

Engineering Evaluation/Cost Analysis for the 200-MG-1 Operable Unit Waste Sites

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management



**United States
Department of Energy**
P.O. Box 550
Richland, Washington 99352

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Date Published
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Release Approval

09/09/2008
Date

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EXECUTIVE SUMMARY

2 This document presents the results of a non-time-critical removal action engineering evaluation/
3 cost analysis (EE/CA) addressing disposition of contaminated soil and other materials from
4 waste sites contained in the Hanford Site 200-MG-1 Operable Unit (OU). This EE/CA was
5 prepared in accordance with the *Comprehensive Environmental Response, Compensation, and*
6 *Liability Act of 1980*¹ (CERCLA).

7 The 200-MG-1 OU includes 193 waste sites in the 200 East and 200 West Areas, hereafter
8 referred to as the “200 Areas”. Six sites were excluded from this EE/CA because they either do
9 not align with the expected conditions in this OU or are part of a multi-increment sampling pilot
10 test. The remaining 187 waste sites include trenches, cribs, pits, ditches, and other areas of
11 shallow contamination (generally less than 4.6 m [15 ft] deep). They also include sites where
12 chemical and radioactive contaminants were released during material transfers (i.e., unplanned
13 release sites). Some sites were produced by airborne dissemination of radioactive particles, or
14 dispersal through plant or animal fecal material. Because these sites are considered low-risk,
15 little remedial investigation has been performed. Thus, one of the aspects of these sites is the
16 general absence of information about site characteristics, including the nature and extent of
17 contamination and historical and process knowledge. The terms “contamination” or
18 “contaminant,” as used in this document, refer to the presence of contaminants of potential
19 concern that exist above preliminary removal cleanup levels, as described throughout the EE/CA.

20 The U.S. Department of Energy has determined that the 200-MG-1 OU waste sites contain the
21 potential for release of CERCLA hazardous substances, and that a non-time-critical removal
22 action, pursuant to authority delegated under Executive Order 12580, *Superfund*
23 *Implementation*,² and Section 7.2.4 of Ecology et al., 1989b, *Hanford Federal Facility*
24 *Agreement and Consent Order Action Plan*,³ is warranted to mitigate the threat of release.

¹ *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601, et seq.

² Executive Order 12580, 1987, *Superfund Implementation*, Ronald Reagan, January 23.
<http://www.archives.gov/federal-register/executive-orders/1987.html>

³ Ecology, EPA, and DOE, 1989b, *Hanford Federal Facility Agreement and Consent Order Action Plan*,
Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy,
Olympia, Washington. <http://www.hanford.gov/?page=117&parent=92>

1 Therefore, the purpose of this EE/CA is to evaluate removal action alternatives to mitigate
2 threats to human health and the environment posed by the contaminated soil and other materials
3 in the 200-MG-1 OU. Typically an EE/CA focuses on a single site or facility after a site
4 investigation and considers a range of alternatives in the evaluation. In contrast, this EE/CA is
5 being used to support removal action decisions for a large number of waste sites for which little
6 characterization information is available.

7 Because the waste sites in this OU are shallow and simple removal efforts would effectively
8 remove the contaminant exposure pathway to human and environmental receptors, the range of
9 alternatives considered is limited. This EE/CA evaluates the following four removal action
10 alternatives for each site:

- 11 • No action (NA)
- 12 • Maintain existing soil cover/institutional controls/ monitored natural attenuation
13 (MESC/IC/MNA)
- 14 • Confirmatory sampling/no action (CS/NA)
- 15 • Removal, treatment, and disposal (RTD).

16 NA assumes all short- and long-term survey and maintenance activities are terminated.

17 MESC/IC/MNA evaluates using natural attenuation processes to lower contaminant
18 concentrations, while relying on institutional controls of the area to prevent migration of the
19 contaminants and exposure to receptors. CS/NA assumes that the waste site does not presently
20 pose a threat to human health and the environment, and sampling and analysis will be conducted
21 to confirm this assumption. Finally, RTD includes removal and disposal of the soil and other
22 materials, with treatment as required for disposal.

23 After summarizing site characteristics, providing a site description, and establishing removal
24 action objectives, these alternatives were evaluated in terms of effectiveness, implementability,
25 and cost. Chapter 4.0 contains a general description of each of the four alternatives.

26 The preferred removal actions for the 200-MG-1 OU waste sites are based on the individual
27 waste site characteristics. The preferred actions include all the alternatives mentioned above
28 with the exception of the no-action alternative, which cannot be chosen for these waste sites
29 because of the absence of characterization data.

1 The preferred alternative for each waste site is recommended based on its overall ability to
 2 protect human health and the environment and its effectiveness in maintaining protection for
 3 both the short and the long term. These alternatives reduce the potential for further releases to
 4 the environment; provide the best balance of protecting the health of the workers and the public;
 5 protect the environment; and provide an end state that is consistent with future cleanup actions
 6 and commitments of Ecology et al., 1989a, *Hanford Federal Facility Agreement and Consent*
 7 *Order*.⁴ Chapter 5.0 describes the bases for these recommendations, including a detailed analysis
 8 of how well each alternative meets the CERCLA removal action evaluation criteria.

9 Chapter 6.0 provides the summary of preferred removal actions for all sites and contingency
 10 plans if the site preferred alternative is determined to be inappropriate during the removal action.
 11 Table ES-1 summarizes the present worth costs of the preferred removal actions across all waste
 12 sites. The 200-MG-1 OU preferred removal actions have a present worth cost of \$149,923,000.
 13 The type, size, and extent of hazardous substance contamination vary considerably across the
 14 200-MG-1 OU waste sites. Thus, it is not possible to prepare meaningful unit cost factors based
 15 on area or waste volume removed from the analysis in this OU.

16
 Table ES-1. Summary of the 200-MG-1 Operable Unit Waste Site Preferred Removal Actions.

Preferred Alternative	Number of Waste Sites	Present Worth
NA	0	\$0
MESC/IC/MNA	0	\$0
CS/NA	89	\$28,649,000
RTD	98	\$121,274,000
Total	187	\$149,923,000

CS/NA = confirmatory sampling/no action.

MESC/IC/MNA = maintain existing soil cover/institutional controls/monitored natural attenuation.

NA = no action.

RTD = removal, treatment, and disposal.

17
 18
⁴ Ecology, EPA, and DOE, 1989a, *Hanford Federal Facility Agreement and Consent Order*, 2 vols., as amended, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington. <http://www.hanford.gov/?page=91&parent=0>.

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PLATE

13 Plate 1. 200-MG-1 Operable Unit Sites..... (located in pocket at the end of this document)

14

15

1

TERMS

2	ARAR	applicable or relevant and appropriate requirement
3	bgs	below ground surface
4	CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
5		
6	COPC	contaminant of potential concern
7	cpm	counts per minute
8	CS/NA	confirmatory sampling/no action
9	DOE	U.S. Department of Energy
10	dpm	disintegrations per minute
11	Ecology	Washington State Department of Ecology
12	EE/CA	engineering evaluation/cost analysis
13	EPA	U.S. Environmental Protection Agency
14	ERDF	Environmental Restoration Disposal Facility
15	HAMMER	Hazardous Materials Management and Emergency Response
16	HEIS	<i>Hanford Environmental Information System</i> database
17	LERF	Liquid Effluent Retention Facility
18	MESC/IC/MNA	maintain existing soil cover/institutional controls/monitored
19		natural attenuation
20	NA	no action
21	NEPA	<i>National Environmental Policy Act of 1969</i>
22	NPL	"National Priorities List" (40 CFR 300, Appendix B)
23	NRDWL	Nonradioactive Dangerous Waste Landfill
24	OU	operable unit
25	PCB	polychlorinated biphenyl
26	PPE	personal protective equipment
27	PRCL	preliminary removal cleanup level
28	PUREX	Plutonium-Uranium Extraction (Plant or process)
29	RAO	removal action objective
30	RAWP	removal action work plan
31	RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
32	REDOX	Reduction-Oxidation (Plant or process)
33	RTD	removal, treatment, and disposal
34	TBC	to be considered
35	Tri-Parties	U.S. Department of Energy, U.S. Environmental Protection Agency, and Washington State Department of Ecology
36		
37	Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>
38		(Ecology et al., 1989a)
39	TMV	toxicity, mobility, and volume
40	UNH	uranyl nitrate hexahydrate
41	UPR	unplanned release
42	WAC	<i>Washington Administrative Code</i>
43	WIDS	<i>Waste Information Data System</i> database
44		

METRIC CONVERSION CHART

Into Metric Units			Out of Metric Units		
<i>If you know</i>	<i>Multiply by</i>	<i>To get</i>	<i>If you know</i>	<i>Multiply by</i>	<i>To get</i>
Length			Length		
inches	25.40	millimeters	millimeters	0.0394	inches
inches	2.54	centimeters	centimeters	0.394	inches
feet	0.305	meters	meters	3.281	feet
yards	0.914	meters	meters	1.094	yards
miles (statute)	1.609	kilometers	kilometers	0.621	miles (statute)
Area			Area		
sq. inches	6.452	sq. centimeters	sq. centimeters	0.155	sq. inches
sq. feet	0.0929	sq. meters	sq. meters	10.764	sq. feet
sq. yards	0.836	sq. meters	sq. meters	1.196	sq. yards
sq. miles	2.591	sq. kilometers	sq. kilometers	0.386	sq. miles
acres	0.405	hectares	hectares	2.471	acres
Mass (weight)			Mass (weight)		
ounces (avoir)	28.349	grams	grams	0.0353	ounces (avoir)
pounds	0.453	kilograms	kilograms	2.205	pounds (avoir)
tons (short)	0.907	ton (metric)	ton (metric)	1.102	tons (short)
Volume			Volume		
teaspoons	5	milliliters	milliliters	0.034	ounces (U.S., liquid)
tablespoons	15	milliliters	liters	2.113	pints
ounces (U.S., liquid)	29.573	milliliters	liters	1.057	quarts (U.S., liquid)
cups	0.24	liters	liters	0.264	gallons (U.S., liquid)
pints	0.473	liters	cubic meters	35.315	cubic feet
quarts (U.S., liquid)	0.946	liters	cubic meters	1.308	cubic yards
gallons (U.S., liquid)	3.785	liters			
cubic feet	0.0283	cubic meters			
cubic yards	0.764	cubic meters			
Temperature			Temperature		
Fahrenheit	$(^{\circ}\text{F}-32)*5/9$	Centigrade	Centigrade	$(^{\circ}\text{C}*9/5)+32$	Fahrenheit
Radioactivity			Radioactivity		
picocurie	37	millibecquerel	millibecquerel	0.027	picocurie

1

1.0 INTRODUCTION

2 This chapter first discusses the purpose and scope of this document. This discussion is followed
3 by sections that describe the document's organization, background to the 200-MG-1 Operable
4 Unit (OU) with a list of its sites, a regulatory overview, and the approach to OU removal actions.

5 1.1 PURPOSE AND SCOPE

6 This document presents the results of a *Comprehensive Environmental Response, Compensation,
7 and Liability Act of 1980* (CERCLA) non-time-critical removal action engineering
8 evaluation/cost analysis (EE/CA) that was conducted to evaluate removal action alternatives for
9 the 200-MG-1 OU waste sites. These waste sites are in the 200 East and 200 West Areas of the
10 Hanford Site, hereafter referred to as the "200 Areas" (Figure 1-1). Typically an EE/CA focuses
11 on a single site or facility. In contrast, this EE/CA is being used to support removal action
12 decisions for a large number of waste sites.

13 Final remedial decisions for the 200-MG-1 OU have not been made. Some of the sites have been
14 characterized and found to contain CERCLA hazardous substances⁵ that pose a threat to human
15 health and the environment. Because most of the sites have not been characterized and may
16 contain hazardous substances, removal actions that include characterization are warranted before
17 final remedial decisions can be documented.

18 This EE/CA identifies the objectives of the removal actions⁶ and analyzes the removal action
19 alternatives in terms of cost, effectiveness, and implementability for the 200-MG-1 OU waste
20 sites. Figure 1-1 depicts the 200-MG-1 OU waste sites in the 200 Areas and Figures 1-2 and 1-3
21 show the sites located within the 200 East and 200 West Areas respectively. A large scale
22 version of Figure 1-1 is provided in Plate 1 at the back of this EE/CA. The alternatives
23 considered provide a range of potential response actions that are appropriate to address site-
24 specific conditions.

25 The U.S. Department of Energy (DOE) and Washington State Department of Ecology (Ecology)
26 will use this EE/CA report as the basis for selecting removal actions to mitigate potential risks to
27 human health and the environment. This EE/CA also will be presented to the public for review
28 and comment. An Action Memorandum, which will document and authorize implementation of
29 the removal actions for each waste site, will be developed from this EE/CA. A removal action
30 work plan (RAWP) will be prepared to document the removal action decision(s), preliminary
31 removal cleanup levels (PRCL), and removal action methods.

32 The final remedial action selected for the 200-MG-1 OU waste sites will be submitted for public
33 review in a proposed plan and documented in a Record of Decision.

34

⁵ "Hazardous substances" are defined in 40 CFR 300.5, "Definitions," and include both radioactive and chemical substances.

⁶ The terms "remove" or "removal" mean the cleanup or removal of released hazardous substances from the environment, such actions as may be necessary taken in the event of the threat of release of hazardous substances into the environment, such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances, the disposal of removed material, or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release (40 CFR 300.5).

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Figure 1-1. 200-MG-1 Operable Unit Waste Sites.

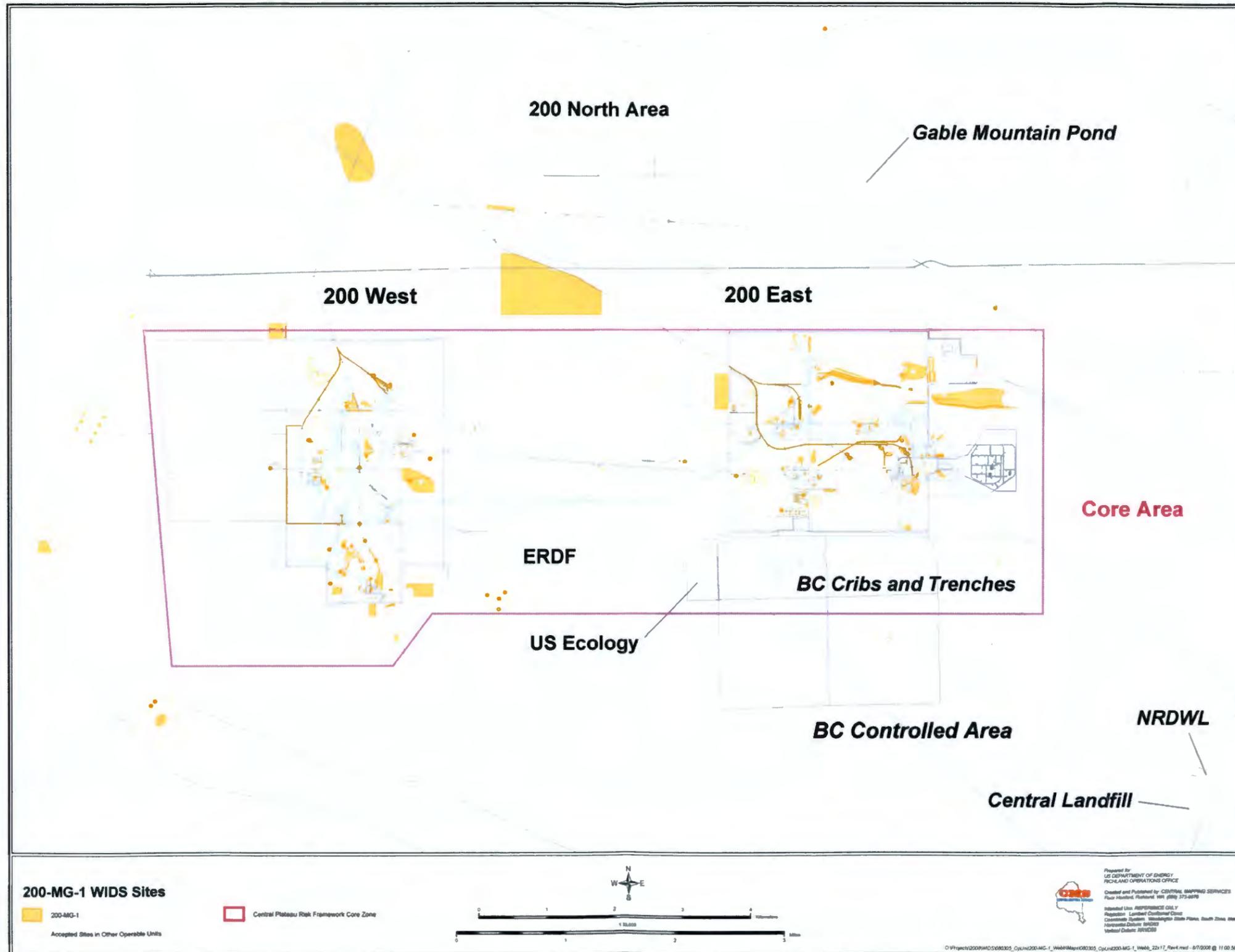


Figure 1-2. 200-MG-1 Operable Unit Waste Sites – 200 East Area.

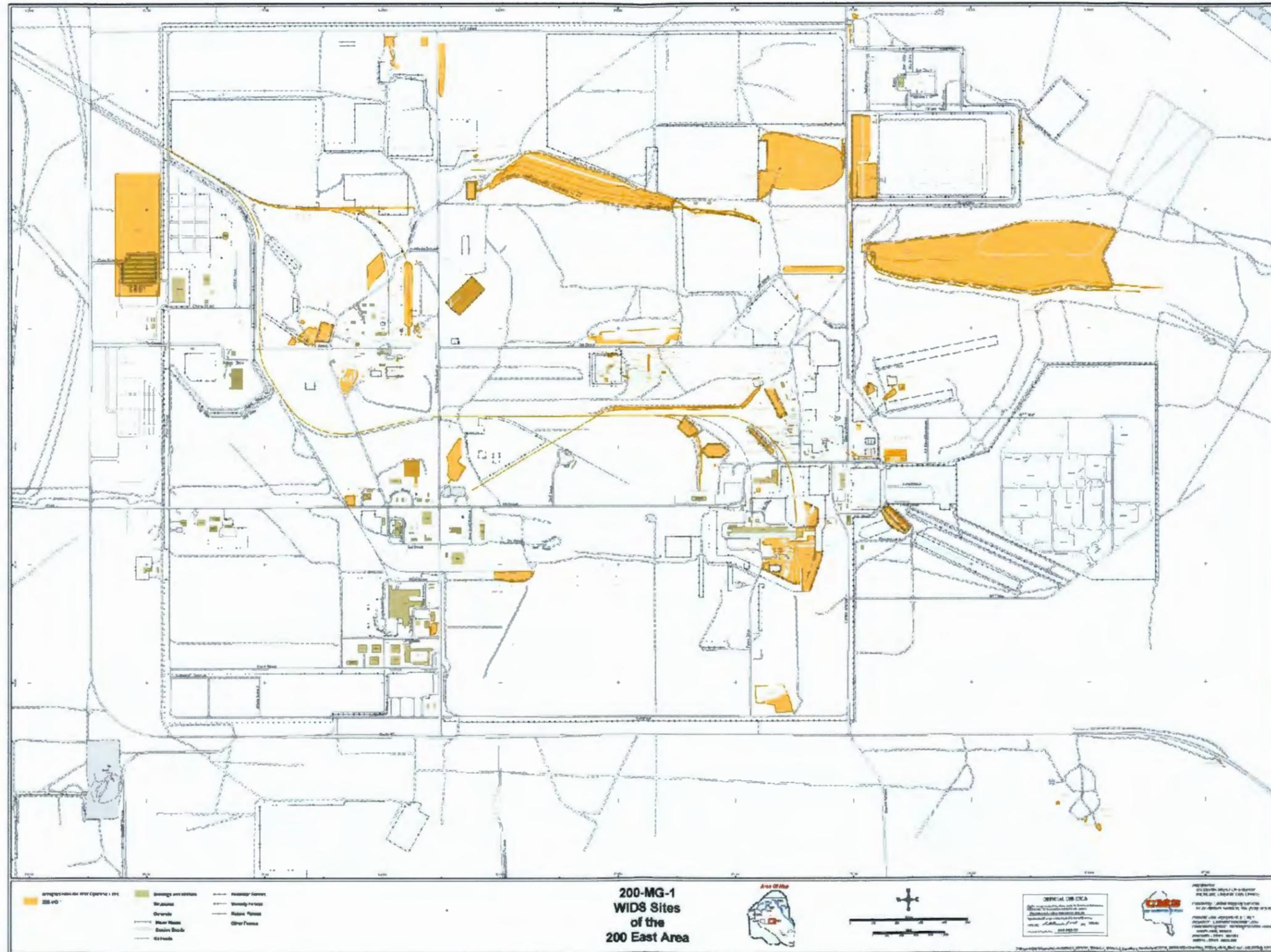
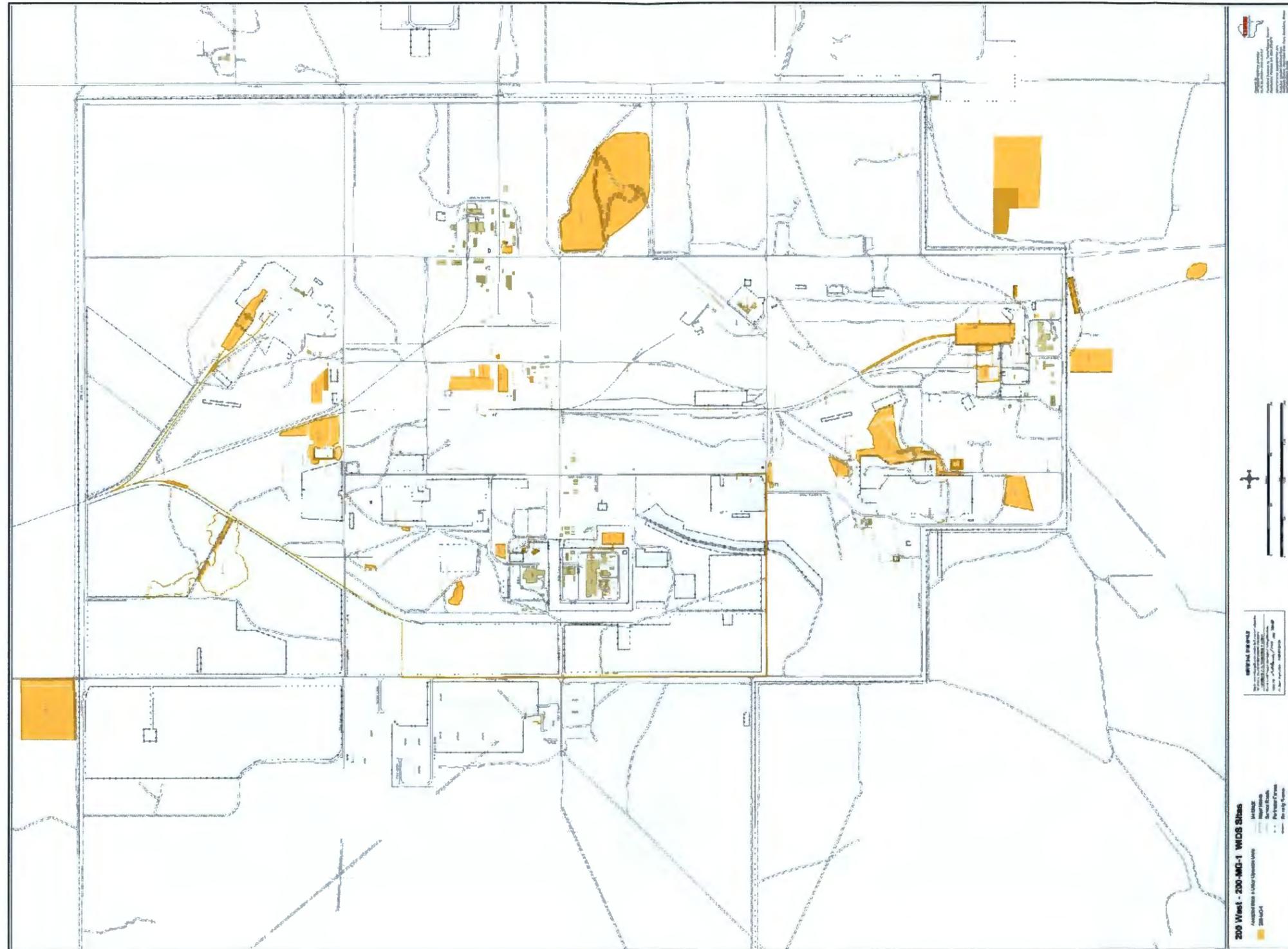


Figure 1-3. 200-MG-1 Operable Unit Waste Sites – 200 West Area.



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3

1.2 REPORT ORGANIZATION

This document is organized into seven chapters as indicated below.

- Chapter 1.0, Introduction. Provides an introduction, purpose, scope, background information on 200 Area characteristics, waste site history, and overall removal action approach.
- Chapter 2.0, Site Characterization. Provides an overview of the waste sites, the waste site profiles, the waste sources, the nature and extent of contamination, and risk evaluation.
- Chapter 3.0, Removal Action Objectives (RAOs) and PRCLs. Provides the removal action scope and purpose, justification for the proposed action, and PRCLs.
- Chapter 4.0, Discussion of Alternatives. Provides a description of the alternatives.
- Chapter 5.0, Analysis of Alternatives. Provides the individual analysis of alternatives, comparative analysis of alternatives, and preferred removal actions.
- Chapter 6.0, Conclusions and Recommended Alternatives. Provides the summary of preferred removal actions and the removal action contingency plans.
- Chapter 7.0, References.

In addition, three appendices support these analyses.

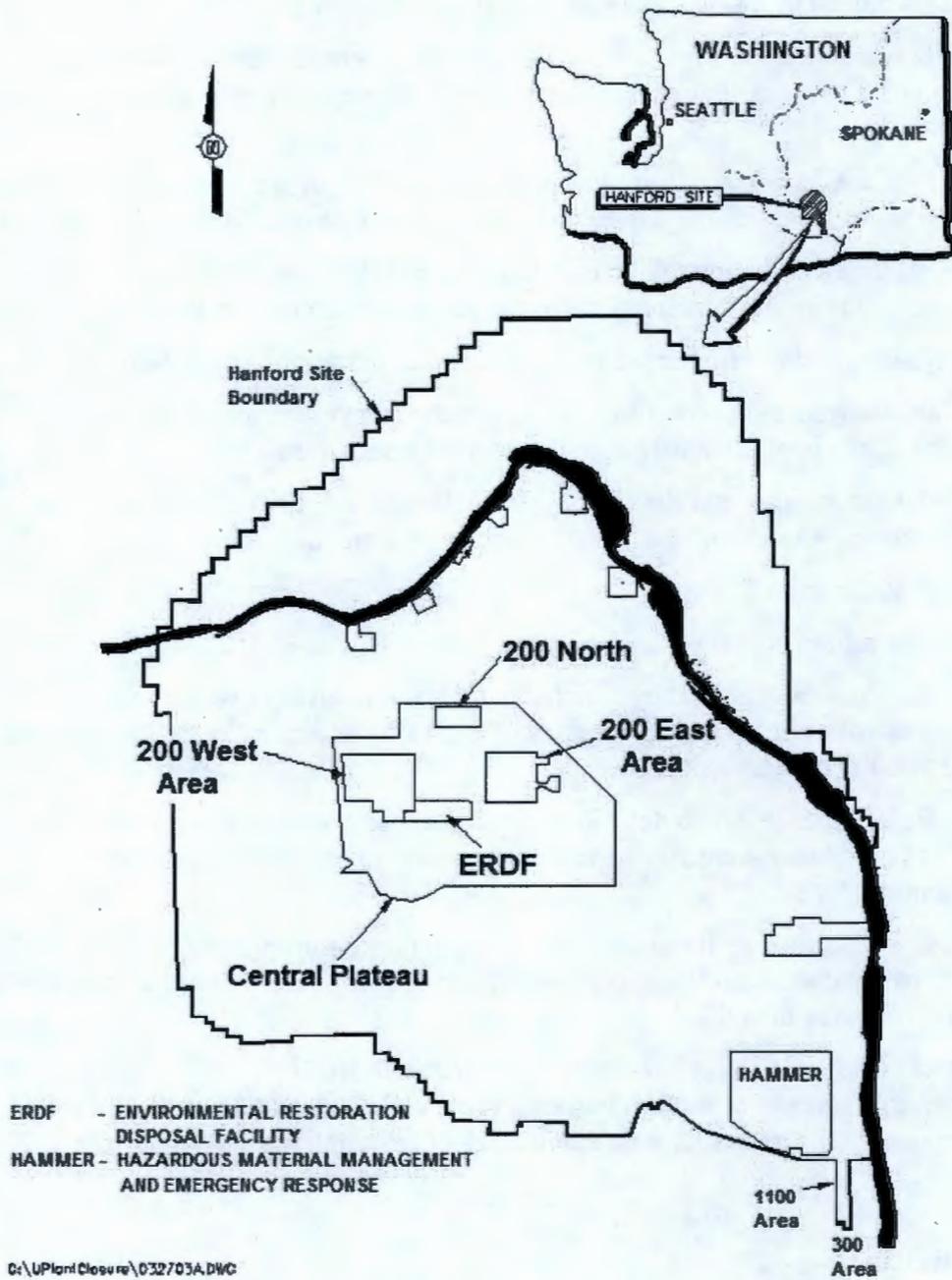
- Appendix A, Waste Site Summary. Includes brief summaries of waste sites and their characteristics with photos and schematics of each site. References for the information are included for each waste site.
- Appendix B, Waste Site Attributes. Provides a comparative overview of the waste site information in a tabular summary form that was used in developing the preferred site removal actions.
- Appendix C, Applicable or Relevant and Appropriate Requirements (ARAR). Includes description of the chemical-, location-, and action-specific ARARs and to-be-considered (TBC) advisories for the OU.

A separate document (SGW-38383, *Cost Estimate for the 200-MG-1 Operable Unit Engineering Evaluation/Cost Analysis Removal Actions*) includes cost estimates and summary tables of primary cost components for each site, with summaries of assumptions and waste site parameters.

1.3 BACKGROUND

The Hanford Site encompasses approximately 1,517 km² (586 mi²) in the Columbia River Basin of south-central Washington state (Figure 1-4). In 1989, the U.S. Environmental Protection Agency (EPA) placed the 100, 200, 300, and 1100 Areas of the Hanford Site on the 40 CFR 300, "National Oil and Hazardous Substances Pollution Contingency Plan" Appendix B, "National Priorities List" (NPL), pursuant to CERCLA. The 200 Area NPL site contains 200 East and 200 West Areas, which include waste management facilities and inactive irradiated fuel-reprocessing facilities, and the 200 North Area (Figure 1-4), formerly used for interim storage and staging of irradiated fuel.

Figure 1-4. Location of the Hanford Site in Washington State.



1
2

1 The 200-MG-1 OU consists of 223 waste sites according to Appendix C of
2 Ecology et al., 1989b, *Hanford Federal Facility Agreement and Consent Order Action Plan*
3 (Tri-Party Agreement Action Plan). The list of sites in Appendix C has been updated, bringing
4 the current total to 193 sites as a result of OU transfers and reclassification of accepted waste
5 sites. Of the 223 sites originally designated for the 200-MG-1 OU, 29 have been identified for
6 transfers to other OUs through Ecology et al., 1989a, *Hanford Federal Facility Agreement and*
7 *Consent Order* (Tri-Party Agreement) change requests, and one site has been identified for
8 reclassification as a "rejected site." A waste-site tracking record (SGW-38577, *200-MG-1 and*
9 *200-MG-2 Operable Units Waste Sites Tracking Record*) has been included in the Administrative
10 Record to facilitate assignment tracking of the 200-MG-1 OU waste sites.

11 The 193 sites addressed by this EE/CA include 6 sites that were not evaluated against the
12 removal action alternative criteria in this EE/CA, but are retained within the 200-MG-1 OU for
13 tracking purposes. Those six waste sites are listed in Table 1-1 with exclusion rationale
14 statements. The remaining 187 waste sites evaluated in this EE/CA are listed in Table 1-2.
15 These waste sites contain shallow contamination or contamination that can feasibly be removed
16 with a non-time-critical removal action. The DOE and Ecology agreed that decision making is
17 straight-forward and that supplemental data are not required before selecting a cleanup
18 alternative. These sites are likely candidates for at least one of the following removal actions
19 described in this EE/CA:

- 20 • No action (NA)
- 21 • Maintain existing soil cover/institutional controls/monitored natural attenuation
22 (MESC/IC/MNA)
- 23 • Confirmatory sampling/no action (CS/NA)
- 24 • Removal, treatment, and disposal (RTD).

25 These alternatives are discussed further in Section 1.5.1 and in Chapter 4.0.

26 The waste sites include trenches, cribs, pits, ditches, and other areas of shallow contamination.
27 The sites also include areas where chemical and radioactive contaminants were released during
28 material transfers (i.e., unplanned release [UPR] sites). Some sites were produced by airborne
29 dissemination of radioactive particles, or dispersal through plant or animal fecal material. The
30 200-MG-1 OU waste sites are generally small-volume sites with low levels of radiological
31 and/or chemical contamination. In this EE/CA, the word "contamination" means the expected or
32 known presence of at least one contaminant of potential concern (COPC), developed in Section
33 2.4.2, at a concentration that is greater than its PRCL. The terms "contaminant" and "COPC" are
34 used interchangeably within this document.

35 Previous partial cleanup actions, including placement of clean soil interim stabilization covers,
36 have been implemented at some of the sites. However, because these sites are considered low
37 risk, little remedial investigation has been performed. Thus, one of the aspects of the 200-MG-1
38 OU sites is the general absence of information about site characteristics, including the nature and
39 extent of contamination and historical and process knowledge.

- 1 Many of the waste sites are located within the Industrial Exclusive Area (previously identified as
 2 Core Zone boundary).⁷ The borders of the Industrial Exclusive Area around the 200 Areas are
 3 shown in Figure 1-1.

Table 1-1. 200-MG-1 Operable Unit Waste Sites Excluded from the Engineering Evaluation/Cost Analysis.

Waste Site Code	Waste Site Type	Rationale
216-S-19	Pond	This site has been designated for inclusion in the Multi-Incremental Sampling Pilot Project. For this reason, it will not be evaluated further in this EE/CA, but will be tracked through site closure in the 200-MG-1 OU.
218-E-7	Burial Vault	This site requires extensive characterization and planning that is not consistent with the 200-MG-1 OU observational characterization. It will be reserved in the OU until assigned to another OU.
218-W-7	Burial Vault	This site requires extensive characterization and planning that is not consistent with the 200-MG-1 OU observational characterization. It will be reserved in the OU until assigned to another OU.
218-W-8	Burial Vault	This site requires extensive characterization and planning that is not consistent with the 200-MG-1 OU observational characterization. It will be reserved in the OU until assigned to another OU.
218-W-9	Burial Ground	This site requires extensive characterization and planning that is not consistent with the 200-MG-1 OU observational characterization. It will be reserved in the OU until assigned to another OU.
231-W-151	Receiving Vault	This site contains contamination that is outside the conceptual model for the 200-MG-1 OU. At this time, no other OU exists to deal with such a site. It will remain in the OU until transferred to a suitable OU.

EE/CA = engineering evaluation/cost analysis.

OU = operable unit.

4

Table 1-2. 200-MG-1 Operable Unit Waste Sites Evaluated in the Engineering Evaluation/Cost Analysis. (4 Pages)

Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type
200 CP	Depression/Pit (nonspecific)	216-A-9	Crib	2607-W6	Septic System
200-E BP	Burn Pit	216-A-18	Trench	2607-W8	Septic System
200-E PD	Ditch	216-A-20	Trench	2607-W9	Septic System
200-E-1	Dumping Area	216-A-28	Crib	2607-WC	Septic System
200-E-2	Unplanned Release	216-A-34	Ditch	2607-WL	Septic System
200-E-6	Septic System	216-A-40	Retention Basin	2607-WZ	Septic System
200-E-7	Septic System	216-A-42	Retention Basin	2607-Z	Septic System

⁷ The application of the Core Zone boundary is defined in DOE/RL-2005-57, *Hanford Site End State Vision*.

