.0005252	0.00032645
241-B-101	0.000076993	0.00023548	0	0.000030841	2568.4	0.012156	3.0743E-06	1.6834	0.032646	3.979E-07	2.5526E-06	6.1348E-06	0.0060296	0.00028811	0.26711
241-B-102	0.000067817	0.00020204	0	0.000010951	0.28966	0.0023534	3.2658E-06	7.8258	2.6889E-06	2.3235E-07	0.00003964	2.8287E-08	0.0011776	0.00015771	0.053275
241-B-103	0.000052525	0.0001557	0	9.1074E-06	0.5166	0.0018169	2.4833E-06	7.5093	2.5541E-06	3.2187E-07	3.7289E-06	7.6124E-08	0.0039836	0.00014856	0.17868
241-B-104	0.000029773	0.00006979	0	0.000006979	13.458	0.035216	1.5682E-06	91.725	4.2326E-06	2.6658E-07	0.000015908	4.2204E-08	0.0018932	0.00012239	0.085497
241-B-105	0.000048619	0.00016313	0	0.000010142	0.28053	0.003842	2.3497E-06	19.797	3.7276E-06	2.6707E-08	5.9472E-06	4.1999E-08	0.0017546	0.00021498	0.079375
241-B-106	0.000043425	0.00025102	0	0.000015876	413.59	0.02005	0.000001874	74.832	3.8423E-06	3.7129E-07	0.000035159	1.4821E-07	0.0065057	0.00020146	0.29408
241-B-107	0.1354	0.058379	0	0.00091509	22.417	0.39949	0.0083228	252.77	0.00010288	5.0617E-07	0.000074122	0.0054511	0.00082659	0.0015189	0.037502
241-B-108	0.000056403	0.00041944	0	5.1261E-06	0.39797	0.00086251	0.000059031	42.043	2.2502E-06	1.2618E-07	0.00001267	0.030918	0.00078518	0.000087555	0.036103
241-B-109	0.000050123	0.00039283	0	0.000002726	0.10628	0.00067907	0.000056956	3.2614	0.000001827	9.177E-08	0.000011836	0.51873	0.0032187	0.000063759	0.15558
241-B-110	0.002519	0.026695	0	0.0017296	597.21	0.70376	0.00041477	179.94	0.042128	1.3161E-07	0.00023959	0.00021569	0.00012028	0.00579	0.005416
241-B-111	0.00024968	0.012147	0	0.0005238	1495.8	1.081	2.7719E-06	592.73	0.052288	2.9012E-08	3.2068E-06	3.9728E-07	0.000033706	0.00081669	0.0014981
241-B-112	0.0041063	0.030687	0	0.0034631	9.9256	1.1434	0.0010008	291.43	0.00079158	4.5665E-07	0.0008946	0.02882	0.00013359	0.0063232	0.0062993
241-B-201	0.00038385	1.4612E-06	0	6.5634E-08	0.3771	1.3286E-07	1.2166E-10	0.032184	1.5829E-08	4.6877E-10	4.3126E-07	4.3766E-11	2.5413E-06	1.5923E-06	0.00011519
241-B-202	9.8786E-11	2.0772E-07	0	9.5178E-09	0.63562	0.0055365		0.017343	3.5978E-09	3.3247E-11	3.3469E-08	1.3441E-10	5.1342E-06	2.3527E-07	0.00026522
241-B-203	1.0176E-10	6.007E-07	0	2.7207E-08	0.014312	5.5074E-08	2.0134E-08	0.0014812	1.2753E-08	1.6003E-10	1.5018E-07	3.3695E-12	1.2516E-07	1.2814E-06	5.7117E-06
241-B-204	1.2275E-10	1.9607E-07	0	8.8759E-09	0.00054109	1.893E-08	5.285E-07	0.0058038	7.9272E-09	3.1939E-11	3.1611E-08	3.4396E-12	5.0903E-10	2.1959E-07	2.3948E-08
241-BX-101	0.00096928	0.0055656	0	0.000792	243.65	0.24868	0.00040417	9.9897	0.0004642	9.2621E-08	0.00010824	0.084045	0.00097395	0.00081311	0.045625
241-BX-102	0.074924	0.10312	0	0.0047021	437.51	2.2749	0.0011686	924.17	0.000061695	0.000026433	5.2164E-06	0.043505	0.14907	0.012835	6.6538
241-BX-103	0.00040911	0.00058222	0	1.8948E-06	99.28	0.0018652	0.00038	0.95044	1.4538E-06	7.9859E-08	0.00011743	0.092405	0.0012932	0.000044433	0.060204
241-BX-104	0.00032999	0.00011544	0	8.3424E-07	339.56	0.10892	0.000021887	43.754	4.4551E-07	9.0392E-07	1.8644E-06	0.20382	0.0080262	0.000034066	0.36957
241-BX-105	0.0017753	0.001189	0	1.6474E-06	317.15	0.19443	0.000016148	21.609	1.8386E-06	4.5481E-07	9.2181E-08	1.7201E-07	0.008517	0.000086723	0.38278
241-BX-106	0.00071099	0.00046442	0	2.1327E-06	249.49	0.139	0.000070246	87.924	1.0988E-06	8.3173E-08	4.3153E-08	3.1519E-08	0.00085047	0.000054305	0.039378
241-BX-107	7.7797E-06	0.00042068	0	3.5487E-06	20.525	0.10188	6.0933E-07	53.077	2.5161E-06	7.6878E-08	9.4978E-06	1.3303E-08	0.00057362	0.000044655	0.025939
241-BX-108	0.006501	0.032363	0	0.0037071	473.43	1.2162	0.00088957	67.282	0.0002516	5.1847E-07	0.000019031	0.0002164	0.0038209	0.0040139	0.17271
241-BX-109	0.000078651	0.00030114	0	0.000016778	1006.4	0.031091	3.1401E-06	110.03	5.0785E-06	6.119E-07	2.6777E-06	2.2968E-07	0.010099	0.00036246	0.45652
241-BX-110	0.00092807	0.0094253	0	0.00096033	62.691	1.3465	0.00088656	302.96	0.0015086	5.2837E-07	0.0017692	0.067389	0.0005866	0.0078913	0.02714
241-BX-111	0.0011179	0.065674	0	0.0038011	116.8	3.0392	0.010708	377.56	0.0031562	1.4019E-06	0.0038894	0.0071037	0.00027495	0.017496	0.012497
241-BX-112	0.000010521	0.00031979	0	0.000025632	15.132	0.060704	5.3946E-07	195.07	2.1162E-06	1.2218E-07	8.1146E-06	8.8262E-09	0.00038056	0.000044246	0.017208
241-BY-101	0.0011597	0.056246	0	0.001239	668.19	2.4255	0.0093679	595.36	0.0026914	0.0003069	0.0033069	0.0065585	0.00091998	0.015002	0.041654
241-BY-102	0.0011018	0.0088633	0	0.00071728	101.11	0.93859	0.010335	224.45	0.0030588	0.000001337	0.0038429	0.15066	0.00036557	0.016679	0.017905
241-BY-103	0.0035034	0.068279	0	0.0021762	76.315	2.6341	0.0095067	350.33	0.0025952	1.1997E-06	0.0035532	0.1338	0.00035385	0.015072	0.017318