Table 1-2. 200-MG-1 Operable Unit Waste Sites Evaluated in the Engineering Evaluation/Cost Analysis. (4 Pages)

Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type
200-E-13	Dumping Area	216-B-2-1	Ditch	2607-Z1	Septic System
200-E-26	Unplanned Release	216-B-2-2	Ditch	Chemical Tile Field North 2703-E	Drain/Tile Field
200-E-29	Unplanned Release	216-B-2-3	Ditch	Old Central Shop Area	Foundations
200-E-43	Storage	216-B-3-1	Ditch	UPR-200-E-2	Unplanned Release
200-E-46	Dumping Area	216-B-3-2	Ditch	UPR-200-E-10	Unplanned Release
200-E-53	Unplanned Release	216-B-3-3	Ditch	UPR-200-E-11	Unplanned Release
200-E-58	Neutralization Tank	216-B-59	Trench	UPR-200-E-12	Unplanned Release
200-E-101	Experiment/ Test Site	216-B-59B	Retention Basin	UPR-200-E-20	Unplanned Release
200-E-103	Unplanned Release	216-C-3	Crib	UPR-200-E-28	Unplanned Release
200-E-107	Unplanned Release	216-C-5	Crib	UPR-200-E-33	Unplanned Release
200-E-109	Unplanned Release	216-C-6	Crib	UPR-200-E-35	Unplanned Release
200-E-110	Dumping Area	216-C-7	Crib	UPR-200-E-37	Unplanned Release
200-E-115	Unplanned Release	216-C-9	Pond	UPR-200-E-39	Unplanned Release
200-E-117	Unplanned Release	216-C-10	Crib	UPR-200-E-43	Unplanned Release
200-E-121	Unplanned Release	216-S-4	French Drain	UPR-200-E-50	Unplanned Release
200-E-123	Unplanned Release	216-S-8	Trench	UPR-200-E-52	Unplanned Release
200-E-124	Unplanned Release	216-S-22	Crib	UPR-200-E-54	Unplanned Release
200-E-125	Unplanned Release	216-S-26	Crib	UPR-200-E-55	Unplanned Release
200-E-128	Unplanned Release	216-T-4A	Pond	UPR-200-E-62	Unplanned Release
200-E-129	Unplanned Release	216-T-20	Trench	UPR-200-E-64	Unplanned Release
200-E-130	Unplanned Release	216-Z-4	Trench	UPR-200-E-66	Unplanned Release

Table 1-2. 200-MG-1 Operable Unit Waste Sites Evaluated in the Engineering Evaluation/Cost Analysis. (4 Pages)

Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type
200-E-139	Unplanned Release	216-Z-6	Crib	UPR-200-E-69	Unplanned Release
200-W Ash Disposal Basin	Coal Ash Pit	270-E-1	Neutralization Tank	UPR-200-E-88	Unplanned Release
200-W BP	Burn Pit	291-C-1	Burial Ground	UPR-200-E-89	Unplanned Release
200-W-1	Mud Pit	600 Original Central Landfill	Sanitary Landfill	UPR-200-E-95	Unplanned Release
200-W-2	Spoils Pile/Berm	600-36	Burn Pit	UPR-200-E-98	Unplanned Release
200-W-3	Dumping Area	600-37	French Drain	UPR-200-E-101	Unplanned Release
200-W-6	Dumping Area	600-38	Dumping Area	UPR-200-E-112	Unplanned Release
200-W-11	Dumping Area	600-40	Dumping Area	UPR-200-E-143	Unplanned Release
200-W-12	Dumping Area	600-51	Dumping Area	UPR-200-W-3	Unplanned Release
200-W-14	Dumping Area	600-65	Dumping Area	UPR-200-W-4	Unplanned Release
200-W-21	Pump Station	600-66	Dumping Area	UPR-200-W-23	Unplanned Release
200-W-22	Unplanned Release	600-70	Dumping Area	UPR-200-W-39	Unplanned Release
200-W-33	Dumping Area	600-71	Burn Pit	UPR-200-W-41	Unplanned Release
200-W-51	Septic System	600-218	Dumping Area	UPR-200-W-43	Unplanned Release
200-W-53	Unplanned Release	600-220	Dumping Area	UPR-200-W-44	Unplanned Release
200-W-54	Unplanned Release	600-222	Military Compound	UPR-200-W-46	Unplanned Release
200-W-55	Dumping Area	600-226	Dumping Area	UPR-200-W-51	Unplanned Release
200-W-63	Unplanned Release	600-228	Dumping Area	UPR-200-W-56	Unplanned Release
200-W-64	Foundation	600-262	Crib	UPR-200-W-57	Unplanned Release
200-W-67	Unplanned Release	600-275	Foundation	UPR-200-W-58	Unplanned Release
200-W-75	Experiment/ Test Site	600-281	Dumping Area	UPR-200-W-61	Unplanned Release

Table 1-2. 200-MG-1 Operable Unit Waste Sites Evaluated in the Engineering Evaluation/Cost Analysis. (4 Pages)

Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type
200-W-80	Spoils Pile/Berm	2607-E1	Septic System	UPR-200-W-63	Unplanned Release
200-W-81	Unplanned Release	2607-E3	Septic System	UPR-200-W-65	Unplanned Release
200-W-82	Pump Station/Product Piping	2607-E4	Septic System	UPR-200-W-67	Unplanned Release
200-W-83	Unplanned Release	2607-E5	Septic System	UPR-200-W-70	Unplanned Release
200-W-86	Unplanned Release	2607-E6	Septic System	UPR-200-W-71	Unplanned Release
200-W-90	Unplanned Release	2607-E7A	Septic System	UPR-200-W-73	Unplanned Release
200-W-92	Dumping Area	2607-E7B	Septic System	UPR-200-W-96	Unplanned Release
200-W-101	Dumping Area	2607-E9	Septic System	UPR-200-W-101	Unplanned Release
200-W-106	Unplanned Release	2607-E12	Septic System	UPR-200-W-116	Unplanned Release
207-B	Retention Basin	2607-EA	Septic System	UPR-200-W-165	Unplanned Release
207-SL	Retention Basin	2607-EE	Septic System	UPR-600-12	Unplanned Release
209-E-WS-3	Valve Pit	2607-W1	Septic System	UPR-600-21	Unplanned Release
216-A-1	Crib	2607-W3	Septic System	--	--
216-A-3	Crib	2607-W4	Septic System	--	--

1 1.4 REGULATORY OVERVIEW

2 This section contains an overview of the Hanford Site designation as NPL sites and of the
3 manner in which CERCLA applies to these waste sites for the 200-MG-1 OU removal action.
4 This section also summarizes regulatory and public involvement requirements.

5 The waste sites contained in the 200-MG-1 OU are all on the 200 Area NPL, one of three
6 remaining NPL sites at the Hanford Site, and subject to cleanup action under CERCLA. These
7 waste sites are identified in Appendix C of the Tri-Party Agreement Action Plan under
8 200-MG-1 OU as waste sites potentially needing remedial action. The removal actions under
9 this EE/CA being proposed for these waste sites will not interfere with the final remedial action
10 decisions as required by 40 CFR 300.415(d), "Removal Action." The cleanup of these waste
11 sites will consider both CERCLA remedial action and *Resource Conservation and Recovery Act*
12 *of 1976* (RCRA) corrective action requirements and will be documented in a final Record of

1 Decision. Activities undertaken for cleanup of these NPL sites are performed in accordance with
2 the National Contingency Plan 40 CFR 300 and the Tri-Party Agreement.

3 **1.4.1 Removal Action Authority**

4 40 CFR 300.415(b)(1) and Tri-Party Agreement Action Plan, Section 7.2.4 state that when there
5 is a threat to public health or welfare of the United States or to the environment, the lead agency
6 may take any appropriate removal action to abate, prevent, minimize, stabilize, mitigate, or
7 eliminate the release or the threat of release.

8 This EE/CA was prepared in accordance with CERCLA and 40 CFR 300.415 to satisfy
9 environmental review requirements for non-time-critical removal action (DOE/EH-143-9811,
10 *Non-Time-Critical Removal Actions*). After the public has had an opportunity to comment on the
11 alternatives and the recommended approach presented in this document, an Action Memorandum
12 will be issued to authorize the removal action.

13 **1.4.2 Regulatory Involvement**

14 Ecology is the lead regulatory agency for the 200-MG-1 OU. Ecology involvement will be in
15 accordance with the Tri-Party Agreement, to ensure that the selected removal action activity
16 complies with ARARs, protection of human health and the environment is achieved, and the
17 removal action is consistent with ongoing or subsequent related remedial actions. Accordingly,
18 Ecology concurrence will be sought for the Action Memorandum that will be prepared after this
19 EE/CA process. The RAWP will be approved by the Tri-Party agencies.

20 **1.4.3 Stakeholder Involvement**

21 Removal actions taken pursuant to this EE/CA will be conducted in compliance with the
22 *Hanford Site Tri-Party Agreement Public Involvement Community Relations Plan* and public
23 participation requirements established in 40 CFR 300.415(n), "Community Relations in Removal
24 Actions," and any applicable DOE policies. This EE/CA will undergo a 30-day public comment
25 period. After the public comment period, a written response to significant comments will
26 be provided in accordance with 40 CFR 300.820(a), "Administrative Record File for a
27 Removal Action."

28 **1.5 APPROACH TO REMEDIATION**

29 The remediation approach to the 200-MG-1 OU has in part been determined by the following:

- 30 • Removal action alternatives consistent with the logic behind the creation of this OU
- 31 • Preference for RTD, whenever practicable
- 32 • Extensive use of the observational approach because of limited site information;
33 particularly for non-engineered structures (e.g., spills, UPRs, and windblown
34 contamination) to support rapid changes to the proposed removal action alternatives
- 35 • Procedure for easy addition of new sites to existing remedy (i.e., plug-in approach), as
36 well as assignment of sites to other OUs if the waste sites do not fit the 200-MG-1 OU
37 conceptual model or the removal action alternatives.

1 The 200-MG-1 OU site removal action approach builds on the experience and processes
2 obtained from DOE/RL-94-61, *100-KR-1 Operable Unit Focused Feasibility Study Report*,
3 Appendix N, and DOE/RL-2004-39, *200-UR-1 Unplanned Release Waste Group Operable Unit*
4 *Remedial Investigation/Feasibility Study Work Plan*. The methods discussed below are used in
5 this EE/CA and removal action implementation, which is described in more detail in Chapter 6.0.

6 **1.5.1 Removal Action Alternatives**

7 Because the waste sites in this OU are shallow and simple removal efforts would effectively
8 remove the contaminant exposure pathway to human and environmental receptors, the range of
9 alternatives considered is limited. The 200-MG-1 OU removal action alternatives considered in
10 this EE/CA are consistent with logic behind the creation of this OU, and include NA,
11 MESC/IC/MNA, CS/NA, and RTD. Sites determined to require other alternatives will be
12 identified for transfer to other OUs.

13 The applicability of the removal action alternatives is discussed below.

- 14 • NA. This alternative applies to sites that decision-makers have determined need no
15 further action.
- 16 • MESC/IC/MNA. This alternative may be appropriate for waste sites that contain an
17 existing soil cover and only short-lived radionuclides that do not present an immediate
18 endangerment to human health or the environment and that will attenuate to levels below
19 PRCLs within 150 years.
- 20 • CS/NA. This alternative may be used when empirical data indicate that RTD of the
21 waste site is not required. Confirmatory sampling data will be collected to confirm that
22 contamination is not present at levels above PRCLs, supporting the decision that no
23 action is required.
- 24 • RTD. In this alternative, contamination will be removed, including contamination that
25 may have migrated away from the original site to levels below the established PRCLs.
26 The PRCLs will be established in the RAWP. Excavated waste will be treated if
27 necessary and disposed of at the Environmental Restoration Disposal Facility (ERDF).
28 RTD waste sites are typically shallow sites where the depth of contamination is not
29 expected to extend more than 4.6 m (15 ft) nominally below ground surface (bgs). This
30 will include removal of soils, debris, and contaminated structures. The depth is not
31 restricted to 4.6 m (15 ft), but that depth will be used as a general guideline for this
32 category. Deeper excavation in certain cases may prove beneficial if it allows removal of
33 contaminants to levels below PRCLs.

34 **1.5.2 Plug-in Approach**

35 The waste site remedy selection is documented in the Action Memorandum. The “plug-in
36 approach” has been developed to analyze removal alternatives for groups of sites with similar
37 characteristics, designated as the site profile. The Action Memorandum will identify remedies
38 on the basis of the site profiles. If it is determined that a new waste site(s) is sufficiently similar
39 to, or compatible with, a site group for which the alternatives have already been developed and
40 analyzed, then the site will “plug-in” to that group. Confirmatory sampling may be required to
41 determine whether a particular waste site fits the criteria for plug-in. The plug-in approach

1 eliminates the time and cost required to produce multiple, redundant site-specific EE/CAs
2 (DOE/EH-413-9903, *The Plug-In Approach: A Generic Strategy to Expediting Cleanup*).

3 **1.5.3 Removal Action Flexibility**

4 An RAWP will be used to document preferred removal alternatives for the 200-MG-1 OU waste
5 sites. However, because of the lack of characterization data and variability inherent in the
6 200-MG-1 OU waste site conditions, flexibility is necessary in the waste site remedy selection
7 process. If the preferred removal alternative for a site, developed in Chapter 5.0, is found to be
8 inappropriate during its implementation, then a different removal alternative will be chosen that
9 is more appropriate to the site conditions through consultation with the U.S. Department of
10 Energy, Richland Operations Office and the lead regulatory agency. This approach allows
11 alternative remedies to be implemented to best achieve site remediation. The removal action
12 decision-making approach is presented in Section 6.2.

13 **1.5.4 Observational Approach**

14 The observational approach is a method of planning, designing, and implementing a removal
15 action that uses a limited amount of initial characterization data. Additional information
16 gathered during removal actions will be used to make "real-time" decisions in the field to guide
17 the direction and scope of removal actions, based on contingent planning. The observational
18 approach in removal actions provides the flexibility in the field necessary to adapt the removal
19 action to observed site conditions. Removal actions will proceed until it can be demonstrated
20 through field screening and verification sampling that the PRCLs and appropriate risk levels
21 have been met. This method of streamlining is faster and more cost-effective than traditional
22 approaches that require substantial site characterization and detailed planning before taking
23 removal actions.

24 **1.5.5 Prioritization**

25 The implementation of the preferred removal actions for the 200-MG-1 OU waste sites will be
26 prioritized in the RAWP. This prioritization may be based on several conditions, including the
27 following:

- 28 • Expected contamination depth
- 29 • Location of a waste site inside or outside the 200 East and 200 West Area fence lines
- 30 • Proximity of a waste site to other waste sites or structures
- 31 • Ease of access to the waste site
- 32 • Potential integration of waste site removal action with other nearby site removal or
33 remedial actions.

2.0 SITE CHARACTERIZATION

This chapter first provides a general background and site description for the 200 Areas of the Hanford Site, including the flora, fauna, climate, geology, and hydrogeology. This is followed by sections on the available waste information and the waste site attributes, which is a compilation of information for the waste sites in the 200-MG-1 OU, including waste site history, physical characteristics (e.g., lateral dimensions and depth) and site types (e.g., UPRs, dumping areas, cribs, trenches, burn pits). The final two sections describe the sources, nature, and extent of contamination, as well as a streamlined risk evaluation.

2.1 BACKGROUND AND SITE DESCRIPTIONS

This section provides general background of the 200 Areas, the sites, flora and fauna, climate, and the geology and hydrogeology of the area.

2.1.1 General Description

The 200 Areas were the center of activity for processing plutonium at the Hanford Site starting in the mid-1940s. Five general plant process groupings exist in the 200 Areas, including fuel processing, plutonium isolation, uranium recovery, cesium/strontium recovery, and waste storage/treatment. Liquid wastes are considered the most significant type of discharge to the environment in terms of volume and numbers of constituents. Detailed information on the historical operations and waste generation mechanisms is provided in DOE/RL-2001-54, *Central Plateau Ecological Evaluation*. Waste sites types in the 200-MG-1 OU are discussed in Section 2.3.

2.1.2 Flora and Fauna

The 200 Areas are a mature shrub-steppe ecosystem, dominated by sagebrush and Sandberg's bluegrass. The native shrub-steppe is interspersed with disturbed areas in which the primary vegetation is made up of annual grasses and forbs. Many sites in the 200 Areas are covered with gravel or asphalt, or stabilized with non-native wheatgrass (DOE/RL-2001-54). Species of mammals common to the 200 Areas include coyotes, Great Basin pocket mice, northern pocket gophers, and deer mice. The most widely distributed bird species are meadowlarks, horned larks, and mourning doves. Gopher snakes and side-blotched lizards are the main reptiles inhabiting the 200 Areas. The most common groups of terrestrial invertebrates in these areas are darkling beetles, grasshoppers, and ants. The *Central Plateau Ecological Evaluation* (DOE/RL-2001-54) presents a detailed account of the species of the 200 Areas.

2.1.3 Climate

The Hanford Site lies east of the Cascade Mountains and has a semiarid climate caused by the rain shadow effect of the mountains. Climatological data are monitored at the Hanford Meteorological Station and other locations throughout the Hanford Site. From 1945 through 2001, the recorded maximum temperature was 45 °C (113 °F), and the recorded minimum temperature was -30.6 °C (-23 °F) (PNNL-6415, *Hanford Site National Environmental Policy Act (NEPA) Characterization*). The two extremes occurred during August and February,

1 respectively. The monthly average temperature ranged from a low of -0.24°C (31.7°F) in
2 January to a high of 24.6°C (76.3°F) in July. The annual average relative humidity is 54 percent
3 (PNNL-6415).

4 Most precipitation occurs during late autumn and winter, with more than half of the annual
5 amount occurring from November through February (PNNL-6415). Normal annual precipitation
6 is 17.7 cm (6.98 in.). Because it typically receives less than 25.5 cm (10 in.) of precipitation a
7 year, the climate is considered to be semiarid (PNNL-6415).

8 The prevailing wind direction at the Hanford Meteorological Station is from the northwest
9 during all months of the year (PNNL-6415). Monthly average wind speeds are lowest during the
10 winter months and average about 3 m/s (6 to 7 mi/h). The highest average wind occurs during
11 the summer and is about 4 m/s (8 to 9 mi/h). The record wind gust was 35.7 m/s (80 mi/h) in
12 1972 (DOE/RL-2007-50, *Central Plateau Terrestrial Ecological Risk Assessment Report*).

13 **2.1.4 Geology and Hydrogeology**

14 The average depth from ground surface to groundwater beneath the Hanford 200 Areas ranges
15 from 50 m (164 ft) to greater than 100 m (328 ft). Additional details on the geology and
16 hydrogeology underlying the 200 Areas and the 200-MG-1 OU are not provided in this EE/CA
17 because the 200-MG-1 OU waste sites do not have the potential to impact groundwater or the
18 deep vadose zone. In addition, the geological and hydrological conditions that exist beneath the
19 Hanford Site 200 Areas are well-understood and are described in a number of technical
20 documents, some of which are included as references to this EE/CA (WHC-SD-ER-TI-003,
21 *Geology and Hydrology of the Hanford Site - A Standardized Text for use in WHC Documents &*
22 *Reports*; PNNL-14187, *Hanford Site Groundwater Monitoring for Fiscal Year 2002*;
23 PNNL-13641, *Uncertainty Analysis Framework - Hanford Site-Wide Groundwater Flow and*
24 *Transport Model*; PNNL-13116, *Hanford Site Groundwater Monitoring for Fiscal Year 1999*;
25 PNNL-6415; PNL-5506, *Hanford Site Water Table Changes 1950 Through 1980, Data*
26 *Observations and Evaluation*; and Lindsey, 1996, *The Miocene to Pliocene Ringold Formation*
27 *and Associated Deposits of the Ancestral Columbia River System, South-Central Washington and*
28 *North-Central Oregon*).

29 The Tri-Parties created the 200-MG-1 OU through Tri-Party Agreement Milestone M-015-06-02
30 and Tri-Party Agreement Change Request C-06-02. The 200-MG-1 OU waste sites have shallow
31 vadose-zone (4.6 m [15 ft bgs]) contamination and are not considered a threat to groundwater
32 quality. Sites with the potential for groundwater impacts probably would not be considered
33 Model Group 1 sites. If confirmation sampling or the observational approach shows that a site is
34 more than a shallow contamination problem, the site will be reevaluated and other alternatives
35 considered.

36 The radionuclide inventory for this conceptual model group does not include transuranic isotopes
37 at or near the level of 100 nCi/g. Examples of 200-MG-1 OU waste sites are unplanned releases,
38 shallow releases or leaks, and contamination spread by burrowing wildlife.

39

2.2 AVAILABLE WASTE SITE INFORMATION

The *Waste Information Data System* database was the primary source of site information for the 200-MG-1 OU. Because the waste sites comprising the 200-MG-1 OU previously had been part of other OUs, certain data-gathering activities and evaluations already had been completed in conjunction with the prior OU activities for a few of the waste sites. Detailed waste site information is presented in Appendices A and B.

- Appendix A contains an information brief for each waste site, including the site history, its known or estimated dimensions and depth, and assumptions concerning potential contaminants and their distribution. References for the information also are provided. Engineering diagrams, if available, are included in each brief where a structure is a component of the waste site. The briefs also contain current site photographs for many of the sites. The preferred remedy and estimated cost for the remedy also is shown for each waste site.
- Appendix B includes a large waste site summary table identifying primary attributes of the waste sites, organized by waste site type. These attributes were used in selecting preferred removal actions. This table permits a direct comparison of all similar waste sites, including their physical features, waste release mechanisms, potential contaminant types (i.e., radiological or nonradiological), and expected contaminant distribution.

Characterization data that include laboratory analytical results are only available for waste sites that were classified as "representative sites" in previous OUs. Only two sites in the 200-MG-1 OU (216-B-2-2 and 216-B-3-3, both ditches) previously were characterized as representative waste sites while assigned to the 200-CW-1 OU.

Little or no characterization data exist for the remainder of the waste sites addressed in this EE/CA. The available information generally is limited to descriptions of the process operations that may have resulted in the release of a radiological or hazardous constituent. Radiological surveys and prior cleanup activities are described for some of the waste sites. Cleanup actions include decontamination operations, removal of impacted soils or materials, and/or covering the affected area with clean soil.

2.3 WASTE SITE ATTRIBUTES

The 200-MG-1 OU contains several different types of waste sites as shown in Table 2-1. Site areas range from tens of square feet to tens of acres in size. The majority of the waste sites are small. Generally, the very small area waste sites are associated with an engineered structure (e.g., French drain, valve pit) or an UPR of very limited extent. Larger area sites include ponds, dumping areas, septic tile fields, or wind-disseminated UPRs. The engineered structures that have been in direct contact with process waste streams (i.e., French drains, reversed wells, cribs, and retention basins) also may be contaminated, and include materials such as concrete and infiltration gravels.

Table 2-1. 200-MG-1 Operable Unit Waste Site Attributes. (10 Pages)

Waste Site Type	Number of Sites	Site Areas (ft ²)	Potential Contaminants	Potential Contaminant Intervals (depth bgs ft) [Number of sites in Interval]	Primary Contaminated Media	Secondary Contaminated Media	Waste Site Characteristics
<i>Waste sites associated with above ground particulate or small volume liquid releases (potential contaminant depth – less than 6 ft)</i>							
Unplanned releases – windblown tumbleweeds, tank farm or stack particulates, leaks, and spills	53	72 – 516,783 (areas are unknown for 12 sites)	Primarily radiological contaminants. Specific contaminants are generally unknown.	0-1 [18]; 0-1 (spotty) [24]; 0-3 [4]; 0-3 (spotty) [1]; 0-6 [6]	Soil	None	Generally spotty surficial distribution of windblown radiological contaminated materials. Site sizes often are large. Includes small volume liquid release sites that are generally of minor extent.
Dumping areas	23	15 – 3,683,933 (areas are unknown for 3 sites)	Primarily nonradiological contaminants.	0-1 [2]; 0-1 (spotty) [9]; 0-2 (spotty) [1]; 0-3 [1]; 0-3 (spotty) [7]; 0-6 [1]; 0-6 (spotty) [1]; above ground [1]	Soil	Debris, Construction Materials	Areas used to dump debris, construction materials, containers, and other miscellaneous items. Areas with empty containers may have had minor liquid releases. Spotty surficial contamination.
Unplanned releases – railroad lines leaks and spills	22	35 – 237,747 (areas are unknown for 6 sites)	Primarily radiological contaminants. Specific contaminants are generally unknown.	0-2 [7]; 0-2 (spotty) [15]	Railbed/Soil	Steel Rail, Wooden Ties	Includes railroad lines between process facilities and storage or burial grounds. Rail lines were used to carry contaminated equipment and some liquids. Releases occurred at facility loading stations and as intermittent drips along lines during transport.
Burn pit	4	8,000 – 79,194	Potential nonradiological contaminants, including metal, organics, and asbestos.	0-1 (spotty) [4]	Soil	None	Areas used to burn miscellaneous nonradioactive construction and office waste.
Spoil piles/berm	2	2,264 – 2,670	Primarily radiological contaminants, possibly organics (oil and grease). Specific contaminants are generally unknown.	0-1 [1]; 0-3 [1]	Soil	None	One area may have been used to decontaminate equipment; the other may be related to leaks in buried pipelines or to parking lot expansion work.

Table 2-1. 200-MG-1 Operable Unit Waste Site Attributes. (10 Pages)

Waste Site Type	Number of Sites	Site Areas (ft ²)	Potential Contaminants	Potential Contaminant Intervals (depth bgs ft) [Number of sites in Interval]	Primary Contaminated Media	Secondary Contaminated Media	Waste Site Characteristics
Mud pit	1	5,001	Unknown.	0-3 [1]	Soil	None	Pit used for equipment decontamination or disposal of drilling mud.
Coal ash pit	1	480,000	A Tiger Team finding for disposing of steam plant ash without a permit prompted sampling of wet flyash and bottom ash from the 200 Area power plants. Sample results determined the ash to be non-dangerous and non-corrosive and not regulated under <i>Washington Administrative Code</i> . Therefore, no permit was required to dispose of the steam plant ash.	0-1 (spotty) [1]	Soil	None	The site consists of an area of dark soil where coal ash and coal ash slurry were dumped. Some material was disposed of through a slurry pipeline and some was dumped from trucks.
Depression/pit (nonspecific)	1	750,000	Unknown.	0-1 (spotty) [1]	Soil	None	Former construction gravel pit. Part of pit may have been used for disposal of nonhazardous concrete waste and other debris (subsequently paved over for parking lot).
Total	107						

Table 2-1. 200-MG-1 Operable Unit Waste Site Attributes. (10 Pages)

Waste Site Type	Number of Sites	Site Areas (ft ²)	Potential Contaminants	Potential Contaminant Intervals (depth bgs ft) [Number of sites in Interval]	Primary Contaminated Media	Secondary Contaminated Media	Waste Site Characteristics
<i>Waste sites associated with small volume incidental releases involving a structure (potential contaminant depth – less than 6 ft)</i>							
Foundations	3	14,490 – 10,795,352	Radiological and nonradiological contaminants, may include plutonium, carbon tetrachloride, hydrocarbon fuels (gasoline), miscellaneous debris, and sanitary sewer waste	0-1 [1]; 0-2 (spotty) [1]; 0-6 (spotty) [1]	Soil	Concrete foundations	One site consists of building foundation for laundry that cleaned contaminated clothing; one consists of foundations for ammunition storage igloos where plutonium scrap was later stored; and one consists of foundations and debris from a large shop and staging/fuel storage area.
Military compound	1	380,860	Nonradiological battery and oil wastes.	0-1 (spotty) [1]	Soil	None	Former anti-aircraft gun site with the remains of deteriorated batteries or ammunition, possible oil waste.
Pump station	1	1,959	Primarily radiological contaminants. Specific contaminants are unknown.	0-6 [1]	Soil, concrete footings, drains	Railroad ballast	Concrete foundations for unloading platforms and associated drains; some contaminated soil (possibly railroad ballast) has been removed.
Pump station/product piping	1	800	Primarily radiological contaminants. Specific contaminants are unknown.	0-6 [1]	Concrete pads, pipelines	Soil	Concrete unloading pads and associated pipelines.
Total	6						

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Table 2-1. 200-MG-1 Operable Unit Waste Site Attributes. (10 Pages)

Waste Site Type	Number of Sites	Site Areas (ft ²)	Potential Contaminants	Potential Contaminant Intervals (depth bgs ft) [Number of sites in Interval]	Primary Contaminated Media	Secondary Contaminated Media	Waste Site Characteristics
<i>Waste sites associated with larger volume waste stream discharges (potential contaminant depth – less than 15 ft)</i>							
Septic tanks and septic tanks with tile fields (septic systems)	22	17.5 – 325 (areas are unknown for 8 sites)	Sanitary waste (one site marked as potentially containing underground radioactive material).	0-6.5 [2]; 0-7 [2]; 0-10 [3]; 0-11 [1]; 0-13 [1]; 0-14 [2]; 0-14.8 [1]; 0-15 [2]; unknown [8]	Concrete tanks	Soil, drain lines	Generally concrete septic tanks and associated drain fields.
Crib	8	4 – 15,096	Primarily radiological contaminants. Specific contaminants are generally unknown.	2-15 [1]; 8-15 [2]; 10-15 [2]; 11-15 [1]; 12-15 [1]; 9.5-15[1]	Soil, crib fill material	Discharge piping	Unlined cribs generally filled with coarse crushed rock to the discharge level and backfilled with earth.
Ditch	8	8,400 – 133,300	Radiological and nonradiological contaminants. Radiological contaminants may include Cs-137, S-90, and U-238. Nonradiological contaminants may include arsenic, barium, lead, nickel, silver, cadmium, selenium, mercury, and hexavalent chromium.	6-8 [1]; 6-10 [6]; 6-15 [1]	Soil	None	Originally open ditches, all ditches have been backfilled and six are described as “surface stabilized.” Surface stabilization is not recorded for one ditch. One ditch was contaminated with a release from PUREX and a surface seal was constructed that incorporated 10 mil plastic sheeting between sand and gravel layers.
Drain/tile field	1	24,025	Radiological and nonradiological contaminants. Specific contaminants are unknown.	6-10 [1]	Soil	Discharge piping	The site consists of a trench and a seepage basin.

Table 2-1. 200-MG-1 Operable Unit Waste Site Attributes. (10 Pages)

Waste Site Type	Number of Sites	Site Areas (ft ²)	Potential Contaminants	Potential Contaminant Intervals (depth bgs ft) [Number of sites in Interval]	Primary Contaminated Media	Secondary Contaminated Media	Waste Site Characteristics
Trench	2	484 – 8,000	Radiological and nonradiological contaminants. Specific contaminants are generally unknown. Nonradiological constituents may include uranium and other metals.	4-6 [1]; 12-15 [1]	Soil	None	One trench was dug as a single use excavation (also described as a pit) to receive acidic waste from a diversion box. The other trench originally was unlined but was later converted to a retention basin by the addition of a hypalon liner and later a concrete liner and cover.
Retention basin	3	2,500 – 30,258	Radiological and nonradiological contaminants. Radiological contaminants may include Cs-137, Sr-90, U-238, and Tc-99. Nonradiological contaminants may include arsenic, cadmium, lead, silver, and selenium, Aroclor-1254, methylene chloride, and sulfate.	6-9 [1]; 10-12 [1]; 14-15 [1]	Concrete or Liner, Soil	Soil	These retention basins are concrete structures. One originally was constructed by lining an existing unlined trench with a hypalon liner and subsequently with a concrete liner and cover. One retention basin was backfilled; two are not.
Pond	2	289,110 – 1,080,105	Radiological and nonradiological contaminants. Specific contaminants are unknown.	0-3 [1]; 8-11 [1]	Soil	None	These ponds received cooling water and/or steam condensate; a portion of one of the ponds was later used as a solid waste burial ground. The ponds have been backfilled and surface stabilized.
Total	46						

Table 2-1. 200-MG-1 Operable Unit Waste Site Attributes. (10 Pages)

Waste Site Type	Number of Sites	Site Areas (ft ²)	Potential Contaminants	Potential Contaminant Intervals (depth bgs ft) [Number of sites in Interval]	Primary Contaminated Media	Secondary Contaminated Media	Waste Site Characteristics
<i>Waste sites associated with small volume incidental releases (potential contaminant depth – less than 15 ft)</i>							
Dumping area	1	2,948	Nonradionuclide contamination consisting of paint, paint solvents, and diesel fuel spilled on the ground.	0-15 (spotty) [1]	Soil	None	Soil contaminated with paint and paint solvents at a paint shop, and possibly diesel fuel at an equipment staging area.
Burial ground	1	4,800	Primarily radiological contaminants. May include Cs-137 and Sr-90. Some nonradiological contaminants may be present.	0-7 [1]	Metal scrap, concrete, brick, mortar	Soil	This burial ground contains the 291-C Exhaust Stack, composed of concrete, acid-resistant brick, and mortar. Very high gamma levels were measured before demolition of the stack. This site was backfilled and has been surface stabilized with an ash layer.
Sanitary landfill	1	15,000	Both radiological and nonradiological contaminants. A survey shows 1,500 cpm beta/gamma contamination. The nonradiological contamination is not specified but debris consists of general office waste, glass, electrical waste, and minimal metal waste.	0-15 [1]	Buried debris	Soil	This site consists of a backfilled trench.
Unplanned releases – associated with pipelines	2	199 – 1,840	Primarily radiological contaminants.	0-15 [1]; 8-10 [1]	Soil, concrete piping	None	One site consists of ground contaminated with liquid from a transfer line related to a ruptured fire hose. The other site consists of buried contaminated concrete pipeline material related to a pipeline repair.

Table 2-1. 200-MG-1 Operable Unit Waste Site Attributes. (10 Pages)

Waste Site Type	Number of Sites	Site Areas (ft ²)	Potential Contaminants	Potential Contaminant Intervals (depth bgs ft) [Number of sites in Interval]	Primary Contaminated Media	Secondary Contaminated Media	Waste Site Characteristics
Unplanned release – associated with equipment storage yard	1	3,600	Nonradiological contamination associated with leaks or spills of petroleum products.	0-15 (spotty) [1]	Soil	None	Heavy equipment staging area.
Total	6						
<i>Waste sites associated with small volume waste stream discharges from an engineered structure (potential contaminant depth – less than 15 ft deep)</i>							
Experiment/Test site	1	591	Potential radionuclides may include Co-60, Sr-90, Ru-106, and Ce-144.	0-8 [1]	Underground galvanized steel enclosures, radioactive sources	Soil	The site consists of three 6-in. steel silos containing radioactive sources that were used to calibrate instrumentation. The site has been surface stabilized.
Valve pit	1	35	Plutonium, other unspecified radiological contaminants.	0-9 [1]	Valve pit tank, valves, and piping	Soil	Valve pit and underground holding tank for condensate with low levels of plutonium.
Unplanned release – associated with underground structure	1	61,548	Radionuclide contaminants from underground structures including a vault with a silica gel column and a neutralization tank. Processed contaminants include UNH, thorium nitrate, N Reactor decontamination waste, and 300 Area laboratory waste.	0-15 (spotty) [1]	Concrete, silica gel, piping(?), possibly stainless steel column	Soil	Site consists of an underground vault with a silica gel column that was used for stripping fission products from UNH. Some piping may still be present, although surface and above-ground structures have been removed.
Total	3						

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Table 2-1. 200-MG-1 Operable Unit Waste Site Attributes. (10 Pages)

Waste Site Type	Number of Sites	Site Areas (ft ²)	Potential Contaminants	Potential Contaminant Intervals (depth bgs ft) [Number of sites in Interval]	Primary Contaminated Media	Secondary Contaminated Media	Waste Site Characteristics
<i>Waste sites associated with small volume waste stream discharges from an engineered structure (potential contaminant depth – greater than 15 ft deep)</i>							
French drain	2	11 – 70	Both radiological and nonradiological contaminants. Potential radiological contaminants for one site may include Tc-99, Sr-90, H ₃ , and U-238. Nonradiological contaminants may include arsenic, nitrate and hexavalent chromium, and mercury. The potential radiological and nonradiological constituents are unknown for the other site.	16-20 [1]; 22-30 [1]	Steel tanks, metal culverts	Soil	One site consists of two vertically buried metal culverts, 20 ft long and filled with rock. One consists of four above-ground steel tanks and four french drains of unknown construction. The first site was stabilized with clean backfill; the second site has not been backfilled or stabilized.
Experiment/test site	1	128	Short-lived isotope tracers and lead bricks.	58-60 [1]	Neutron probe, lead bricks	Soil	Site consists of two buried steel lysimeters with an assumed concrete underground monitoring room. A neutron probe and lead bricks that were used to hold cables in place may still be present.

Table 2-1. 200-MG-1 Operable Unit Waste Site Attributes. (10 Pages)

Waste Site Type	Number of Sites	Site Areas (ft ²)	Potential Contaminants	Potential Contaminant Intervals (depth bgs ft) [Number of sites in Interval]	Primary Contaminated Media	Secondary Contaminated Media	Waste Site Characteristics
Retention basin	2	8,000 – 10,260	Primarily radiological contaminants.	12-20 [1]; 13-20 [1]	Soil	Liner	One retention basin held contaminated cooling water before discharge to the 216-B-3 or 216-A-25 Ponds. This basin was lined with rubber bladders, which failed in 1979. The basin eventually was backfilled with soil including contaminated fill. The other basin was rubber-lined and held cooling water and steam condensate from PUREX for later reprocessing.
Neutralization tank	2	77 – 94	Primarily radiological contaminants.	0-20 [2]	Steel tanks	Soil	Stainless steel underground tanks were used to neutralize contaminated acid. One of the tanks may still contain liquid.
Total	7						

Table 2-1. 200-MG-1 Operable Unit Waste Site Attributes. (10 Pages)

Waste Site Type	Number of Sites	Site Areas (ft ²)	Potential Contaminants	Potential Contaminant Intervals (depth bgs ft) [Number of sites in Interval]	Primary Contaminated Media	Secondary Contaminated Media	Waste Site Characteristics
<i>Waste sites associated with larger volume waste stream discharges (potential contaminant depth – greater than 15 ft)</i>							
Trench	4	100 – 6,400	Primarily radiological contaminants.	15-20 [1]; 15-25 [1]; 16-20 [1]; 25-30 [1]	Soil	None	Two trenches received PUREX start up process waste. One received unirradiated uranium waste from start up of 202-S. One received laboratory waste from 231-Z Building. All trenches have been backfilled.
Crib	5	2184 – 8400	Primarily radiological contaminants.	15-20 [1]; 16-20 [3]; 13-25 [1]	Soil	None	These cribs received PUREX start up waste, PUREX acid fractionator condensate and cooling water, silica-gel regeneration waste and pump house drainage from 203-A and UNH storage pit, REDOX and PUREX process condensate, and high salt waste from 201-C.
Septic tanks and septic tanks with tile fields (septic systems)	3	204 – 533	Nonhazardous sanitary waste.	0-16 [2]; 0-20 [1]	Concrete tanks	Soil, drain lines	Generally concrete septic tanks and associated drain fields.
Total	12						

bgs = below ground surface.
 cpm = counts per minute.
 PCB = polychlorinated biphenyl.
 PUREX = Plutonium-Uranium Extraction Plant.
 REDOX = Reduction-Oxidation Plant.
 UNH = uranyl nitrate hexahydrate.

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1 Dumping areas include many different types of waste materials, such as scrap materials,
2 construction debris (concrete, wood, and metal), used containers, and other miscellaneous items.
3 The contamination at these sites generally is limited to the soil in immediate contact with the
4 waste materials, with little or no migration into the underlying soil.

5 Sites identified as UPRs consist of areas where a release has been disseminated by wind or liquid
6 was released onto the ground. Large area waste sites are found near some of the tank farms
7 where past releases of particulates from the tanks were locally spread by the wind. In other
8 cases, radioactive tumbleweeds and tumbleweed fragments dispersed contamination over a wide
9 area. The majority of the UPR areas have been cleaned up by previous soil removal actions,
10 and/or placement of a 0.3 to 0.6 m (1- to 2-ft) thick soil stabilization cover over the site. Soil
11 stabilization covers are used to prevent or minimize the uncontrolled spreading of contamination.
12 Those waste sites with a soil stabilization cover are noted in Appendices A and B.
13 Approximately one-third of all the 200-MG-1 OU waste sites have soil stabilization covers.

14 **2.4 SOURCES, NATURE, AND EXTENT OF** 15 **CONTAMINATION**

16 This section includes a summary of the information on the existing waste sites and the process
17 that was used to select the COPCs.

18 **2.4.1 Site Information**

19 There is little information on the depths of contamination in the 200-MG-1 OU waste sites. This
20 information, however, is needed to estimate the removal action costs. To fill this data gap, the
21 contaminant depth for each site was estimated based on the following considerations.

- 22 • The known or estimated volume of a release. The volume of waste released is not
23 typically known with a high degree of certainty for the majority of the waste sites. The
24 nature of the UPRs is often known and the amount of material available for release was
25 estimated to be relatively small. For those waste sites involving the discharge of process
26 waste streams, such as cribs, ditches, and ponds, the effluent volumes may have been
27 large. Effluent discharge volume data for engineered liquid disposal waste sites, if
28 available, are summarized in RPP-26744, *Hanford Soil Inventory Model, Rev. 1*. Larger
29 volume releases may result in deeper vertical migration into the soil column.
- 30 • Depth at the point of release. Many of the waste sites in this OU are the result of
31 contaminated material released on the ground surface as a result of windblown
32 contaminated particulates. Process waste streams, such as cooling water, also were
33 discharged at the surface into ditches and pond waste sites. Septic system tile field
34 discharge points generally are at depths less than 3 m (10 ft) bgs. Reverse wells, cribs,
35 trenches, certain french drains, and structures also may have resulted in releases to the
36 subsurface deeper than 4.6 m (15 ft).
- 37 • Engineered liquid disposal facilities. Cribs, ponds, french drains, ditches, and septic
38 systems were designed for waste stream disposal and were intended for liquid discharge
39 directly to the soil at or below ground surface.
- 40 • Release incidental to primary operations. Uncontrolled releases were not intended at
41 these sites, but an incidental release occurred as the result of operational incidents or

1 improper handling of materials in dumping areas, railroad lines, and building
2 storage areas.