241-BY-104	0.0012011	0.10528	0	0.0011347	2952	4.6944	0.017177	869.42	0.0052397	2.5972E-06	0.0065565	0.40819	0.0064815	0.030541	0.29685
241-BY-105	0.0013694	0.056731	0	0.0010399	367.53	0.39476	0.0095228	192.38	0.0026894	1.1871E-06	0.0033128	0.087866	0.0016976	0.0023425	0.077578
241-BY-106	0.0011829	0.050716	0	0.0012959	2706.9	11.932	0.0015762	405.19	0.017887	4.9558E-06	0.022013	0.2752	0.0096929	0.084467	0.44088
241-BY-107	0.0078993	0.053829	0	0.0038859	508.53	2.7849	0.0024028	578.94	0.0027537	1.1123E-06	0.0042184	0.23972	0.0022918	0.015208	0.10583
241-BY-108	0.0036264	0.025975	0	0.0015354	858.65	1.6293	0.0017577	304.26	0.0018602	1.0487E-06	0.0025308	0.092544	0.0056676	0.011513	0.25717
241-BY-109	0.0012162	0.036029	0	0.00073864	50.754	1.426	0.0058894	187.45	0.0015484	6.7701E-07	0.0019456	0.076951	0.00019546	0.0086543	0.0095692
241-BY-110	0.0011239	0.074651	0	0.00083521	1060.7	3.2888	0.012267	69.954	0.0036622	1.4888E-06	0.0045841	0.34682	0.0047268	0.019472	0.21693
241-BY-111	0.0011025	0.010788	0	0.00080931	59.276	1.2719	0.0012407	134.92	0.0018119	5.4975E-07	0.0020979	0.088377	0.00021444	0.0087121	0.010503
241-BY-112	0.00087382	0.0068802	0	0.0015285	74.176	0.68998	0.0076634	165.1	0.0022335	1.0033E-06	0.0027961	0.11002	0.0014105	0.012167	0.06534

G.10

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
241-C-101	0.0075575	0.011231	0	0.00072281	129.04	0.22749	0.0018045	221.87	0.000092097	1.1127E-07	5.5666E-07	0.00019929	0.0027372	0.0012794	0.12762
241-C-102	0.0025385	0.0046777	0	8.3454E-06	50.201	0.0031974	0.0015826	25.873	0.000004654	1.4214E-07	0.0010639	1.0941	0.0021524	0.000026131	0.10642
241-C-103	0.0042583	0.0039127	0	0.00022951	4945.2	0.071685	0.00046314	139.47	0.0025006	2.2971E-08	3.2116E-07	0.00098014	0.00063435	0.00050424	0.030097
241-C-104	0.0041337	0.0071647	0	0.024234	621.38	0.235	0.0042337	98.576	0.0034804	8.9498E-07	0.0011869	2.8756	0.0041961	0.030551	0.2263
241-C-105	0.016327	0.0082169	0	0.00072835	666.1	0.78271	0.00068744	245.63	0.000067658	4.629E-08	1.4586E-06	0.00011261	0.0010336	0.00079857	0.048802
241-C-106	0.00023637	0.0081593	0	0.0095722	13170	0.1647	0.0006305	308.96	2.0394	404.09	0	0.0018287	0.000038601	0.05411	0.0018428
241-C-107	0.00027531	0.0034334	0	0.00020023	3514.5	0.21304	0.0027225	84.994	0.03735	7.1255E-08	4.5087E-06	0.03476	0.00099055	0.00038926	0.045682
241-C-108	0.00018806	0.00058535	0	0.000011904	70.543	0.040446	7.0293E-06	748.64	3.5297E-06	3.6035E-07	5.0483E-06	2.4278E-09	0.000097466	0.00018075	0.0044066
241-C-109	0.00021304	0.00012908	0	0.000031032	1683.1	0.49585	0.00042825	1225.3	0.00019388	3.9078E-07	2.7884E-06	4.8029E-06	0.0020684	0.0035242	0.10043
241-C-110	0.0008733	0.0028026	0	0.000075258	21.118	0.19131	0.000032247	58.988	4.7197E-06	4.5492E-07	0.000010502	2.092E-08	0.00089309	0.00024552	0.040384
241-C-111	0.03278	0.017443	0	0.00018539	5732.7	0.069659	0.002837	64.936	0.0010691	3.6691E-07	2.7229E-06	1.5177E-06	0.0020442	0.00044632	0.094401
241-C-112	0.00084004	0.022716	0	0.0040732	3435.2	0.72285	0.00034077	1401.4	5.2829E-06	0.000000573	4.1429E-06	2.6557E-07	0.0097241	0.020879	0.44306
241-C-201	0.000025902	0.0012763	0	0.000071145	56.982	0.022875	0.00000133	11.259	0.00044863	2.8629E-09	1.9082E-08	0.000017394	0.0023407	0.0014462	0.11109
241-C-202	0.000023188	0.00050512	0	0.000063691	69.558	0.020049	1.1906E-06	9.3139	0.00040164	2.5629E-09	1.7133E-08	0.000015154	0.0021856	0.0012036	0.10076
241-C-203	0.000022525	0.00049737	0	0.000061875	32.942	0.010175	1.1565E-06	7.0526	0.00039013	2.4892E-09	1.6542E-08	0.000022613	0.0030163	0.000081867	0.14379
241-C-204	0.000017852	0.00040958	0	0.000050955	26.311	0.013059	9.5234E-07	7.0362	0.00032129	2.0501E-09	1.3609E-08	9.1195E-06	0.00069199	0.000067412	0.044598
241-S-101	0.00038709	0.0019392	0	0.00036928	643.6	0.067636	0.00084068	30.521	0.00042634	1.3278E-07	0.00003384	0.0038262	0.0010413	0.0037351	0.048833
241-S-102	0.00033737	0.042855	0	0.0008493	2083	0.58721	0.00018394	1309.4	0.014849	4.0033E-06	0.0017644	0.10593	0.0099902	0.099944	0.46824
241-S-103	0.00027919	0.0038222	0	0.00050902	1141.9	0.7097	0.00014196	36.282	0.0088189	3.8402E-06	0.00063988	0.044328	0.0016613	0.10044	0.077477
241-S-104	0.49548	0.17258	0	0.00014301	571.78	0.067475	0.00033931	41.109	0.00030687	1.5194E-07	4.0901E-06	0.00019837	0.00061943	0.0016631	0.028939
241-S-105	0.00042682	0.005117	0	0.00057493	68.671	2.1475	0.00017112	274.91	0.012919	0.000011902	0.0027545	0.055635	0.0016492	0.47543	0.076727
241-S-106	0.00056868	0.0068323	0	0.0040087	367.81	0.72645	0.00022007	161.97	0.0033842	3.3333E-06	0.00087373	0.019694	0.0052079	0.10295	0.024198
241-S-107	0.00070925	0.0008808	0	0.00018789	246.19	0.0097675	0.000089712	39.097	0.000050772	2.7366E-08	6.2806E-06	0.0014839	0.0010839	0.00074023	0.049089
241-S-108	0.00058663	0.0069757	0	0.0026012	623.76	0.70003	0.0002124	168.13	0.0034715	3.4141E-06	0.00089401	0.043219	0.0012419	0.10554	0.05776
241-S-109	0.00054627	0.061985	0	0.0013616	981.68	1.2129	0.00019971	6.5353	0.0074984	4.8497E-06	0.0023014	0.010872	0.00090067	0.22648	0.042191
241-S-110	0.00058262	0.0047583	0	0.00084354	590.49	0.21109	0.00015907	26.468	0.00061149	5.9234E-07	0.00015375	0.0046165	0.0011169	0.018446	0.05234
241-S-111	0.00068381	0.010932	0	0.0012426	1568.1	0.32802	0.00022151	440.2	0.0007143	4.7205E-07	0.00021315	0.0033471	0.00010614	0.019198	0.0049403
241-S-112	0.000029358	0.069985	0	0.000014924	3497.9	0.0048351	0.001053	5.2199	0.026774	0.000050281	0.0011753	0.096192	0.0035156	0.21739	0.16191
241-SX-101	0.001176	0.0047892	0	0.001588	3849.9	0.19321	0.00018571	255.81	0.0064318	1.9159E-06	0.00038278	0.063054	0.0037609	0.052313	0.17487
241-SX-102	0.00055753	0.0059947	0	0.0020187	2354.8	0.97946	0.00022214	80.929	0.0030485	2.2899E-06	0.00059362	0.035383	0.0010697	0.065418	0.049778
241-SX-103	0.00062411	0.0056607	0	0.0011919	1259.7	0.20868	0.00018806	59.523	0.00078078	6.8103E-07	0.00017452	0.0069963	0.00029786	0.021168	0.013883
241-SX-104	0.012494	0.14762	0	0.013921	692.56	4.641	0.0044797	1220	0.00094792	1.4658E-06	0.00044794	0.0040794	0.0060718	0.019834	0.028484
241-SX-105	0.00059484	0.006001	0	0.0016352	1760.8	0.42737	0.00021539	117.09	0.0016936	1.6287E-06	0.00041895	0.015287	0.00095081	0.050684	0.044484
241-SX-106	0.00068572	0.031946	0	0.0019315	327.82	0.73331	0.00028942	437.64	0.010784	2.3822E-06	0.0011339	0.03479	0.00076756	0.052827	0.035597
241-SX-107	0.082067	0.17221	0	0.016237	649.02	6.0286	0.0094459	3604.3	0.0012373	9.6366E-07	0.000073268	0.00037257	0.00054831	0.024987	0.02575
241-SX-108	0.19234	0.40448	0	0.037987	14935	14.107	0.022172	8772.9	0.0027969	2.2511E-06	0.00016932	0.00074873	0.0021635	0.059646	0.10166
241-SX-109	0.011482	0.024797	0	0.0022891	355.15	0.86126	0.0019258	546.59	0.00092845	2.3899E-06	0.000018008	0.00060879	0.00030526	0.0062507	0.014302
241-SX-110	0.0021062	0.011081	0	0.0011315	617.57	0.38192	0.00030814	41.728	0.0005321	1.3927E-07	0.00041518	0.00040402	0.0005134	0.0033521	0.024113
241-SX-111	0.001228	0.0073758	0	0.00075619	657.37	0.25326	0.00018261	20.06	0.00028201	7.6723E-08	3.2972E-06	0.00019243	0.00055443	0.0022811	0.026057
241-SX-112	0.0056915	0.012633	0	0.0011173	673.04	0.42178	0.00064015	246.11	0.00024501	9.7927E-08	6.1062E-06	0.00012399	0.00056784	0.0029255	0.026691
241-SX-113	0.030368	0.084556	0	0.0039391	51.175	1.4954	0.0023935	872.8	0.00046918	2.2078E-07	1.4256E-06	6.3332E-08	0.000038116	0.010956	0.0017921
241-SX-114	0.00059977	0.001913	0	0.00013104	408.44	0.058647	0.00059202	68.758	0.00063844	9.6846E-08	6.9001E-06	0.00046004	0.00034833	0.0026641	0.01634
241-SX-115	0.74788	0.30309	0	0.01213	39962	4.575	0.0070857	2971.4	0.015927	9.0889E-07	7.7388E-06	0.000014798	0.0017293	0.016598	0.077518
241-SY-101	0.000076178	7.6505	0	0.000061993	6.8688	0.018398	0.0006169	5.1077	3.3654E-06	3.8526E-09	0.000001216	0.000024737	0.000006663	6.0111847	0.00017276
241-SY-102	0.000035164	0.00040906	0	0.000045699	0.057252	0.0078789	7.7976E-06	0.20911	8.947E-08	8.4309E-10	4.2592E-07	6.3568E-08	7.0345E-09	6.1886E-07	3.1847E-07
241-SY-103	0.000055417	0.00078978	0	0.00005358	1.6282	0.018014	0.000016825	3.7606	4.2362E-06	4.2223E-09	1.3674E-06	0.00008195	3.7921E-06	0.00013281	0.00017425
241-T-101	0.12199	0.061711	0	0.0013729	6.1185	0.64621	0.00061755	261.34	0.00045403	3.8533E-07	0.00010768	0.010199	0.00297	0.0050298	0.13285
241-T-102	0.00014393	0.025401	0	0.00010962	189.64	0.068353	0.00012017	10.319	0.000008244	1.0144E-07	9.9209E-06	0.047862	0.0032869	0.0027825	0.15019
241-T-103	0.0080279	0.026488	0	0.0029506	27.33	0.95463	0.00079373	66.258	0.00025352	1.9172E-07	0.00011667	0.0020239	0.0031315	0.093616
241-T-104	0.000023424	0.00018567	0	3.5301E-06	7.5808	0.0026394	0.000001383	0.84154	1.9072E-06	8.6209E-08	7.1622E-06	8.5736E-09	0.00036909	0.000040033	0.01989
241-T-105	0.000075847	0.0033374	0	6.2469E-07	187.11	0.5498	6.4935E-08	5.7051	4.0226E-07	1.0407E-08	1.7273E-06	1.0454E-08	0.0005636	0.000008974	0.025972
241-T-106	0.30085	1.0454	0	0.11629	1105.2	37.462	0.024617	2259.1	0.010105	5.6114E-06	0.000201	0.0042201	0.0010946	0.12342	0.04944
241-T-107	0.000080585	0.001127	0	0.00023363	450.51	0.30032	0.000036955	30.449	2.7479E-06	1.3125E-07	0.000010043	0.022503	0.0025039	0.000068551	0.11365
241-T-108	0.00042962	0.0013994	0	0.000075291	3.7378	0.034977	0.000020644	29.347	4.3018E-06	4.3849E-07	8.3399E-06	5.0985E-09	0.00021764	0.00017175	0.0098356
241-T-109	0.0016132	0.0089582	0	0.00097218	5.3133	0.32053	0.00025905	37.035	0.000080021	7.9617E-07	0.000020998	0.000057856	0.00063795	0.0013911	0.028814
241-T-110	2.4102E-08	0.000025052	0	4.3356E-07	0.030329	0.000011042	2.4852E-09	0.10568	4.7583E-07	1.3543E-08	2.2096E-06	3.0473E-10	0.000014346	0.0014264	0.00064724