- 3 • Mobility of the potential contaminants associated with the release. Available information
4 concerning the process waste streams indicates that the primary contaminants released at
5 the waste sites in this OU have low to moderate mobility.

6 The estimated contaminant depths and potential contaminants at each waste site are presented in
7 Appendices A and B. A summary of this assessment and other site attributes is provided in
8 Table 2-1. The waste sites in Table 2-1 were grouped into three potential depth categories: less
9 than 1.8 m (6 ft), less than 4.6 m (15 ft), and deeper than 4.6 m (15 ft). The conceptual
10 contaminant distribution model for the 200-MG-1 OU is shallow contamination with no potential
11 for impact to groundwater. Nevertheless, waste sites may be encountered during removal actions
12 that do not fit the conceptual model (i.e., sites with contamination greater than 4.6 m [15 ft]).
13 These sites will be dispositioned in accordance with the process described in Section 6.2.

14 Existing site descriptions indicate that potential release locations and lateral extent are poorly
15 defined or undefined at these types of sites. Windblown contaminated materials such as
16 particulates, surface leaks, and spills were assumed to result in spotty contamination. The lateral
17 extent of potential contamination for waste sites that received liquid discharges was determined
18 by considering the portion of the site that was in direct contact with the liquid, yielding
19 contaminated soil volume estimates for the cost analyses.

20 **2.4.2 Selection of Contaminants of Potential Concern**

21 The 200-MG-1 OU waste sites consist of a variety of source types. The limited empirical data
22 available on the 200-MG-1 OU waste sites is a hindrance to the development of a list of COPCs.
23 Because these waste sites originate from many different waste-generating processes and release
24 mechanisms, potential risk-driver contaminants were selected by a Central Plateau site-wide
25 information query from the *Hanford Environmental Information System* (HEIS) database.

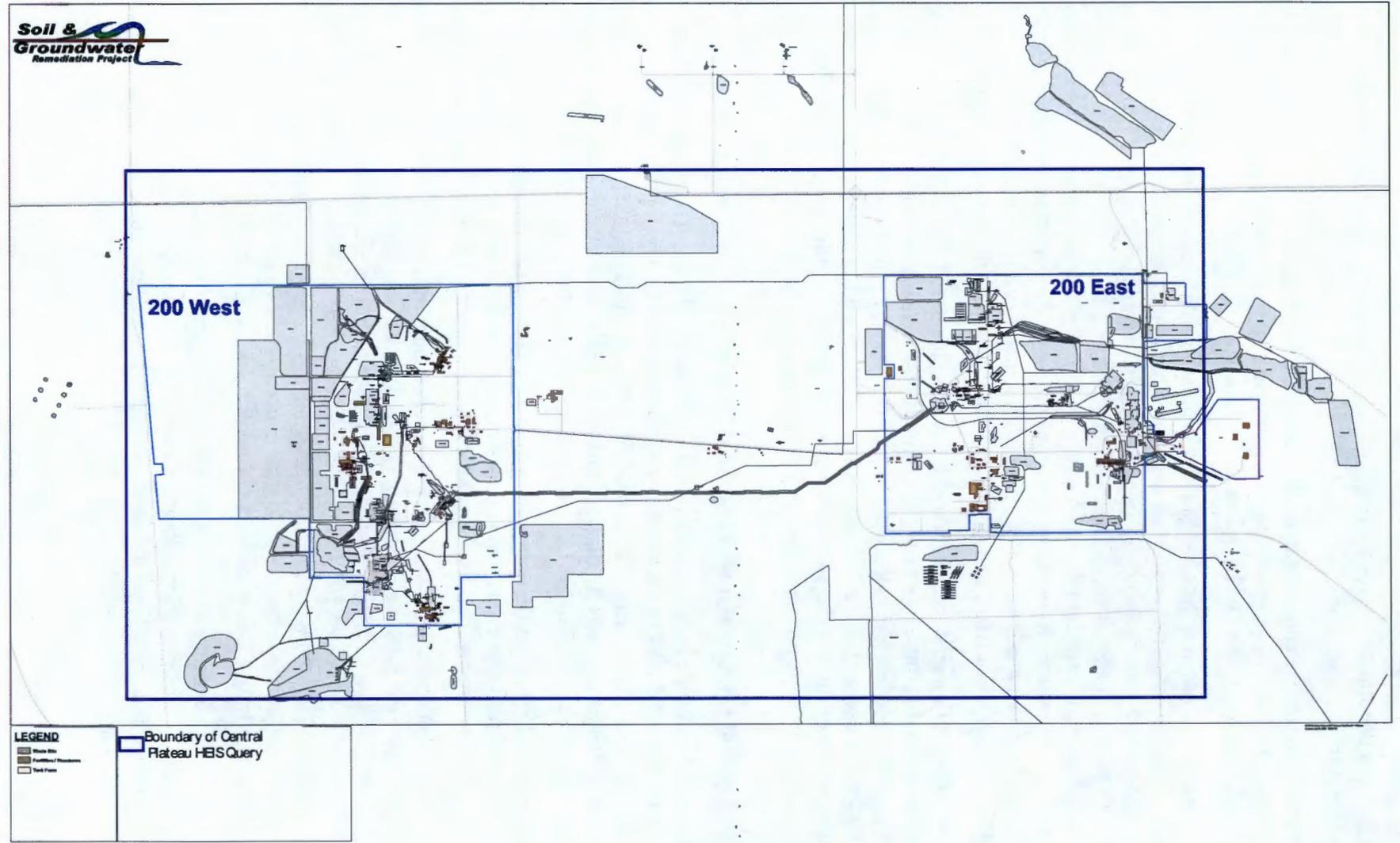
26 The query searched several different types of data held in the HEIS database. The maximum
27 detected concentrations were obtained for constituents in soil samples taken from wells,
28 boreholes, and waste sites within the boundaries of the Central Plateau as shown in Figure 2-1.

29 Initially, 332 constituents were identified and the maximum detected value of each constituent
30 was compared to human health and ecological screening values. Method C of Ecology, 2007,
31 *Cleanup Levels and Risk Calculations (CLARC)* database and radiation soil preliminary cleanup
32 levels (DOE/RL-2006-50, *200-UR-1 Unplanned Release Waste Group Operable Unit Sampling
33 and Analysis Plan*, Table 3) were used for human health screening. WAC 173-340-900,
34 "Tables," Table 749-3 and radiation biological concentration guides were used for ecological
35 screening. The resulting COPC lists are provided in Tables 2-2 and 2-3.

36 To ensure an effective means for detecting and reporting constituents that may not be identified
37 as COPCs, a "method-based" approach will be used for reporting analytical results. This
38 approach will yield concentrations for the COPCs as well as other constituents included in the
39 laboratory analytical method lists.

40

Figure 2-1. Boundary of Central Plateau Information Query.



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Table 2-2. Nonradionuclide Contaminants of Potential Concern

Contaminants of Potential Concern	
Antimony	Molybdenum
Aroclor-1254	Nickel
Aroclor-1260	Selenium
Arsenic	Thallium
Barium	Total petroleum hydrocarbons – diesel range
Chromium	Total petroleum hydrocarbons – kerosene range
Copper	Uranium
Lead	Vanadium
Mercury	Zinc

1

Table 2-3. Radionuclide Contaminants of Potential Concern

Contaminants of Potential Concern	
Americium-241	Plutonium-239/240
Cesium-137	Strontium-90
Europium-152	Uranium-233/234
Europium-154	Uranium-235
Europium-155	Uranium-238
Plutonium-238	--

2

3 2.5 STREAMLINED RISK EVALUATION

4 An exposure pathway is the physical course that a COPC takes from the point of release to a
 5 receptor. The route of exposure is the means by which a COPC enters a receptor. For an
 6 exposure pathway to be complete, all of the following components must be present:

- 7
- 8 • Source
 - 9 • Mechanism of chemical release and transport
 - 10 • Environmental transport medium
 - 11 • Exposure point
 - 12 • Exposure route
 - Receptor or exposed population.

1 In the absence of any one of these components, an exposure pathway is considered incomplete
 2 and, therefore, creates no risk or hazard. This section examines the potential site contaminant
 3 release mechanisms, potentially complete human exposure pathways and receptors, potentially
 4 complete ecological exposure pathways, and the potential threats.

5 **2.5.1 Release Mechanisms**

6 The primary release mechanisms for the 200-MG-1 OU waste sites include the following:

- 7 • Discharge of liquid effluent waste streams or cooling water to shallow cribs, ditches and
 8 ponds, french drains, or septic system tile fields
- 9 • Unplanned release of liquid waste streams to shallow zone soils
- 10 • Wind dispersal of particulates from various sources.

11 As discussed in Section 2.1.4, the 200-MG-1 OU waste sites have contamination in the shallow
 12 vadose zone and are not considered a threat to groundwater quality.

13 **2.5.2 Potentially Complete Human Exposure** 14 **Pathways and Receptors**

15 The future land use of the Central Plateau is described in DOE/EIS-0222-F, *Final Hanford*
 16 *Comprehensive Land Use Plan Environmental Impact Statement*. Based on DOE/EIS-0222-F
 17 and the associated 64 FR 61615, "Record of Decision: Hanford Comprehensive Land-Use Plan
 18 Environmental Impact Statement," the Central Plateau, which includes the 200 Areas, land use is
 19 described as industrial-exclusive, which is defined as "preserving DOE control of the continuing
 20 remediation activities and use of the existing compatible infrastructure required to support
 21 activities such as dangerous waste, radioactive waste, and mixed waste treatment, storage, and
 22 disposal facilities" (DOE/EIS-0222-F). Most of the 200-MG-1 OU waste sites are inside the
 23 industrial-exclusive boundary. The most plausible exposure pathways are considered for
 24 characterizing human health risks. An industrial worker will be used to calculate PRCLs inside
 25 the industrial-exclusive boundary. Conservation and mining are land uses identified for land
 26 located immediately outside the industrial-exclusive boundary. Several of the 200-MG-1 OU
 27 waste sites are outside this boundary (see Chapter 3.0).

28 The most plausible exposure pathways are considered for characterizing human-health risks. An
 29 industrial worker, consistent with the industrial-exclusive land use, will be used to calculate
 30 PRCLs for those waste sites located inside the industrial-exclusive boundary. Exposure
 31 scenarios for the conservation/mining land uses will be used to calculate PRCLs for those waste
 32 sites located outside the boundary. Although it is unlikely that areas near the industrial-exclusive
 33 boundary will be used for residential purposes, use of PRCLs that are based on a conservation
 34 land use will limit land-use control areas (areas where institutional controls limit reuse) near the
 35 boundary.

36 The potential human health exposure pathways are:

- 37 • Inhalation of dust or particulates
- 38 • Ingestion of soil
- 39 • Dermal contact
- 40 • External radiation exposure

1 **2.5.3 Potentially Complete Ecological Exposure**
2 **Pathways**

3 The most plausible potential ecological exposure pathways for the 200-MG-1 OU waste sites
4 stem from direct contact with shallow-zone soil that contains suitable habitat for terrestrial
5 wildlife.

6 Ecological PRCLs that are protective of terrestrial ecological receptors will be established for
7 use on 200 Area waste sites. These values will be presented in the Removal Action Work Plan.

8 **2.5.4 Potential Threats**

9 If action is delayed or not taken, waste site contaminants will continue to migrate in the
10 environment. Severe weather and vegetation growth can result in further environmental
11 contamination. This may cause a threat to worker health and the environment through ingestion
12 and inhalation of particles, and direct exposure, and to the public through inhalation of airborne
13 contaminants. Subsurface liquids may continue to migrate. Areas that have been cleaned up
14 may become recontaminated with the release of contaminants from these waste sites. The
15 potential for worker, public, and environmental exposures as well as removal costs increases
16 with continued distribution of contamination in the environment over time.

17 **2.6 RISK EVALUATION AND SITE**
18 **CONDITIONS THAT JUSTIFY A**
19 **REMOVAL ACTION**

20 DOE has determined that the 200-MG-1 OU waste sites contain the potential for release of
21 CERCLA hazardous substances, and that a non-time-critical removal action, pursuant to
22 authority delegated under Executive Order 12580, *Superfund Implementation*, and the Tri-Party
23 Agreement Action Plan, Section 7.2.4, is warranted to mitigate the threat of release.

24
25

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3.0 REMOVAL ACTION OBJECTIVES AND PRELIMINARY REMOVAL CLEANUP LEVELS

This chapter discusses the RAOs and PRCLs to be attained by the removal actions for the 200-MG-1 OU. The development of the RAOs and PRCLs identified in this EE/CA are consistent with preliminary CERCLA remedial investigation/feasibility study processes for the 200-MG-1 OU and for the other 200 Area OUs.

3.1 REMOVAL ACTION OBJECTIVES

RAOs provide a basis for evaluating specific removal alternatives to achieve compliance with potential ARARs (specified in Appendix C) and PRCLs, to the extent practicable. Based on previous remedial action objectives developed for other 200 Area OUs, the RAOs for this EE/CA are listed below.

- RAO 1. Prevent unacceptable risk to human health and ecological receptors from exposure to soils and/or debris contaminated with nonradiological constituents at concentrations above the appropriate land-use criteria.
- RAO 2. Prevent unacceptable risk to human health and ecological receptors from exposure to soils and/or debris contaminated with radiological constituents at concentrations above the appropriate land-use criteria.
- RAO 3. Prevent adverse impacts to cultural resources and threatened or endangered species, and minimize wildlife habitat disruption.

Achieving these RAOs can be accomplished by reducing concentrations (or activities) of contaminants to PRCLs or by eliminating potential exposure pathways/routes. DOE will excavate to the depth of unimpacted soil for waste sites within the Industrial Exclusive Area to the extent practicable. This will initially be demonstrated using field instruments that detect beta- or gamma-ionizing radiation. The target excavation depth will be achieved when field radiological surveys show that residual radioactivity approximates non-impacted soil conditions. If this is judged not feasible for the site, DOE will, to the maximum extent practicable, complete the removal action in a manner consistent with the anticipated final remedial action by comparison of COPC concentrations to PRCLs.

Verification sampling and analysis will be performed to assist in closing out the removal action at individual sites. Protection of human health and the environment is met when risks from residual contamination are within the CERCLA 10^{-6} to 10^{-4} excess lifetime cancer risk range or when the hazard index is less than 1.0 for noncarcinogenic effects (EPA, 1991, *Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions*, OSWER Directive 9355.0-30).

3.2 PRELIMINARY REMOVAL CLEANUP LEVELS

The conceptual site model in this EE/CA consists of sites with a shallow contamination profile that do not pose a risk to groundwater. PRCLs for the waste sites identified in this EE/CA will be developed and documented in the RAWP. These PRCLs will be based on attainment of

- 1 acceptable levels of human health and ecological risk for waste sites within the Industrial
 2 Exclusive Area to the extent practicable. The PRCLs for waste sites inside the Industrial
 3 Exclusive Area boundary are based on industrial land-use and the protection of wildlife.
- 4 The PRCLs for waste sites outside the Industrial Exclusive Area boundary will be based on
 5 conservation land-use and the ecological PRCLs include protection of plants, soil biota, and
 6 wildlife. Table 3-1 lists the 200-MG-1 OU waste sites that are outside or partially outside the
 7 Industrial Exclusive Area boundary. The sites not listed in Table 3-1 are within the Industrial
 8 Exclusive Area boundary.
- 9 However, if sites are encountered with deeper contamination and are not transferred to another
 10 OU, then groundwater PRCLs may be developed through site-specific modeling or other
 11 methods (e.g., leachability testing). If DOE and Ecology agree that those cleanup levels apply to
 12 a site and will result in residual contamination levels that do not pose an unacceptable threat to
 13 groundwater for 1,000 years, then those levels will be adopted and documented in the RAWP.
- 14 Attainment of the PRCLs is intended to meet the RAOs identified in Section 3.1 and are
 15 expected also to satisfy the remedial action objectives established in a final Record of Decision.

Table 3-1. 200-MG-1 Operable Unit Sites Outside the
 Central Plateau Industrial Exclusive Area.

Waste Site Code	Waste Site Type	Waste Site Code	Waste Site Type
200-E-101	Experiment/Test Site	600-218	Dumping Area
200-E-109*	Unplanned Release	600-220	Dumping Area
200-E-110	Dumping Area	600-222	Military Compound
200-W-33*	Dumping Area	600-226	Dumping Area
600-36	Burn Pit	600-262	Crib
600-38	Dumping Area	600-275	Foundation
600-40	Dumping Area	Old Central Shop Area	Foundation
600 Original Central Landfill	Sanitary Landfill	UPR-600-21	Unplanned Release

* Indicates a site only partially outside of the Industrial Exclusive Area.

4.0 DISCUSSION OF ALTERNATIVES

A summary of each of the four removal action alternatives for the 200-MG-1 OU waste sites is provided below. The alternatives are discussed in general terms as they will be applied to the 200-MG-1 OU waste sites.

4.1 NO-ACTION ALTERNATIVE

The NA alternative is required by CERCLA as a baseline for comparison with other removal action alternatives. In the NA alternative, no legal restrictions, institutional controls (ICs), or active measures are applied to the waste site. The NA alternative implies allowing the wastes to remain in the current configuration, thus being affected only by natural processes. No maintenance or other activities will be instituted or continued. Selecting the NA alternative will require that a waste site pose no unacceptable threat to human health or the environment.

4.2 MAINTAIN EXISTING SOIL COVER/INSTITUTIONAL CONTROLS/MONITORED NATURAL ATTENUATION ALTERNATIVE

Under the MESC/IC/MNA alternative, the existing soil cover on a waste site is maintained and/or augmented as needed to provide protection from intrusion by biological receptors, along with ICs (e.g., deed restrictions, excavation permits) and physical barriers (e.g., fencing) that will mitigate contaminant exposure. Appendices A and B identify waste sites that have soil covers (i.e., soil stabilization covers and clean overburden). With this alternative, radioactive contaminants remaining at the site are allowed to decay in place (i.e., to attenuate naturally), thereby reducing risk until PRCLs are met. This alternative will be considered for waste sites that meet the following conditions.

- A soil cover exists on the site.
- Contaminant concentrations will attenuate to below PRCLs within 150 years.
- Contaminants do not have a pathway to receptors within 150 years.
- Cost for this alternative is lower than the other alternatives and is still protective of human health and the environment.

DOE/RL-2001-41, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions*, describes how the ICs are implemented and maintained and serves as a reference for the selection of ICs in the future. ICs generally include non-engineered restrictions on activities and access to land, groundwater, surface water, waste sites, waste-disposal areas, and other areas or media that contain hazardous substances. This is to minimize the potential for human exposure to the substances. Common types of ICs include procedural restrictions for access, warning notices, permits, easements, deed notifications, leases and contracts, and land-use controls. Waste sites having a thin soil cover may require more stringent ICs (e.g., physical barriers, biological monitoring, removal of deeply rooted plants, and control of deep-burrowing animals) to be implemented. The RAWP will specify soil cover thickness requirements. Water-and land-use restrictions also will be used, as necessary, to prevent exposure during the attenuation period.

1 Attenuation relies on natural processes to lower contaminant concentrations until cleanup levels
2 are met. Monitored natural attenuation includes sampling and/or environmental monitoring,
3 consistent with EPA/540/R-99/006, *Radiation Risk Assessment at CERCLA Sites: Q&A*,
4 OSWER 9200.4-31P, to verify that contaminants are attenuating as expected and to ensure that
5 contaminants remain isolated (e.g., will not be released to air or biota). Monitoring activities
6 will include surface radiological surveys and/or subsurface radiological logging to verify that
7 natural attenuation processes are effective. Collection of confirmatory samples and laboratory
8 analysis is included in this alternative to confirm that the radiological contaminants at the site
9 will attenuate and meet cleanup criteria within the 150-year timeframe. Sample design
10 assumptions for cost estimating purposes are described (SGW-38383).

11 **4.3 CONFIRMATORY SAMPLING/NO-ACTION** 12 **ALTERNATIVE**

13 Under the CS/NA alternative, sampling and analysis will be conducted to confirm that COPCs
14 are not present at concentrations above PRCLs. Radiological surveys will be included in the
15 initial site investigation as appropriate for site conditions to support the selection of sampling
16 locations. Direct radiological surveys without additional sampling and analysis may also be used
17 for verifying that radiological contamination is below PRCLs for waste sites contaminated only
18 with radionuclides for which the isotopic ratios have been established.

19 This alternative will be considered for waste sites that meet one or more of the following
20 conditions.

- 21 • Prior cleanup activities have been performed, but insufficient data are currently available
22 to close out the waste site.
- 23 • COPC concentrations are not expected to exceed PRCLs.
- 24 • The contamination status of the site is uncertain and a strong possibility exists that the
25 site is not contaminated.

26 **4.4 REMOVAL, TREATMENT, AND DISPOSAL** 27 **ALTERNATIVE**

28 This alternative applies to waste sites that are expected to be contaminated above PRCLs.
29 Removal activities will include excavation of contaminated soil and structures. This alternative
30 will be considered for waste sites that meet one or more of the following conditions.

- 31 • Contaminant concentrations are known or expected to exceed PRCLs.
- 32 • Contaminants will not naturally attenuate within 150 years.
- 33 • Removal cost for this alternative is not prohibitive and provides a greater amount of risk
34 reduction than other alternatives.

35 The cleanup of sites under the RTD alternative will be guided by the observational approach.
36 The observational approach is a method of planning, designing, and implementing a removal
37 action that relies on information (e.g., field instrument readings and/or field screening samples)
38 collected during the removal to guide the direction and scope of the activity. Initial screening
39 and sampling data are used for an ERDF profile, to assess the extent of contamination and to
40 make real-time decisions in the field. Following some excavation, the extent of contamination

1 may be further assessed by additional screening and sampling. The extent of removal is then
2 adjusted based on those results. Targeted removals will be conducted under this alternative if
3 contamination is localized in only a portion of a waste site.

4 In this alternative, soils will be removed until the PRCLs are achieved, generally up to a depth of
5 4.6 m (15 ft). For human exposures via soil contact, a depth of 4.6 m (15 ft) is the point of
6 compliance under WAC 173-340-740(6) and WAC 173-340-745(7) as it represents a reasonable
7 estimate of the depth of soil that is normally excavated and distributed at the surface as a result
8 of development activities. Direct radiological surveys without additional sampling and analysis
9 may be used for verifying that radiological contamination is below PRCLs for waste sites
10 contaminated only with radionuclides for which the isotopic ratios have been established.

11 In some cases, excavation beyond 4.6 m (15 ft) may be required. These cases include waste sites
12 where removal of an engineered structure is required, or where verification sampling indicates
13 that deeper excavation is required to attain PRCLs. Structures and soil with contaminant
14 concentrations above the PRCLs will be removed using conventional techniques and will be
15 disposed of at ERDF or other approved disposal facility.

16 Pre-verification sampling will be performed to determine depth of contamination if unanticipated
17 contamination above the PRCLs is discovered at greater than 4.6 m (15 ft) bgs. The impacted
18 soils will be removed if sampling indicates that PRCLs can reasonably be achieved through
19 slightly deeper excavation. However, the waste site will be proposed for reassignment to another
20 OU and assessment of other response or removal actions if pre-verification sampling indicates
21 that slightly deeper excavation will not result in attainment of PRCLs. Sites also may be
22 proposed for OU reassignment if removal actions will interfere with remedial actions at
23 nearby sites. Decision inputs will include results of modeling (in accordance with
24 WAC 173-340-747(8), "Alternative Fate and Transport Models"), risk assessment, and
25 regulatory requirements. Criteria will be developed within the RAWP to indicate under which
26 conditions deeper excavation will be required. Exceptional conditions will require consultation
27 with Ecology.

28 Some OU waste sites containing structures are known to extend below 4.6 m (15 ft). The
29 removal action cost estimates were calculated recognizing the excavation that is expected.

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5.0 ANALYSIS OF ALTERNATIVES

2 CERCLA requires that non-time-critical removal action EE/CA alternatives be evaluated against
 3 three criteria: effectiveness, implementability, and cost (EPA, 1993, *Guidance on Conducting*
 4 *Non-Time Critical Removal Actions Under CERCLA*, OSWER Directive 9360.0-32). Each
 5 removal action alternative is evaluated against the criteria shown in Table 5-1.

Table 5-1. Description of CERCLA Evaluation Criteria.

CERCLA Evaluation Criteria	Description of CERCLA Evaluation Criteria
Effectiveness	The ability to meet the removal objectives within the scope of the removal action and in terms of overall protection of human health and the environment.
Overall protection of human health and the environment	This criterion evaluates whether implementation of an alternative achieves adequate protection of risks to human health and the environment posed by the likely exposure pathways. Reducing the potential threat to acceptable levels is a CERCLA threshold requirement and is the primary objective of the removal action. The evaluation of this criterion is based on qualitative analysis and on assumptions regarding the contaminants present at the waste site.
Compliance with ARARs	Implementation actions for any selected alternative will be designed to comply with ARARs cited in this document, to the extent possible. ARARs are any appropriate standards, criteria, or limitations under any federal environmental law or more stringent state requirement that must be either met or waived for any hazardous substance, pollutant, or contaminant that will remain on site during or after completion of a removal action. Each alternative is assessed for compliance against these ARARs.
Long-term effectiveness and permanence	The long-term effectiveness and permanence criterion addresses the risk after the removal action is completed. This criterion also refers to the ability of the removal action to maintain reliable long-term protection of human health and the environment after removal action objectives have been met.
Reduction of TMV through treatment	This criterion refers to an evaluation of the anticipated performance of treatment technologies that might be employed in a removal action. The criterion assesses whether a removal action alternative significantly and permanently reduces the TMV of a hazardous substance through treatment. Significant overall reduction can be achieved by destroying toxic contaminants or by reducing total mass, contaminant mobility, or total volume of contaminated media.
Short-term effectiveness	This criterion refers to potential adverse effects on human health and the environment during the removal action implementation phase(s). This criterion also evaluates the speed with which an alternative achieves protection.
Implementability	This criterion addresses the technical and administrative feasibility of implementing the removal action alternative and the availability of the required services and materials.
Cost	This criterion considers the cost of implementing a removal action alternative, including capital costs, operation and maintenance costs, and monitoring costs, to the extent that costs can be quantified. The cost evaluation also includes monitoring of any restoration or mitigation measures for natural, cultural, and historical resources.

ARAR = applicable or relevant and appropriate requirement.

CERCLA = *Comprehensive Environmental Response, Compensation, and Liability Act of 1980.*

TMV = toxicity, mobility, and volume.

1 Specific information on contaminant concentrations is generally not available for the
2 200-MG-1 OU waste sites. In many cases, process knowledge concerning the characteristics of
3 the waste stream released, materials present, or historical radiological hand-held instrument
4 survey results provide the only indication as to whether the site may currently be contaminated.
5 Qualitative information suggests that COPC concentrations are below PRCLs for many of the
6 waste sites; therefore, site conditions are presumed in the absence of quantitative data.

7 Two base assumptions were considered in the alternatives analysis and are repeated as each
8 alternative is evaluated against the criteria in Sections 5.1 and 5.2. The first assumption is that
9 the waste site is assumed to be contaminated (i.e., at least one COPC concentration is greater
10 than its PRCL). The second assumption is that the COPC concentrations are all below PRCLs at
11 a given waste site. The preferred alternative was selected by matching the available site
12 information with the appropriate assumption and CERCLA evaluation criteria. Each of these
13 criteria is further explained in the following sections.

14 **5.1 EFFECTIVENESS**

15 The effectiveness criterion refers to the ability to meet the removal objectives outlined in
16 Chapter 3.0 in terms of overall protection of human health and the environment.

17 **5.1.1 Overall Protection of Human Health and the** 18 **Environment**

19 This criterion was used to evaluate whether implementation of an alternative achieves adequate
20 protection of risks to human health and the environment through the likely exposure pathways.
21 Reducing the potential threat to acceptable levels is a CERCLA threshold requirement and is the
22 primary objective of the removal action. The evaluation of this criterion was based on a
23 qualitative analysis and the current assumptions regarding the contamination status of the
24 200-MG-1 OU waste sites.

25 **NA.** The NA alternative was retained for detailed analysis as a baseline description of the effects
26 of taking no action as required by CERCLA regulations. This alternative cannot be considered
27 for the 200-MG-1 OU waste sites because of the absence of characterization data. Secondly,
28 assuming that COPC concentrations exist above their PRCLs, this alternative does not provide
29 acceptable levels of protection because exposure pathways would remain intact for Hanford Site
30 personnel, the local environment, and/or the public. However, this alternative is provided for
31 comparison to the other alternatives in the analysis even though it is not selected as a removal
32 action alternative.

33 **MESC/IC/MNA.** Under the MESC/IC/MNA alternative, contaminants would remain at the
34 200-MG-1 OU waste sites beneath the existing soil covers to prevent inadvertent human and
35 biological intrusion until contaminant concentrations reach acceptable levels. This alternative
36 relies on natural attenuation (i.e., radioactive decay for radionuclides) to decrease contaminant
37 concentrations to levels protective of human health and the environment. This alternative would
38 be protective if PRCLs can be achieved within 150 years. Maintenance and periodic monitoring
39 would be required for soil covers throughout the attenuation period. Confirmatory sampling is
40 required to determine that attenuation would be achieved within the 150-year timeframe, based
41 on half-lives of the radionuclides at the waste site.

1 **CS/NA.** The CS/NA alternative would protect human health and the environment if
2 confirmatory sampling and analysis shows contaminant levels below PRCLs and appropriate risk
3 levels are met. This alternative cannot be applied to waste sites when sampling and analysis
4 shows contaminant concentrations above PRCLs because additional actions would not be taken
5 and residual contaminants could lead to unacceptable exposures to human or ecological
6 receptors.

7 **RTD.** The RTD alternative is protective of long-term human health and the environment
8 because the contaminants are removed from the waste sites. However, this alternative has
9 greater potential to expose workers to contamination and industrial safety hazards than the other
10 alternatives.

11 **5.1.1.1 Contaminant Levels Exceed PRCLs**

12 The RTD alternative is most protective for the 200-MG-1 OU waste sites with contaminant
13 levels above PRCLs, because contaminants are removed and exposure pathways are eliminated.
14 The MESC/IC/MNA alternative is next most protective because exposure pathways are
15 controlled at sites where soil covers exist and contaminants naturally attenuate below PRCLs
16 within 150 years. The CS/NA alternative is not protective for sites where contaminants exceed
17 PRCLs, appropriate risk levels are not met, and because actions would not be taken to control
18 exposure pathways. The NA alternative is not protective of human health and the environment
19 because no action would be taken to confirm exposure risks or control exposure pathways.

20 **5.1.1.2 Contaminant Levels Below PRCLs**

21 Each alternative requires certain actions to determine that the site contaminants are below
22 PRCLs. The CS/NA alternative is most appropriate for 200-MG-1 OU waste sites that have
23 COPCs at levels below PRCLs, because no actions beyond sampling and analysis are needed
24 after the risks are determined. The MESC/IC/MNA alternative is protective, but unnecessary
25 because no contamination is present. Only sampling below the cover soil to confirm
26 contaminant levels would be required. The RTD alternative would be protective, but not
27 necessary because the site poses no risk to human health or the environment. The NA alternative
28 cannot demonstrate protectiveness in the absence of characterization data.

29 **5.1.2 Compliance with Applicable or Relevant and** 30 **Appropriate Requirements**

31 Implementation actions for any selected removal alternative will comply, to the extent
32 practicable, with ARARs. ARARs are environmental regulations that have been evaluated to
33 potentially be pertinent to the removal action. Response actions are required to comply with the
34 substantive aspects of ARARs, not with corresponding administrative requirements. That is,
35 permit applications and other administrative requirements, such as administrative reviews, and
36 reporting and recordkeeping requirements, are considered administrative for actions conducted
37 entirely onsite [40 CFR 300.400(e), "General"] and therefore not required. The purpose of this
38 section is to identify the key ARARs proposed for the alternatives addressed in this EE/CA.
39 ARARs, which will be complied with during implementation of the selected removal action, will
40 be documented in the CERCLA Action Memorandum. The proposed ARARs are discussed
41 generally in the following sections and are documented in detail in Appendix C. In addition,
42 TBC information consists of nonpromulgated advisories or guidance issued by Federal or state
43 governments that are not binding legally and do not have the status of potential ARARs. As

1 appropriate, TBCs should be considered in determining the removal action necessary for
2 protection of human health and the environment.

3 **NA.** The NA alternative does not comply with ARARs because no actions would be taken to
4 comply with Federal or state requirements.

5 **MESC/IC/MNA.** The MESC/IC/MNA alternative complies with ARARs for sites that have an
6 existing soil cover and have contaminants that will naturally attenuate to levels below PRCLs
7 within 150 years, or sites with an existing soil cover and current contaminant levels that do not
8 exceed PRCLs because the appropriate risk levels would be met. The alternative does not
9 comply for sites with an existing soil cover where contaminants will not naturally attenuate to
10 levels below PRCLs within this timeframe.

11 **CS/NA.** The CS/NA alternative complies with ARARs for sites where confirmatory sampling
12 verifies that the appropriate risk levels have been met. Sites where confirmatory sampling shows
13 contaminant levels to be above PRCLs and appropriate risk levels have not been met, would not
14 comply because no action would be taken to meet Federal or state requirements.

15 **RTD.** The RTD alternative complies with ARARs for sites where contaminants exceed PRCLs
16 because contaminated soils and structures would be removed from the waste sites and
17 appropriate risk levels would be met. The alternative also would comply for sites where
18 contaminants are below PRCLs.

19 **5.1.2.1 Contaminant Levels Exceed PRCLs**

20 The RTD alternative would comply with ARARs because both radiological and nonradiological
21 contaminated soils would be removed from the waste sites. More potential ARARs would need
22 to be met with this alternative because of excavation, emission control, waste transportation, and
23 waste management action-specific requirements. The MESC/IC/MNA alternative also would
24 comply with ARARs at sites that have an existing soil cover and where contaminants would
25 naturally attenuate to levels below PRCLs within 150 years because the appropriate risk levels
26 would be met. This alternative does not comply with ARARs at sites where natural attenuation
27 is not sufficient to result in contaminant levels that are less than PRCLs within 150 years or
28 where soil covers do not currently exist. The CS/NA alternative does not comply with ARARs
29 for sites where contaminants exceed PRCLs because the appropriate risk levels would not be met
30 and no action would be taken to meet any Federal or state regulations. The NA alternative does
31 not comply with ARARs because no action would be taken to meet any Federal or state
32 regulations.

33 **5.1.2.2 Contaminant Levels Below PRCLs**

34 Each alternative requires certain actions to determine that the site contaminants are below
35 PRCLs. For the MESC/IC/MNA, CS/NA, and RTD alternatives, confirmatory sampling would
36 be used to demonstrate that appropriate risk levels have been met by attaining PRCLs. The NA
37 alternative does not comply with ARARs because no action would be taken to identify risk or
38 meet any Federal or state regulations.

39 **5.1.2.3 Waste Management Standards**

40 A variety of waste streams may be generated under the proposed removal action alternatives. It
41 is anticipated that most of the waste will designate as low-level, dangerous waste, or mixed
42 waste in a solid form and result from implementation of the RTD alternative.

1 Radioactive waste is governed under the authority of the *Atomic Energy Act of 1954*. The
2 identification, storage, treatment, and disposal of hazardous waste and the hazardous component
3 of mixed waste are governed by RCRA. The State of Washington, which implements RCRA
4 requirements under WAC 173-303, "Dangerous Waste Regulations," has been authorized by the
5 EPA to implement most elements of the RCRA program. The dangerous waste standards for
6 generation and storage will apply to the management of any dangerous or mixed waste generated
7 at the 200-MG-1 OU waste sites. Treatment standards for dangerous or mixed waste subject to
8 RCRA land disposal restrictions are specified in WAC 173-303-140, "Land Disposal
9 Restrictions," which incorporates 40 CFR 268, "Land Disposal Restrictions," by reference.

10 Waste that is designated as low-level waste that meets ERDF acceptance criteria (WCH-191) is
11 assumed to be disposed at ERDF, which is engineered to meet appropriate performance
12 standards. Alternate potential disposal locations may be considered when the removal action
13 occurs if a suitable and cost-effective location is identified. Any potential alternate disposal
14 location will be evaluated for appropriate performance standards to ensure that it is adequately
15 protective of human health and the environment.

16 Waste designated as dangerous or mixed waste would be treated as appropriate to meet land
17 disposal restrictions and ERDF acceptance criteria and disposed at ERDF. ERDF is engineered
18 to meet minimum technical requirements for landfills under WAC 173-303-665, "Landfills."
19 Applicable packaging and pre-transportation requirements for dangerous or mixed waste
20 generated at a 200-MG-1 OU waste site would be identified and implemented before movement
21 of any waste.

22 It is anticipated that the MESC/IC/MNA, CS/NA, and RTD alternatives can be performed in
23 compliance with the waste management ARARs. Waste streams will be evaluated, designated,
24 and managed in compliance with the potential ARAR requirements. Before disposal, waste will
25 be managed in a protective manner to prevent releases to the environment or unnecessary
26 exposure to personnel.

27 **5.1.2.4 Standards Controlling Emissions to the Environment**

28 The proposed removal action alternatives have the potential to generate both radioactive and
29 nonradioactive airborne emissions. The RTD alternative would have the greatest potential for
30 generation of airborne emissions.

31 RCW 70.94, "Washington Clean Air Act," requires regulation of radioactive air pollutants. The
32 state implementing regulation WAC 173-480, "Ambient Air Quality Standards and Emission
33 Limits for Radionuclides," sets standards that are as stringent or more so than the Federal *Clean*
34 *Air Act of 1990* and Amendments, and under the Federal implementing regulation, 40 CFR 61,
35 Subpart H, "National Emission Standards for Emissions of Radionuclides Other than Radon
36 from Department of Energy Facilities." EPA partial delegation of the 40 CFR 61 authority to the
37 State of Washington includes all substantive emissions monitoring, abatement, and reporting
38 aspects of the Federal regulation. The state standards protect the public by conservatively
39 establishing exposure standards applicable to even the maximally exposed public individual, be
40 that individual real or hypothetical. To that end, the standards address any member of the public,
41 at the point of maximum annual air concentration in an unrestricted area where any member of
42 the public may be. All combined radionuclide airborne emissions from the DOE Hanford Site
43 "facility" are not to exceed amounts that would cause an exposure to any member of the public
44 of greater than 10 mrem/yr effective dose equivalent. The state implementing regulation

1 WAC 246-247, "Radiation Protection – Air Emissions," which adopts the WAC 173-480
2 standards and the 40 CFR 61, Subpart H standard, requires verification of compliance with the
3 10 mrem/yr standard, and would potentially be applicable to the removal action.

4 WAC 246-247 further addresses emission sources emitting radioactive airborne emissions by
5 requiring monitoring of such sources. Such monitoring requires physical measurement of the
6 effluent or ambient air. The substantive provisions of WAC 246-247 that require monitoring of
7 radioactive airborne emissions would potentially be applicable to the removal action.