241-T-111	9.629E-08	0.000025196	0	8.2987E-07	22.602	0.10644	1.1213E-09	0.61931	5.0263E-07	7.8775E-09	1.7752E-06	4.4749E-08	0.0018471	0.000012319	0.083856
241-T-112	1.3842E-08	0.000011441	0	3.4592E-07	0.00095849	0.000004699	8.7507E-10	0.01676	3.0409E-07	6.0195E-09	1.2229E-06	5.3513E-09	0.00025319	8.2277E-06	0.01142
241-T-201	1.2387E-12	1.406E-07	0	6.3349E-09	0.01534	1.2805E-06	5.6835E-12	0.0054073	1.5285E-09	4.5153E-11	4.1678E-08	1.8863E-15	1.1035E-10	1.5323E-07	4.94E-09
241-T-202	9.8176E-11	2.0644E-07	0	9.4589E-09	0.00047006	1.9107E-08		0.0015226	8.5447E-09	3.3042E-11	3.3262E-08	4.3952E-11	0.000001628	2.3382E-07	0.000074332
241-T-203	9.7699E-11	2.0544E-07	0	9.4131E-09	0.00047027	1.9014E-08	0	0.0015152	8.5033E-09	3.2881E-11	3.3101E-08	1.3434E-12	4.9758E-08	7.368E-07	2.2719E-06
241-T-204	1.0136E-10	2.1313E-07	0	9.7654E-09	0.00084621	1.9726E-08		0.00154	8.8216E-09	3.4112E-11	3.434E-08	4.6271E-13	1.7139E-08	6.3592E-07	7.8255E-07
241-TX-101	0.0012033	0.0051896	0	0.00040176	2124.6	0.16707	0.00059554	153.12	0.00027127	2.8176E-07	0.000041914	0.004017	0.0058768	0.0040267	0.27088
241-TX-102	0.00076656	0.014252	0	0.0010949	3.3893	3.5056	0.00022667	355.95	0.0028518	1.4072E-06	0.00066069	0.071478	0.0047424	0.022306	0.21696
241-TX-103	0.00077086	0.01478	0	0.0010663	0.38572	3.6944	0.000216	371.3	0.0030198	1.4306E-06	0.00069884	0.07571	0.001058	0.023622	0.048567
241-TX-104	0.0008355	0.0066541	0	0.00076267	2050.2	1.0467	0.00020194	215.18	0.00070115	3.3269E-07	0.00014263	0.045261	0.00075292	0.0067696	0.034719
241-TX-105	0.00083018	0.014388	0	0.00093779	9.0946	3.3917	0.00019979	338.43	0.002786	1.3894E-06	0.00064311	0.069897	0.005785	0.02182	0.26461
241-TX-106	0.00075655	0.0051166	0	0.00065627	123.01	0.19582	0.0002079	44.915	0.0042589	2.9968E-06	0.00058942	0.1089	0.0033355	0.040433	0.15291

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
241-TX-107	0.02293	0.16478	0	0.014433	116.08	9.1325	0.0050422	2116.4	0.005731	3.3184E-06	0.00131	0.07865	0.0011719	0.043082	0.053825
241-TX-108	0.00079384	0.013553	0	0.00095799	63.735	3.1745	0.00020624	322.13	0.0025921	1.3371E-06	0.00059937	0.065001	0.0069914	0.020314	0.31953
241-TX-109	0.00004284	0.0011245	0	6.3107E-06	45.481	0.11979	2.5294E-06	16.695	5.7144E-06	3.2735E-07	0.000015615	3.4498E-08	0.0014875	0.00012086	0.067263
241-TX-110	0.00081693	0.013859	0	0.00087406	0.55585	3.2912	0.000189	324.59	0.0026335	1.2562E-06	0.00060957	0.066072	0.0010582	0.020635	0.048482
241-TX-111	0.00080772	0.013199	0	0.00082408	0.64345	3.091	0.00018275	303.89	0.0024368	1.1744E-06	0.00056494	0.061138	0.0010553	0.019107	0.048307
241-TX-112	0.00080975	0.014965	0	0.00093646	0.37855	3.6606	0.00019108	362.28	0.0030163	1.4336E-06	0.00069618	0.075675	0.0010729	0.023618	0.049239
241-TX-113	0.00079675	0.016766	0	0.00094042	0.61121	4.4616	0.00017584	38.58	0.0035461	1.6958E-06	0.0008208	0.017317	0.00055191	0.027739	0.025123
241-TX-114	0.00076919	0.010845	0	0.00071202	0.3807	2.2479	0.00017144	227.96	0.0018334	9.0895E-07	0.00042411	0.046008	0.00070384	0.014423	0.032265
241-TX-115	0.00082871	0.015213	0	0.00097304	12.142	3.7104	0.00019983	368.83	0.0030538	1.4384E-06	0.00070467	0.076615	0.0012476	0.023905	0.057145
241-TX-116	0.00037042	0.0051039	0	0.00053348	0.16628	1.5412	0.00010652	337.36	0.00086557	7.3884E-07	0.00024756	0.0204	0.00063956	0.0066735	0.029096
241-TX-117	0.00052656	0.0078518	0	0.00047954	0.25961	1.6994	0.00011033	171.88	0.0013912	8.461E-07	0.00032411	0.034857	0.00076951	0.011027	0.035115
241-TX-118	0.00059747	0.011195	0	0.00090247	2211.6	2.7753	0.00018668	155.13	0.002251	1.0611E-06	0.00052208	0.082248	0.0011276	0.017599	0.051779
241-TY-101	0.00294	0.017571	0	0.0013415	6.9572	0.47335	0.00050117	170.96	0.000095846	2.7936E-07	0.000061553	0.000098799	0.00029314	0.0014783	0.013184
241-TY-102	0.0004258	0.0033126	0	0.0006584	30.134	0.093365	0.000072141	24.754	0.0015998	1.0426E-06	0.00023815	0.0083172	0.00020587	0.01466	0.0093844
241-TY-103	0.0082877	0.060002	0	0.0051405	316.57	1.7831	0.0018353	663.21	0.0005016	9.544E-07	0.000268	0.12447	0.0059638	0.0068033	0.27014
241-TY-104	0.000010999	0.019776	0	0.000010772	296.65	0.17411	0.000001226	84.854	1.6313E-06	1.9602E-07	9.4819E-06	3.7019E-07	0.0053456	0.000085024	0.24031
241-TY-105	0.015866	0.031298	0	0.00143	883.38	0.54171	0.00068379	316.04	0.00005711	6.9205E-06	2.4676E-07	5.0748E-08	0.0022915	0.0041952	0.10359
241-TY-106	0.00904	0.017838	0	0.00081207	216.55	0.29941	0.00036354	250.71	0.00003081	3.7826E-06	1.3284E-07	1.5861E-08	0.00073172	0.0044325	0.033077
241-U-101	0.0099173	0.029397	0	0.0012868	2865.2	0.4882	0.00078201	286.87	0.00029482	1.3789E-07	8.0949E-07	0.000011005	0.002371	0.0069004	0.11149
241-U-102	0.00081417	0.015682	0	0.0018748	1467.9	3.6623	0.00024026	692.42	0.0037236	1.1704E-06	0.00055888	0.022642	0.0011673	0.020955	0.054551
241-U-103	0.00056287	0.0066696	0	0.0054427	737.75	1.3147	0.00022856	61.702	0.0063506	3.4115E-06	0.0008952	0.021617	0.00068197	0.052656	0.031753
241-U-104	0.092339	0.08045	0	0.0044349	894.44	2.1401	0.0023982	977.47	0.00032838	0.000011388	2.505E-07	3.1483E-06	0.0032741	0.014994	0.15026
241-U-105	0.0010747	0.0081701	0	0.001716	76.658	0.97443	0.0020205	245.29	0.004672	1.3937E-06	0.00040027	0.043486	0.0049918	0.022676	0.23197
241-U-106	0.00049854	0.0060916	0	0.0018599	1524	0.29315	0.00027839	86.166	0.0023801	6.2359E-07	0.00075719	0.050186	0.0013271	0.087424	0.061663
241-U-107	0.00094557	0.025474	0	0.0010518	16.468	6.617	0.00031372	374.39	0.001231	1.7395E-06	0.00082512	0.016699	0.00046741	0.03193	0.021678
241-U-108	0.0011876	0.015402	0	0.00084025	64.047	3.069	0.00025664	384.19	0.0024588	3.4163E-07	0.00034622	0.0051485	0.0014461	0.022942	0.064808
241-U-109	0.00092551	0.024591	0	0.0015933	117.37	6.7335	0.00026811	663.34	0.005589	0.000001632	0.00070094	0.007867	0.00024407	0.050186	0.011333
241-U-110	0.0077591	0.016224	0	0.0011489	420.86	0.41968	0.00042226	179.4	0.00010772	1.8017E-06	0.000050486	0.000095686	0.0026598	0.0019001	0.12444
241-U-111	0.00065382	0.022938	0	0.0015475	814.94	6.2254	0.00027445	726.73	0.0059232	1.5363E-06	0.00071422	0.023369	0.0011661	0.040821	0.054219
241-U-112	0.016782	0.037319	0	0.0016378	652.24	0.62492	0.00098784	350.95	0.00022565	2.2298E-07	4.8779E-06	2.4582E-06	0.00083537	0.0053039	0.038951
241-U-201	0.0019058	0.00041898	0	4.5303E-07	0.039851	0.0037542	2.7798E-07	1.3955	5.9049E-08	7.6754E-10	7.9801E-09	1.2469E-11	2.7327E-07	1.3084E-06	0.000012686
241-U-202	0.0017488	0.000304	0	4.1571E-07	0.015768	0.0034084	2.5508E-07	1.1308	5.4184E-08	7.0431E-10	7.3227E-09	1.2248E-11	2.6843E-07	1.2006E-06	0.000012459
241-U-203	0.0015264	0.00026534	0	3.6284E-07	0.033853	0.0033431	2.2264E-07	1.123	4.7293E-08	6.1474E-10	6.3914E-09	6.2194E-12	1.363E-07	1.0479E-06	6.3225E-06
241-U-204	0.0017401	0.00030248	0	4.1364E-07	0.94852	0.0019899	2.5381E-07	1.3269	5.3914E-08	7.008E-10	7.2862E-09	8.6794E-10	0.000019022	0.000027772	0.00088474
241-WR-VAULT	0	0	0	0.000041978	10.72	0.024035	6.8999E-07	13.129	7.6336E-06	0	0	0	0	0	0
276-S	0	0	0	0.0027789	860.47	1.5911	0.0034136	1045.1	0.00076107	0	0	0	0	0	0
276-U	0	0	0	1.2456E-06	0.35734	0.00034987	0.00000153	0.38947	2.2636E-07	0	0	0	0	0	0
291-S-1	0	0	0	0	0.10055	0	0.099156	0.13744	0	0	0	0	0	0	0
291-WTP	1.4574	0.0087907	0	0.00014028	0.098088	0.0096903	0.000006747	1.4728E-06	2.0851E-06	0	0.00021995	5.8208E-06	0.00015115	0.00027338
293-S	0	0	0	0.0027789	860.47	1.5911	0.0034136	1045.1	0.00076107	0	0	0	0	0	0
296-A-13	0	0	0	0	0.42268	8.0342E-06	0	2.5975	0.58813	0	0	0	0	0	0
300-224	2.3435E-09	0.00013392	0	0	2.2281E-06	4.2166E-08	0.000002397	0.000042801	0	2.64E-08	0	0.045142	0.0002772	0.000018548	0.013462
300-24	0	0	0	2.4755E-06	1.4692	0.0014176	3.0414E-06	1.7348	2.7002E-06	0	0	0	0.00015334	0	0.0072836
300-28	0	0	0	2.4755E-06	1.4692	0.0014176	3.0414E-06	1.7348	2.7002E-06	0	0	0	0.00015334	0	0.0072836
316-1	0.020561	0.12151	0	0.00098506	21.706	0.43532	0.018632	191.8	0.000044462	0.000024055	0.000032118	68.571	0.39691	0.015923	19.261
316-2	0.009139	0.11028	0	0.00043781	9.6484	0.19349	0.018389	85.261	0.000019761	0.000024054	0.000032222	49.744	0.29533	0.014431	14.293
316-3	2.5015E-08	0.0038558	0	0	0.000042964	1.2156E-06	0.00069227	0.00083917	0	7.5571E-07	0	1.2992	0.008117	0.00053493	0.39115
316-4	0	0	0	0	0	0	0	0	0	0	0	1.2632E-08	2.7161E-06	0	0.00012775
316-5	0	0.14018	0	0	0.0016154	0	0.0020001	0	0	0.000031739	0.0002645	0.000082041	0.033102	0.010894	1.3764
331_LSLT2	0	0.074788	0	0	0.16343	0	0	0.0083217	0.000031977	0	0	0	0	0	0
4843	26.837	302.57	0	0	0	27.194	0	0	0	0	0	0	0.216	0	14.64
600-211	224.61	0.000052939	0	3.917E-07	0.1615	0.0037179	0.00014581	3.1323	4.0859E-08	6.3704E-08	4.4344E-07	0.000029908	9.0024E-07	0.000093171	0.000043126
618-1	0	0	0	0.000008799	1.7163	0.0050541	0.000010791	2.0814	9.7938E-07	0	0	0	0.20013	0	9.5061
618-10	0	0	0	0.00002051	5.0808	0.011781	0.000025153	6.0982	3.8088E-06	0	0	0	0.000027605	0	0.0013112
618-11	42.793	0	0	7.5542E-06	2.2317	0.0043392	9.2643E-06	2.6587	2.0308E-06	0	0	0	0.73566	0	34.943
618-13	0	0	0	0.00044561	91.658	0.25515	0.0005475	113.26	0.000051124	0	0	0	0.027605	0	1.3112
618-2	0	0	0	0.000013272	2.8884	0.0076236	0.000016277	3.4865	1.8614E-06	0	0	0	0.00096617	0	0.045892
618-3	0	0	0	0.00044561	103.39	0.25515	0.0005475	127.1	0.000066034	0	0	0	0.027605	0	1.3112
618-4	0	0	0	0.000066842	16.68	0.038273	0.000082126	20.441	0.000011579	0	0	0	0.0041407	0	0.19668
618-5	0	0	0	0.0044561	1005	2.5515	0.005475	1236.6	0.00063333	0	0	0	0.27605	0	13.112
618-7	0	0	0	0.00044562	138.59	0.25516	0.0005475	168.22	0.0001243	0	0	0	0.027605	0	1.3112
618-8	0	0	0	0.0044561	1009.3	2.5515	0.005475	1242	0.00062739	0	0	0	0.27605	0	13.112