8 The above state implementing regulations further address control of radioactive airborne
9 emissions where economically and technologically feasible (WAC 246-247-040 (3) and -040 (4),
10 "General Standards," and associated definitions). To address the substantive aspect of these
11 potential requirements, best or reasonably achieved control technology could be addressed by
12 ensuring that applicable emission control technologies (those successfully operated in similar
13 applications) would be used when economically and technologically feasible (i.e., based on
14 cost/benefit). If it is determined that there are substantive aspects of the requirement for control
15 of radioactive airborne emissions once ARARs are finalized, then controls will be administered
16 as appropriate using reasonable and effective methods.

17 The MESC/IC/MNA, CS/NA, and RTD alternatives are expected to comply with
18 these standards.

19 **5.1.3 Long-Term Effectiveness and Permanence**

20 The long-term effectiveness and permanence criterion refers to the magnitude of remaining risk
21 and the ability of a remedy to maintain reliable protection of human health and the environment
22 over time, after the removal action alternative has been completed and cleanup goals have been
23 met. The completion of the removal action alternative for MESC/IC/MNA is defined as the end
24 of the attenuation period (up to 150 years) and for RTD it is defined as the day the removal is
25 complete.

26 **NA.** The NA alternative was retained for detailed analysis as a baseline description of the effects
27 of taking no action as required by CERCLA regulations. This alternative cannot be considered
28 for the 200-MG-1 OU waste sites because of the absence of characterization data. Secondly, for
29 contaminated sites the NA alternative does not provide any measure of long-term effectiveness
30 and permanence because no actions would be taken to mitigate risks or maintain long-term
31 protection.

32 **MESC/IC/MNA.** The MESC/IC/MNA alternative achieves long-term effectiveness via natural
33 attenuation and ICs. This alternative does not provide protection for sites without existing soil
34 covers or where contaminants will not attenuate sufficiently to meet PRCLs within 150 years.

35 **CS/NA.** The CS/NA alternative would provide long-term effectiveness and permanence for sites
36 where confirmatory sampling shows contaminant levels do not exceed PRCLs. The alternative
37 would not be effective or provide permanent protection for human health and the environment at
38 sites where confirmatory sampling shows contaminant levels that exceed PRCLs.

39 **RTD.** The RTD alternative provides long-term effectiveness and permanent protection of
40 human health and the environment because contaminants would be removed from the waste sites
41 and exposure pathways would no longer be present.

1 **5.1.3.1 Contaminant Levels Exceed PRCLs**

2 The RTD alternative provides the most effective, permanent, long-term protection for human
3 health and the environment because contaminant removal eliminates exposure pathways. The
4 MESC/IC/MNA alternative also would be protective for sites where confirmatory sampling
5 shows contaminants will attenuate to less than PRCLs within 150 years and the existing soil
6 cover can be maintained during this period. This alternative does not provide effective long-term
7 protection for sites where PRCLs will be exceeded after 150 years, or where an existing soil
8 cover is not present. The CS/NA alternative would not provide long-term effectiveness and
9 permanence because waste site sampling would show PRCLs are exceeded. The NA alternative
10 is not effective and permanent because no action is taken to identify or eliminate risk.

11 **5.1.3.2 Contaminant Levels Below PRCLs**

12 Each alternative requires certain actions to determine that the site contaminants are below
13 PRCLs. The CS/NA alternative is effective and permanent in the long-term for 200-MG-1 OU
14 waste sites that have contaminant levels that do not exceed PRCLs, because confirmatory
15 sampling and analysis results provide data indicating no risk is present. The MESC/IC/MNA
16 and RTD alternatives also would be effective, but unnecessary, because the waste site poses no
17 unacceptable risk. The NA alternative cannot demonstrate protectiveness in the absence of
18 characterization data.

19 **5.1.4 Reduction of Toxicity, Mobility, or Volume** 20 **through Treatment**

21 This criterion evaluates performance of anticipated treatment technologies in the removal action.
22 It also assesses the potential reduction of toxicity, mobility, and volume (TMV) of a hazardous
23 substance through treatment. Reduction characteristics include destruction of toxic
24 contaminants, mass reduction, immobilization of contaminants, or reduction of the contaminated
25 media volume.

26 This criterion focuses on the following factors for each alternative:

- 27 • Treatment processes used and the materials treated
- 28 • Recycling, reuse, and/or waste minimization used in a given treatment process
- 29 • Types and quantities of residuals that remain following treatment
- 30 • Possibility that further treatment actions may be needed for residuals
- 31 • Extent to which the alternative satisfies the statutory preference for treatment as a
32 principal element.

33 **NA.** The NA alternative was retained for detailed analysis as a baseline description of the effects
34 of taking no action as required by CERCLA regulations. This alternative cannot be considered
35 for the 200-MG-1 OU waste sites because of the absence of characterization data. Secondly, the
36 NA alternative does not provide reduction in TMV because no treatment is implemented.

37 **MESC/IC/MNA.** The MESC/IC/MNA alternative does not provide reduction in TMV because
38 no treatment is implemented at the waste site. No credit is taken for attenuation as a treatment
39 mechanism.

1 **CS/NA.** The CS/NA alternative does not provide reduction in TMV because no treatment is
2 implemented at the waste site.

3 **RTD.** The RTD alternative does not provide reduction in TMV because no treatment is
4 implemented at the waste site.

5 **5.1.4.1 Contaminant Levels Exceed PRCLs**

6 The NA, MESC/IC/MNA, CS/NA, and RTD alternatives do not provide reduction in TMV
7 because no treatment is implemented at the waste site.

8 **5.1.4.2 Contaminant Levels Below PRCLs**

9 Each alternative requires certain actions to determine that the site contaminants are below
10 PRCLs. The NA, MESC/IC/MNA, CS/NA, and RTD alternatives do not provide reduction in
11 TMV because no treatment is implemented at the waste site.

12 **5.1.5 Short-Term Effectiveness**

13 This criterion refers to potential adverse effects on human health and the environment during the
14 removal action implementation phase(s). The factors are considered for each alternative are
15 listed below.

- 16 • Health and safety of remediation workers and reliability of protective measures taken.
17 Specifically, this involves any risk resulting from implementation, such as fugitive dust,
18 transportation of hazardous materials, or air quality impacts from off-gas emissions.
- 19 • Physical, biological, and cultural impacts that might result from the construction and
20 implementation of the removal action, and whether the impacts can be controlled
21 or mitigated.
- 22 • The amount of time required to meet RAOs.

23 Short-term environmental impacts generally relate to the extent of physical disturbance of a site
24 and its associated habitat. Risks also can be associated with the potential disturbance of sensitive
25 species because of increased human activity in the area.

26 **NA.** The NA alternative was retained for detailed analysis as a baseline description of the effects
27 of taking no action as required by CERCLA regulations. This alternative cannot be considered
28 for the 200-MG-1 OU waste sites because of the absence of characterization data. Secondly, the
29 NA alternative does not apply for this criterion.

30 **MESC/IC/MNA.** The MESC/IC/MNA alternative would have no adverse impact to human
31 health and the environment for sites with an existing soil cover and contaminant levels that do
32 not exceed PRCLs. There is a potential for worker exposure during sampling, monitoring, or
33 maintenance activities over the attenuation period (up to 150 years) if the contaminant levels
34 exceed PRCLs. This alternative would prevent adverse impacts to cultural resources and/or
35 threatened or endangered species, and also would minimize disruption of habitat.

36 **CS/NA.** The CS/NA alternative would have negligible short-term impact to workers for sites
37 where confirmatory sampling shows contaminant levels do not exceed PRCLs. The alternative
38 would pose minimal risk to workers for sites where confirmatory sampling shows contaminant
39 levels exceed the PRCLs during the sampling process.

1 **RTD.** The RTD alternative could result in short-term risks to workers and the environment
2 during the implementation phase if contaminant levels exceed PRCLs. The excavation of
3 contaminated soil would inherently increase the potential for a release to the environment,
4 especially to the air. Adherence to appropriate environmental regulations and use of control
5 technologies would mitigate the potential for releases. Risk would be lower at sites where
6 contaminant levels are below PRCLs and only related to site industrial worker hazards and
7 impacts to the environment associated with site disturbances.

8 **5.1.5.1 Contaminant Levels Exceed PRCLs**

9 The RTD alternative has the greatest potential short-term impacts to human health and the
10 environment during implementation for 200-MG-1 OU waste sites where contaminant levels
11 exceed PRCLs. Potential worker and environmental impacts are associated with excavation,
12 fugitive dust, and transportation of contaminated material. The MESC/IC/MNA alternative
13 would have few adverse effects to human health and the environment for sites with an existing
14 soil cover because direct exposure pathways would be controlled. The CS/NA may have the
15 potential for a short-term impact (through exposure) on workers collecting samples. This
16 alternative would not involve any additional actions that would pose a risk to workers or the
17 environment. The NA alternative does not apply as discussed previously.

18 **5.1.5.2 Contaminant Levels Below PRCLs**

19 Each alternative requires certain actions to determine that the site contaminants are below
20 PRCLs. The CS/NA alternative would have minimal short-term impacts on human health and
21 the environment for waste sites where contaminant levels do not exceed PRCLs, because no
22 exposure pathways will be present and the site disturbance is minimal. The MESC/IC/MNA
23 alternative also would have minor impact to workers or the environment. The RTD alternative
24 would have more short-term risk to human health and the environment than the other alternatives
25 because excavation involves construction worker hazards and more disturbance of the site. The
26 NA alternative does not apply as discussed previously.

27 **5.2 IMPLEMENTABILITY**

28 This criterion addresses the technical and administrative feasibility of implementing the removal
29 action alternative and the availability of the required services and materials.

30 The following factors are considered for each alternative:

- 31 • Technical feasibility:
 - 32 – likelihood of technical difficulties in constructing and operating the alternative
 - 33 – likelihood of delays because of technical problems
 - 34 – uncertainties related to innovative technologies (e.g., failures).
- 35 • Administrative feasibility:
 - 36 – ability to coordinate activities with other offices and agencies
 - 37 – potential for regulatory constraints to develop (e.g., because of uncovering buried
 - 38 cultural resources or encountering endangered species).

1 • Availability of services and materials:

- 2 – availability of adequate onsite or offsite treatment storage capacity, and disposal
3 services, if necessary
- 4 – availability of necessary equipment, specialists, and provisions to ensure obtaining
5 any additional resources, if necessary.

6 **NA.** The NA alternative was retained for detailed analysis as a baseline description of the effects
7 of taking no action as required by CERCLA regulations. This alternative cannot be considered
8 for the 200-MG-1 OU waste sites because of the absence of characterization data. Secondly, the
9 NA alternative would not be feasible, because regulatory constraints would prevent its
10 implementation.

11 **MESC/IC/MNA.** The MESC/IC/MNA alternative is relatively easy to implement, but requires
12 a long-term commitment to monitoring and maintenance of the existing soil cover. The
13 alternative is technically straightforward and would be administratively and technically feasible
14 for sites with an existing soil cover and contaminant levels that would meet PRCLs within
15 150 years.

16 **CS/NA.** The CS/NA alternative is relatively easy to implement for all 200-MG-1 OU waste sites
17 because it is technically and administratively straightforward. The potential for failure or
18 development of new regulatory constraints would be low, because the only activity would be
19 sampling and analysis. The alternative may have technical challenges at sites that require special
20 sampling equipment (e.g., accessing potentially contaminated soils below thick concrete
21 retention basins or below building foundations).

22 **RTD.** The RTD alternative poses the greatest technical and administrative implementation
23 challenge because it requires the most planning, commitment of equipment and personnel, and
24 project coordination. Another important factor that may influence its feasibility is the available
25 treatment and disposal capacity at ERDF.

26 **5.2.1 Contaminant Levels Exceed PRCLs**

27 The CS/NA alternative would be easiest to implement where contamination levels exceed
28 PRCLs, because the only activity would be sampling and analysis, although this alternative
29 would not provide a reduction in the risk posed by a contaminated waste site. The
30 MESC/IC/MNA alternative will be more difficult to implement, because of the long-term nature
31 of the action. On-going administrative coordination would be required to ensure proper
32 maintenance, monitoring, and compliance. The RTD alternative would be the most difficult to
33 implement due to the requirements for planning, equipment and personnel requirements for
34 excavation and demolition activities, and worker safety. For sites outside the Industrial
35 Exclusive Area, there may be greater potential for regulatory constraints if cultural resources or
36 endangered species were to be encountered. Sites with large waste removal volumes could be
37 impacted by disposal capacity at ERDF. The NA alternative is not applicable.

38 **5.2.2 Contaminant Levels Below PRCLs**

39 Each alternative requires certain actions to determine that the site contaminants are below
40 PRCLs. The CS/NA alternative would be easy to implement for waste sites where
41 contamination levels do not exceed PRCLs, because the only activity required would be

1 sampling and analysis. The MESC/IC/MNA alternative also would be easy to implement. Only
2 sampling and analysis would be performed to determine if COPCs would meet attenuation
3 requirements. The RTD alternative would require the greatest commitment of personnel,
4 equipment, and administrative coordination. The NA alternative is not applicable.

5 **5.3 COST**

6 This criterion considers the cost of implementing a removal action alternative, including capital
7 costs, operation and maintenance costs, and monitoring costs, to the extent that costs can be
8 quantified assuming that the site contaminants are above PRCLs. The cost evaluation also
9 includes monitoring of any restoration or mitigation measures for natural, cultural, and
10 historical resources. The costs provide a discriminator for deciding between similar protective
11 and implementable alternatives for a specific site. Therefore, the costs are not absolute costs, but
12 rather relational costs for the evaluation of the alternatives.

13 The cost reference document for this EE/CA (SGW-38383) presents the cost estimates in both
14 2008 nondiscounted and present worth terms. Only the present worth costs are used for
15 comparative purposes in the alternatives analysis. The target accuracy for the cost estimates is
16 -30 percent to +50 percent. The cost estimates were prepared from information available at the
17 time of this study. The actual cost of the project will depend on additional information gained
18 during the removal action phase. While the exact dollar estimates were prepared, present worth
19 estimates in this EE/CA have been rounded to the nearest thousand dollars.

20 The present worth cost for each applicable alternative is estimated for each waste site for
21 comparison between alternatives. The cost shown for a particular alternative would only be
22 applicable if the waste site met all the conditions for its use (see Chapter 4.0). In some cases,
23 because of the specific characteristics of a waste site, an alternative and its associated costs
24 would not apply. For example, the cost for MESC/IC/MNA would not apply to waste sites
25 without an existing soil stabilization cover. The CS/NA alternative generally has the lowest cost
26 of the three alternatives that could be implemented (it is assumed that the NA alternative would
27 not be implemented). The RTD alternative is generally higher in cost than CS/NA. The
28 MESC/IC/MNA alternative typically costs more than other alternatives. However, the RTD
29 costs are highly dependent on site size and waste volume. Thus, RTD in some cases may be
30 more expensive than MESC/IC/MNA.

31 **5.4 APPLICATION OF ALTERNATIVE** 32 **SELECTION PROCESS**

33 A summary showing the application of the CERCLA evaluation criteria is presented in
34 Tables 5-2 and 5-3. The two base assumptions considered for each alternative are that
35 contaminant concentrations at the waste site exceed PRCLs and that contaminant concentrations
36 at the waste site do not exceed PRCLs.

37

38

Table 5-2. Comparison of CERCLA Evaluation Criteria to Removal Action Alternatives: Site COPCs Expected to Exceed PRCLs. (2 Pages)

CERCLA Evaluation Criteria	Summary of Comparison of CERCLA Evaluation Criteria Among Alternatives			
	NA	MESC/IC/MNA	CS/NA	RTD
Effectiveness				
Protective of human health and the environment See Section 5.1.1.1	<input checked="" type="checkbox"/> Not protective because no action taken to characterize risk or control exposure pathways.	<input type="checkbox"/> Protective for sites with an existing soil cover and COPCs would be below PRCLs within 150 years. Exposure pathways must be controlled until attenuation is complete. <input checked="" type="checkbox"/> Does not apply for waste sites without an existing soil cover and/or where COPCs would not be below PRCLs within 150 years.	<input checked="" type="checkbox"/> Not protective because no action taken to control exposure pathways.	<input type="checkbox"/> Most protective because COPCs are removed to levels below PRCLs.
Complies with ARARs See Section 5.1.2.1	<input checked="" type="checkbox"/> Cannot demonstrate compliance with ARARs in the absence of characterization data or removal actions.	<input type="checkbox"/> Would comply for sites with existing soil cover and COPCs that would be below PRCLs within 150 years. <input checked="" type="checkbox"/> Does not apply for waste sites without an existing soil cover and/or where COPCs would not be below PRCLs within 150 years.	<input checked="" type="checkbox"/> Not compliant with ARARs because sampling data do not confirm the site poses no risks and because no action taken to meet Federal or state cleanup regulations.	<input type="checkbox"/> Would comply with ARARs. More potential ARARs need to be met with this alternative because of excavation, emission controls, and waste management requirements.
Long-term effectiveness and permanence See Section 5.1.3.1	<input checked="" type="checkbox"/> Does not apply. There are no characterization data and removal actions not taken.	<input type="checkbox"/> Effective and permanent for sites with existing soil cover and COPCs would be below PRCLs within 150 years. <input checked="" type="checkbox"/> Not effective or permanent for waste sites without an existing soil cover and/or where COPCs would not be below PRCLs within 150 years.	<input checked="" type="checkbox"/> No long-term effectiveness because protective measures are not taken to control exposure pathways.	<input type="checkbox"/> Effective and permanent because COPCs would be removed to levels below PRCLs at completion of the removal action.
Reduction of TMV through treatment See Section 5.1.4.1	<input checked="" type="checkbox"/> Does not reduce TMV because active treatment actions are not taken.	<input checked="" type="checkbox"/> Does not result in a reduction in TMV because active treatment actions are not taken. No credit is taken for attenuation as a treatment method.	<input checked="" type="checkbox"/> Does not result in a reduction in TMV because active treatment actions are not taken.	<input checked="" type="checkbox"/> Does not result in a reduction in TMV because active treatment actions are not taken at the waste site.
Short-term effectiveness See Section 5.1.5.1	<input checked="" type="checkbox"/> Does not apply. There are no characterization data and removal actions not taken.	<input type="checkbox"/> Minor potential impact to workers or environment during implementation. <input checked="" type="checkbox"/> Not applicable for sites without an existing soil cover and/or where COPCs would not be below PRCLs within 150 years.	<input type="checkbox"/> Minor potential impact to workers or environment during implementation.	<input type="checkbox"/> Greatest potential for impacts to workers and releases to the environment.

Table 5-2. Comparison of CERCLA Evaluation Criteria to Removal Action Alternatives: Site COPCs Expected to Exceed PRCLs. (2 Pages)

CERCLA Evaluation Criteria	Summary of Comparison of CERCLA Evaluation Criteria Among Alternatives			
	NA	MESC/IC/MNA	CS/NA	RTD
Implementability See Section 5.2.1	<input checked="" type="checkbox"/> Cannot achieve regulatory acceptability in the absence of characterization data.	<input type="checkbox"/> Few actions required, but it involves long-term monitoring and maintenance. <input checked="" type="checkbox"/> Not applicable for sites without an existing soil cover and/or where COPCs would not be below PRCLs within 150 years.	<input type="checkbox"/> Easily implementable because only activity is sampling and analysis.	<input type="checkbox"/> Technically and administratively the most difficult alternative to implement.
Cost See Section 5.3	Not applicable – No associated cost.	Generally highest cost alternative.	Generally lowest cost alternative.	Generally intermediate cost alternative.

①②③ Circles indicate the criterion is met. The numbers within the circles designate the relative ranking in meeting the criterion among the alternatives. A ranking of No. 1 indicates all aspects of the criterion are best met by the alternative. Criteria of relatively equal ranking receive the same numeric value.

Does not meet the criterion.

ARAR = applicable or relevant and appropriate requirement.
 CERCLA = *Comprehensive Environmental Response, Compensation, and Liability Act of 1980.*
 CS/NA = confirmatory sampling/no action.
 COPC = contaminant of potential concern.

MESC/IC/MNA = maintain existing soil cover/institutional controls/monitored natural attenuation.
 NA = no action.
 PRCL = preliminary removal cleanup level.
 RTD = removal, treatment, and disposal.
 TMV = toxicity, mobility, and volume.

Table 5-3. Comparison of CERCLA Evaluation Criteria to Removal Action Alternatives: Site COPCs Expected Below PRCLs. (2 Pages)

CERCLA Evaluation Criteria	Summary of Comparison of CERCLA Evaluation Criteria Among Alternatives				
	NA	MESC/IC/MNA	CS/NA	RTD	
Effectiveness					
Protective of human health and the environment See Section 5.1.1.2	<input checked="" type="checkbox"/>	Cannot demonstrate protectiveness in the absence of characterization data.	⊖ Not evaluated because COPCs are below PRCLs.	① Meets the criterion because data are gathered to confirm that the waste site poses no risk and no further action is needed.	⊖ Not evaluated because COPCs are below PRCLs.
Complies with ARARs See Section 5.1.2.2	<input checked="" type="checkbox"/>	Cannot demonstrate compliance with ARARs in the absence of characterization data.	⊖ Not evaluated because COPCs are below PRCLs.	① Complies with ARARs because sampling data confirm the site poses no risks and meets Federal or state cleanup regulations.	⊖ Not evaluated because COPCs are below PRCLs.
Long-term effectiveness and permanence See Section 5.1.3.2	<input checked="" type="checkbox"/>	Does not apply. There are no characterization data and removal actions not taken.	⊖ Not evaluated because COPCs are below PRCLs.	① Meets the criterion. Sampling data verify no further actions are needed at the waste site.	⊖ Not evaluated because COPCs are below PRCLs.
Reduction of TMV through treatment See Section 5.1.4.2	<input checked="" type="checkbox"/>	Cannot demonstrate reduction of TMV without active treatment.	⊖ Not evaluated because COPCs are below PRCLs.	⊖ Does not apply because COPCs are below PRCLs.	⊖ Not evaluated because COPCs are below PRCLs.
Short-term effectiveness See Section 5.1.5.2	<input checked="" type="checkbox"/>	Does not apply. There are no characterization data and removal actions not taken.	⊖ Not evaluated because COPCs are below PRCLs.	⊖ Does not apply. Removal actions not taken.	⊖ Not evaluated because COPCs are below PRCLs.
Implementability See Section 5.2.2	<input checked="" type="checkbox"/>	Cannot achieve regulatory acceptability in the absence of characterization data.	⊖ Not evaluated because COPCs are below PRCLs.	① Easily implementable because only activity is sampling and analysis.	⊖ Not evaluated because COPCs are below PRCLs.

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Table 5-3. Comparison of CERCLA Evaluation Criteria to Removal Action
 Alternatives: Site COPCs Expected Below PRCLs. (2 Pages)

CERCLA Evaluation Criteria	Summary of Comparison of CERCLA Evaluation Criteria Among Alternatives			
	NA	MESC/IC/MNA	CS/NA	RTD
Cost See Section 5.3	Does not apply. There are no characterization data and removal actions not taken.	Not evaluated because COPCs are below PRCLs.	Low cost alternative.	Not evaluated because COPCs are below PRCLs.

● Circles indicate the criterion is met. A ranking of No. 1 indicates all aspects of the criterion are best met by the alternative.

⊙ The circle with the diagonal bar indicates an alternative that was not evaluated because COPCs concentrations are expected to be below PRCLs.

☒ Does not meet the criterion.

ARAR = applicable or relevant and appropriate requirement.
 CERCLA = *Comprehensive Environmental Response, Compensation, and Liability Act of 1980.*
 CS/NA = confirmatory sampling/no action.
 COPC = contaminant of potential concern.

MESC/IC/MNA = maintain existing soil cover/institutional controls/monitored natural attenuation.
 NA = no action.
 PRCL = preliminary removal cleanup level.
 RTD = removal, treatment, and disposal.
 TMV = toxicity, mobility, and volume.

1 The preferred alternative selection was based on the CERCLA evaluation criteria and the
2 decision logic shown in Figure 5-1. When comparing and selecting a preferred alternative,
3 present worth cost was used as the final factor in the analysis. Generally, if one alternative
4 offered a greater amount of protection than another for approximately the same cost of
5 implementation, the most protective alternative was selected. The MESC/IC/MNA has a limited
6 application (see Section 4.2), so the cost comparison was focused on RTD and CS/NA for most
7 waste sites. As the cost difference increased between RTD and CS/NA, CS/NA became the
8 preferred alternative, particularly when the site was most likely below PRCLs.

9 Removal action alternative selection involved review of available information for specific waste
10 site attributes as shown in Appendix B. The outcome of this evaluation for each waste site,
11 including removal action costs, is presented in Table 5-4. Some waste sites have been combined
12 because they have a similar type and are adjacent to each other (i.e., rail sites). Other sites were
13 divided into their components because different cost models were used for each component
14 (i.e., septic systems).

15 Symbols were used in Tables 5-2, 5-3, and 5-4 to illustrate graphically whether or not the
16 alternatives met the CERCLA evaluation criteria. The symbols also relay the relative ranking of
17 each alternative against the criteria. The symbols in Tables 5-2 and 5-3 demonstrate the general
18 guidelines of how the alternatives ranked against each other for each criterion.

19 **5.5 NATIONAL ENVIRONMENTAL POLICY** 20 **ACT OF 1969**

21 In accordance with DOE *National Environmental Policy Act of 1969* (NEPA) policy,
22 DOE CERCLA documents are required to incorporate NEPA values (e.g., transportation,
23 cumulative, offsite, ecological, and socioeconomic impacts) to the extent practicable. For this
24 EE/CA, the NA alternative is excluded from the NEPA values evaluation because it failed to
25 meet the overall protection threshold criterion as documented in Section 5.1.1. None of the other
26 removal alternatives, MESC/IC/MNA, CS/NA, or RTD, would be expected to create any
27 significant transportation impacts. All waste transportation would occur on the Hanford Site,
28 primarily on roads where public access is restricted.

29 Cumulative impacts might occur in both the short term and long term because of the
30 interrelationships between the removal action and other 200 Areas activities, such as remediation
31 of waste sites and groundwater, deactivation, decontamination and decommissioning of
32 surrounding facilities, and operation of waste treatment or disposal facilities. For this action,
33 short-term cumulative impacts were considered in terms of both air quality and resource
34 allocation. With appropriate work controls, airborne releases from the 200-MG-1 OU waste sites
35 are expected to be minor under all of the removal action alternatives, so the contribution to
36 cumulative impacts on local and regional air quality would be minimal. With respect to resource
37 allocation, the MESC/IC/MNA, CS/NA, and RTD alternatives as well as other 200 Area
38 activities would require resources in terms of budget, materials, and/or disposal space. The RTD
39 alternative also would require a commitment of resources required for excavation of waste sites.

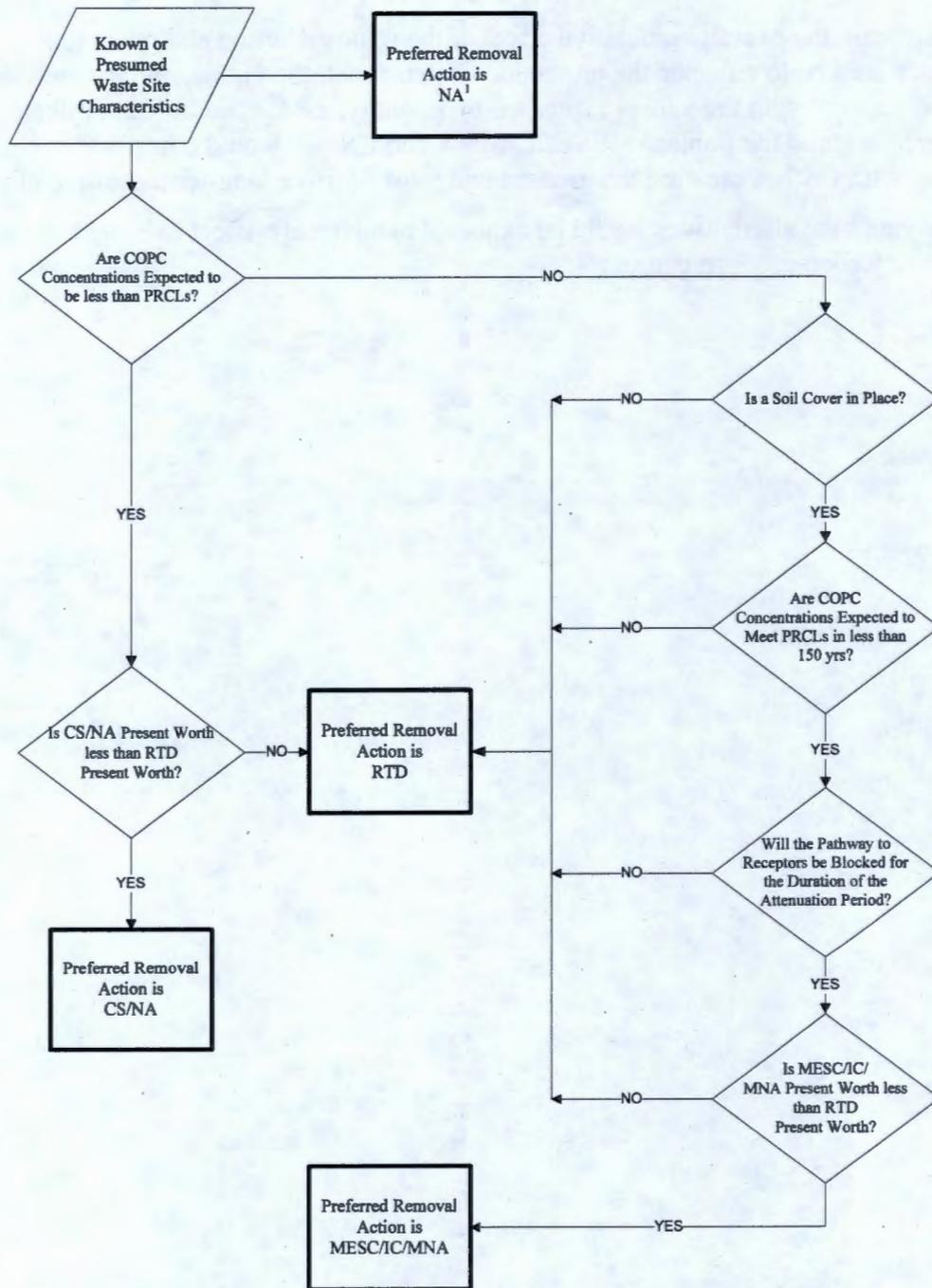
40 Initially, the contribution to cumulative impacts would be less for MESC/IC/MNA and CS/NA
41 and greater for RTD, which would require additional budget resources as well as some
42 disturbance to ecological resources. The disturbance to ecological resources would be

1 minimized during removal by performing mitigation in accordance with DOE/RL-96-88,
2 *Hanford Site Biological Resources Mitigation Strategy*.

3 In the long term, the overall cumulative effect of the removal action and other activities in the
4 200 Areas would be to enhance the protection of personnel, the public, and the environment,
5 which is consistent with the values expressed by Ecology, EPA, stakeholders, affected Native
6 American tribes, and the public. MESC/IC/MNA and CS/NA would contribute to this enhanced
7 protection, with CS/NA creating the greatest and most positive long-term positive effect.

8 Finally, none of the alternatives would be expected to adversely affect existing cultural resources
9 or to have any socioeconomic impacts.

Figure 5-1. Decision Logic Diagram.



¹ NA is included as a CERCLA requirement of the assessment, but is not the preferred removal action for any 200-MG-1 OU waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome				
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative		
200 CP	Pit/Dumping Area	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	Note B	\$347,000	\$706,000			■
200-E BP	Burn Pit	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	Note B	\$459,000	\$906,000		■	Available information indicates presence of asbestos and radiological contamination at the surface. There is no stabilization cover and direct exposure pathways may be present. The RTD alternative is most protective of potential receptors (human and ecological) and best meets other CERCLA criteria.
200-E PD	Ditch	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	\$489,000	\$330,000	\$1,026,000		■	Available information indicates the eastern portion of the ditch was backfilled in 1996, due to spread from contaminated animal feces and particulates. This portion of the ditch is currently posted with Underground Radioactive signs. The ditch is fed from a 107 cm (42 in.) diameter underground pipeline connected to the 282-E, 283-E, and 284-E facilities. During 1997 and 1998, blowdown/boiler condensate from the Johnson Controls facility also discharged to the ditch. RTD is the preferred alternative to remove contamination under the backfilled portion of the ditch. The alternative is protective of human and ecological receptors and best meets CERCLA criteria.
200-E-1	Dumping Area	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	Note B	\$168,000	\$402,000		■	Available information indicates this site is contaminated with asbestos and/or asbestos-laden materials buried in a trench located beneath a concrete 90-day storage pad. It is unknown whether the waste was removed before the pad was constructed. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-E-101	Experiment/Test Site	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	Note B	\$180,000	\$636,000		■	Available information indicates this site was used to carry out vadose zone monitoring experiments. There are no known hazardous chemical references and only short-lived radioisotopic tracers were used for experiments. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
200-E-103	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	\$2,108,000	\$609,000	\$2,176,000		■	This large area site is located south of PUREX and was contaminated several times with radiological and nonradiological constituents related to PUREX operations. A surface stabilization cover is present at this site. The RTD alternative protects human and ecological receptors and best meets other CERCLA criteria.
200-E-107	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	\$690,000	\$241,000	\$753,000		■	Available information indicates that this site is the result of windblown contamination related to PUREX operations. Long-lived radionuclides may be present. A surface stabilization cover is present. The RTD alternative protects human and ecological receptors and best meets other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

- ①②③ Circles indicate the criterion is met. The numbers designate the relative ranking in meeting the criterion among the alternatives.
- ☒ Indicates an alternative that was not evaluated because COPC concentrations are expected to be below PRCLs.
- ☒ Does not meet the criterion.
- Indicates the preferred alternative for the waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome			
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative	
200-E-109	Unplanned Release	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	①	③	Note A	Note B	\$143,000	\$444,000		
200-E-110	Dumping Area	☒	⊖	①	⊖	☒	⊖	①	⊖	☒	⊖	①	⊖	☒	⊖	①	⊖	☒	⊖	①	⊖	Note A	Note B	\$86,000	\$163,000		■ Available information suggests that this site was surface contaminated at one time with low levels of radioactivity resulting from discarded contaminated tumbleweeds. The tumbleweeds have been removed and the site is no longer posted as contaminated. No soil stabilization cover is present. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
200-E-115	Unplanned Release	☒	②	☒	①	☒	②	☒	②	☒	②	☒	①	☒	☒	☒	☒	☒	②	①	③	Note A	\$421,000	\$86,000	\$137,000		■ Available information indicates that surface or underground contamination was once identified at this site. Soil was subsequently removed, although contaminated tumbleweeds continued to be found. A bio barrier and surface stabilization were installed in 2004. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-E-117	Unplanned Release	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	①	③	Note A	Note B	\$86,000	\$105,000		■ Available information indicates the site consists of two steel pipes and valves related to raw water pipelines that extend above ground and have nonremovable beta-gamma contamination. There is no stabilization cover so direct exposure pathways may be present. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-E-121	Unplanned Release	☒	⊖	①	⊖	☒	⊖	①	⊖	☒	⊖	①	⊖	☒	⊖	①	⊖	☒	⊖	①	⊖	Note A	\$678,000	\$241,000	\$642,000		■ Available information indicates that this site consists of a previously cleaned up area of surface radiological contamination. A small area of contaminated tumbleweeds was identified in 2003. A surface stabilization cover is present. Because the previous contamination is most likely short-lived radionuclides, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
200-E-123	Unplanned Release	☒	②	☒	①	☒	②	☒	②	☒	②	☒	①	☒	☒	☒	☒	☒	②	①	③	Note A	\$442,000	\$109,000	\$152,000		■ Little is known about this site, although available information indicates that a small area of surface or underground radiological contamination is covered with a stabilization cover. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-E-124	Rail Siding	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	①	③	Note A	\$445,000	\$122,000	\$505,000		■ This waste site is currently under a soil stabilization cover because of exposure potential from prior leaks and spills that occurred during unloading operations on a rail line. Long-lived radionuclides may be present. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

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- ⊖ Indicates an alternative that was not evaluated because COPC concentrations are expected to be below PRCLs.
- ☒ Does not meet the criterion.
- Indicates the preferred alternative for the waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome											
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative									
200-E-125	Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	☑	②	☑	☑	☑	③		☑	☑	①	③	Note A	Note B	\$86,000	\$115,000	■
200-E-128	Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	☑	②	☑	☑	☑	③	☑	☑	①	③	Note A	Note B	\$109,000	\$116,000	■	This waste site consists of an area of underground radiation beneath a gravel road. There is no surface stabilization cover and direct exposure pathways may be present. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-E-129	Unplanned Release	☑	②	☑	①	☑	②	☑	②	☑	②	☑	①	☑	☑	☑	☑	☑	②	☑	②	☑	②	☑	③	☑	②	①	③	Note A	\$421,000	\$86,000	\$119,000	■	This waste site consists of a small area of radiologically contaminated soil near a railroad cut. A surface stabilization layer is present. The RTD alternative is most protective of human and ecological receptors and meets other CERCLA criteria.
200-E-13	Dumping Area	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	⊖	☑	☑	⊖	⊖	⊖	☑	⊖	⊖	⊖	☑	⊖	①	⊖	Note A	Note B	\$347,000	\$706,000	■	Available information indicates that this site contains piles of inert, nonhazardous construction debris. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
200-E-130	Rail Siding	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	☑	②	☑	☑	☑	③	☑	☑	①	③	Note A	\$445,000	\$122,000	\$390,000	■	This waste site has a soil stabilization cover because of exposure potential from prior releases along the railroad spur. Long-lived radionuclides may be present. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-E-139	Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	☑	②	☑	☑	☑	③	☑	☑	①	③	Note A	\$662,000	\$241,000	\$626,000	■	Little is known about this waste site. Available information indicates a large URM area on the north side of 8th Street and a smaller URM area on the south side. The area on the south side of the street has a biobarrier and a soil stabilization layer. Contaminated vegetation has been removed from the site several times. Because of the risk of direct exposure pathways on the north side of 8th Street, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-E-2	Unplanned Release	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	⊖	☑	☑	⊖	⊖	⊖	☑	⊖	⊖	⊖	☑	⊖	①	⊖	Note A	Note B	\$168,000	\$755,000	■	Available information indicates that the parking lot site may have received unplanned releases in the form of motor oil or hydraulic fluid. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome		
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative
200-E-26	Unplanned Release	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	\$494,000	\$180,000	\$676,000	■	
200-E-29	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	\$818,000	\$312,000	\$828,000	■	Available information indicates the site was radiologically contaminated as the result of mice and ant intrusion. Contamination is suspected to originate from the 241-ER-152 Diversion Box. Long-lived radionuclides may be present. Radiological surveys (1996) showed 7,000 dpm and 300 mrem/h from rodent feces and urine. A backhoe that had been parked on the site had a 50 mrem/h contaminated compartment due to rat nests. The RTD alternative is protective of human and ecological receptors and best meets other CERCLA criteria.
200-E-43, UPR-200-E-88	Rail Siding	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	\$445,000	\$202,000	\$902,000	■	Available information indicates these waste sites are the result of radioactive releases in association with storage or staging of contaminated equipment on rail cars in the area. Although a soil cover is present, there is a potential for the presence of long-lived radionuclides. The RTD alternative is most protective of human and ecological receptors in addition to meeting other CERCLA criteria.
200-E-46	Dumping Area	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	Note B	\$347,000	\$850,000	■	Available information indicates that this site contains debris of a nonhazardous nature. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
200-E-53	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	Note B	\$86,000	\$373,000	■	Available information indicates that this site was originally used to store contaminated equipment. Radiological survey results indicated 600 cpm and 30 mrem/h beta (1.5 mrem/h gamma). Radioactive animal feces were encountered in 1991, 1993, and 1997. Because radionuclides are potentially present and there is no surface cover, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-E-58	Neutralization Tank	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	\$494,000	\$180,000	\$480,000	■	Available information indicates that this site is an underground storage tank that received acid waste to be neutralized. Because of the nature of the chemical reactions involved, hazardous chemicals may have leached into the soil and the tank and piping may still contain hazardous waste. The RTD alternative is the most protective of human and ecological receptors and best meets other CERCLA criteria.
200-E-6	Septic Tank	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	\$494,000	\$180,000	\$463,000	■	This septic tank was abandoned in 1998. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.