618-9	0	0	0	0.0020052	438.43	1.1482	0.0024638	540.33	0.00026246	0	0	0	0.12422	0	5.9004
B_PLANT_FILTER	0	0	0	0.032912	27330	11.996	0.02	13509	0.010972	0	0	0	0	0	0
GTF	2.9285E-06	0	0	1.7777E-10	7.3178E-06	0.000060739	2.9811E-08	0.00011361	1.5802E-10	0	0	0	3.4264E-09	0	1.1132E-07
GTFL	0.0065553	0	0	4.711E-07	0.018041	0.16096	0.000079	0.28094	3.5914E-07	0	0	0	0.00000908	0	0.000295
RMWSF	0.0062109	0	0	0.042031	16883	23.252	0.06721	28755	0.035625	0	0	0	0.12071	0	1.0969
SNM_234-5Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

G.11

G.12

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
UPR-100-F-1	0	0	0	0	0.000003686	0	0	0	0						0
UPR-100-N-1	0.00012325	0	0	1.2468E-09	0.00038722	7.139E-07	1.5315E-09	0.00055086	4.8826E-10	0	0	0	3.69E-13	0	1.7369E-11
UPR-100-N-12	0	0.4233	0	0	0	0	0	0.049098	0.00019847			0	0		0
UPR-100-N-25	2.1733E-06	0	0	2.0783E-11	6.6117E-06	1.19E-08	2.5527E-11	9.3961E-06	8.5659E-12	0	0	0	6.1507E-15	0	2.8951E-13
UPR-100-N-30	0.000010272	0	0	1.0391E-10	0.000032272	5.9498E-08	1.2764E-10	0.00004591	4.0693E-11	0	0	0	3.0753E-14	0	1.4476E-12
UPR-100-N-35	0	0.35991	0	0	0	0	0	0.057695	0.00034534	0	0	0	0	0	0
UPR-100-N-5	0.0003304	0	0	3.7405E-09	0.001107	2.1417E-06	4.5944E-09	0.0015781	1.3222E-09	0	0	0	1.107E-12	0	5.2107E-11
UPR-100-N-7	0	0	0	0	0	0.79978	0	0	0	0	0	0	0	0	0
UPR-200-E-1	0.0011547	0.0019271	0	0.000041486	1.028	0.0031237	1.5402E-06	1.2685	0.000001195	2.9518E-07	0.00001886	0	9.3581E-06	0.000070831	0.00041835
UPR-200-E-105	0.010347	0.0069843	0	0.00023171	1.0805	0.017616	0.00015376	7.9385	0.000028126	7.4002E-07	0.000050367	0	0.000038846	0.00040517	0.0017825
UPR-200-E-107	2.2583E-06	4.4554E-06	0	2.0284E-07	0.0086956	0.000070643	9.0615E-08	0.04321	7.6324E-09	9.3824E-10	3.1564E-11	0	8.5783E-09	5.6067E-07	3.8782E-07
UPR-200-E-108	0.00037404	0.00031725	0	0.00017678	0.34091	0.0085518	9.7594E-06	3.8993	8.6225E-07	4.4627E-08	0	0	0.000010224	0.000049152	0.00046653
UPR-200-E-109	0.000067748	0.0001337	0	6.0845E-06	0.26084	0.0021197	0.000002719	1.2965	2.2912E-07	2.8165E-08	9.5304E-10	0	2.5719E-07	0.000016822	0.000011633
UPR-200-E-110	0.0022881	0.0015444	0	0.000051227	0.23896	0.0038956	0.000033999	1.7555	0.0000006221	1.6366E-07	0	0	8.5891E-06	0.0000896	0.000039409
UPR-200-E-117	0.000068159	0.00063039	0	0.000076204	0.15166	0.023846	0.000012686	19.156	0.000009636	3.193E-09	4.5542E-08	1.3064E-06	1.4446E-07	0.000098306	6.8345E-06
UPR-200-E-141	0.00012666	0	0	0	0	0.000027694	0	0	0	0	0	7.0517E-11	2.6096E-06	0	0.00011924
UPR-200-E-145	0.0038015	0	0	0	0	0.00083022	0	0	0	0	0	2.117E-09	0.000078305	0	0.0035772
UPR-200-E-16	0.00061515	0.00029524	0	1.2335E-07	0.022331	0.000053778	0.000052985	0.028465	1.982E-08	1.5742E-10	1.6676E-09	0	8.1394E-08	3.6082E-07	3.8636E-06
UPR-200-E-3	0.000039227	0.000026477	0	8.7825E-07	0.0040963	0.000066789	5.8275E-07	0.030097	1.0662E-07	2.8055E-09	1.9089E-07	0	1.4723E-07	1.5358E-06	6.7558E-06
UPR-200-E-38	0.0078352	0.076872	0	0.0092206	9.3859	2.94	0.0017422	61.125	0.00062194	4.1714E-07	6.9551E-06	0.00032616	9.4008E-06	0.0095794	0.00043584
UPR-200-E-39	0.002766	0	0	0.000012098	0.20764	0.00069443	0	0.19436	3.0436E-07	4.3225E-09	3.2442E-08	8.3269E-09	3.9315E-06	8.4611E-06	0.00015963
UPR-200-E-40	0.00021278	0	0	9.3098E-07	0.015969	0.000053401	0.0000068	0.01495	2.3409E-08	3.3271E-10	2.4956E-09	6.4039E-10	3.0242E-07	6.5117E-07	0.000012279
UPR-200-E-6	0.0004577	0.00030893	0	0.000010247	0.047786	0.00077904	0.0000068	0.35107	1.2442E-06	3.2731E-08	2.2277E-06	0	1.7174E-06	0.00001792	0.00007884
UPR-200-E-7	3.1101E-08	5.3087E-06	0	2.4275E-07	0.00099919	2.7447E-06	0	0.0012518	7.5646E-08	8.4893E-10	2.1463E-07	0	6.3671E-08	1.5101E-06	2.9028E-06
UPR-200-E-73	0.00017491	0.00014826	0	8.2633E-06	0.15938	0.0039971	4.5605E-06	1.8228	4.0295E-07	2.0859E-08	0	0	4.7775E-06	0.000022977	0.00021811
UPR-200-E-74	8.9035E-10	8.7602E-10	0	4.2656E-11	9.3991E-07	1.885E-08	1.8793E-11	8.3045E-06	1.9253E-12	1.3652E-13	1.7938E-12	0	2.7973E-11	1.1627E-10	1.2655E-09
UPR-200-E-75	0.00045761	0.00030891	0	0.000010246	0.047784	0.00077904	6.7995E-06	0.35109	0.000001244	3.2725E-08	2.2279E-06	0	1.7179E-06	0.000017919	0.000078825
UPR-200-E-77	7.8428E-06	0.000010637	0	4.9241E-07	0.015934	0.00023815	1.0541E-07	0.096723	6.4131E-09	2.0862E-09	0	0	4.8874E-07	1.3435E-06	0.000021845
UPR-200-E-78	9.8185E-07	0.000021635	0	2.6928E-06	2.7873	0.00084319	5.0429E-08	0.67339	0.000016991	1.0852E-07	6.8334E-10	0	6.7314E-08	3.5637E-06	3.1806E-06
UPR-200-E-79	0.00035402	0.0010565	0	0.000041894	1.6314	0.012494	0.000017488	7.3451	1.8055E-06	2.0075E-07	2.7971E-06	0	1.7366E-06	0.00010805	0.000079067
UPR-200-E-80	0.000024363	0.000032637	0	1.4928E-06	0.049608	0.00073013	3.1909E-07	0.29756	1.97E-08	6.4233E-09	0	0	1.4916E-06	4.1267E-06	0.000067167