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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome					
		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative																
200-E-7	Septic Tank	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	☒	☒	☒		■
200-W BP	Burn Pit	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	☒	☒	☒	■	Available information indicates that this site consists of a large open pit to burn 200 Area office waste and nonradioactive construction debris and tumbleweeds. The site is currently used as a staging area for uncontaminated tumbleweeds from the 200 Area fences, which are burned bi-annually in the spring and the fall. The area is also used as a source of clean backfill (gravel) material. In October 1992, before being used as a source of clean backfill material, radiological surveys and soil sampling were performed (results not available). CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
200-W-1	Mud Pit	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	☒	☒	☒	■	Available information indicates that this area could be related to past drilling operations (dried drilling mud) or could be related to wash-down of plutonium-contaminated equipment. No radiological survey data are available. Because the potential exists for radionuclides and no surface cover is present, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-W-101	Dumping Area	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	☒	☒	☒	■	Available information indicates low-level radiological contamination on minor debris at this site. A radiological survey in 2002 only found a small (2,000 dpm) area of contamination on a piece of hose. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
200-W-106	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	☒	☒	☒	■	Available information indicates that radiological soil contamination is present at this old dump site. Radiological survey results recorded 300 cpm at surface, 7,600 cpm at 7.6 cm (3 in.) bgs, and 20,100 cpm at 10 cm (4 in.) bgs. The majority of the contamination has been located within 15 cm (6 in.) of the surface. No surface stabilization or clean-up has been reported. Because the potential exists for radionuclides and no surface cover is present, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.

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Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome							
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative					
200-W-11	Dumping Area	☑	☐	①	☐	☐	①	☐	☐	①	☐	☐	☐	☐	☐	☐	☐	☐	☐	①	☐	Note A	Note B	\$202,000	\$666,000		■	Available information suggests that this site contains nonhazardous and nonradioactive debris. No surface cover is present. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.			
200-W-12	Dumping Area	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑	①	③	Note A	Note B	\$168,000	\$149,000	■	Available information suggests that this site is associated with the grout/cement slurry testing area, which would indicate nonhazardous waste materials; however, a mound of soil with several polyvinyl chloride pipes arranged as possible vents suggests the presence of an underground tank of unknown nature. RTD is the preferred alternative because of the potential for a buried tank. This alternative protects human and ecological receptors, meets CERCLA criteria, and is cost-effective.
200-W-14	Dumping Area	☑	☐	①	☐	☐	①	☐	☐	①	☐	☐	☐	☐	☐	☐	☐	☐	☐	①	☐	Note A	\$489,000	\$168,000	\$484,000	■	Available information indicates that this site was a heavy equipment parking area. Only staining of surface soil with petroleum products from leaking vehicles is indicated in several areas. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.				
200-W-2	Spoils Pile/Berm	☑	☐	①	☐	☐	①	☐	☐	①	☐	☐	☐	☐	☐	☐	☐	☐	☐	①	☐	Note A	Note B	\$180,000	\$614,000	■	Available information indicates that this site consists of two bermed areas and several acres of disturbed ground. The location may have been used to clean ventilation equipment. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.				
200-W-21	Rail Siding	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑	①	③	Note A	\$489,000	\$168,000	\$612,000	■	Available information indicates that this site consists of two railroad liquid waste unloading platforms that were remediated in 1996. Radiologically contaminated drains were noted before remediation. Because little information is available about the previous remediation, there is a potential presence of long-lived radionuclides. RTD is the preferred alternative because it is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-W-22	Foundations/Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑	①	③	Note A	\$549,000	\$290,000	\$1,850,000	■	Available information indicates that long-lived radionuclides such as uranium and hazardous chemical process waste from several different places (PUREX, REDOX, 100-N reactor, etc.) were released at this site. Although a surface cover is present, there is a potential presence of long-lived radionuclides. RTD is the preferred alternative because it is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-W-3	Dumping Area	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑	①	③	Note A	Note B	\$389,000	\$728,000	■	Available information indicates that this site is contaminated, as confirmed with prior soil sampling results that showed detections of PCBs, lead, xylene, and petroleum hydrocarbons from operation of a former filling station. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.

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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

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		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative	
200-W-33	Dumping Area	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒		■
200-W-51	Septic Tank	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	■	This septic tank was abandoned in 1994 in accordance with WAC 246-272A-0300. The tank walls have been collapsed and the location is backfilled and compacted with clean backfill. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
200-W-51	Septic Tank Drain Field	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	■	The septic tank associate with this drain field was abandoned in 1994 in accordance with WAC 246-272A-0300. The septic system received nonhazardous sanitary effluent. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
200-W-53	Unplanned Release	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	■	Available information indicates that this site is an area where radiologically contaminated surface soil was scraped and put in the 207-T Retention Basin. The original area is still posted as a URM. Because the contamination is presumed to have been removed, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
200-W-54	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	■	Available information indicates that this site is a large irregular area of surface contamination associated with S/SX Tank Farm activities. Type of waste and concentration of potential radioactive or hazardous chemical wastes are poorly known, but survey data showed readings up to 20,000 cpm. The RTD alternative is best protective of human and ecological receptors and meets other CERCLA criteria.
200-W-55	Dumping Area	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	■	Available information indicates the site consists of debris that is nonhazardous. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
200-W-6	Dumping Area	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	■	Available information suggests that this site has nonradiological soil contamination of a potentially hazardous chemical nature. Chemicals are suspected to be solvents and paint waste from the paint shop located on site. The RTD alternative is most protective of human and ecological receptors and meets CERCLA criteria.

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		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative																				
200-W-63	Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑		①	③	Note A	\$421,000	\$86,000	\$317,000		
200-W-64	Foundation	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑	①	③	Note A	Note B	\$86,000	\$871,000			■ Available information indicates this site is part of the foundation of a laundry facility that was constructed in 1952. A prior facility built on the same foundation used to be a mask-washing facility. Fixed radioactive contamination measured at 9,000 dpm beta/gamma was found at the site and assumed to be from the decontamination of PPE. Because of the potential presence of long-lived radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-W-67	Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑	①	③	Note A	\$421,000	\$86,000	\$287,000			■ Available information indicates this site was contaminated from an unknown source. Radiological surveys in the area in 1998 showed readings of 6 to 11 mrem/h and 500 to 70,000 cpm. An ant hill read 3,000 cpm. A surface stabilization layer was subsequently installed. The RTD alternative is most protective of human and ecological receptors and best meets CERCLA criteria.
200-W-75	Experiment/Test Site	☑	②	☑	①	☑	②	☑	②	☑	②	☑	①	☑	☑	☑	☑	☑	②	②	③	☑	②	①	③	Note A	\$442,000	\$109,000	\$358,000			■ Available information indicates this site consisted of several calibration silos. The calibration silos contained radioactive sources consisting of known quantities of Co-60, Sr-90, Ru-106, and Ce-144 in sealed capsules. The site is posted as a URM, which suggests the sources may still be inside the silos. The RTD alternative is the preferred alternative to be most protective of human and ecological receptors and meet other CERCLA criteria.
200-W-80	Spoils Pile/Berm	☑	②	☑	①	☑	②	☑	②	☑	②	☑	①	☑	☑	☑	☑	☑	②	②	③	☑	②	①	③	Note A	\$421,000	\$86,000	\$279,000			■ Available information indicates that this site originally consisted of a mound of dirt with asphalt chunks and was posted as a CA. A radiological survey in 1999 did not identify any surface contamination. The site may be waste from a parking lot expansion. The original mound has been flattened and currently has a surface stabilization cover. The RTD alternative is protective of human and ecological receptors and meets other CERCLA criteria.
200-W-81; UPR-200-W-58	Rail Siding	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑	①	③	Note A	Note B	\$453,000	\$2,084,000			■ Available information indicates these waste sites are the result of releases associated with transport of radioactive materials using rail cars. Windblown contaminated tumbleweed fragments from the nearby burial grounds appear to have also contributed to past contamination. Because of the potential presence of long-lived radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

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- Indicates the preferred alternative for the waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome												
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative										
200-W-82	Pump Station/ Product Piping	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	☑	②	☑	☑	☑	③		☑	☑	①	③	Note A	Note B	\$168,000	\$428,000		
200-W-83, UPR-200-W-41, 44, 46	Rail Siding	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	☑	②	☑	☑	☑	③	☑	☑	①	③	Note A	Note B	\$527,000	\$2,775,000			■ Existing information indicates these waste sites are the result of releases in association with transport of materials using rail cars. With a potential for the presence of long-lived radionuclides, the RTD alternative is the preferred alternative because it is most protective of potential human and ecological receptors.
200-W-86	Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	☑	②	☑	☑	☑	③	☑	☑	①	③	Note A	\$421,000	\$86,000	\$106,000			■ Available information indicates that this site is associated with contamination around a former light pole at the intersection of the U Plant railroad spur and Bridgeport Avenue. There are no radiological surveys of the area. The light pole was removed in 2001 and the area was covered with clean backfill. Because of the potential presence of long-lived radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-W-90	Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	☑	②	☑	☑	☑	③	☑	☑	①	③	Note A	\$421,000	\$86,000	\$106,000			■ Available information indicates this site is associated with UPR-200-W-63. This site consists of three URM areas; two across from the 218-W-2A Burial Ground and one across from the T Tank Farm. No current radiological surveys are available. No clean-up activities are reported for this site. Because of the potential presence of long-lived radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
200-W-92	Dumping Area	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	☑	②	☑	☑	☑	③	☑	☑	①	③	Note A	\$489,000	\$168,000	\$633,000			■ Available information indicates that this site is contaminated based on radiological survey readings of 1,600,000 dpm per 100 cm ² of beta/gamma and 14,000 dpm per 100 cm ² of alpha. Because of the potential presence of long-lived radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets CERCLA criteria.
200-W Ash Disposal Basin	Coal Ash Pit	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	⊖	☑	☑	⊖	⊖	☑	☑	⊖	⊖	☑	☑	⊖	①	⊖	Note A	Note B	\$347,000	\$706,000		■	Available information indicates that this site received coal ash slurry and ash from the operation of the coal fired 284-W Powerhouse. Later, the site received trucked material dredged from the 200-W Ash Pit. The waste was found to be nondangerous, non-corrosive, and nonregulated under the <i>Washington Administrative Code</i> . CS/NA is the most appropriate alternative and meets the other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome				
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative		
207-B	Retention Basin	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	Note B	\$429,000		\$2,523,000	
207-SL	Retention Basin	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	Note B	\$180,000	\$690,000		■ This site consists of a large below-ground basin that is divided into two 95,000 L (25,000 gal) holding basins. Before 1955, the site received low-level radioactive waste and discharged it to the 216-S-19 Pond. From 1955 to 1995, the effluent was discharged to the 216-S-26 Crib. After 1995, nonradioactive, nonhazardous liquid effluents from the 222-S Laboratory, the 222-SA Laboratory, the 219-S Operating Gallery sump, and the package boiler unit flowed into the below-ground basins for retention before transfer to the Treated Effluent Disposal Facility. The area has signs warning of surface radiation contamination. Because of the potential presence of radionuclides in the below ground basin walls and floor, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
209-E-WS-3	Valve Pit	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	Note B	\$109,000	\$316,000		■ Available information indicates this site is a valve pit associated with the 190 L (50 gal) 209-E-TK-111 Holding Tank located beneath the valve pit. The tank held condensate with low levels of plutonium before release to the 216-C-7 Crib. The tank is currently considered to contain condensate water containing low levels of plutonium. A surface stabilization cover is not present. Because of the potential presence of long-lived radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
216-A-1	Crib	☒	⊖	①	⊖	☒	⊖	①	⊖	☒	⊖	①	⊖	☒	⊖	⊖	☒	☒	⊖	⊖	①	⊖	Note A	\$494,000	\$180,000	\$1,051,000	■ This site consists of the 216-A-1 Crib which received about 98,000 L (26,000 gal) of start-up waste from the PUREX facility. The bottom of the cribs is approximately 4.6 m (15 ft) bgs. In 1992, contaminated soil was scraped and consolidated and the site was backfilled and a stabilization cover is in place. Effluent discharged to the site contained U-238, arsenic, and uranium. Based on the assumption that current contaminant concentrations in the crib will not exceed PRCLs, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.	
216-A-18	Trench	☒	⊖	①	⊖	☒	⊖	①	⊖	☒	⊖	①	⊖	☒	⊖	⊖	☒	☒	⊖	⊖	①	⊖	Note A	\$494,000	\$180,000	\$1,028,000	■ Available information indicates that this trench received about 490,000 L (130,000 gal) of start-up waste from the PUREX 202-A facility. No crib structure was built and the bottom of the trench is reported to be 4.9 m (16 ft) bgs. The site was surface stabilized in 1990. Effluent discharged to the site contained U-238, arsenic, and uranium. Based on the assumption that current contaminant concentrations in the trench will not exceed PRCLs, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.	

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Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome									
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative						
216-A-20	Trench	☑	⊙	①	⊙	☑	⊙	①	⊙	☑	⊙	①	⊙	☑	⊙	①	⊙	☑	⊙	①	⊙	Note A	\$494,000	\$180,000	\$612,000		■	Available information indicates this trench received about 950,000 L (250,000 gal) of PUREX start-up waste and cooling water from the 241-A-431 Building contact condenser via the 216-A-34 Ditch. The site was backfilled when its retention capacity was reached and was deactivated in 1955 by removing over-ground piping. A surface stabilization layer was installed in 1990. In 2007, more surface contamination was backfilled with clean soil. Before stabilization, the bottom of the trench was reported to be 4.6 m (15 ft) bgs. Effluent discharged to the site contained U-238, arsenic, manganese, and uranium. Based on the assumption that current contaminant concentrations in the trench will not exceed PRCLs, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.				
216-A-28	Crib	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	☑	②	③	☑	☑	①	③	Note A	Note B	\$180,000	\$405,000	■	Available information indicates that this crib received about 30,000 L (8,000 gal) of liquid waste from the 203-A Sumps and heating coil condensate from UNH tanks in the 203-A Tank Farm. The excavation is a truncated cone 6 m (20 ft) across at grade and 1 m (3 ft) across at a depth of 3.4 m (11 ft) bgs. The site is reported to have received radioactive waste, UNH, and associated process chemical waste. Partial excavation of the site was carried out in 1981, although a surface stabilization layer is not present. The RTD alternative is most protective of human and ecological receptors and best meets CERCLA criteria.
216-A-3	Crib	☑	⊙	①	⊙	☑	⊙	①	⊙	☑	⊙	①	⊙	☑	⊙	①	⊙	☑	⊙	①	⊙	Note A	\$494,000	\$180,000	\$868,000	■	Available information indicates this crib received about 3,000,000 L (800,000 gal) of silica-gel regeneration waste and pump house drainage from the 203-A Building and UNH storage pit. The bottom of the crib is reported to be 4.9 m (16 ft) bgs and there is no surface stabilization layer. Effluent discharged to the site contained Cs-137, Sr-90, Ru-106, UNH, and uranium. Based on the assumption that current contaminant concentrations in the Crib will not exceed PRCLs, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.					
216-A-34	Ditch	☑	②	☑	①	☑	②	☑	②	☑	②	☑	②	☑	①	☑	②	☑	②	☑	②	③	☑	②	①	③	Note A	\$494,000	\$180,000	\$1,378,000	■	Available information indicates that this ditch received an unknown amount of cooling water from the contact condenser in the 241-A-431 Building. The ditch was 85 m (280 ft) long, 9 m (30 ft) wide and 2 m (6 ft) deep and was surface stabilized in 1990. The site reportedly received less than 1 Ci total beta activity. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.

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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome										
		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative																					
216-A-40	Retention Basin	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑		①	③	Note A	\$494,000	\$180,000	\$1,589,000			<p>Available information indicates that about 950,000 L (250,000 gal) of contaminated cooling water and steam condensate from the 244-AR Vault were diverted to the retention basin when the effluent was above standard release limits for the 216-B-3 or 216-A-25 Ponds. The retention bladders failed in 1979 and the basin was removed from service. Effluent discharged to the site contained Cs-137, Sr-90, U-239, Tc-99, arsenic, cadmium, lead, mercury, selenium, and Aroclor-1254. Contaminated soil from the adjacent Soil Contamination Area (UPR-200-E-143 and remnants of UPR-200-E-100) was scraped and placed into the east end of the basin. The remainder of the basin was backfilled with clean material. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.</p>
216-A-42	Retention Basin	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑	①	③	Note A	\$494,000	\$180,000	\$4,575,000			<p>Available information indicates that this retention basin received an unknown amount of cooling water or steam condensate from PUREX that was contaminated above standard release limits for disposal to Gable Mountain Pond, B Pond, or various cribs. The trench consisted of a rubber-lined excavation 104 m (342 ft) long, 10 m (30 ft) wide, and 6 m (20 ft) deep that was divided into three compartments by internal berms. The basin was deactivated in 1997 when PUREX was closed. In 1984, 40,000 cpm was found inside the fenced area and 3,000 cpm was found outside the fenced area, presumably related to windblown contamination. The area was leveled and backfilled in 2001, although a surface stabilization layer is not reported to be present. Effluent discharged to the site contained Cs-137, Sr-90, U-238, Tc-99, arsenic, cadmium, lead, mercury, selenium, and PCB-1254. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.</p>	
216-A-9	Crib	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑	①	③	Note A	\$494,000	\$318,000	\$4,374,000			<p>Available information indicates that this crib was used to dispose of about 980 million L (260 million gal) of PUREX acid fractionator condensate and cooling water and liquid N Reactor decontamination waste. The crib was an excavation 130 m (420 ft) long, 6 m (20 ft) wide, and 4 m (13 ft) deep. The site was backfilled and surface stabilized in 1993. The RTD alternative is most protective of human and ecological receptors and best meets CERCLA criteria.</p>	
216-B-2-1	Ditch	☑	②	☑	①	☑	②	☑	②	☑	②	☑	①	☑	☑	☑	☑	☑	☑	②	②	③	☑	②	①	③	Note A	\$494,000	\$318,000	\$2,481,000			<p>Available information indicates that this ditch received an unknown amount of steam condensate, cooling water, and chemical sewer waste from B Plant. The ditch was originally 1100 m (3,500 ft) long, 4.6 m (15 ft) wide, and 2 m (6 ft) deep. A leak in 1963 resulted in contamination of the first 300 m (1,000 ft) of the ditch with waste that had a dose rate of 500 mrem/h. The remaining 760 m (2,500 ft) of the ditch became the 216-B-2-2 Ditch. The ditch has been backfilled and surface stabilized. Because of the potential presence of radionuclides and hazardous chemical waste at a shallow depth, the RTD alternative is most protective of human and ecological receptors and best meets CERCLA criteria.</p>

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216-B-2-2	Ditch	☒	②	☒	①	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	Note A	\$494,000	\$318,000	\$2,481,000			<p>Available information indicates that this ditch was originally part of the 216-B-2-1 Ditch. It received an unknown amount of steam condensate, cooling water, and chemical sewer waste from B Plant. About 1,000 Ci of Sr-90 was released to the ditch in 1970. The ditch is described as 1,100 m (3,600 ft) long, 4.6 m (15 ft) wide, and 2.4 m (8 ft) deep, which includes 1,100 ft of new ditch, required connecting to the 207-B Retention Basin. The ditch has been backfilled and surface stabilized. A characterization borehole near the head end of the ditch returned 1,600,000 dpm from a depth of 2.4 m (8 ft) bgs. Based on the potential for radionuclides and hazardous chemical waste present at a shallow depth, the RTD alternative is most protective of human and ecological receptors and best meets CERCLA criteria.</p>
216-B-2-3	Ditch	☒	②	☒	①	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	Note A	\$527,000	\$318,000	\$2,793,000			<p>Available information indicates that an unknown amount of waste was disposed to this ditch from the 207-B Retention Basin. The ditch is reported to be 1,200 m (4,000 ft) long, 6 m (20 ft) wide, and 2 m (6 ft) deep. The ditch was built as a replacement for the 216-B-2-2 Ditch and received similar waste. Because of the potential for radionuclides and hazardous chemical waste present at a shallow depth, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.</p>
216-B-3-1	Ditch	☒	②	☒	①	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	Note A	\$489,000	\$330,000	\$2,086,000			<p>Available information indicates this site received about 150 million L (40 million gal) of B Plant and PUREX process waste. The ditch is 975 m (3,200 ft) long, 2 m (6 ft) wide, and 2 m (6 ft) wide. A leak in 1964 contaminated the ditch and the 216-B-3 Pond with about 2,500 Ci of fission products. The ditch was then backfilled and surface stabilized. Because of the potential presence of radionuclides and hazardous chemical waste at a shallow depth, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.</p>
216-B-3-2	Ditch	☒	②	☒	①	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	Note A	\$542,000	\$429,000	\$2,449,000			<p>Available information indicates this site received about 150 million L (40 million gal) of B Plant and PUREX process waste. The ditch, built to replace the 216-B-3-1 Ditch, is 1,100 m (3,700 ft) long, 4.6 m (15 ft) wide, and 2.4 m (8 ft) deep. The ditch was contaminated in 1970 with about 1,000 Ci of Sr-90 and was then backfilled and surface stabilized. Dose rates at the time of the contaminating event were 450 mrem/h. Because of the potential presence of radionuclides and hazardous chemical waste, the RTD alternative is most protective of human and ecological receptors and best meets the CERCLA criteria.</p>
216-B-3-3	Ditch	☒	②	☒	①	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	☒	②	Note A	\$489,000	\$168,000	\$1,828,000			<p>Available information indicates that this site received an unknown quantity of B Plant and PUREX process waste. The ditch is 1,100 m (3,700 ft) long, 6 m (20 ft) wide, and 2 m (6 ft) deep. The site has been backfilled and has a surface stabilization layer. Characterization sampling shows the presence of hazardous chemical waste and short-lived radionuclides. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.</p>

Ranking of Alternatives for Individual CERCLA Criteria:

- ①②③ Circles indicate the criterion is met. The numbers designate the relative ranking in meeting the criterion among the alternatives.
- Indicates an alternative that was not evaluated because COPC concentrations are expected to be below PRCLs.
- ☒ Does not meet the criterion.
- Indicates the preferred alternative for the waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome							
		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative																		
216-B-59/59B	Trench/ Retention Basin	☒	②	☒	①	☒	②	☒	②	☒	②	☒	②	☒	①	☒	②	☒	③	☒	②	①	③	Note A	\$905,000	\$724,000		\$2,278,000		
216-C-10	Crib	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	①	①	Note A	\$494,000	\$180,000	\$519,000		■ Available information indicates that this crib received about 908,000 L (240,000 gal) of process condensate from the 201-C Facility. The bottom of the crib was reported to be 2.1 m (7 ft) bgs before backfilling and surface stabilization. Based on the assumption that current contaminant concentrations in the crib will not exceed PRCLs, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.	
216-C-3	Crib	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	①	①	Note A	\$494,000	\$180,000	\$497,000		■ Available information indicates that this crib received about 4,900,000 L (1,300,000 gal) of acidic liquid process waste from the 201-C, 215-C, and 271-C Buildings. The composition of the process waste is unknown. The bottom the crib was reported to be 3.1 m (10 ft) bgs before backfilling and surface stabilization. Because of the potential for radionuclides present at a shallow depth, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.	
216-C-5	Crib	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	①	①	Note A	\$494,000	\$180,000	\$533,000		■ Available information indicates this crib received about 38,000 L (10,000 gal) of high salt cold run waste from the 201-C, 241-CX-71, and 200-E-41 facilities. The bottom of the crib was 4.8 m (16 ft) bgs before backfilling and surface stabilization. Based on the assumption that current contaminant concentrations in the crib will not exceed PRCLs, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.	
216-C-6	Crib	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	☒	①	①	①	Note A	\$494,000	\$180,000	\$518,000		■ Available information indicates this crib received about 530,000 L (140,000 gal) of acidic and radioactive PUREX and REDOX process condensate. The bottom of the crib was 4.8 m (16 ft) bgs before surface stabilization activities. Based on the assumption that current contaminant concentrations in the crib will not exceed PRCLs, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.	

Ranking of Alternatives for Individual CERCLA Criteria:

- ②③ Circles indicate the criterion is met. The numbers designate the relative ranking in meeting the criterion among the alternatives.
- Indicates an alternative that was not evaluated because COPC concentrations are expected to be below PRCLs.
- ☒ Does not meet the criterion.
- Indicates the preferred alternative for the waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome									
		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative																				
216-C-7	Crib	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	②	③	☒	☒	①	③	Note A		\$494,000	\$180,000	\$516,000		
216-C-9	Pond	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	\$3,822,000	\$1,137,000	\$12,740,000		■ Available information indicates this pond received more than 1,020 million L (270 million gal) of cooling water from the 201-C Hot Semiworks Facility. Part of the dried up pond was used as a solid waste burial ground for Semiworks decommissioning waste. The site has been backfilled and surface stabilized. A survey in 1978 showed no radioactive contamination along the margins of the pond. Because the pond received primarily cooling water and no contamination is documented, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.		
216-S-22	Crib	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	\$494,000	\$180,000	\$600,000		■ Available information indicates that this crib received about 98,000 L (26,000 gal) of liquid waste from the acid recovery facility in the 293-S Building. Waste was reported to contain mobile constituents including tritium, nitrate, and sodium. The bottom of the crib is 3 m (9.8 ft) bgs. The crib has been backfilled, although a surface stabilization layer is not present. Based on the waste stream characteristics, it is suspected that COPC concentrations would be below PRCLs. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.		
216-S-26	Crib	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	②	③	☒	☒	①	③	Note A	\$494,000	\$180,000	\$983,000		■ Available information indicates this crib received about 163 million L (43 million gal) of liquid waste from the 222-S laboratory. This waste was reported to include acetone, nitric acid, sulfuric acid, and hydrofluoric acid, as well as various radionuclides. A proximal groundwater monitoring well shows elevated alpha, total uranium, and U-238. The bottom of the crib was 3.1 m (10 ft) bgs. The crib has been backfilled, although a surface stabilization layer is not present. Because of the potential presence of radionuclides and hazardous chemicals, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.	
216-S-4	French Drain	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	\$494,000	\$180,000	\$556,000		■ Available information indicates that this french drain received about 1 million L (265,000 gal) of condensate and cooling water from the S Tank Farm. The french drain reaches a depth of 5.1 m (16.8 ft) bgs and has been backfilled and surface stabilized. Potential contaminants discharged to the site include Tc-99, Sr-90, tritium, U-238, silver, arsenic, mercury, nitrate, and chromium VI. Based on the assumption that current contaminant concentrations in the crib will not exceed PRCLs, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.		

Ranking of Alternatives for Individual CERCLA Criteria:

- ①②③ Circles indicate the criterion is met. The numbers designate the relative ranking in meeting the criterion among the alternatives.
- ☒ Indicates an alternative that was not evaluated because COPC concentrations are expected to be below PRCLs.
- ☒ Does not meet the criterion.
- Indicates the preferred alternative for the waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome			
		No Action MESC/IC/MINA	CS/NA	RTD	No Action	MESC/IC/MINA	CS/NA	RTD	No Action MESC/IC/MINA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative														
216-S-8	Trench	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	Note A	\$494,000	\$180,000	\$1,282,000		■	Available information indicates this site received about 9,800,000 L (2,600,000 gal) of unirradiated start-up waste from the 202-S Building, with an estimated concentration of 0.2 g of uranium per liter. The total amount of unirradiated uranium (U-238) discharged is reported to be about 193 kg. The bottom of the trench was at a depth of 7.6 m (25 ft) bgs before backfilling and surface stabilization. Based on the assumption that current contaminant concentrations in the crib will not exceed PRCLs, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
216-T-20	Trench/Minor debris	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	②	☒	☒	③	☒	☒	①	③	Note A	\$489,000	\$168,000	\$163,000	■	Available information indicates this site is a single-use pit that collected contaminated nitric acid waste from the 241-TX-155 Diversion Box. The discharge to the pit was about 19,000 L (5,000 gal). The bottom of the pit was at a depth of 3.1 m (10 ft bgs). It has been backfilled, although no surface stabilization is reported. Because of the potentially hazardous nature of the acidic waste, as well as the potential for radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
216-T-4A	Pond	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	③	Note A	\$2,790,000	\$1,386,000	\$7,839,000	■	Available information indicates this pond received more than 42 million L (11 million gal) of cooling water and steam condensate from the 221-T and 224-T Buildings, as well as cooling water and steam condensate from the 242-T Evaporator. According to available information, this site has been exhumed, backfilled, stabilized, and revegetated to make room for the 218-W-2A Burial Ground. Because concentrations of COPCs are anticipated to be below PRCLs, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
216-Z-4	Trench	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	②	☒	☒	③	☒	☒	①	③	Note A	\$494,000	\$180,000	\$447,000	■	Available information suggests this site is associated with a capped pipeline from the 231-Z Building, and the 231-W-151 Vault sump. This site was temporarily used to receive liquid laboratory waste from the 231-Z Building. This 4.6 m (15 ft) deep trench was deactivated and backfilled in 1945, when it was discovered it was too small for the waste stream volume. Laboratory waste was diverted to the 216-Z-6 Crib. The site was interim stabilized in 1990. Potential constituents include Am-241, Cs-137, Co-60, Sr-90, tritium, PCB-1254, and selenium. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
216-Z-6	Crib	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	②	☒	☒	③	☒	☒	①	③	Note A	\$494,000	\$180,000	\$495,000	■	Existing information suggests this crib was only used for a short time and potentially only received minor radioactive and chemical waste. The RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome							
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative					
2607-E1	Septic System	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪		Note A	\$1,467,000	\$866,000	\$2,024,000	■
2607-E12	Septic System	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	Note A	\$2,117,000	\$1,416,000	\$2,693,000	■	Available information indicates the septic system received nonhazardous sanitary wastewater and sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-E3	Septic Tank	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	Note A	\$494,000	\$180,000	\$463,000	■	The septic tank was abandoned in 1997. The tank was pumped out and backfilled with soil. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-E3	Septic Tank Drain Field	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	Note A	\$905,000	\$675,000	\$3,722,000	■	The associated septic tank was abandoned in 1997 in accordance with requirements of WAC 246-272A-0300. Available information indicates the drain field received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-E4	Septic Tank	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	Note A	\$489,000	\$168,000	\$341,000	■	The septic tank was abandoned 1998 in accordance with WAC 246-272A-0300. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-E4	Septic Tank Drain Field	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	Note A	\$445,000	\$122,000	\$415,000	■	The associated septic tank was abandoned in 1998 in accordance with requirements of WAC 246-272A-0300. Available information indicates the drain field received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-E5	Septic Tank	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	☒	⓪	①	⓪	Note A	\$494,000	\$180,000	\$463,000	■	Available information indicates the septic tank received nonhazardous sanitary wastewater and sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome							
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative					
2607-E5	Septic Tank Drain Field	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙		Note A	\$489,000	\$168,000	\$566,000	■
2607-E6	Septic Tank	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$494,000	\$180,000	\$457,000	■	The tank was abandoned in 1997 in accordance with WAC 246-272A-0300, including pumping the tank contents, filling the tank with soil, and removing the covers. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-E6	Septic Tank Drain Field	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$880,000	\$444,000	\$2,570,000	■	The associated tank for this drain field was abandoned in 1997 in accordance with WAC 246-272A-0300. Available information indicates the drain field received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-E7A	Septic Tank	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$489,000	\$168,000	\$346,000	■	Available information indicates the septic tank received nonhazardous sanitary wastewater and sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-E7B	Septic Tank	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$489,000	\$168,000	\$346,000	■	Available information indicates the septic tank received nonhazardous sanitary wastewater and sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-E9	Septic Tank	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$445,000	\$122,000	\$311,000	■	Available information indicates the septic tank received nonhazardous sanitary wastewater and sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-E9	Septic Tank Drain Field	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$489,000	\$168,000	\$436,000	■	Available information indicates this drain field received nonhazardous sanitary wastewater and sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

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- ⊙ Indicates an alternative that was not evaluated because COPC concentrations are expected to be below PRCLs.
- ☒ Does not meet the criterion.
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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome								
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative					
2607-EA	Septic Tank	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙		Note A	\$489,000	\$168,000	\$287,000	■
2607-EA	Septic Tank Drain Field	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$489,000	\$168,000	\$342,000	■	Available information indicates this drain field received nonhazardous sanitary wastewater and sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-EE	Septic Tank	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$489,000	\$168,000	\$346,000	■	Available information indicates the septic tank received nonhazardous sanitary wastewater and sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-EE	Septic Tank Drain Field	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$445,000	\$122,000	\$415,000	■	Available information indicates this drain field received nonhazardous sanitary wastewater and sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-W1	Septic System	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$6,006,000	\$1,347,000	\$5,975,000	■	Available information indicates the septic system received nonhazardous sanitary wastewater and sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-W3	Septic Tank	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$494,000	\$330,000	\$463,000	■	The 2607-W3 Septic Tank has been pumped, filled with sand, and abandoned in place in 1998. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-W3	Septic Tank Drain Field	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$489,000	\$180,000	\$1,574,000	■	The associated tank for this drain field was abandoned in 1998 in accordance with WAC 246-272A-0300. Available information indicates the drain field received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

- ①②③ Circles indicate the criterion is met. The numbers designate the relative ranking in meeting the criterion among the alternatives.
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- ☒ Does not meet the criterion.
- Indicates the preferred alternative for the waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome		
		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative														
2607-W4	Septic Tank	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	Note A	\$489,000	\$168,000	\$341,000		■	The septic tank was abandoned in June 1998, in accordance with WAC 246-272A-0300 requirements. Before filling with sand, the septic tank was pumped empty. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-W4	Septic Tank Drain Field	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	Note A	\$445,000	\$122,000	\$297,000	■	The associated tank for this drain field was abandoned in 1998 in accordance with WAC 246-272A-0300. Available information indicates the drain field received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.	
2607-W6	Septic System	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	Note A	\$1,663,000	\$1,008,000	\$3,267,000	■	Available information indicates that this waste site consists of a currently active septic tank and associated drain field. The 2607-W6 Septic Tank is constructed of reinforced concrete and receives sanitary wastewater and sewage. The tank and associated drain field are designed to accept sanitary sewer effluent from the connected facilities. An upgrade or replacement of the existing larger on-site system will be required in 2025, because the existing system will be beyond its useful life. Some components of this system may be reused (septic tank, etc.). Because the septic tank and associated drain field received sanitary waste, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.	
2607-W8	Septic Tank	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	Note A	\$494,000	\$180,000	\$438,000	■	The tank was abandoned 1998 according to WAC 246-272A-0300 requirements. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.	
2607-W8	Septic Tank Drain Field	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	☒	⊙	①	Note A	\$938,000	\$301,000	\$1,120,000	■	This septic tank associate with this drain field was abandoned in 1998 in accordance with requirements of WAC 246-272A-0300. Available information indicates the drain field received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.	

Ranking of Alternatives for Individual CERCLA Criteria:

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- ☒ Does not meet the criterion.
- Indicates the preferred alternative for the waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome							
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative					
2607-W9	Septic Tank	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙		Note A	\$494,000	\$180,000	\$422,000	■
2607-W9	Septic Tank Drain Field	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$445,000	\$122,000	\$683,000	■	This septic tank associate with this drain field was abandoned in 1999 in accordance with requirements of WAC 246-272A-0300. Available information indicates the drain field received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-WC	Septic System	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$934,000	\$289,000	\$843,000	■	Available information indicates that the 2607-WC Septic System consists of two tanks and a trench-type drain field. This system was scheduled to be abandoned in 1998. In 1994, a soil investigation was performed to determine the soil type. Based on the soil type, there was not enough noncontaminated land in proximity for a new system. This system has been pumped twice a week in recent years. An upgrade or replacement of the existing on-site system is needed because the existing system is well beyond its useful life. Some components of the existing system may be reused (septic tank, etc.). This system may also pick up the sanitary wastewater flows from the 2607-W9 System in the future. Because the septic tank and associated drain field received sanitary waste, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-WL	Septic Tank	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$494,000	\$180,000	\$822,000	■	This septic tank was abandoned in 1999 in accordance with requirements of WAC 246-272A-0300. No sewage remains in the tank. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-WL	Septic Tank Drain Field	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$445,000	\$122,000	\$683,000	■	This septic tank associate with this drain field was abandoned in 1999 in accordance with requirements of WAC 246-272A-0300. Available information indicates the drain field received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-WZ	Septic Tank	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	\$489,000	\$168,000	\$346,000	■	Available information indicates the septic tank received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

- ①②③ Circles indicate the criterion is met. The numbers designate the relative ranking in meeting the criterion among the alternatives.
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- ☒ Does not meet the criterion.
- Indicates the preferred alternative for the waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome			
		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD															
2607-WZ	Septic Tank Drain Field	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	\$445,000	\$122,000	\$415,000		■	Available information indicates the drain field received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-Z	Septic Tank	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	\$494,000	\$180,000	\$570,000		■	This septic tank was abandoned in 1999 in accordance with requirements of WAC 246-272A-0300. No sewage remains in the tank. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-Z	Septic Tank Drain Field	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	\$704,000	\$347,000	\$2,078,000		■	The associated septic tank was abandoned in 1999 in accordance with requirements of WAC 246-272A-0300. Available information indicates the drain field received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-Z1	Septic Tank	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	\$489,000	\$168,000	\$322,000		■	The septic tank was abandoned in accordance with the requirements of WAC 246-272A-0300 in 1999. All sewage inside the tank was removed and the empty tank was filled to eliminate void spaces. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
2607-Z1	Septic Tank Drain Field	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	\$489,000	\$168,000	\$406,000		■	The associated septic tank was abandoned in 1999 in accordance with requirements of WAC 246-272A-0300. Available information indicates the drain field received nonhazardous sanitary sewage. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
270-E-1	Neutralization Tank	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	Note B	\$180,000	\$482,000			■ The site consists of an underground acid neutralization tank. The tank was used to neutralize acidic process condensate from the 221-B and 224-B facilities. Remaining waste in the tank could include limestone, process condensate precipitates, salts, and residual process condensates. Process condensate was reported to have low levels of uranium, plutonium, and beta emitters. Radiation readings of tank sludge in 1974 showed less than 100 cpm. The tank has not been backfilled or surface stabilized. Contaminated anthills found in 1984 may be related to biological intrusion of the tank or the associated pipeline. Because of the potential presence of radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome							
		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative																			
291-C-1	Burial Ground	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①		③	Note A	\$442,000	\$109,000	\$730,000		
600 Original Central Landfill	Sanitary Landfill	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	\$494,000	\$318,000	\$2,383,000			■ This site is a backfilled trench that is posted "Underground Radioactive Material." The trench received miscellaneous trash and debris including office wastes, some glass, electrical wastes, and minimal metal wastes. The trench was used for approximately 9 months. On June 5, 1988, a test pit was dug to try to locate this burial trench and a special radiological survey found 1,500 cpm beta/gamma. After encountering radioactive contamination, the excavation was discontinued. This discovery resulted in the trench being posted as "Underground Radioactive Material." The RTD alternative is protective of human and ecological receptors and best meets CERCLA criteria for this site.
600-218	Dumping Area	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	Note B	\$202,000	\$689,000			■ Available information indicates that this is a dumping area containing demolition debris, including wood, concrete footings, pipe, sheet metal, barbed wire, empty oil and paint cans, and steel fence posts. Because contamination is not anticipated, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
600-220	Dumping Area	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	Note B	\$638,000	\$1,127,000			■ Available information indicates that this site consists of dumping areas containing metal, transite, fluorescent light bulbs, metal ducting, fiberglass insulation, an unknown white granular substance, pipe, and wire. Empty oil, paint, and bleach containers are also present. One area appears to have been scraped with a bulldozer. Several waste materials are partially buried. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Because contamination is not anticipated, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
600-222	Military Compound	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	Note B	\$533,000	\$1,127,000			■ Available information indicates that this is a former military gun site. Material left at the site includes trees, walkways, roads, an underground telephone warning sign, ceramic pipe, oil filters, coat hangers, and a few pieces of transite siding. Because no contamination is anticipated, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
600-226	Dumping Area	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	③	Note A	Note B	\$122,000	\$131,000			■ Available information indicates that this is a dumping area for an anti-aircraft site. Surface debris includes pipe, glass, empty buckets, a 208 L (55-gal) drum, dried paint, cans, transite, broken concrete, and dry cell batteries. Based on the nature of the debris, contamination is not anticipated, but RTD is the preferred alternative because it is cost-effective and protective.