UPR-200-E-81	0.44607	0.14485	0	0.00006592	13.604	0.02743	0.02384	17.14	0.000019482	3.0509E-07	0.00024618	0.011305	0.000061127	0.00018228	0.0029785
UPR-200-E-82	0.0037735	0.036977	0	0.0044368	4.5157	1.4159	0.00083909	29.459	0.00029984	2.2077E-07	3.3498E-06	0.00015744	4.5259E-06	0.00461	0.00020991
UPR-200-E-84	0.0013094	3.904E-08	0	3.8511E-09	0.000022192	0.000001208	3.7958E-06	9.1125E-06	4.9141E-10	2.3041E-10	1.4938E-09	0	1.0881E-08	5.1668E-06	5.1446E-07
UPR-200-E-85	0.00095011	0.0093168	0	0.0011172	1.1367	0.35643	0.00021125	7.4114	0.000075388	5.0523E-08	8.4244E-07	0.000039573	1.1389E-06	0.0011618	0.000052844
UPR-200-E-86	0.014037	0.1297	0	0.015702	31.221	4.9149	0.0026113	3943.1	0.001984	6.5696E-07	0.000009373	0.00026901	0.000029775	0.020259	0.0014069
UPR-200-E-87	8.9556E-11	0.000010746	0	4.585E-07	0.00030545	9.2843E-07	4.1092E-10	0.00037693	1.1068E-07			0	7.9853E-09	0.000011123	1.8007E-07
UPR-200-E-9	0.0049686	0.0098035	0	0.00044622	19.127	0.15541	0.00019938	95.082	0.000016794	2.0644E-06	7.0669E-08	0	0.000018859	0.0012335	0.00085309
UPR-200-W-100	0.0011443	0.00077239	0	0.000025619	0.11947	0.0019475	0.000016997	0.87761	3.1094E-06	8.1805E-08	0.000005571	0	4.2933E-06	0.000044801	0.00019707
UPR-200-W-101	0.001382	0	0	0	0	0.0001337	0	0	0	0	0	1.5261E-09	0.000056486	0	0.0025787
UPR-200-W-102	7.7349E-09	0.000016288	0	7.4472E-07	0.00054891	1.5083E-06	0	0.00068763	6.7257E-07	2.6049E-09	2.6207E-06	0	7.7476E-09	0.000018407	1.7864E-07
UPR-200-W-103	0	0	0	0	0	0	0	0	0	0	4.6394E-14	0	5.389E-12	0.0038474	1.0954E-06
UPR-200-W-12	0.00000174	5.1933E-06	0	2.0593E-07	0.0080214	0.000061394	8.5986E-08	0.03611	8.8684E-09	9.8696E-10	1.3752E-08	0	8.5335E-09	5.3114E-07	3.8876E-07
UPR-200-W-127	0.00018712	0	0	0	1.1054E-11	0	0	2.917E-11	0	0	0	0	1.8019E-12	1.2322E-06	8.0002E-11
UPR-200-W-130	0	0	0	3.0701E-13	2.6341E-11	1.764E-11	0	3.1178E-11	9.4995E-15	0	1.8829E-13	0	2.2145E-11	3.4459E-08	8.9735E-10
UPR-200-W-131	1.8043E-06	3.5609E-06	0	1.6203E-07	0.0069488	0.000056434	7.2388E-08	0.03452	6.1022E-09	7.4964E-10	2.5366E-11	0	6.8482E-09	4.4795E-07	3.0973E-07
UPR-200-W-132	0.00095375	0.00080882	0	0.000045062	0.86907	0.021801	0.000024875	9.9433	0.000002198	1.1376E-07	0	0	0.000026058	0.00012533	0.0011897
UPR-200-W-135	0.001908	0.0016172	0	0.000090141	1.7382	0.043598	0.000049755	19.883	4.3962E-06	2.2753E-07	0	0	0.000052103	0.00025066	0.0023791
UPR-200-W-138	0.0045616	0	0	0	0	0.00044129	0	0	0	0	0	5.0385E-09	0.00018645	0	0.008512
UPR-200-W-163	0.01823	5.4138E-10	0	2.7909E-11	5.0902E-07	0.0022747	2.5866E-07	2.4632E-06	1.5923E-12	2.8749E-12	4.7286E-13	8.7345E-09	0.00032235	8.2428E-10	0.014716
UPR-200-W-19	4.0867E-10	8.0634E-10	0	3.6698E-11	1.5735E-06	0.000051128	1.6398E-11	2.6065E-06	1.3816E-12	7.6993E-09	1.2107E-10	4.1748E-12	2.1097E-07	3.0661E-09	9.5442E-06
UPR-200-W-2	0.0027799	0.0037698	0	0.0001745	5.6482	0.084417	0.000037367	34.28	2.2731E-06	7.3942E-07	0	0	0.00017323	0.00047618	0.0077432
UPR-200-W-20	0.00043651	0	0	0	2.5793E-11	0	0	6.8061E-11	0	0	0	0	4.203E-12	2.8749E-09	1.8382E-10
UPR-200-W-21	0.0055486	0.0047384	0	0.00026404	5.0926	0.1277	0.00014575	58.245	0.000012874	6.6666E-07	0	0	0.00015266	0.00073414	0.0069688
UPR-200-W-24	0.000031063	0.000042121	0	1.9505E-06	0.063926	0.00094328	4.1754E-07	0.38304	2.5392E-08	8.2634E-09	0	0	1.9359E-06	5.3218E-06	0.000086532
UPR-200-W-28	0.00027566	0.00054387	0	0.00002476	1.0613	0.0086221	0.000011063	5.276	9.3215E-07	1.1457E-07	3.8988E-09	0	1.0467E-06	0.000068444	0.000047328
UPR-200-W-29	0.00044988	0.00030371	0	0.000010073	0.046984	0.00076594	6.6849E-06	0.34519	0.000001223	3.2171E-08	2.1903E-06	0	1.6887E-06	0.000017614	0.000077477
UPR-200-W-32	0.00015064	0	0	0	0	0.000015545	0	0	0	0	0	1.1189E-10	4.1408E-06	0	0.00018901
UPR-200-W-33	1.1644E-06	9.8721E-07	0	5.5006E-08	0.0010608	0.000026615	3.0359E-08	0.012134	2.6826E-09	1.3889E-10	0	0	3.181E-08	1.5295E-07	1.4521E-06
UPR-200-W-38	0.003881	0.0032902	0	0.00018335	3.5363	0.088694	0.0001012	40.454	8.9408E-06	4.6289E-07	0	0	0.00010602	0.00050975	0.0048398
UPR-200-W-39	0.00011812	0	0	0	0	0.000011427	0	0	0	0	0	1.3045E-10	4.8283E-06	0	0.0002204
UPR-200-W-61	0.00042089	0.0011683	0	0.000054613	0.35883	0.020692	0.000033149	11.66	6.4519E-06	3.0388E-09	1.9677E-08	0	3.3923E-07	0.00015075	0.00001594
UPR-200-W-74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.451E-14
UPR-200-W-8	0	0	0	6.0303E-08	0.012475	0.000034526	7.4072E-08	0.015322	6.9134E-09	0	0	0	0	0	0
UPR-200-W-82	0.00087309	0	0	0	5.1587E-11	0	0	1.3612E-10	0	0	0	0	8.405E-12	5.75E-09	3.7339E-10
UPR-200-W-87	6.7755E-10	5.7595E-10	0	4.056E-11	1.7413E-07	1.5284E-08	2.4003E-11	9.5979E-06	4.2965E-12	2.4051E-15	1.5518E-14	0	1.9687E-13	6.9891E-11	9.086E-12

Inventory by site for waste form "All_Types" at the year 2070

Site	H3	C14	Cl36	Se79	Sr90	Tc99	I129	Cs137	Eu152	Ra226	Pa231	U233	U235	Np237	U234/8
UPR-200-W-95	0.00002134	0.000059287	0	2.7689E-06	0.018209	0.0010505	1.6825E-06	0.59202	3.2775E-07	1.5419E-10	9.9351E-10	0	1.7231E-08	7.6532E-06	8.0998E-07
UPR-200-W-96	2.8806E-09	2.4476E-09	0	1.7243E-10	7.3998E-07	6.4953E-08	1.0202E-10	0.00004081	1.8256E-11	0	0	0	8.3652E-13	2.9716E-10	3.8604E-11
UPR-200-W-97	1.0843E-07	0.000017406	0	7.958E-07	0.0034611	0.000009508	0	0.0043361	2.1563E-07	2.7838E-09	5.5958E-07	0	2.2253E-07	3.9389E-06	0.000010151
UPR-200-W-98	0.000074597	0.00010116	0	4.6829E-06	0.15159	0.0022651	1.0027E-06	0.91988	6.1009E-08	1.9838E-08	0	0	4.6484E-06	0.000012781	0.00020779
UPR-300-1	0	0	0	2.4757E-06	0.87815	0.0014175	0.000003041	0.97475	7.506E-07	0	0	0	0	0	0
UPR-300-2	0	0	0	2.4757E-09	0.00056049	1.4175E-06	3.041E-09	0.00068981	3.4831E-10	0	0	0	0	0	0
US_Ecology	15869	5040.7	3.2281	0	7429	55.084	5.968	16268	32.858	313.24	0.001316	0	30.576	0	1789.1
WIPP_118-KE-1	0	0	0	0.0015877	3619.6	53.787	0.0019471	3884.6	0.076994	0	0	0	0.087495	0.154	4.1185
WIPP_118-KW-1	0	0	0	0.0012838	2912.9	4.339	0.0015744	3141.1	0.019284	0	0	0	0.053415	0.072598	2.5143
WIPP_218-E-12B	0	0	0	0	0.56182	0.00093028	0	0.66488	5.4689E-07	0	0	0	0	0	0
WIPP_218-W-3A	0.044225	1.5828	0	0	1.0532	0.001657	0	1.9273	1.3329E-06	0	0	0.2405	0.086239	0	4.418
WIPP_218-W-3AE	0	0	0	0.000018564	4518.7	0.66685	0	9262	0.010364	0	0	1.1197E-08	0.0000166	0	0.000682
WIPP_218-W-4B	0	0	0	0	1131.6	1.8536	0	1342.6	0.001117	0	0	72.813	0.38021	0.15091	0.52425
WIPP_218-W-4C	0	0	0	0	9119.5	14.787	0	10936	0.009164	0	0	7.5665	0.2331	0.098767	1.2337
WIPP_234-5Z	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WIPP_241-Z-361	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WIPP_H2-CHTRU-PKGS	0.0234	0.07183	0	0.0014422	2439.6	18.139	0.00013282	109.74	0.00014821	6.9276E-06	0.00063087	0.000003065	0.1274	0.056378	5.9562
WIPP_H2-RHTRU-PKGS	0.04312	1.0498	0	0.079062	133460	156.14	0.063167	47268	2.9655	0.00026587	0.90071	2.5994	0.68042	2.3887	30.386
WIPP_RMWSF	0.001146	0.000092136	0	0.0013182	5027.5	69.225	0.0021613	6364.9	0.0034567	0	0	0.087283	0.071953	0.20743	3.6867
Yucca_100-K-42	318.57	343.53	0	43.097	891920	1439.7	3.185	1255300	11.855	0	0	0	14.493	28.599	828.06
Yucca_100-K-43	318.57	343.53	0	43.097	891920	1439.7	3.185	1255300	11.855	0	0	0	14.493	28.599	828.06
Yucca_218-W-3A	0.32914	55.321	0	0.010074	5410.7	5.6327	0.011167	6291	0.0085062	0	0	0	0.069017	0.22061	0.028486
Yucca_218-W-4C	0.70216	11.203	0	0.021491	4550.7	12.855	0.023823	13421	0.018146	0	0	0	0.34393	0.40545	0.035317
Yucca_221-T-11-R	0.2135	103.93	0	2.7675	456.39	0.705	0.001398	976.36	2.1189	0	0	6.9493	0.21614	1.7949	12.35
Yucca_225-B	0	0	0	0	3795900	0	0	9375600	0	0	0	0	0	0	0
Yucca_4843	3.1208	1361.8	0	0.79805	244850	472.77	0.93723	721970	0.64012	0	0	0	0.9159	32.026	34.099
YUCCA_H2-HLW-CANISTER	0	0	0	2.747	8006400	3677.4	2.1918	8965800	40.587	0.010386	3.1086	692.76	7.9052	78.025	368.62
YUCCA_RMWSF	0	0	0	0	490510	0	0	732330	0	0	0	0	0	0	0
All_Sites	27502	56324	348.38	184.87	15375000	31321	65.513	22977000	122.88	718.74	6.1599	954.41	109.6	273.66	5629.5
Nonzero sites	547	545	16	528	671	562	529	633	598	412	423	352	602	523	626

Distribution

(Distribution is by electronic copy.)

No. of Copies		
3	**DOE Office of River Protection**	
	M.E. Burandt	H6-60
	R. W. Lober	H6-60
	S.A. Wiegman	H6-60
6	**DOE Richland Operations Office**	
	B. L. Charboneau	A6-33
	B. L. Foley	A6-38
	R. D. Hildebrand	A6-38
	J. G. Morse	A6-38
	K. M. Thompson	A6-38
	DOE Public Reading Room	H2-53
5	**CH2M HILL Hanford Group, Inc.**	
	M. Connelly	H6-03
	J. G. Field	H6-62
	J. G. Kristofzski	H6-03
	F. M. Mann	H6-03
	W. J. McMahon	H6-03
3	**Washington Closure**	
	K. R. Fecht	H4-21
	E. T. Feist	H4-22
	S. G. Weiss	H4-22
2	**Fluor Federal Services**	
	R. Khaleel	E6-17
	R. J. Puigh	E6-17
6	**Fluor Hanford, Inc.**	
	B. A. Austin	H8-68
	J. V. Borghese	E6-35
	L. R. Fitch	E6-35
	B. H. Ford	E6-35
	T. W. Fogwell	E6-35
	J. Hoover	E6-35

No. of Copies		
47	**Pacific Northwest National Laboratory**	
	R. L. Aaberg	K3-54
	M. P. Bergeron	K9-36
	B. N. Bjornstad	K6-81
	C. A. Brandt	K9-04
	R. W. Bryce (5)	E6-35
	A. L. Bunn	K6-85
	K. J. Cantrell	K6-81
	D. W. Engel	K5-12
	P. W. Eslinger	K6-04
	J. C. Evans, Jr.	K6-96
	M. J. Fayer	K9-33
	E. J. Freeman	K9-36
	V.L. Freedman	K9-36
	M. D. Freshley	K9-33
	G. W. Gee	K9-33
	T. J. Gilmore	K6-96
	D. G. Horton	K6-81
	C. T. Kincaid	K9-33
	G. V. Last (5)	K6-81
	C. A. LoPresti	K5-12
	B. A. Napier	K3-54
	W. J. Martin	K6-81
	T. B. Miley	K6-04
	C. J. Murray	K6-81
	I. C. Nelson	K3-54
	W. E. Nichols	K9-33
	B.E. Opitz	K6-75
	G. W. Patton	K6-75
	C. L. Rakowski	K9-33
	J. V. Ramsdell, Jr	K3-54
	R. G. Riley	K6-96
	M. L. Rockhold	K9-36
	P. A. Scott	K9-46
	R. J. Serne	P7-22
	D. L. Strenge	K3-54
	P. D. Thorne	K9-33
	M. D. Williams	K6-96
	S. K. Wurstner	K9-36
	Hanford Technical Library	H2-53