Ranking of Alternatives for Individual CERCLA Criteria:

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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome							
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative					
600-228	Dumping Area	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙		Note A	Note B	\$122,000	\$295,000	■
600-262	Crib	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	Note B	\$180,000	\$393,000	■	Available information indicates that this site consists of a test crib and 21 monitoring wells installed as a field experiment to predict crib capacity and waste retention. The site waste injected with 34,000 L (9,000 gal) of calcium nitrate solution spiked with Sr-85 (half-life = 65 days). The bottom of the crib was 0.6 m (2 ft) bgs and the water table at the time of the test was about 3.7 m (12 ft) bgs. Another test may have been carried out later using the same solutions. Because the radionuclide has a very short half-life and the calcium nitrate solution is very soluble, no contaminant is likely to remain. The wells were removed and decommissioned in 2007. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
600-275	Foundation-Removed	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	②	☒	☒	☒	③	Note A	Note B	\$290,000	\$589,000	■	Available information indicates that this site consists of the foundations for seven regulated storage areas for ammunition storage and Nike missile parts. Plutonium scrap in barrels of carbon tetrachloride was also stored at the site and one barrel was reported to have leaked and contaminated one of the concrete foundations. The contamination is reported to have been cleaned up. Because of the potential presence of hazardous substances, the RTD alternative is most protective of human and ecological receptors and meets other CERCLA criteria.
600-281	Dumping Area	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	Note B	\$168,000	\$442,000	■	Available information indicates that this was a dumping area. Current debris includes some material suspected to be asbestos, charred wood, glass, metal pipes, gauges, metal containers, concrete, and transite. Based on the nature of the expected debris at this site, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
600-36	Burn Pit	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	Note B	\$202,000	\$466,000	■	Available information indicates that this site consists of a burn pit adjacent to a railroad siding. In addition to a burned and oil stained area, the site contains metal canisters of nuts and bolts, batteries, abandoned rails, and metal debris. Based on the nature of the expected waste at this site, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.

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Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome				
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative	
600-37	French Drain/Tanks	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	Note B	\$180,000	\$595,000		■
600-38	Dumping Area	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	Note B	\$446,000	\$886,000	■	Available information indicates that this was a dumping area at a railroad siding. The dump site originally contained material that appeared to be related to cleaning or decontamination, including rubber boots, brooms, brushes, chisels mounted on poles, hoses, and various trash, including four or five drums. One of the drums had leaked an oily liquid. Much of the material was cleaned up by 1996. The site is reported to consist of nonradioactive and nondangerous waste. Based on the nature of the waste noted at this site, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
600-40	Dumping Area	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	②	③	☒	☒	①	③	Note A	Note B	\$122,000	\$168,000	■	Available information indicates that this site consists of a dumping area containing concrete, lumber, miscellaneous metal debris, rusted cans, asphalt-based roofing, wooden posts, two small wooden structures, and a wheelbarrow. The site may not be contaminated based on the nonhazardous nature of the material, but RTD is the preferred alternative because it is cost-effective and protective.
600-51	Dumping Area	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	②	③	☒	☒	①	③	Note A	Note B	\$122,000	\$131,000	■	Available information indicates that this site consists of a dumping area where a white powdered sodium compound was observed. A later site visit showed the compound to be gone, with no visible soil discoloration. Because of the potentially hazardous nature of the waste, the RTD alternative is most protective of human and ecological receptors and meets CERCLA criteria.
600-65	Dumping Area	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	②	③	☒	☒	①	③	Note A	Note B	\$122,000	\$132,000	■	Available information indicates that this site was a dumping area containing two crushed and flattened 208 L (55-gal) drums, an oil filter housing, a cable, a large concrete block, and some indication of oil disposal. In 2001, the debris could not be located. RTD is the preferred alternative, because it is cost-effective and most protective of potential exposure to human and ecological receptors.
600-66	Dumping Area	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	②	③	☒	☒	①	③	Note A	Note B	\$122,000	\$131,000	■	Available information indicates that this site consists of a dumping area containing two crushed and flattened drums and some metal sheeting. Because of the potentially hazardous nature of the waste, the RTD alternative is most protective of human and ecological receptors and meets other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome			
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative	
600-70	Dumping Area	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒		■
600-71	Burn Pit	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	■	Available information indicates that this site consists of a burn pit where charred material, wood, corrugated metal, oil cans, aerosol cans, paint cans, glass jars, paper, rope, rubber, roofing, metal pipe, and metal have been observed in the past. Based on the expected nature of the debris at this site, the CS/NA alternative meets CERCLA criteria, is cost-effective, and would lead to close out of the site.
Chemical Tile Field North 2703-E	Drain Field	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	■	Available information indicates that this site consists of a drain field (trench and seepage basin) that received nonhazardous waste from the 272-E and 2703-E Buildings. It is unknown whether a surface stabilization layer is present. Based on the expected nonhazardous nature of the waste, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
Old Central Shop Area	Foundations	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	■	Available information indicates that this site consists of foundations for the Old Central Shop Area. Debris found at the site consists of lumber, bricks, shingles, buckets, bricks, a barrel, office furniture, wooden tables, and nails. Several foundations and burnt areas are visible. A gas station at this facility stored diesel, gasoline, and kerosene in 11,000 L (3,000-gal) tanks and a fuel storage facility stored 659,000 L (174,000 gal) of gasoline and diesel in tanks. In addition, a 379,000 L (100,000-gal) storage tank (probably water storage tank) was connected to a boiler for heating. A sanitary sewer system (open trench and settling ponds) was also present. Based on the expected nonhazardous nature of the materials noted at this site, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
UPR-200-E-10; -11; -12; -20; -33	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	②	③	☒	☒	①	③	☒	☒	☒	☒	■	Available information indicates that these waste sites are the result of contamination that spread along the railroad tracks and right-of-way while transporting radioactive equipment or liquid waste. The contamination occurred on the railroad bed and right-of-way between PUREX and the 218-E-10 Burial Ground. In some cases, following a release, decontamination of the area was undertaken. Sections of the track have had a soil stabilization cover added and are posted as an underground radioactive area. Because long-lived radionuclides may be present, the RTD alternative is protective of human and ecological receptors and best meets CERCLA criteria.

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Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome						
		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative																	
UPR-200-E-101	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	②	☒	☒	③	☒	☒	①	③	Note A	\$421,000	\$86,000		\$241,000	■
UPR-200-E-112	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	②	☒	☒	③	☒	☒	①	③	Note A	Note B	\$439,000	\$2,444,000	■	Available information indicates that this site consists of an unplanned release along the railroad track from B Plant to the burial ground. Liquid spilled out of a cesium ion-exchange column and was spread by the train wheels. Radiological survey readings are reported to have ranged from 40,000 to 80,000 cpm. The original spill location was decontaminated immediately, but the completeness of the cleanup action is uncertain. Because of the potential presence of radionuclide contamination along this rail line, RTD alternative is the preferred alternative and best meets the CERCLA criteria.
UPR-200-E-143	Unplanned Release	☒	⊖	①	☒	⊖	①	☒	⊖	①	☒	⊖	⊖	☒	⊖	⊖	☒	⊖	⊖	☒	⊖	①	⊖	Note A	Note B	\$310,000	\$724,000	■	Available information indicates that this site consists of an unplanned release related to the 244-A Lift Station, the 200-E Powerhouse, and UPR-200-E-100. The site was contaminated with radioactive animal feces/urine and windblown particulates. A radiological survey in 1990 resulted in dose of up to 900 mrem/h from the animal feces. A large portion of this site was scraped in 1994 to remove contaminated soil. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
UPR-200-E-2	Unplanned Release	☒	⊖	①	☒	⊖	①	☒	⊖	①	☒	⊖	⊖	☒	⊖	⊖	☒	⊖	⊖	☒	⊖	①	⊖	Note A	Note B	\$207,000	\$550,000	■	Available information indicates that this site consists of an unplanned release of radioactive contamination in a 305 m (1,000 ft) radius around the B and T Plant stacks. Most stack-related contamination was ruthenium (half-life = 373 days) and contamination has decayed to below detection. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
UPR-200-E-28	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	②	☒	☒	③	☒	☒	①	③	Note A	Note B	\$122,000	\$133,000	■	Available information indicates that this site consists of an unplanned release in the eastern half of the PUREX exclusion area when fission products escaped from a trap pit. Because of the potential presence of radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets CERCLA criteria.
UPR-200-E-35	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	②	☒	☒	③	☒	☒	①	③	Note A	\$489,000	\$168,000	\$441,000	■	Available information indicates that this site consists of an unplanned release related to repair of a radiologically contaminated underground pipe. The site is reported to contain less than 1 Ci of fission products and is not reflected in surface radiological surveys. The RTD alternative is most protective of potential human and ecological receptors.

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Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome							
		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative																		
UPR-200-E-37	Unplanned Release	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	Note B	\$452,000		\$1,830,000	■	There is currently no physical evidence of this site and it is no longer marked or posted. On July 31, 1967, a release from the Strontium Semi-Works Facility was documented on a Radiation Occurrence Report. A documented remediation of a contaminated area east of Semi-Works was done 22 years later in 1989. Contaminated soil in the field east and south of Semi-Works was scraped up and disposed of in the 216-C-9 Dry Waste Burial Trench. A subsequent radiological survey was carried out and 96 soil samples were analyzed. Concentrations of radionuclides in all the samples were below the values listed in Table K-2 of the Westinghouse Environmental Compliance Manual WHC-CM-7-5. Based on the survey and sample results, radiological postings were removed from the area. Based on reported prior cleanup actions and sampling results, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.			
UPR-200-E-39	Unplanned Release	☒	☒	☒	①	☒	☒	②	☒	☒	☒	①	☒	☒	☒	☒	☒	☒	②	③	☒	☒	①	③	Note A	\$489,000	\$168,000	\$137,000	■	Available information indicates that this site consists of an unplanned release on the ground and blacktop outside the 216-A-36B Crib Sampler Shack. The area was hosed down and is currently included in a large area of surface stabilization (200-E-103). Radiological contamination levels ranged up to 450 mrem/h shortly after the release. Because of the potential presence of residual radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
UPR-200-E-43	Unplanned Release	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	Note B	\$109,000	\$143,000	■	Available information indicates that this site consists of an unplanned release related to transportation of the 102-BY Pump between the BY Tank Farm and the burial ground. Radiological readings along the road ranged up to 100,000 cpm. Decontamination of the road was carried out but there is no record of the effectiveness of these activities. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.				
UPR-200-E-50	Unplanned Release	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	Note A	Note B	\$207,000	\$569,000	■	Available information indicates that this site consists of an unplanned release in an area located southeast of the Over ground Radioactive Equipment Storage Yard and north of the C Tank Farm. Radiological particulate contaminants are presumed to have come from the equipment storage yard where some highly contaminated equipment was stored. Beta gamma readings up to 100,000 cpm have been found on the surface in the past, decreasing away from the source area. Some decontamination was carried out in 1974, but there is no record of the completeness of these efforts. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.				

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		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative																						
UPR-200-E-52	Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	②	③	☑	☑	①	③	Note A		Note B	\$122,000	\$148,000			■ Available information indicates that this site consists of an unplanned release of radioactive liquid related to the drain area of the steam pressure relief pipe discharge from the E-5-2 Strontium Concentrator. Beta/gamma radiological readings up to 20,000 cpm were found in the soil near the drain. Radionuclides in the soil continue to be released by precipitation. Because of the potential presence of residual radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.	
UPR-200-E-54	Unplanned Release	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	⊖	☑	⊖	⊖	⊖	☑	⊖	①	⊖	Note A	Note B	\$122,000	\$297,000			■ Available information indicates that this site is the result of an unplanned release associated with water that was being used to decontaminate a manipulator and seeped under an exit door at the 225-B Building, spreading low-level radiological contamination onto a concrete door pad and adjacent soil. A radiological survey showed 25 mR/h direct and 20,000 cpm smearable contamination. The door pad was decontaminated from 25 mR/h to 4,000 cpm, the remaining contamination was covered in plastic, contaminated soil was packaged for disposal, and the concrete pad was removed and replaced. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.			
UPR-200-E-55	Unplanned Release	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	⊖	☑	⊖	⊖	⊖	☑	⊖	①	⊖	Note A	Note B	\$86,000	\$134,000			■ Available information indicates that this site is the result of windblown radioactive particulates being released from a plastic sheet in a zone near the 212-B Building. An initial radiological survey showed 5,000 to 30,000 cpm. The area was cleaned up and postings removed in 1979. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.			
UPR-200-E-62	Unplanned Release	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	⊖	☑	⊖	⊖	⊖	☑	⊖	①	⊖	Note A	Note B	\$86,000	\$105,000			■ Available information indicates that this site consists of an unplanned release of radioactive liquid that had spilled from a pressure test assembly while in transit. A radiological survey of the contaminated area in 1982 showed 350 mrad/h. Ground contamination was removed and taken to a burial ground. The site was cleaned to background levels and released from Radiological Control in 1982. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.			
UPR-200-E-64	Unplanned Release	☑	②	☑	①	☑	②	☑	②	☑	②	☑	②	☑	①	☑	☑	☑	☑	☑	②	②	③	☑	②	①	③	Note A	\$728,000	\$347,000	\$851,000			■ Available information indicates that this site consists of an unplanned release related to biological transport (ants, animals, etc.) of radiological contamination from the 216-B-64 "Swab Riser" or the vent riser from the 270-E-1 Neutralization Tank. A radiological survey in 1987 showed 60,000 cpm on the soil of an ant hill and a survey in 1985 showed 30 mrad/h on a pipe at the site. Because of the potential presence of radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.

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		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative							
UPR-200-E-66	Unplanned Release	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	☒	①	☒	☒	☒	☒	Note A	\$695,000	\$241,000	\$760,000	■	Available information indicates that this site consists of an unplanned release around the perimeter of the 216-A-42 Retention Basin. Radiologically contaminated liquid was allowed to evaporate and particulates were spread by the wind. A radiological survey in 1984 showed levels up to 100,000 cpm. The contaminated area within the basin was subsequently backfilled with clean soil. A radiation survey of the 216-A-42 Basin perimeter fence done on December 8, 1998, did not identify any contamination. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
UPR-200-E-69	Rail Siding	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	②	③	☒	☒	①	③	Note A	\$445,000	\$202,000	\$755,000	■	Available information indicates that this site consists of an unplanned release along the railroad track extending from the B-221 railroad tunnel door to Atlanta Avenue. Radiological contamination occurred when flush water from a burial box leaked during rail transport. The section of track was subsequently covered with gravel. Because of the potential presence radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.		
UPR-200-E-89	Unplanned Release	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	☒	☒	Note A	\$445,000	\$202,000	\$566,000	■	Available information indicates that this site resulted from an unplanned release of radioactive particulates spread by wind at the BX and BY Tank Farms. Surface stabilization was carried out in 1991, when contaminated soil was scraped up and a clean cover was applied. Subsequent soil samples were all below release limits. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.	
UPR-200-E-95	Rail Siding	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	②	③	☒	☒	①	③	Note A	\$445,000	\$122,000	\$821,000	■	Available information indicates that this site consists of an unplanned release related to the storage of radiologically contaminated rail cars on a railroad spur. A radiological survey in 1991 showed up to 350,000 dpm beta. The tracks were covered with gravel in 1998. Because of the potential presence of radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.		
UPR-200-E-98	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	②	③	☒	☒	①	③	Note A	\$421,000	\$86,000	\$106,000	■	Available information indicates that this site is located within a large surface stabilized area (200-E-41). Much of the contamination was removed and placed into the 218-C-9 Burial Pit in 1992. The area has been surface stabilized with powerhouse ash. The covered area has "Underground Radioactive Material" warning signs posted. The RTD alternative is protective of human and ecological receptors and best meets CERCLA criteria for this site.		
UPR-200-W-101	Unplanned Release	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒	①	☒	☒	☒	Note A	\$489,000	\$168,000	\$576,000	■	Available information indicates that this site consists of a radioactive spill of unreclaimed acid on the ground at the northeast end of the 221-U Building. About 1 Ci of Sr-90 was released. The area was covered with 7.6 cm (3 in.) of gravel and an asphalt cap. CS/NA is the most appropriate alternative and meets other CERCLA criteria that document that decay has resulted in radiological levels below PRCLs.	

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		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative		
UPR-200-W-116	Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	①	③	Note A	\$681,000	\$241,000	\$736,000			■
UPR-200-W-165	Unplanned Release	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	①	⊖	☑	⊖	①	⊖	Note A	Note B	\$241,000	\$655,000		■	Available information indicates that this site consists of an unplanned release from the S, SX, and SY Tank Farms, presumably windblown particulates. A radiological survey showed readings up to 200 cpm and 45 mrad/h. The area was scraped, contaminated soil removed, and a clean backfill cover was installed in 1992. The area was subsequently removed from radiological control. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
UPR-200-W-23	Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	①	③	Note A	\$421,000	\$86,000	\$108,000		■	Available information indicates that this site consists of an unplanned release related to a fire in a waste box that spread plutonium contamination over a 28 m ² (300 ft ²) area. A radiological survey showed readings up to 10,000 dpm. The site was covered in blacktop and surrounded by "Do Not Excavate" signs. Because of the potential presence of long-lived radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
UPR-200-W-3, -4, -65, -73	Rail Siding	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	①	③	Note A	Note B	\$450,000	\$2,273,000		■	Available information indicates that these sites consist of unplanned releases related to the transport of radioactive materials using rail cars. Because of the potential presence of long-lived radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets CERCLA criteria.
UPR-200-W-39	Unplanned Release	☑	☑	☑	①	☑	☑	☑	②	☑	☑	☑	①	☑	☑	☑	☑	☑	☑	①	③	Note A	\$489,000	\$168,000	\$415,000		■	Available information indicates that a radioactive leak occurred in March 1954 and spread to an area southeast of the 224-U Building. The contamination was placed in a trench and the contamination was covered with clean soil. The site is not marked because the 224-UA Building was built over the trench location. The exposure potential is low until the 224-UA Building is removed. Assuming removal of the building, the RTD alternative is protective of human and ecological receptors and best meets CERCLA criteria for this site.

Ranking of Alternatives for Individual CERCLA Criteria:

- ①②③ Circles indicate the criterion is met. The numbers designate the relative ranking in meeting the criterion among the alternatives.
- ⊖ Indicates an alternative that was not evaluated because COPC concentrations are expected to be below PRCLs.
- ☑ Does not meet the criterion.
- Indicates the preferred alternative for the waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome								
		No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative						
UPR-200-W-43	Unplanned Release	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙		Note A	Note B	\$86,000	\$121,000		■
UPR-200-W-51	Unplanned Release	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	Note B	\$241,000	\$655,000		■	Available information indicates that this site consists of an unplanned release related to a radioactive steam leak at the 241-S-151 Diversion Box. While trying to unplug a line to the diversion box, high-pressure steam bled back into the diversion box causing the contamination. The surrounding areas were flushed with water and the surface scraped. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
UPR-200-W-56	Unplanned Release	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	①	☒	☒	☒	②	☒	☒	☒	③	☒	☒	①	③	Note A	Note B	\$168,000	\$161,000		■	Available information indicates that this site consists of an unplanned release associated with heavy rains that washed radiological contamination from a papered area in an outside radiation zone into a ground recess adjacent to the REDOX Column Carrier Trench. A grossly contaminated steel cable was being decontaminated in 1961 and was the source of the contaminants. A radiological survey showed 30,000 cpm over 19 m ² (200 ft ²) area (gravel) and 80,000 cpm over 4.6 m ² (50 ft ²) area (blacktop under paper). No clean-up actions are mentioned. The RTD alternative is cost-effective, protective of human and ecological receptors, and best meets other CERCLA criteria.
UPR-200-W-57	Unplanned Release	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	Note B	\$122,000	\$131,000		■	Available information indicates that this site is the result of a radioactive unplanned release caused by a fire in the 233-S Building. Plutonium contamination was spread throughout the building and to a small degree outside the building via soot and ash in the air. The 233-S Building was subsequently demolished and removed. Because the contamination most likely was removed when the 233-S Building was demolished, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
UPR-200-W-61	Unplanned Release	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	☒	⊙	①	⊙	Note A	Note B	\$180,000	\$572,000		■	Available information indicates that this site consists of a radioactive unplanned release related to a fire hose rupturing while flushing the H-10 to 241-SX Transfer Line. Backflow from the transfer line contaminated an outside ground area. A radiological survey showed 4,000 to 100,000 cpm over a 19 m ² (200 ft ²) area. The site was released from radiation control after 15 cm (6 in.) of soil was removed and the walkways were flushed with clean water. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

- ①②③ Circles indicate the criterion is met. The numbers designate the relative ranking in meeting the criterion among the alternatives.
- ⊙ Indicates an alternative that was not evaluated because COPC concentrations are expected to be below PRCLs.
- ☒ Does not meet the criterion.
- Indicates the preferred alternative for the waste site.

Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth			Alternative Analysis Outcome								
		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative																			
UPR-200-W-63	Unplanned Release	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒		☒	①	Note A	\$421,000	\$86,000	\$407,000	■
UPR-200-W-67	Unplanned Release	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	Note A	Note B	\$86,000	\$114,000	■	Available information indicates that this site consists of an unplanned release related to a contaminated electric lift parked on the ground outside of a radiation zone. The lift was from the B Plant and had been moved to the 2706-T Building without being surveyed first. Radiological survey readings in 1970 showed ground contamination was 20,000 cpm beta/gamma and the lift was contaminated at 500 mrad/h. A site visit in 1991 noted there were no radiation hazard postings in the area. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
UPR-200-W-70	Unplanned Release	☒	☒	①	☒	☒	②	☒	☒	①	☒	☒	①	☒	☒	②	☒	☒	③	☒	☒	①	☒	☒	③	Note A	\$445,000	\$122,000	\$137,000	■	Available information indicates that this site consists of an unplanned release related to an unauthorized dumping of a contaminated material into a noncontaminated trench used for burning. The site is associated with the 200-W Burn Pit and is within the 200-W Ash Disposal Basin. Radiological hot spots were discovered within the burning trench, which showed 20,000 cpm to 30 mrad/h in some areas. A 3.8 L (1-gal) bucket showed 100,000 cpm (250 mrad/h) plus alpha from 5,000 to 200,000 dpm. In 1973, fabro-film was sprayed on contaminated areas, and a locked gate was installed. Samples suggest radionuclides to be americium and plutonium. Because of the potential presence of long-lived radionuclides, the RTD alternative is most protective of human and ecological receptors and best meets other CERCLA criteria.
UPR-200-W-71	Unplanned Release	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	☒	☒	①	Note A	Note B	\$347,000	\$944,000	■	Available information indicates that contamination was spread onto the road in January 1974 along the route from the U Tank Farm to the 200 West Area Burial Ground, affecting 16th Street and Dayton Avenue. At the exit of the U Farm, on 16th Street, spots to 600 mrad/h were found. Numerous contaminated spots from 20,000 to 100,000 cpm were found along 16th Street to the intersection of 16th Street and Dayton Avenue, and on Dayton Avenue. The cause of the contamination spread included inadequate packaging of the failed equipment, inadequate surveillance of the load during transit, and transporting the equipment while it was raining. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.

Ranking of Alternatives for Individual CERCLA Criteria:

- ①②③ Circles indicate the criterion is met. The numbers designate the relative ranking in meeting the criterion among the alternatives.
- ☒ Indicates an alternative that was not evaluated because COPC concentrations are expected to be below PRCLs.
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Table 5-4. Assessment of Alternatives Using CERCLA Evaluation Criteria and Selection of the Preferred Removal Action Alternative for Each Waste Site. (34 Pages)

Waste Site Code	Site Type	Overall Protection			Compliance with ARARs			Long-Term Effectiveness			Reduction in TMV			Short-term Effectiveness			Implementability			Present Worth				Alternative Analysis Outcome		
		No Action MESC/IC/MNA	CS/NA	RTD	No Action	MESC/IC/MNA	CS/NA	RTD	No Action MESC/IC/MNA	CS/NA	RTD	Key Site Information and Rationale for Selected Alternative														
UPR-200-W-96	Unplanned Release	☒	☉	①	☒	☉	①	☒	☉	①	☒	☉	①	☒	☉	①	☒	☉	①	Note A	\$442,000	\$109,000	\$382,000			■
UPR-600-12	Unplanned Release	☒	☉	①	☒	☉	①	☒	☉	①	☒	☉	①	☒	☉	①	☒	☉	①	Note A	Note B	\$168,000	\$181,000		■	Available information indicates that this site consists of an unplanned release of radioactive contaminants related to a truck rollover on the shoulder of Route 4S in the 200 East Area. In 1954, a tractor-trailer rolled over and spilled 6,000 L (1,600 gal) of UNH onto the ground and roadway. The roadway was washed and a thin layer of new asphalt was applied over contamination. The shoulder was covered in clean soil reducing contamination levels from 60 mrad/h to 20,000 cpm. In 1971, contamination was dug up and removed to a 200 West Area Burial Ground. In 1998, contamination on south shoulder of Route 4S near the top of hill was discovered and in 1999, backfilled with clean material. In January 2006, contaminated (beta/gamma) soil was removed and gravel added to site. Because the contamination has most likely been removed, CS/NA is the most appropriate alternative and meets the other CERCLA criteria.
UPR-600-21	Unplanned Release	☒	☉	①	☒	☉	①	☒	☉	①	☒	☉	①	☒	☉	①	☒	☉	①	Note A	Note B	\$86,000	\$101,000		■	Available information indicates that this site is related to an unplanned release of radioactive tumbleweeds and possible windblown particulates from the PUREX stack or nearby burial ground. No survey results are reported for the area. The majority of the tumbleweed contamination has been removed over the years and the area is no longer posted. CS/NA is the most appropriate alternative and meets the other CERCLA criteria.

Note A: The NA alternative was retained for detailed analysis as a baseline description of the effects of taking no action as required by CERCLA regulations. This alternative cannot be considered for the 200-MG-1 OU waste sites because of the absence of characterization data. Hence, there is no cost listed for this alternative.

Note B: No cost in the MESC/IC/MNA category indicates a site with no stabilization cover and no backfill according to the *Waste Information Data System* database. Sites that do not have a stabilization cover but have been backfilled may still be considered for MESC/IC/MNA.

- | | | | |
|--|--|---|--|
| ARAR = applicable or relevant and appropriate requirement. | cpm = counts per minute. | mrem = millirem. | RTD = removal, treatment, and disposal. |
| bgs = below ground surface. | dpm = disintegrations per minute. | NA = no action. | TMV = toxicity, mobility, and volume. |
| CA = Contaminated Area. | LERF = Liquid Effluent Retention Facility. | PCB = polychlorinated biphenyl. | UNH = uranyl nitrate hexahydrate. |
| CERCLA = <i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980.</i> | MESC/IC/MNA = maintain existing soil cover/institutional controls/monitored natural attenuation. | PPE = personal protective equipment. | URM = underground radioactive material. |
| CS/NA = confirmatory sampling/no action. | mR = milliroentgen. | PRCL = preliminary removal cleanup level. | WAC = <i>Washington Administrative Code.</i> |
| COPC = contaminant of potential concern. | mrads = millirad. | PUREX = Plutonium-Uranium Extraction Plant. | |
| | | REDOX = Reduction-Oxidation Plant. | |

Ranking of Alternatives for Individual CERCLA Criteria:

- ①②③ Circles indicate the criterion is met. The numbers designate the relative ranking in meeting the criterion among the alternatives.
- ☉ Indicates an alternative that was not evaluated because COPC concentrations are expected to be below PRCLs.
- ☒ Does not meet the criterion.
- Indicates the preferred alternative for the waste site.

1 **6.0 CONCLUSIONS AND RECOMMENDED ALTERNATIVES**

2 Chapter 4.0 provided a description of the four alternative removal actions, and Chapter 5.0
 3 analyzed each of the alternatives against the three CERCLA evaluation criteria for
 4 non-time-critical removal actions: effectiveness, implementability, and cost. This chapter
 5 provides a summary of the preferred removal actions and the path forward for implementing the
 6 removal actions for the 200-MG-1 OU waste sites.

7 **6.1 SUMMARY OF PREFERRED REMOVAL**
 8 **ACTIONS**

9 Table 6-1 summarizes the present worth costs of the preferred removal alternatives across all
 10 waste sites. The 200-MG-1 OU preferred removal actions have a present worth cost of
 11 \$149,923,000. The type, size, and extent of hazardous substance contamination vary
 12 considerably across the 200-MG-1 OU waste sites. Thus, it is not possible to prepare meaningful
 13 unit cost factors based on area or waste volume removed from the analysis in this OU.

Table 6-1. Summary of the 200-MG-1 Operable Unit Waste Site Preferred Removal Actions.

Preferred Alternative	Number of Waste Sites	Present Worth
NA	0	\$0
MESC/IC/MNA	0	\$0
CS/NA	89	\$28,649,000
RTD	98	\$121,274,000
Total	187	\$149,923,000

CS/NA = confirmatory sampling/no action.

MESC/IC/MNA = maintain existing soil cover/institutional controls/monitored natural attenuation.

NA = no action.

RTD = removal, treatment, and disposal.

14 The preferred removal action for each site is summarized in Tables 6-2 and 6-3 for CS/NA and
 15 RTD, respectively. As discussed earlier, the NA and MESC/IC/MNA alternatives were not
 16 selected as the preferred alternatives for any of the 200-MG-1 OU waste sites.

Table 6-2. Waste Sites with CS/NA Preferred Removal Action Alternative. (3 Pages)

Waste Site Code	Waste Site Type	Present Worth	Waste Site Code	Waste Site Type	Present Worth
200 CP	Depression/Pit (nonspecific)	\$347,000	2607-W4	Septic System	\$290,000
200-E-2	Unplanned Release	\$168,000	2607-W6	Septic System	\$1,008,000
200-E-6	Septic System	\$180,000	2607-W8	Septic System	\$302,000
200-E-7	Septic System	\$290,000	2607-W9	Septic System	\$302,000
200-E-13	Dumping Area	\$347,000	2607-WC	Septic System	\$290,000
200-E-26	Unplanned Release	\$180,000	2607-WL	Septic System	\$302,000

Table 6-2. Waste Sites with CS/NA Preferred Removal Action Alternative. (3 Pages)

Waste Site Code	Waste Site Type	Present Worth	Waste Site Code	Waste Site Type	Present Worth
200-E-46	Dumping Area	\$347,000	2607-WZ	Septic System	\$290,000
200-E-101	Experiment/ Test Site	\$180,000	2607-Z	Septic System	\$527,000
200-E-110	Dumping Area	\$87,000	2607-Z1	Septic System	\$336,000
200-E-121	Unplanned Release	\$242,000	600-36	Burn Pit	\$202,000
200-W Ash Disposal Basin	Coal Ash Pit	\$347,000	600-37	French Drain	\$180,000
200-W BP	Burn Pit	\$347,000	600-38	Dumping Area	\$447,000
200-W-2	Spoils Pile/Berm	\$180,000	600-70	Dumping Area	\$347,000
200-W-11	Dumping Area	\$202,000	600-71	Burn Pit	\$122,000
200-W-14	Dumping Area	\$168,000	600-218	Dumping Area	\$202,000
200-W-33	Dumping Area	\$598,000	600-220	Dumping Area	\$638,000
200-W-51	Septic System	\$290,000	600-222	Military Compound	\$533,000
200-W-53	Unplanned Release	\$310,000	600-228	Dumping Area	\$122,000
200-W-55	Dumping Area	\$122,000	600-262	Crib	\$180,000
200-W-101	Dumping Area	\$87,000	600-281	Dumping Area	\$168,000
216-A-1	Crib	\$180,000	Chemical Tile Field North 2703-E	Drain/Tile field	\$330,000
216-A-3	Crib	\$180,000	Old Central Shop Area	Foundations	\$721,000
216-A-18	Trench	\$180,000	UPR-200-E-2	Unplanned Release	\$208,000
216-A-20	Trench	\$180,000	UPR-200-E-37	Unplanned Release	\$453,000
216-C-5	Crib	\$180,000	UPR-200-E-43	Unplanned Release	\$110,000
216-C-6	Crib	\$180,000	UPR-200-E-50	Unplanned Release	\$208,000
216-C-9	Pond	\$1,138,000	UPR-200-E-54	Unplanned Release	\$122,000
216-C-10	Crib	\$180,000	UPR-200-E-55	Unplanned Release	\$87,000
216-S-4	French Drain	\$180,000	UPR-200-E-62	Unplanned Release	\$87,000
216-S-8	Trench	\$180,000	UPR-200-E-66	Unplanned Release	\$242,000
216-S-22	Crib	\$180,000	UPR-200-E-89	Unplanned Release	\$202,000
216-T-4A	Pond	\$1,386,000	UPR-200-E-143	Unplanned Release	\$311,000
2607-E1	Septic System	\$867,000	UPR-200-W-43	Unplanned Release	\$87,000
2607-E3	Septic System	\$855,000	UPR-200-W-51	Unplanned Release	\$242,000
2607-E4	Septic System	\$290,000	UPR-200-W-57	Unplanned Release	\$122,000
2607-E5	Septic System	\$348,000	UPR-200-W-61	Unplanned Release	\$180,000
2607-E6	Septic System	\$624,000	UPR-200-W-63	Unplanned Release	\$87,000
2607-E7A	Septic System	\$168,000	UPR-200-W-67	Unplanned Release	\$87,000
2607-E7B	Septic System	\$168,000	UPR-200-W-71	Unplanned Release	\$347,000

Table 6-2. Waste Sites with CS/NA Preferred Removal Action Alternative. (3 Pages)

Waste Site Code	Waste Site Type	Present Worth	Waste Site Code	Waste Site Type	Present Worth
2607-E9	Septic System	\$290,000	UPR-200-W-96	Unplanned Release	\$110,000
2607-E12	Septic System	\$1,416,000	UPR-200-W-101	Unplanned Release	\$168,000
2607-EA	Septic System	\$336,000	UPR-200-W-165	Unplanned Release	\$242,000
2607-EE	Septic System	\$290,000	UPR-600-12	Unplanned Release	\$168,000
2607-W1	Septic System	\$1,348,000	UPR-600-21	Unplanned Release	\$87,000
2607-W3	Septic System	\$510,000	--	--	--
Total Present Worth for CS/NA sites: \$28,649,000					

CS/NA = confirmatory sampling/no action.

1

Table 6-3. Waste Sites with RTD Preferred Removal Action Alternative. (2 Pages)

Waste Site Code	Waste Site Type	Present Worth	Waste Site Code	Waste Site Type	Present Worth
200-E BP	Burn Pit	\$906,000	216-B-3-1	Ditch	\$2,086,000
200-E PD	Ditch	\$1,027,000	216-B-3-2	Ditch	\$2,449,000
200-E-1	Dumping Area	\$402,000	216-B-3-3	Ditch	\$1,829,000
200-E-29	Unplanned Release	\$828,000	216-B-59	Trench	\$2,279,000
200-E-43	Storage	\$903,000	216-B-59B	Retention Basin	\$2,279,000
200-E-53	Unplanned Release	\$373,000	216-C-3	Crib	\$498,000
200-E-58	Neutralization Tank	\$480,000	216-C-7	Crib	\$517,000
200-E-103	Unplanned Release	\$2,177,000	216-S-26	Crib	\$983,000
200-E-107	Unplanned Release	\$754,000	216-T-20	Trench	\$164,000
200-E-109	Unplanned Release	\$445,000	216-Z-4	Trench	\$448,000
200-E-115	Unplanned Release	\$138,000	216-Z-6	Crib	\$495,000
200-E-117	Unplanned Release	\$106,000	270-E-1	Neutralization Tank	\$483,000
200-E-123	Unplanned Release	\$153,000	291-C-1	Burial Ground	\$731,000
200-E-124	Unplanned Release	\$506,000	600 Original Central Landfill	Sanitary Landfill	\$2,384,000
200-E-125	Unplanned Release	\$116,000	600-40	Dumping Area	\$169,000
200-E-128	Unplanned Release	\$116,000	600-51	Dumping Area	\$131,000
200-E-129	Unplanned Release	\$119,000	600-65	Dumping Area	\$133,000
200-E-130	Unplanned Release	\$390,000	600-66	Dumping Area	\$132,000
200-E-139	Unplanned Release	\$627,000	600-226	Dumping Area	\$132,000
200-W-1	Mud Pit	\$394,000	600-275	Foundation	\$589,000
200-W-3	Dumping Area	\$729,000	UPR-200-E-10	Unplanned Release	\$4,973,000
200-W-6	Dumping Area	\$796,000	UPR-200-E-11	Unplanned Release	\$4,973,000
200-W-12	Dumping Area	\$149,000	UPR-200-E-12	Unplanned Release	\$4,973,000

Table 6-3. Waste Sites with RTD Preferred Removal Action Alternative. (2 Pages)

Waste Site Code	Waste Site Type	Present Worth	Waste Site Code	Waste Site Type	Present Worth
200-W-21	Pump Station	\$612,000	UPR-200-E-20	Unplanned Release	\$4,973,000
200-W-22	Unplanned Release	\$1,850,000	UPR-200-E-28	Unplanned Release	\$134,000
200-W-54	Unplanned Release	\$2,211,000	UPR-200-E-33	Unplanned Release	\$4,973,000
200-W-63	Unplanned Release	\$318,000	UPR-200-E-35	Unplanned Release	\$442,000
200-W-64	Foundation	\$871,000	UPR-200-E-39	Unplanned Release	\$137,000
200-W-67	Unplanned Release	\$287,000	UPR-200-E-52	Unplanned Release	\$149,000
200-W-75	Experiment/ Test Site	\$359,000	UPR-200-E-64	Unplanned Release	\$851,000
200-W-80	Spoils Pile/Berm	\$279,000	UPR-200-E-69	Unplanned Release	\$756,000
200-W-81	Unplanned Release	\$2,085,000	UPR-200-E-88	Unplanned Release	\$903,000
200-W-82	Pump Station/ Product Piping	\$429,000	UPR-200-E-95	Unplanned Release	\$822,000
200-W-83	Unplanned Release	\$2,776,000	UPR-200-E-98	Unplanned Release	\$106,000
200-W-86	Unplanned Release	\$107,000	UPR-200-E-101	Unplanned Release	\$241,000
200-W-90	Unplanned Release	\$106,000	UPR-200-E-112	Unplanned Release	\$2,444,000
200-W-92	Dumping Area	\$634,000	UPR-200-W-3	Unplanned Release	\$2,274,000
200-W-106	Unplanned Release	\$270,000	UPR-200-W-4	Unplanned Release	\$2,274,000
207-B	Retention Basin	\$2,524,000	UPR-200-W-23	Unplanned Release	\$109,000
207-SL	Retention Basin	\$691,000	UPR-200-W-39	Unplanned Release	\$416,000
209-E-WS-3	Valve Pit	\$317,000	UPR-200-W-41	Unplanned Release	\$2,776,000
216-A-9	Crib	\$4,375,000	UPR-200-W-44	Unplanned Release	\$2,776,000
216-A-28	Crib	\$406,000	UPR-200-W-46	Unplanned Release	\$2,776,000
216-A-34	Ditch	\$1,379,000	UPR-200-W-56	Unplanned Release	\$162,000
216-A-40	Retention Basin	\$1,590,000	UPR-200-W-58	Unplanned Release	\$2,085,000
216-A-42	Retention Basin	\$4,576,000	UPR-200-W-65	Unplanned Release	\$2,274,000
216-B-2-1	Ditch	\$2,482,000	UPR-200-W-70	Unplanned Release	\$137,000
216-B-2-2	Ditch	\$2,482,000	UPR-200-W-73	Unplanned Release	\$2,274,000
216-B-2-3	Ditch	\$2,794,000	UPR-200-W-116	Unplanned Release	\$736,000
Total Present Worth for RTD sites:		\$121,274,000			

RTD = removal, treatment, and disposal.

6.2 200-MG-1 OPERABLE UNIT PATH FORWARD

The path forward following public release of this EE/CA includes:

- Public review and comment. During this period, the public will have an opportunity to review this EE/CA, and comment on the analyses and preferred removal actions.
- Action Memorandum. An Action Memorandum will be prepared after the public review and comment period that provides a concise written record of the decisions for the OU waste sites and removal action alternatives. It will describe the site histories, current activities, and human health and environmental risks. It will outline the proposed actions and costs, and documents the approval of the proposed action by the U.S. Department of Energy, Richland Operations Office and the lead regulatory agency. Tri-Party Agreement Milestone M-015-49A-T01 makes the following commitment for the 200-MG-1 OU:
 - “A draft action memorandum for the 200-MG-1 OU will be submitted with a proposed set of M-016 series of interim milestones to establish specific schedules, adjusted to site priorities, to complete the remediation field work by 2024. The proposed set of M-016 milestones will include a process to reevaluate priorities annually.”
- RAWP. The RAWP will provide a description of the work to be done and applicable PRCLs.
- Removal action implementation. The culmination of the regulatory and planning documents is the field implementation of the removal actions, including verification that PRCLs and RAOs have been achieved.

The path forward is graphically summarized in Figure 6-1. Removal actions at the 200-MG-1 OU waste sites may have a lower priority for cleanup than other Hanford OU waste sites because they are expected to pose relatively little potential risk to human health and the environment. Thus, the 200-MG-1 OU removal actions may be performed opportunistically or to complement other ongoing cleanup actions. The 200-MG-1 OU RAWP will contain more schedule details and will be submitted to DOE and Ecology for review and approval.

Because characterization data do not exist for most of the 200-MG-1 OU waste sites, the observational screening and excavation guidance activities may reveal different site conditions than presently understood. This necessitates the ability to revise the preferred alternative as characterization data become available. Decision logic has been developed to describe how the site removal action may shift from one alternative to another based on the assessment of characterization data. This decision logic begins with the preferred waste site removal alternative developed in Chapter 5.0, and is shown in Figure 6-2 for MESC/IC/MNA, Figure 6-3 for CS/NA, and Figure 6-4 for RTD. Although MESC/IC/MNA was not the preferred removal action for any site, decision logic has been prepared for this alternative in case additional site data suggest that it is the most appropriate removal action.

1 The initial site screening or confirmatory sampling activities will be used to determine
2 compliance with the PRCLs and the potential need to consider other alternatives. For example,
3 contamination may be found to extend deeper than 4.6 m (15 ft) bgs before reaching the depth of
4 unimpacted soil at some sites. Because these sites are outside the expected conditions for a
5 200-MG-1 OU waste site, DOE will discuss the next steps (e.g., sampling to determine
6 contamination depth, or transfer site to another OU) with Ecology. After the completion of the
7 waste site removal activity, site completion activities will be performed as specified in the
8 RAWP.

Figure 6-1. General Path Forward.

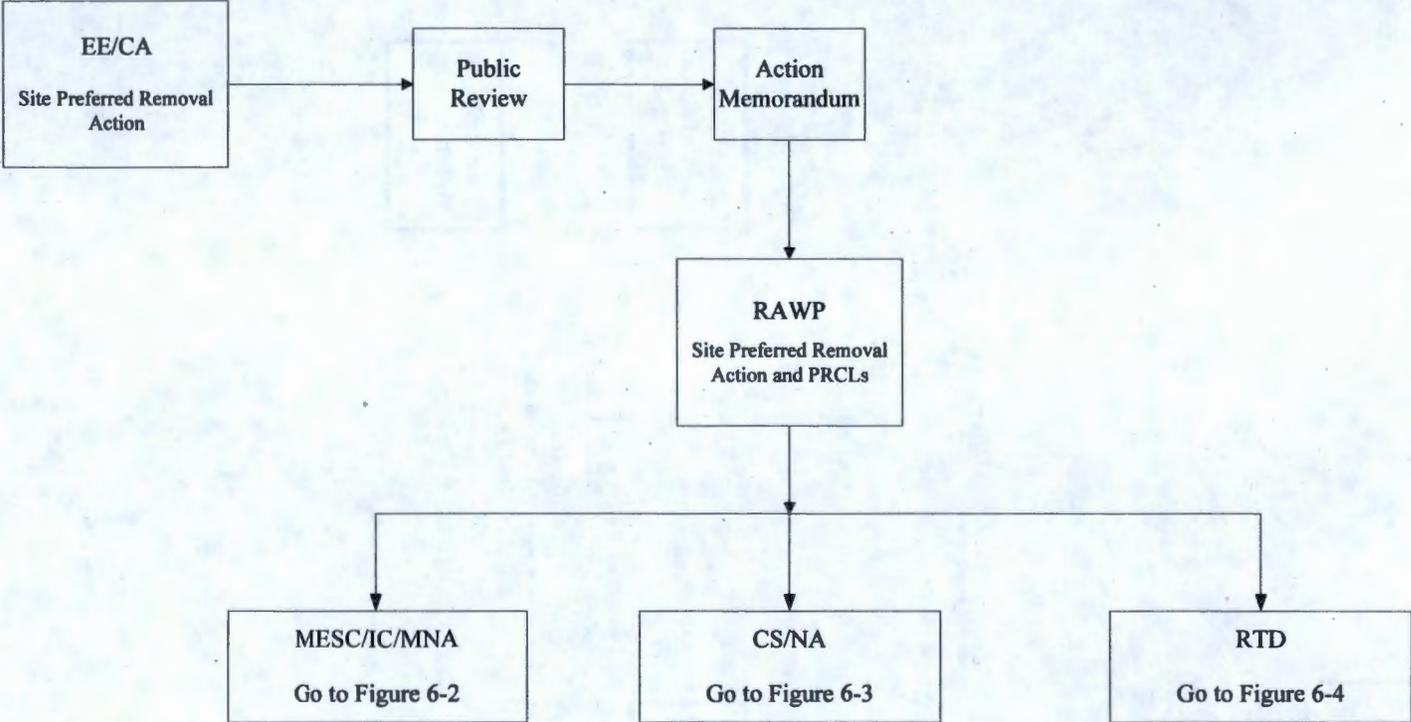


Figure 6-2. Removal Action Decision-Making Process for MESC/IC/MNA Alternative.

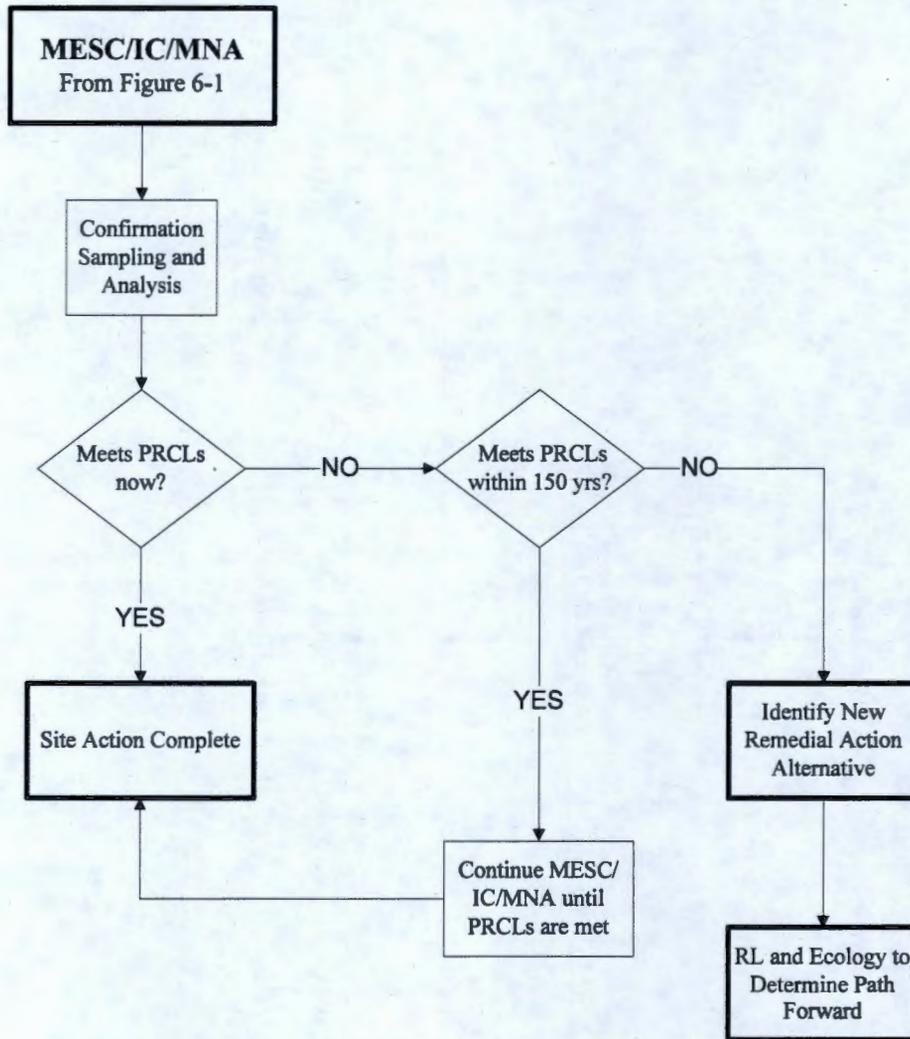
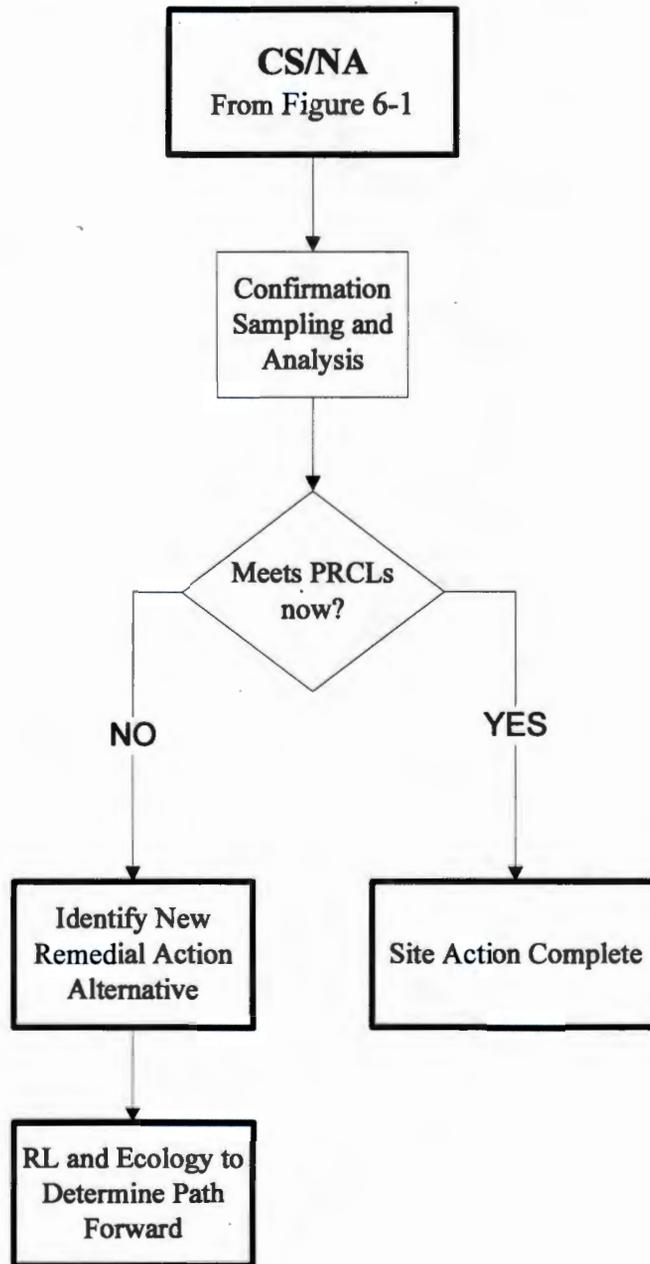
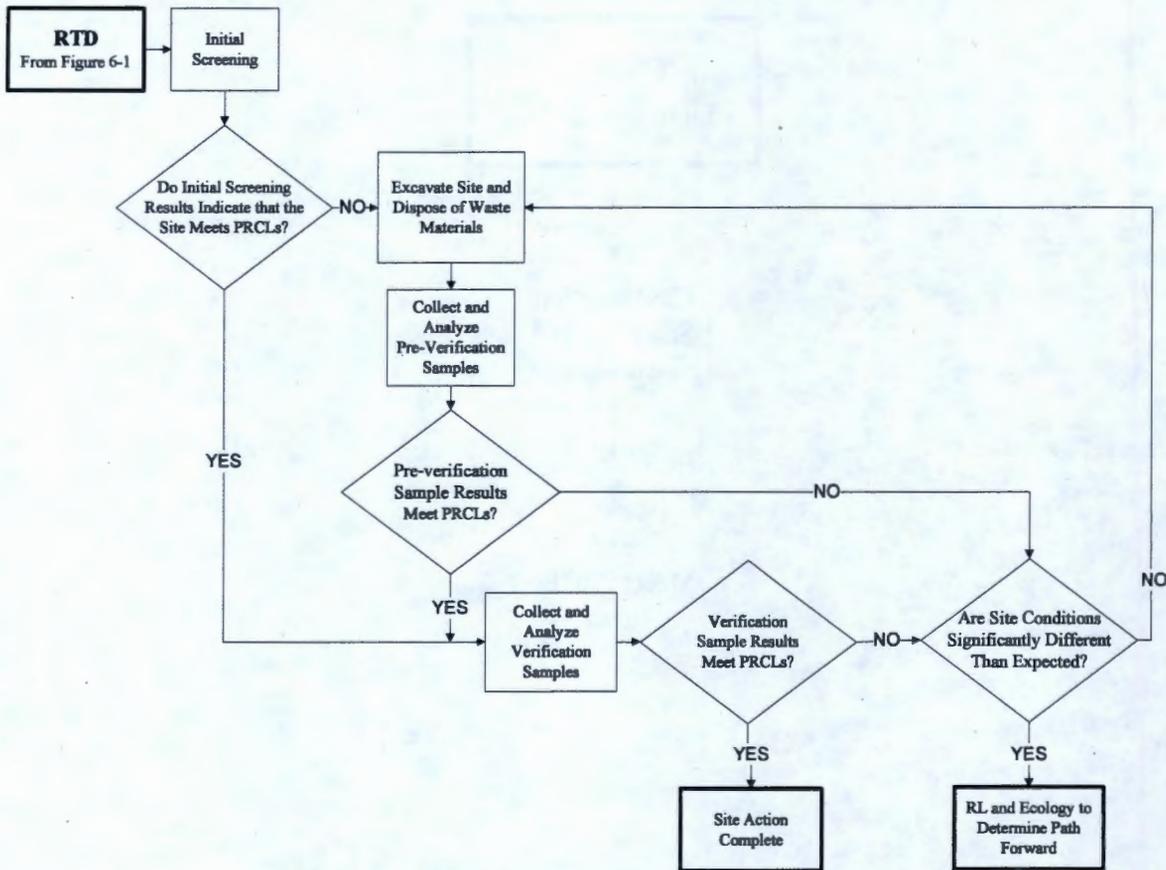


Figure 6-3. Removal Action Decision-Making Process for CS/NA Alternative.



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Figure 6-4. Removal Action Decision-Making Process for RTD Alternative.



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APPENDIX A
WASTE SITE SUMMARY

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APPENDIX A
WASTE SITE SUMMARY

A1.0 INTRODUCTION

Appendix A provides summaries of each 200-MG-1 Operable Unit (OU) waste site based on the information in the *Waste Information Data System* (WIDS) and other documents. The summaries include:

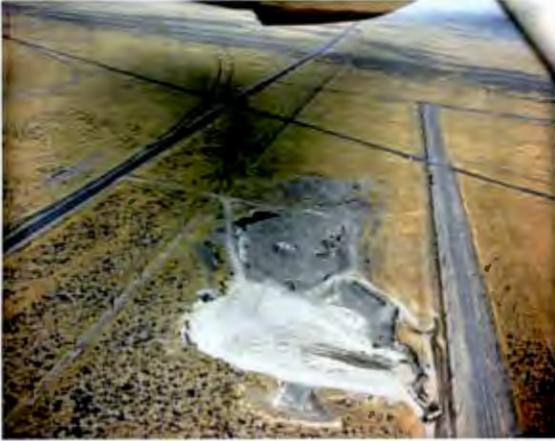
- Site Code
- Representative Site Photographs and/or Schematics
- Site Name
- Site Type
- Facility
- Current and Former Operable Units
- Waste Site Description
- Related Site Structure
- Site Posting
- Release Mechanism and Release Type
- Dimensions
- Potential Contaminants
- Preferred Removal Action
- Estimated Removal Action Present Worth
- References.

Waste site descriptions and other information are quoted directly from WIDS and other references cited at the end of each summary. No modifications have been made to maintain consistent format, and references cited in those descriptions are not provided.

The photos and sketches are provided to give a general orientation and site configuration for the waste site. The photos provided may not give current site conditions.

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200 CP

Site Name: 200 CP, 200 Area Construction Pit, 200 Area Construction Waste Site, Hanford Site Gravel Pit 29

Site Type: Depression/Pit (nonspecific)

Current OU: 200-MG-1

Facility: 200 E Admin Area

Former OU: 200-SW-1

Waste Site Description:

The site is a large, open gravel area. The pit has been used as a source of gravel for various Hanford projects, but is no longer being used. Several truck loads of nonhazardous solid waste, broken blocks of concrete foundation and other debris have been reported to have been placed in the pit over the years. Although older documentation states that the pit was used for disposal of concrete blocks and debris, a 1997 site visit did not visually identify anything in the pit. An E-Mail from Rusty Knight, Fluor 600 Area Landlord, states that he believes the concrete and debris was in the portion of the old gravel pit that was paved over to become the parking lot for the 2704 HV building.

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Construction

Release Type: Solid

Dimensions (estimated):

Site Length:	457.2 m (1500.0 ft)	Site Depth:	6.1 m (20.0 ft)
Site Width:	152.4 m (500.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	69677.3 m ² (750000.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	Unknown	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$347,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-E BP

No Image Available

No Image Available

Site Name: 200-E BP, 200-E Burning Pit, 200 East Burn Pit**Site Type:** Burn Pit**Current OU:** 200-MG-1**Facility:** Solid Waste Area**Former OU:** 200-SW-1**Waste Site Description:**

The burn pit is a large depression. There is limited growing vegetation. The surface is mostly rock and gravel. The burn pit was used for disposal of nonradioactive construction and office wastes. It was also used to burn tumbleweed that were collected off the 200 East Area perimeter fences and to detonate nonradioactive, shock sensitive chemicals. Sometimes paint, solvents and chemicals were dumped there. The 200-E Borrow Pit Demolition Site (200-E8 BPDS) RCRA TSD unit (now clean closed) was located within the 200 East Burn Pit. The site of the chemical detonations is no longer marked or posted. During a 1991 site visit, three enclosures were noted within the basin. A 12-m (40 ft) by 12-m (40-ft) area in the southwest corner (south of 218-E-8) contained several drums, pallets, and sections of steel pipes. A triangular enclosure, extending from two points along the sites border with 218-E-8, to 6 m (20 ft) into the unit, was found empty. In the middle of the basin was a 4.6-m (15 ft) by 4.6-m (15 ft) light chain barricade with asbestos warning signs. The east end of the open ditch became radiologically contaminated from contaminated animal feces and wind blown speck contamination from adjacent contaminated sites (216-A-40 and 244-A Lift Station).

Related Site Structure: The site is associated with WIDS site code 200-E-8 BPDS and UPR-200-E-106.**Site Posting:** Asbestos warning signs**Release Mechanism:** Dumping Area/ Burning**Release Type:** Solid and Liquid**Dimensions (estimated):**

Site Length:	120.1 m (394.0 ft)	Site Depth:	4.6 m (15.0 ft)
Site Width:	61.3 m (201.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	7356.7 m ² (79194.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Asbestos, organics, metals

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$906,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

200-E PD

Site Name: 200-E PD 200-E Powerhouse Ditch, 200 East Powerhouse Pond

Site Type: Ditch

Current OU: 200-MG-1

Facility: Semi-Works/ Area, PUREX Area

Former OU: 200-CW-1

Waste Site Description:

The site currently consists of an open ditch, measuring approximately 580 meters, running east to west. The eastern portion of the original ditch was backfilled in 1996, due to a contamination spread. This portion is currently posted with Underground Radioactive signs. The ditch is fed from a 42 inch diameter underground pipeline connected to the 282-E, 283-E and 284-E facilities. The water was discharged from the ditch to a 24 inch diameter pipeline that led to the 216-B-3C Pond. In 1997, when discharges to the 216-B-3C Pond were discontinued, the effluent from the Powerhouse Ditch was diverted to the 200 Area Treated Effluent Disposal Facility (TEDF). The 284-E powerhouse was completely shut down in 1998. After the powerhouse was shutdown, a small amount of effluent continued to be discharged to the ditch from the 282-E and 283-E water treatment facility and reservoir. During 1997 and 1998, blowdown/boiler condensate from the Johnson Controls facility also discharged to the ditch.

Related Site Structure: The ditch is associated with the 284-E Powerhouse, UPR-200-E-100 and UPR-200-E-143. The pipeline associated with the ditch is site code 200-E-237-PL.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	813.0 m (2666.0 ft)	Site Depth:	1.8 m (6.0 ft)
Site Width:	15.0 m (50.0 ft)	Cover Thickness:	0.6 m (2 ft)
Site Area:	12195.0 m ² (133300.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Radiological animal feces and windblown specs from nearby contaminated area.
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$1,026,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69

200-E-1

No Image Available

Site Name: 200-E-1, 284-E Landfill**Site Type:** Dumping Area**Current OU:** 200-MG-1**Facility:** 200 E Admin Area**Former OU:** 200-SW-1**Waste Site Description:**

There is no visible evidence of a landfill at this location. A covered concrete pad has been built over the area where the landfill was supposed to be located. The unit consists of asbestos waste encountered during below grade trenching activities. A WIDS site entry form, submitted in 1993 (but initiated in December 1992) states asbestos material was found approximately 9 m (30 ft) west of the 284-E building while digging a water line trench. The form also indicates the material is underneath a 90 Day Storage Pad. The WIDS submittal form cited an October 22, 1990 "DSI" from DR Herman to JW Schmidt as a reference. No dimensions or waste volume was documented. There is no information to indicate if the material was removed from the trench.

Related Site Structure: The site is associated with the 284-E Powerhouse.**Site Posting:** None**Release Mechanism:** Landfill**Release Type:** Solid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	None	None
Nonradiological	X	Asbestos

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$402,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

200-E-101

No Image Available

Site Name: 200-E-101, 200 East Deep Lysimeter Site
Site Type: Experiment/Test Site
Current OU: 200-MG-1

Facility: BC Control Area
Former OU: 200-UR-1

Waste Site Description:

The site consisted of three features, one open bottom pit, one closed bottom pit and an underground equipment storage room. The pits were located 34.6 m (114 ft) apart. Both pits were constructed from corrugated steel cylinders that were buried and backfilled with soil. 2/2001, the underground equipment storage room access hatch and vents were found inside a chained area, just west of the dirt access road. The closed bottom pit was found to the north of the equipment room, enclosed in a triangular shaped chained area. Lysimeter access pipes were protruding up through the soil and the rim of the closed bottom lysimeter caisson were visible. The lysimeter pits were used to collect soil information. The sensors in the pits were hard wired to the instrument recorders, located inside the underground equipment storage room. Three, 4-cm (1.6 in.) diameter aluminum pipes were installed to a depth of 18.3 m (60 ft) to allow access of a Neutron Moisture Probe. Other pipes contained soil temperature thermocouples and pressure sensor tubes. The closed bottom lysimeter has a 20 cm (8 in) poured concrete slab at the bottom. Holes were bored through the cement slab so the instruments could access the soil below the caisson. The instrument room housed the recording and measurement instruments. The room was buried approximately 0.3 m (1 ft) below ground level to eliminate climatological influences, such as wind and temperature that could interfere with readings. The room measures 4.5 m (14.8 ft) by 4.8 m (15.8 ft) and was located between the two lysimeter pits. The open bottom lysimeter has been decommissioned. The closed bottom lysimeter remains in a "Standby" mode. It is still operational, but is not being used. The neutron probe is likely to still be in place inside the lysimeter. Verbal reports indicate that early experiments included the use of short-lived isotope tracers. During construction, the instrument cables were hung inside the lysimeters. To hold the cables straight during the filling of the lysimeters with soil, the cables were anchored with 500 g (1.1 lbs) lead bricks. The lead bricks remain buried in the lysimeter structures. The closed bottom pit has not been used since 1991, but is considered to be on stand-by.

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Test Site

Release Type: Unknown

Dimensions (estimated):

Site Length:	18.0 m (59.1 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	3.0 m (10.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	54.0 m ² (590.6 ft ²)		

Potential Contaminants:

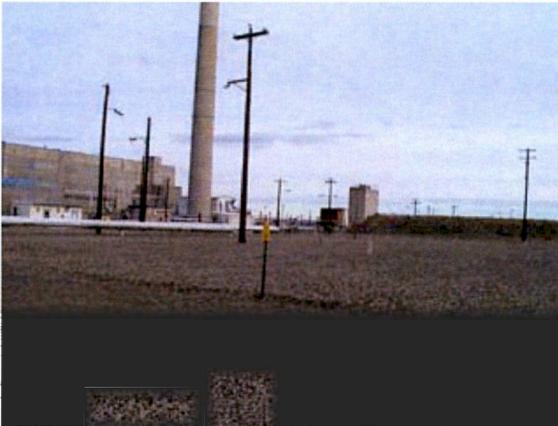
	Type	Constituents
Radiological	X	Short-lived isotope tracers
Nonradiological	X	Lead bricks

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2004-39

200-E-103

No Image Available

Site Name: 200-E-103, Radiologically Controlled Area - South Side of PUREX, PUREX Stabilized Area, 202-A
Site Type: Unplanned Release
Current OU: 200-MG-1
Facility: PUREX Area
Former OU: 200-UR-1

Waste Site Description:

The waste site area is covered with gravel and currently posted with URM signs. The site is an area contaminated by many unplanned releases that occurred over time during facility operation. Interim stabilization of the area began on January 4, 1999 and was completed on February 4, 1999. Interim stabilization objectives were to reduce risk to workers, simplify ongoing surveillance and maintenance at the site, and transform the site to a safer and more stable configuration while awaiting the identification and implementation.

Related Site Structure: The site is associated with 202-A, 291-A and the 241-A-151 Diversion Box. Also associated with multiple UPRs that occurred in the area during years of operation activities. Other sites inside this area stabilized with gravel include: 216-A-2, 216-A-4, 216-A-5, 216-A-21 and 216-A-31.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	17326.4 m ² (186499.8 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,176,000

References:

WIDS General Summary Report, DOE/RL-2004-39

200-E-107

No Image Available

Site Name: 200-E-107, Contamination Area East of PUREX, PUREX E Field**Site Type:** Unplanned Release**Current OU:** 200-MG-1**Facility:** PUREX Area**Former OU:** 200-UR-1**Waste Site Description:**

The site was a large, irregularly shaped, posted Contamination Area. The posted contamination east of the tunnels (218-E-14 and 218-E-15) extended into the double security fence. The area east of the Railroad Cut included the 216-A-32 Crib and the 2607-EE Sanitary Septic Tank and Tile Field, but ended at the inner security fence. In 5/00, a narrow corridor was considered an RBA and separated the northern portion of the CA from the southern portion. Both sections are considered to be one waste site. The entire area was stabilized and reposted as a URM Area in 2001. Residual surface contamination exists from years of PUREX facility operations.

Related Site Structure: The site is associated with the 202-A facility, the 2607-EE septic system and the 216-A-32 crib.

Site Posting: URM**Release Mechanism:** Ventilation Particulate/ Windblown Particulate**Release Type:** Solid**Dimensions (estimated):****Site Length:** 114.6 m (376.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 34.7 m (114.0 ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** 3982.2 m² (42868.2 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Alpha contamination detected on motion detectors and aboveground electrical boxes in 2001
Nonradiological	Unknown	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$753,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

200-E-109

Site Name: 200-E-109, Contaminated Tumbleweed Accumulation, Contamination Spread in Northeast Corner of 200 East Area

Site Type: Unplanned Release

Facility: Solid Waste Area

Current OU: 200-MG-1

Former OU: 200-UR-1

Waste Site Description:

The site originally consisted of numerous radiologically posted areas along 12th St. and Canton Ave. inside the 200 East Area as well as inside and around the LERF, east of 200 East Area. Some areas were posted CA with a RBA and others were posted High CA with a RBA. The posted areas size and shape varied with additional radiological surveys. By 2004, all the contamination and the individual radiological postings had been removed except one. One area, located on the west side of Canton Ave., was covered with soil and posted as a URM Area. The contamination was reported on occurrence Report RL-PHMC-Solidwaste-2004-0002. When possible, the contaminated vegetation is removed; otherwise, the contamination is surrounded with a radiation barrier. In 01/00, 02/00, 03/00, numerous contaminated tumbleweed fragments were identified inside the LERF facility fence, resulting in the posting of a large CA. Although most of the contaminated fragments and some contaminated soil were picked up and removed from the area, the radiological posted area remains. Contaminated vegetation appears to be coming out of the 218-E-12B Burial Ground or may be contaminated growth on underground radioactive pipelines.

Related Site Structure: UPR-200-E-92 and UPR-200-E-93 reported contaminated tumbleweed fragments along the east perimeter fence of 200 East Area in 1980. The tumbleweeds reported in both UPR-200-E-92 and UPR-200-E-93 were removed from the fence line in 1981. 218-E-12B Burial Ground appears to be source of contaminated vegetation.

Site Posting: URM, CA, RBA, HCA

Release Mechanism: Vegetation (tumbleweeds)

Release Type: Solid

Dimensions (estimated):

Site Length: 75.9 m (249.0 ft)

Site Depth: Unknown m (Unknown ft)

Site Width: 18.9 m (62.0 ft)

Cover Thickness: 0.3-0.6 m (1-2 ft)

Site Area: 1434.2 m² (15439.5 ft²)

Potential Contaminants:

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	Type	Constituents
Radiological	X	Inside East Area perimeter fence: 20,000 - > 100,000 dpm; Outside 200 East Area perimeter fence and around LERF: 2,000-800,000 dpm beta/gamma over the years of 1998-2000.
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$444,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-110

No Image Available

Site Name: 200-E-110, Contaminated Tumbleweed Dump Site**Site Type:** Dumping Area**Current OU:** 200-MG-1**Facility:** 200 E Ponds Area**Former OU:** 200-UR-1**Waste Site Description:**

DynCorp Environmental erected the posts and chain around the pile of discarded tumbleweeds in 1998. The pile of weeds had the appearance of being compacted with a garbage compactor truck. The original pile was quite large and it was estimated to be more than one truck load of compacted tumbleweeds. In 1999, the Integrated Soil, Vegetation and Animal Control team removed the bulk of the compacted tumbleweeds and downposted the area to a CA. Some tumbleweed fragments remain in the radiation zone. In October 2003, the area was down posted to a non-controlled area. The radiological posting signs were removed. The site had been surrounded with light duty steel chain and posts and posted as a CA. The CA was surrounded with light duty steel chain and posts and is posted as a RBA. The area was also posted as a RCA. The ground is sandy soil with rocks and chunks of concrete. The area is free of growing vegetation and the tumbleweeds have been removed. Only tumbleweed fragments remained.

Related Site Structure: None**Site Posting:** Non-controlled area (CA, RBA)**Release Mechanism:** Vegetation (tumbleweeds)**Release Type:** Solid**Dimensions (estimated):****Site Length:** 26.5 m (87.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 17.7 m (58.0 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 468.8 m² (5046.5 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Contaminated Vegetation
Nonradiological	None	None

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$86,000

References:

WIDS General Summary Report, DOE/RL-2004-39

200-E-115

No Image Available

Site Name: 200-E-115; Contamination Area East of 241-C Tank Farm**Site Type:** Unplanned Release**Current OU:** 200-MG-1**Facility:** WTP/A Farm Area**Former OU:** 200-UR-1**Waste Site Description:**

The site had been a posted CA surrounded with light posts and chains. Large weeds were growing inside the posted area and there are several radiation flags visible inside the posted area. In June 2004, the site was stabilized with a bio-barrier and gravel. The area was reposted as a URM area. The site was submitted to WIDS as a Discovery Site in October 2000. No radiological survey could be found to provide information about the radiological conditions inside the posted area. It was assumed and later confirmed, that the area had been posted by the East Tank Farm Radiological Control group. They stated that they do routine perimeter surveys of miscellaneous posted areas but do not go inside the areas. A review of underground pipeline locations does not indicate a pipeline at this location. In 1980, a larger area of posted contamination had been located in this same vicinity (see site code UPR-200-E-91). In 1981, the contaminated soil was removed and buried in a depression north of the 216-A-24 Crib. The area was released from radiological posting in 1981. Since so much time has passed, it is difficult to determine if the two areas are related. The Environmental Surveillance radiological control group identified contaminated vegetation inside the posted CA east of 241-C Tank Farm. In January 2001, the contaminated tumbleweeds were removed. A radiological survey done in September 2002 found additional, new growth contaminated tumbleweed reading 350 cpm and small dried tumbleweeds reading 200 cpm. It was recommended the site be surface stabilized, including a bio-barrier.

Related Site Structure: The site may be related to UPR-200-E-91.**Site Posting:** CA**Release Mechanism:** Unknown**Release Type:** Solid**Dimensions (estimated):**

Site Length:	12.2 m (40.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	10.1 m (33.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	122.6 m ² (1320.1 ft ²)		

Potential Contaminants:

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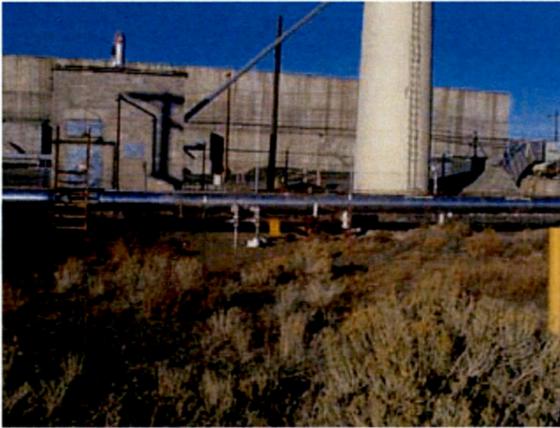
	Type	Constituents
Radiological	X	Contaminated tumbleweed reading 350 counts per minute and small dried tumbleweeds reading 200 counts per minute in January 2001.
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$137,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-117

No Image Available

Site Name: 200-E-117, Contamination Zone South of B Plant**Site Type:** Unplanned Release**Current OU:** 200-MG-1**Facility:** B Plant Area**Former OU:** 200-UR-1**Waste Site Description:**

The site is a small, posted CA. Inside the chained area, two steel pipes extend approximately 0.6 m (2 ft) above the ground surface. The pipes have valves on them. The DynCorp ISVAC group submitted this posted area to WIDS as a Discovery site. The reason the area was posted is not known. In 09/00, the blown in tumbleweeds were removed from the posted area. At that time, the valves were surveyed and found to be contaminated with 800 cpm (direct) beta/gamma contamination. No removable contamination was found. According to H-2-44501, Sheet 85, a raw water line extends southward from the 292-B Building and connects to a 30 centimeter (12 inch) raw water line. The water line on the drawing is in the same location as the valves inside the Contamination Area.

Related Site Structure: None**Site Posting:** CA**Release Mechanism:** Unknown**Release Type:** Solid and Liquid (?)**Dimensions (estimated):****Site Length:** 3.0 m (10.0 ft)**Site Width:** 3.0 m (10.0 ft)**Site Area:** 9.3 m² (100.0 ft²)**Site Depth:** Unknown m (Unknown ft)**Cover Thickness:** 0 m (0 ft)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Area was surveyed and found to be contaminated with 800 cpm (direct) beta/gamma in September 2000.
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$105,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-121

Site Name: 200-E-121, Soil Contamination Area East and West of Baltimore Avenue
Site Type: Unplanned Release
Current OU: 200-MG-1

Facility: B Farm Area
Former OU: 200-UR-1

Waste Site Description:

The site is a long, narrow area along the east side of Baltimore Avenue marked with metal posts and chain with SCA signs and two smaller areas on the west side of Baltimore Ave., also posted with Soil Contamination Area signs. The power poles inside the posted area are marked with yellow Fixed Contamination signs. The contamination event occurred in 1996 or 1997. Contamination was identified outside the 241-BX/BY fence extending eastward, down the gravel covered hill and across Baltimore Ave. into the field on the east side of Baltimore Ave. A contamination spread had occurred inside the tank farm, through the top of a containment tent. Two or three areas on the west side of Baltimore Ave. and one large area in the east side of Baltimore Ave. remained posted as CAs. In the 1980's, approximately 6 hectares (15 acres) of property, located east of Baltimore Avenue (north of 241-B Tank Farm), was posted as a large SCA and known as UPR-200-E-144 (alias UN-216-E-44). The posted area included part of this strip of land that is currently posted with SCA signs. However, in 1992, the entire 6 hectare area (including this strip of contaminated soil) was released from radiological control. This was accomplished by scraping the contaminated soil into a pile and placing it on top of the 216-B-7 A&B and 216-B-11 A&B Cribs. The pile of soil and the cribs were covered with clean dirt and reposted with URM signs. The scraped area was released from radiological control by collecting soil samples and radiologically surveying the area. When the project was completed, no radiological posting existed north of the 216-B-7 A&B and 216-B-11 A&B Cribs. In 2003, a small area of growing contaminated tumbleweeds was found on the east side of the posted area. An additional area measuring approximately 3 x 3 m (10 ft x by 10 ft) was posted SCA.

Related Site Structure: None

Site Posting: SCA, FC, URM

Release Mechanism: Windblown Particulate

Release Type: Solid

Dimensions (estimated):

Site Length:	200.0 m (656.2 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	24.4 m (80.0 ft)	Cover Thickness:	Unknown m (Unknown ft)
Site Area:	4876.8 m ² (52498.6 ft ²)		

Potential Contaminants:

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	Type	Constituents
Radiological	X	Contaminated Vegetation
Nonradiological	None	None

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$241,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-123

No Image Available

Site Name: 200-E-123, Contamination Area South of 216-B-2 Stabilized Ditches.**Site Type:** Unplanned Release**Facility:** Solid Waste Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

In 2001, the area was covered with clean backfill material and down posted to a URM Area. The site had been surrounded with light duty steel posts and chain and was originally posted as a SCA. No significant vegetation was observed on the site. The source of the contamination is unknown. ISVAC Group submitted the posted area to WIDS as a Discovery Site. No radiation surveys are available for this site since it was already posted before being reported by the ISVAC Group.

Related Site Structure: None**Site Posting:** URM**Release Mechanism:** Unknown**Release Type:** Solid and Liquid (?)**Dimensions (estimated):****Site Length:** 7.1 m (23.3 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 4.5 m (14.8 ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** 32.0 m² (343.9 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$152,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

200-E-124

No Image Available

Site Name: 200-E-124, URM on East Side of 275-EA
Site Type: Unplanned Release
Current OU: 200-MG-1

Facility: PUREX Area
Former OU: 200-UR-1

Waste Site Description:

The site is posted as a URM Area with steel posts. The site has been stabilized with approximately 0.3 meters of clean soil. A few tumbleweeds were observed growing on the site. Railroad tracks run through the site and are buried under the stabilization soil. The contamination area is where railroad cars were parked and offloaded into the 275-EA Building. The ISVAC Group submitted the posted area to WIDS as a Discovery Site. No survey reports are available for this site since it was found already posted by the ISVAC Group.

Related Site Structure: None
Site Posting: URM

Release Mechanism: Leak/ Spill
Release Type: Solid and Liquid

Dimensions (estimated):

Site Length:	64.0 m (210.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	4.6 m (15.1 ft)	Cover Thickness:	0.3 m (1 ft)
Site Area:	294.4 m ² (3169.2 ft ²)		

Potential Contaminants:

Type		Constituents
Radiological	X	Unknown
Nonradiological	None	None

Preferred Removal Action: RTD
Estimated Removal Action Present Worth: \$505,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-125

No Image Available

Site Name: 200-E-125, Contamination Area Northwest of 244-AR Building.**Site Type:** Unplanned Release**Facility:** PUREX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The site is posted as a CA with light duty posts and chain. The surface is very sandy soil. No vegetation was observed.

Related Site Structure: None**Site Posting:** CA**Release Mechanism:** Unknown**Release Type:** Solid, Liquid, ?**Dimensions (estimated):****Site Length:** 6.8 m (22.4 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 4.4 m (14.5 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 30.3 m² (325.8 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$115,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-128

No Image Available

Site Name: 200-E-128, Radioactive Contamination "Hot Spot" Under Gravel Road**Site Type:** Unplanned Release**Facility:** Solid Waste Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The area where the contamination is located is marked with two URM signs, on steel posts. The posts are located on the north and south sides of the road. The contamination is located between the signs, under the surface of the gravel road. The road monitor routinely alarms when driven over this area. In 1995, the Environmental Radiological Surveillance group placed two steel posts with URM signs, one on each side of the road, to mark the location of the contamination "Hot Spot". They also evaluated the contamination by removing a layer of soil. This soil contained no detectable contamination, but the readings on the area in the road increased as more soil was removed. The surface or the gravel road initially read 1000 cpm. The readings with 15 cm (6 in.) of soil removed increased to 100,000 cpm. They replaced the soil and posted the road. The nearest known underground radioactive pipeline is located approximately 30 m (100 ft) west of this hot spot. The roads inside 200 East and West Areas are routinely surveyed by a truck mounted with radiation detectors. The detectors are equipped with an alarm that makes an audible sound to alert the driver if radiation above a predetermined limit is detected.

Related Site Structure: None**Site Posting:** URM**Release Mechanism:** Unknown**Release Type:** Solid, Liquid, ?**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	The surface or the gravel road initially read 1000 cpm. The readings with 15 cm (6 in.) of soil removed increased to 100,000 cpm. Beta/gamma in 1995.
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$116,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-129

No Image Available

Site Name: 200-E-129, Stabilized Area on East Side of B Plant Railroad Cut**Site Type:** Unplanned Release**Current OU:** 200-MG-1**Facility:** B Plant Area**Former OU:** 200-UR-1**Waste Site Description:**

The area has been covered with gravel and posted with URM signs. In February 2001, a random radiological survey was done to determine the radiological conditions around the B Plant Railroad cut. The survey was done by the ERC group. A small area of soil contamination was identified near the north end of the railroad cut, on the east side of the soil berm. The area was posted with Contamination Area signs. No determination of the contamination source was made. A small, 2.4 by 4.6 m (8 x 15 ft) CA was identified and posted adjacent to the URM in August 2002. In February 2001, a random radiological survey was done to determine the radiological conditions around the B Plant Railroad cut. The survey was done by the Eberline Radiological Control group. A small area of soil contamination was identified near the north end of the railroad cut, on the east side of the soil berm. The area was posted with CA signs. No determination of the contamination source was made. A small, 2.4 by 4.6 meter (8 by 15 foot) CA was identified and posted adjacent to the URMA in August 2002.

Related Site Structure: None**Site Posting:** URM**Release Mechanism:** Unknown**Release Type:** Solid, Liquid, ?**Dimensions (estimated):****Site Length:** 6.1 m (20.0 ft)**Site Width:** 3.7 m (12.0 ft)**Site Area:** 22.3 m² (240.0 ft²)**Site Depth:** Unknown m (Unknown ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Potential Contaminants:**

	Type	Constituents
Radiological	X	12,000 (max) dpm per 100 cm probe area convert to 2400 cpm (beta-gamma) in February 2001.
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$119,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-13

No Image Available

Site Name: 200-E-13, Rubble Piles from RCRA General Inspection #200EFY95 Item #7**Site Type:** Dumping Area**Facility:** ILAW Area**Current OU:** 200-MG-1**Former OU:** 200-SW-1**Waste Site Description:**

A 1995 site inspection identified this site and described it as numerous rubble piles. These piles contained inert construction debris, such as wood, asphalt, dirt, pipe and concrete. Another site visit occurred in February 1997 when following debris was identified: asphalt paving, concrete, steel pipe, rebar and PVC pipe. A GPS survey on 8/26/1998 observed that debris was concentrated in piles south of an old borrow area. However, there were also isolated piles/berms of debris beyond this concentration, primarily to the west. Some scattered debris and half-buried towels or rags were observed in the borrow area. A site visit on 7/26/1999, confirmed the previous site conditions. A Hanford Facility RCRA Permit General Inspection was conducted on July 17, 1995 and July 18, 1995. During the inspection a site containing numerous rubble piles was identified as meeting the criteria for "solid waste site not previously identified for remedial action" (Hanford Facility RCRA Permit General Inspection Plan, WHC-EP-0850).

Related Site Structure: None**Site Posting:** Not Specified**Release Mechanism:** Dumping Area**Release Type:** Solid**Dimensions (estimated):**

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0 m (0 ft)
Site Area:	13095.0 m ² (140953.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	None	Inert construction debris

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$347,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-E-130

No Image Available

Site Name: 200-E-130, Stabilized Area on West Side of B Plant Chemical Spur**Site Type:** Unplanned Release**Facility:** B Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The site is covered with fine gravel and posted with URM signs. The site was submitted to WIDS in March 2001 as a Discovery site by the ISVAC group. The site was already posted with URM signs. No radiological survey or other reports could be found to determine when the area was posted or what the radiological conditions were at the time it was posted. However, additional radiation surveys done in August 2002 found contamination levels of 20,000 disintegrations per minute per 100 centimeters square on the edge of the previously posted area.

Related Site Structure: None**Site Posting:** URM**Release Mechanism:** Unknown**Release Type:** Solid, Liquid, ?**Dimensions (estimated):**

Site Length:	19.8 m (65.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	3.0 m (10.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	60.4 m ² (650.1 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	20,000 dpm per 100 sq cm in August 2002.
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$390,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-139

No Image Available

**Site Name:** 200-E-139, Contamination Area North of C Farm**Site Type:** Unplanned Release**Current OU:** 200-MG-1**Facility:** WTP/A Farm Area**Former OU:** 200-UR-1**Waste Site Description:**

A large posted URM area is located on the north side of 8th St. It contains growing vegetation (rabbit brush and tumbleweeds). A small posted URM area is located on the south side of 8th St. The area on the south side of 8th St has been covered with a biobarrier and gravel. The two areas have been radiologically posted for many years. The areas were surveyed with Global Positioning equipment and mapped in 12/97. No radiological survey can be found to provide any radiological condition information. As of 2/2002, it is not known which Hanford organization erected the posts and chain or when the areas were posted.

Related Site Structure: None**Site Posting:** URM**Release Mechanism:** Unknown**Release Type:** Solid**Dimensions (estimated):****Site Length:** 260.0 m (853.1 ft)**Site Width:** 30.0 m (98.4 ft)**Site Area:** 7800.0 m² (83966.7 ft²)**Site Depth:** Unknown m (Unknown ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Potential Contaminants:**

	Type	Constituents
Radiological	X	300-4100 CPM Beta-Gamma in 2004.
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$626,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-2

Site Name: 200-E-2, Soil Stains at the 2101-M SW Parking Lot, MO-234 parking Lot

Site Type: Unplanned Release

Current OU: 200-MG-1

Facility: 200 E Admin Area

Former OU: 200-SW-1

Waste Site Description:

Originally described as gravel covered parking lot that contained discolored soil. Two large dark circular stains visible in front of the access ramp at the south end of MO-234. In 10/06 soil sample was taken from the darkest stained area. On 08/12/99 the discolored soil was observed to be primarily concentrated at the north end of the parking lot. Large areas of discolored soil were found just south of MO234 and E of MO413 and stains extended for most of the length of these two MOs. Smaller stains were found throughout the currently in use lot. The parking lot was fairly level, but was lower than either Baltimore (to the east) or 2nd St (to the south). The site was covered with gravel w/ no visible debris or vegetation. Two storm drains were visible in the lot, both slightly depressed relative to the surrounding area. The north end drain was surrounded by the large stained areas; second drain near south end of the lot, E of MO021, but away from the highly stained portion of the lot. The parking lot is actively being used for vehicle parking. Personnel that may have knowledge of past disposal in this unit were interviewed. Based on these interviews, the unit was used as a parking lot for the Telephone and Utilities Department. Used oil has been used for dust abatement; no other dumping is known to have occurred. In 10/06 during a site walkdown sampling was done (B1KHYO). The soil was taken from the darkest stained area in the parking lot. Previously during a site visit on 8/12/99, it was observed that the discolored soil was primarily concentrated at the north end of the parking lot. Large areas of discolored soil were found just south of MO234 and east of MO413. The stains extended for most of the length of these two mobile offices. Smaller stains were found throughout the lot, which was currently in use. The parking lot was fairly level, but was lower than either Baltimore (to the east) or 2nd Street (to the south). The site was covered with gravel and no debris or vegetation were visible. Two storm drains were visible in the lot (miscellaneous streams 709 and 710). The drain at the north end of the lot is slightly depressed relative to the surrounding area and was surrounded by the large stained areas. The second storm drain was near the south end of the lot, east of MO021. It was also slightly depressed relative to the surrounding area, but was away from the highly stained portion of the lot. The unit waste includes used oil for dust abatement. BHI Regulatory Support (B. Vedder) had two concerns about the site. Polychlorinated biphenyls (PCBs) were the biggest concern and heavy metals of lesser concern. PCBs were common in high heat grade hydraulic fluids.

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Oil for dust abatement

Release Type: Liquid

Dimensions (estimated):

Site Length:	46.0 m (100.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	31.0 m (100.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	1426.0 m ² (10000.0 ft ²)		

Potential Contaminants:

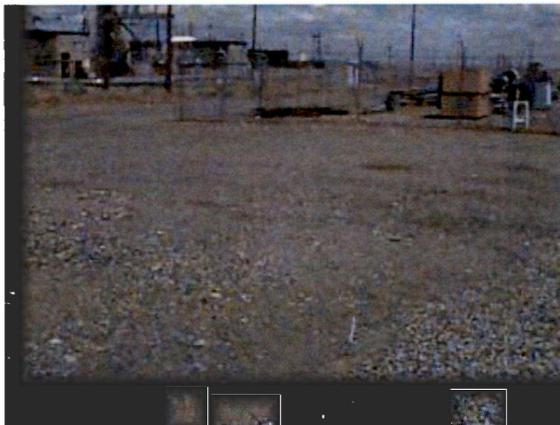
	Type	Constituents
Radiological	None	None
Nonradiological	X	PCBs, used oil for dust abatement, heavy metals.

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$168,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-E-26

Site Name: 200-E-26, Heavy Equipment Storage Area, Diesel Fuel Contaminated Soil
Site Type: Unplanned Release
Current OU: 200-MG-1
Facility: B Plant Area
Former OU: 200-UR-1

Waste Site Description:

The site is an area that was used as an equipment staging area for trucks, backhoes, compressors, and other heavy equipment. As of October 2001, the site no longer shows visual evidence of oil contaminating the soil. In 1996, the soil had an odor like diesel fuel, but this was not reported in 2001. The contamination noted in 1996 appeared to be spotty. An electrical receptacle marks each end of the site.

Related Site Structure: None

Site Posting: None

Release Mechanism: Leak/ Spill

Release Type: Liquid

Dimensions (estimated):

Site Length:	36.6 m (120.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	9.1 m (30.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	334.5 m ² (3600.4 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Hydrocarbons

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-29

Site Name: 200-E-29, Unplanned Release From 241-ER-152 Diversion Box

Site Type: Unplanned Release

Current OU: 200-MG-1

Facility: B Plant Area

Former OU: 200-UR-1

Waste Site Description:

The site is a large, irregular shaped, posted URM area. A smaller triangular shaped URM area is located adjacent to the east shoulder of Atlanta Ave., northwest of the larger, stabilized 200-E-29 area. Another small URM area is located adjacent to a row of conex boxes, east of the larger stabilized area. In 11/00, the ISVAC submitted a small posted URM (located adjacent to the east side of the posted 200-E-29 site and a row of conex boxes) to WIDS as a Discovery site. Ground surface contaminated from biological intrusion by mice and ants. In 1996, mouse feces, urine, a mouse nest, several mouse carcasses and an ant hill were identified as contaminated in this area; contamination levels ranged from 7,000 dpm to 300 millirem/hr. The posted area was surveyed/mapped with GPS equipment in 1996. A smaller, adjacent area measured 14.71 sq m (158.30 sq ft). The Dyncorp RCT remember a contaminated backhoe being parked at this location for approximately two years that had originally been parked next to the 241-ER-152 Diversion Box. Two rodent nests were found in the engine compartment of the backhoe that had maximum contamination levels of 50 mR/hr. The contaminated backhoe was moved next to the row of conex boxes in 1996 when the 200-E-29 site was being stabilized. The area surrounding the backhoe was posted as a CA. The backhoe was moved again in 1998; the CA where the backhoe had been sitting was reposted as a URM area. The area remains posted; no radiological surveys can be found to document the radiological conditions inside the area.

Related Site Structure: The site is associated with the 241-ER-152 Diversion Box.

Site Posting: URM

Release Mechanism: Biological Intrusion

Release Type: Solid

Dimensions (estimated):

Site Length: 96.0 m (315.0 ft)

Site Width: 60.0 m (196.9 ft)

Site Area: 5760.0 m² (62006.2 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0.3-0.6 m (1-2 ft)

Potential Contaminants:

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	Type	Constituents
Radiological	X	7000 dpm - 300 mrem/hr from mouse feces, urine, a mouse nest, several mouse carcasses and an ant hill in 1996; A backhoe engine compartment had 50 mR/hr from mice nests in 1996; Radiation survey found 200 cpm above background where paint was cracked in September 2000.
Nonradiological	None	None

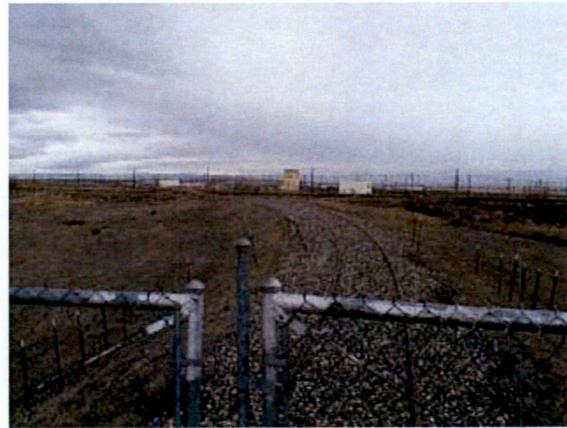
Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$828,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-43



Site Name: 200-E-43, Tank Car Storage Area, Regulated Equipment Storage Area, TC-4 Spur Tank Car Storage Area
Site Type: Storage
Current OU: 200-MG-1
Facility: 200 E Admin Area
Former OU: 200-UR-1

Waste Site Description:

This site consists of a chain link fenced portion of the TC-4 Spur located northwest of the PUREX facility. The site was used to store railroad tank cars containing liquid radioactive material that require controls due to radiological dose rate conditions. The fence gate is locked. The area had been posted as a RMA and a URM. However, in January 1999, it was only posted as an URM area. It is also posted with "Danger- Unauthorized Personnel Keep Out" signs. The ties between the rails are covered with gravel. The fenced area was used to stage railroad tank cars that transported liquid waste to the 204-AR waste unloading facility. The fenced in area was originally part of the TC-4 Railroad Spur. It became a separate waste site in 1997 due to programmatic responsibility issues. The inactive railroad spur was assigned to the Environmental Restoration Contractor and the fenced area was assigned to the Project Hanford Contractor. Due to site activities, the number of railcars stored within the fenced area will vary. However, as of January 1999, no railcars are being stored in the fenced area.

Related Site Structure: The site is associated with the TC-4 Railroad Spur and UPR-200-E-88.

Site Posting: URM, RMA

Release Mechanism: Leak/ Spill

Release Type: Liquid

Dimensions (estimated):

Site Length:	65.5 m (215.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	50.0 m (164.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	3275.8 m ² (35263.4 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	Unknown	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$902,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-46

Site Name: 200-E-46, RCRA Permit General Inspection #200EFY96 Item #3

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: 200 E Admin Area

Former OU: 200-SW-1

Waste Site Description:

The site appears to be an old lay down area. Scattered debris is visible over a large area. Some of the items mentioned in the RCRA inspection have been removed as stated in the Cleanup Activities Section. Materials observed at the site include wire rope, a steel railroad rail, a metal bar, wood, fiberglass insulation, aluminum cans coal, pipe, aluminum wire, copper wire, concrete, and glass. Most of the debris is in relatively small pieces. Large debris include the steel railroad rail, iron bar, wire rope, and concrete.

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Dumping Area

Release Type: Solid and Liquid (?)

Dimensions (estimated):

Site Length: 150.0 m (492.0 ft)

Site Width: 50.0 m (164.0 ft)

Site Area: 7500.0 m² (80688.0 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$347,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-E-53

Site Name: 200-E-53, Contaminated Zone Adjacent to 218-E-12B and 218-E-8, Overground Storage Area, Above Ground Storage Area

Site Type: Unplanned Release

Current OU: 200-MG-1

Facility: Solid Waste Area

Former OU: 200-UR-1

Waste Site Description:

Rockwell document RHO-CD-1048 and photographic documentation from 1982 indicate this area was used to store contaminated equipment. This is an irregular, wedge-shaped site with a rope barrier and posted with Soil Contamination signs, first documented in 1987. Contamination readings ranged from 600 cpm to 30 mrem/hr beta (1.5 mrem/hr gamma). Contaminated rabbit feces found in 1991. In 10/93, the area was re-identified in conjunction with a routine survey of the 218-E-12B Burial Ground. A relatively small Surface CA had been previously established. Additional radiological surveying beyond the boundaries of the contamination zone found several more areas of contamination; the posted area was enlarged to include the majority of the newly identified contamination. In 1997, the rope was found on the ground; evidence of vehicle traffic driving through the area. No one claims responsibility for maintenance of the posted CA. On 10/22/97, a rope barrier was re-established.

Related Site Structure: This site is associated with UPR-200-E-50 and UPR-200-E-62.

Site Posting: SCA

Release Mechanism: Biological Intrusion/Animal Feces

Release Type: Solid

Dimensions (estimated):

Site Length:	125.0 m (410.1 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	80.0 m (262.5 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	10000.0 m ² (107649.6 ft ²)		

Potential Contaminants:

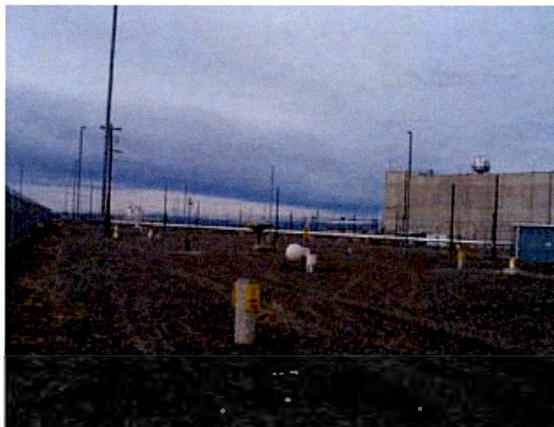
	Type	Constituents
Radiological	X	600 cpm - 30 mrem/hr beta (1.5 mrem/hr gamma) between January - September 1987; 75000 dpm found in October 1993.
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$373,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-E-58

No Image Available

Site Name: 200-E-58, 216-A-5 Neutralization Tank, 216-A-5 NU, Tank A5, IMUST, Inactive Miscellaneous Underground Storage Tank

Site Type: Neutralization Tank

Current OU: 200-MG-1

Facility: PUREX Area

Former OU: 200-PW-2

Waste Site Description:

The site is an underground tank used to neutralize acidic waste prior to disposal. A 101 cm (40 in.) riser is visible at the surface. The cylindrical tank sits vertically on a concrete pad. The tank is constructed of welded stainless steel and has a capacity of approximately 28,400 L (7,500 gal). A 20-cm (8 in) inlet pipe enters from the north near the base of the tank. The inlet connects into distribution piping constructed of 20 cm (8 in) stainless steel pipe welded into a cross with 1.9 cm (3/4 in) holes drilled at 23 cm (9 in) intervals. A 20 cm (8 in) outlet pipe exits to the south near the top of the tank. A 101 cm (40 in) riser extends 30 cm (12 in) above the surface. The “charging riser” is for adding limestone to the tank to act as a neutralizing agent. Acidic liquid waste entered the tank from the bottom and was forced upward through a bed of limestone. Interaction with the limestone neutralized the waste prior to overflow through the outlet pipe. The neutralized waste was discharged to a crib. Due to the design of the tank and the orientation of the inlet and outlet piping, it is highly likely that this tank and some of the inlet piping still contain liquid waste. Because the inlet piping angles sharply downward before entering the tank and the outlet piping is at the top of the tank, the structure would act like a trap where liquid collects at the lowest point, in this case, the tank. The tank was used to neutralize acid waste from PUREX prior to ground disposal. From 1955 to 1961, the neutralized waste was discharged to the 216-A-5 Crib. From 1961 to 1987 the neutralized waste was discharged to the 216-A-10 Crib. The 216-A-10 Crib is a permitted RCRA Treatment, Storage or Disposal (TSD) unit. Even though the 216-A-5 Neutralization Tank was connected to the crib, it is not covered under its Part A permit.

Related Site Structure: The site is related to the 202-A Building (PUREX Canyon), the 216-A-5 Crib, and the 216-A-10 Crib. The pipeline to the 216-A-5 Sample Pit #4 is 200-E-241-PL.

Site Posting: Not Specified

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	None m (None ft)	Site Depth:	4.9 m (16.0 ft)
Site Width:	3.5 m (11.3 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	8.7 m ² (93.5 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$480,000

References:

WIDS General Summary Report, DOE/RL-2004-60, DOE/RL-2004-85, DOE/RL-2004-25

200-E-6

No Image Available

No Image Available

Site Name: 200-E-6, Septic Tank, Sanitary Sewer Repair and Replacement 2607-E4
Site Type: Septic System
Current OU: 200-MG-1

Facility: B Plant Area
Former OU: 200-ST-1

Waste Site Description:

The septic tank is surrounded by chain with four steel posts painted yellow. The tank is posted with a septic tank sign. The tank has two 10-cm (4-in.) PVC pipes which protrude vertically from the ground. The sanitary tile field is surrounded with a steel post and chain barricade and is posted with Caution URM signs. The septic system received waste from the 221-B Building. This septic system was installed to replace 2607-E4 septic system. The system was abandoned in 1998.

Related Site Structure: None

Site Posting: ST, URM

Release Mechanism: Sanitary Effluent

Release Type: Solid and Liquid

Tank:**Dimensions (estimated):**

Site Length: Unknown m (Unknown ft) **Site Depth:** Unknown m (Unknown ft)
Site Width: Unknown m (Unknown ft) **Cover Thickness:** None m (None ft)
Site Area: Unknown m² (Unknown ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length: 21.3 m (70.0 ft) **Site Depth:** Unknown m (Unknown ft)
Site Width: 6.1 m (20.0 ft) **Cover Thickness:** Not Specified m (Not Specified ft)
Site Area: 130.2 m² (1400.0 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

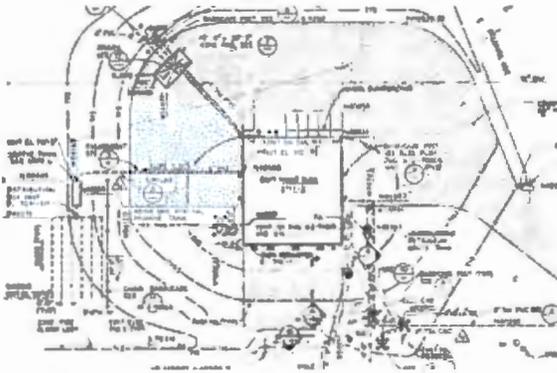
Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2002-14

200-E-7



No Image Available

Site Name: 200-E-7, 2607-EO Septic Tank & Tile Field
Site Type: Septic System
Current OU: 200-MG-1

Facility: 200 E Admin Area
Former OU: 200-ST-1

Waste Site Description:

The tank is part of the 2607-EP System. Current and proposed additions to this system bring its design daily flow to 20,440 liters (5400 gallons). The tank was pre-fabricated with a 1500 gallon first chamber and a 1000 gallon second chamber. The associated septic field has been abandoned.

Related Site Structure: Active system supports 2711E (automotive shop). Installed in 1994.

Site Posting: None

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:**Dimensions (estimated):**

Site Length:	Unknown m (Unknown ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Unknown m (Unknown ft)	Cover Thickness:	None m (None ft)
Site Area:	Unknown m ² (Unknown ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	19.8 m (65.0 ft)	Site Depth:	0.9 m (3.0 ft)
Site Width:	15.2 m (50.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	301.9 m ² (3250.0 ft ²)		

Potential Contaminants:

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	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$289,000

References:

WIDS General Summary Report, DOE/RL-2002-14

200-W ADB

Site Name: 200-W ADB, 200-W Ash Disposal Basin
Site Type: Coal Ash Pit
Current OU: 200-MG-1

Facility: T Plant Area
Former OU: 200-SW-1

Waste Site Description:

The site is an area of dark soil with cheatgrass growing on the surface. A small depression can be seen in the middle of the site. The Ash Disposal Basin received coal ash slurry and ash from the operation of the coal fired 284-W Powerhouse. A 1954 drawing shows an underground ash slurry pipeline extending from the northeast corner of the 284-W Powerhouse to the northwest corner of the Ash Disposal Basin. Later, the site received trucked material, dredged from the 200 West Powerhouse Ash Pit, located south of the powerhouse, on the west side of Beloit Ave. Hanford Site drawings generally refer to the entire large, irregular shaped excavation east of Beloit Ave. as the Ash Pit or Ash Basin. Some site drawings refer to the southern portion of the large area as the Burn Pit or Burning Ground. Reference to the 200 West Area Burn Pit and 200 West Ash Disposal Basin are often confused. A Tiger Team finding for disposing of steam plant ash without a permit prompted sampling of wet flyash and bottom ash from the 200 Area power plants. Sample results determined the ash to be non-dangerous and non-corrosive and not regulated under Washington Administrative Codes. Therefore, no permit was required to dispose of the steam plant ash.

Related Site Structure: The site is associated with the 284-W Powerhouse operation the 200-W Ash Pit. The open pit adjacent to the south side of the 200-W ADB is known as the 200-W Burn Pit (200-W BP).

Site Posting: Not Specified

Release Mechanism: Ash Disposal

Release Type: Solid

Dimensions (estimated):

Site Length:	244.0 m (800.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	183.0 m (600.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	44652.0 m ² (480000.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	Unknown	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$347,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-W BP

Site Name: 200-W BP, 200-W Burning Pit, Pit 34

Site Type: Burn Pit

Current OU: 200-MG-1

Facility: T Plant Area

Former OU: 200-SW-1

Waste Site Description:

The site is a large open pit. The 200 Area office waste and non-radioactive construction debris and tumbleweeds have been brought to this site and burned. According to Dave Phipps in April 2002, this site is used as a staging area for uncontaminated tumbleweeds from the 200 Area fences. They are burned bi-annually in the spring and the fall. The area is also used as a source of clean backfill (gravel) material. In 1984, a one time chemical demolition event occurred inside the northern portion of the current 200-W Burn Pit. However, the title of the closure document is the 200 West Area Ashpit Demolition Site Closure Plan (DOE/RL-92-54). A review of this document confirms the location of the chemical demolition was inside the 200-W Burn Pit. Drawing H-2-1495 and historical photograph #3755 show another disposal pit/burn pit, located south of 16th Street, east of Beloit Ave. Early references to the 200 West Burn Pit could be referring to this location. The 200 West Area Ash Disposal Basin had been a very large, irregularly shaped excavation. The burn pit is considered to be the southern portion of the large excavation. Hanford Site drawings generally refer to the entire large, irregular shaped excavation east of Beloit Ave. as the Ash Pit or Ash Basin. Some site drawings refer to the southern portion of the large area as the Burn Pit or Burning Ground. The burn pit portion is shown as being located in the southwest corner of the Ash Disposal Basin on drawing H-2-34762. Reference to the 200 West Area Burn Pit and 200 West Ash Disposal Basin are often confused. Now that the northern portion of the original Ash Disposal Basin has been filled to grade with ash, only the 200-W Burn Pit portion is an open excavation. In October 1992, prior to being used as a source of clean backfill material, radiological surveys and soil sampling were performed. A total of ten samples were collected from five locations inside the burn pit area. One sample at each location was collected at the surface and a second sample at each location was collected at a depth of approximately 1 meter (3 feet).

Related Site Structure: The burn pit is associated with the 200-W Ash Disposal Basin (200-W ADB), 200-W ADS and 200-W-71.

Site Posting: Not Specified

Release Mechanism: Dumping Area

Release Type: Solid

Dimensions (estimated):

Site Length: 61.0 m (200.0 ft)

Site Width: 61.0 m (200.0 ft)

Site Area: 3721.0 m² (40000.0 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	In 1955, 3 broken boxes that contained radioactive waste were discovered in the pit and moved to a separate burial ground. In 1973 a routine survey revealed several spots of beta-gamma radiation measuring from 5,000-50,000 c/m.	Beta-gamma radiation measuring from 5,000-50,000 c/m.
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$347,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-W-1

Site Name: 200-W-1, REDOX Mud Pit West

Site Type: Mud Pit

Current OU: 200-MG-1

Facility: REDOX Area

Former OU: 200-SW-1

Waste Site Description:

The site was originally described as a pit that is approximately 15.3 m (50 ft) by 31 m (100 ft). The surface of the area has the appearance of drilling mud, and has the typical surface that is left from evaporated or percolated liquid. Vegetation is absent from the area. The following observations were made during a field visit in August 1999. The site is in a shallow depression. It is difficult to discern the precise boundaries of the site because the general area appears to have been disturbed by heavy equipment. One section of the site is devoid of vegetation and appears to have some soil discoloration. West of this section is an area where the ground surface is broken up and sparsely vegetated. These two distinctive areas are surrounded by sparse to moderate vegetation cover, composed primarily of cheatgrass and tumbleweeds. An approximately 2.5-cm (1-in.) diameter rubber hose was seen near the west edge of the site and some lumber and a wooden stake were found at the unvegetated spot. Some older employees that were interviewed stated that plutonium contaminated ventilation equipment was rinsed somewhere near this area.

Related Site Structure: The site is possibly associated with 200-W-17 and 200-W-18.

Site Posting: Not Specified

Release Mechanism: Equipment Decontamination

Release Type: Liquid

Dimensions (estimated):

Site Length:	30.5 m (100.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	15.2 m (50.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	464.5 m ² (5000.5 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$394,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-W-101

Site Name: 200-W-101, Contaminated Material West of 216-S-12 Crib

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: REDOX Area

Former OU: 200-SW-2

Waste Site Description:

The site consists of two large boxes and a rusted metal shaft surrounded with light post and chain. The area had been posted with CA and RA signs. The metal shaft is approximately 18 m (60 ft) long and extends beyond (outside) the posted area chain. The radiological posting was changed to CA in April 2002. Conversations with BHI and CHG employees revealed that this material has been sitting at this location for approximately 15 years. In 1999, an attempt was made to remove and bury the material. In 1999, BHI was responsible for both the REDOX inactive facility and the 216-S-12 Crib, but had no knowledge of the source of the material or who erected the radiological zone. In 1999, BHI was surface stabilizing the adjacent REDOX railroad cut and considered placing the material into the area being covered with dirt and burying it along with the railroad track. They contacted the Tank Farm contractor to see if they claimed ownership of the material. The Tank Farm contractor personnel had no knowledge of this material either. BHI stabilized the railroad cut in 1999 without disturbing this posted material, because they could not find a responsible individual to give them permission to move it. A radiological survey was done on April 2, 2002 to determine the radiological conditions inside the posted area. No contamination was detected on the wooden boxes or the ground surface. A small amount of contamination (2000 dpm) was found on a piece of hose. The radiological posting was changed from RA/CA to CA.

Related Site Structure: None

Site Posting: CA

Release Mechanism: Dumping Area

Release Type: Solid

Dimensions (estimated):

Site Length: 12.0 m (40.0 ft)

Site Width: 6.0 m (20.0 ft)

Site Area: 72.0 m² (800.0 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	None	Minor debris

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$86,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-W-106

Site Name: 200-W-106, Soil Contamination Area Adjacent to 200-W-55

Site Type: Unplanned Release

Current OU: 200-MG-1

Facility: T Farm Area

Former OU: 200-UR-1

Waste Site Description:

Soil contamination was found and posted on 2/13/2003 (200-W-55 dump site). Soil had apparently been placed in the location of the contamination. The surrounding area contains large, growing rabbit- and sagebrush, indicating the vegetation was established many years ago. The area containing the soil contamination has little or no vegetation. On 2/13/2003, a Radiological Control Technician was passing the 200-W-55 dump site in his vehicle. Because he was unfamiliar with the dump site, he decided to do a cursory radiation survey. The technician found soil contamination on the top rim of the debris pit. Occurrence Report RL-PHMC-FSS-2003-0002 was issued describing the contamination found. Closer inspection of the area showed that soil had apparently been placed in the location of the contamination. The surrounding area contains large, growing rabbit and sage brush, indicating the vegetation was established many years ago. The area containing the soil contamination has little or no vegetation. The maximum surface contamination level was 3600 cpm. A least fifteen separate small contaminated areas were identified. Contamination levels became larger at depth. The 300 cpm surface reading rose to 7600 cpm at a depth of 7.6 cm (3 in.). Additional investigations were done to determine the depth of the contamination. The majority of the contamination was found to be within 15 cm (6 in.) of the surface. A maximum reading of 20,100 cpm was found at a depth of 10 cm (4 in.).

Related Site Structure: None

Site Posting: SCA

Release Mechanism: Soil Contamination

Release Type: Solid

Dimensions (estimated):

Site Length: 20.4 m (67.0 ft)

Site Width: 16.2 m (53.0 ft)

Site Area: 329.9 m² (3551.3 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

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	Type	Constituents
Radiological	X	3600 cpm. At least 15 separate, small contaminated areas were found; contamination levels larger at depth. 300 cpm surface reading rose to 7600 cpm at depth of 7.6 cm (3 in.). Add'l investigations found majority of contamination to be within 15 cm (6 in.) of surface. Max reading 20,100 cpm found at 10 cm (4 in.) depth found on February 13, 2003.
Nonradiological	Unknown	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$269,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-11

Site Name: 200-W-11, Concrete Foundation South of 241-S, S-Farm Foundation and Dump Site

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: 200 W Ponds Area

Former OU: 200-SW-1

Waste Site Description:

A concrete foundation, small burn areas, bare areas and scattered debris are located south of 241-S Tank Farm. The site was identified on April 19, 1995 during a RCRA General Inspection. No drawings related to the foundation have been identified. The debris includes barbed wire, welding rods, oil cans, paint cans, glass, and vehicle parts. It may have been used as a laydown yard, support fabrication area, or vehicle maintenance. It is possible it supported the construction of 241-S-Farm.

Related Site Structure: The site is possibly associated with the construction of the 241-SX, 241-SY, 241-S Tank Farms.

Site Posting: Not Specified

Release Mechanism: Unknown

Release Type: Solid and Liquid (?)

Dimensions (estimated):

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0 m (0 ft)
Site Area:	11505.2 m ² (123840.4 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Paint, solvent

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$202,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-W-12

No Image Available

Site Name: 200-W-12, 201-W Soil Mound and Plastic Pipe**Site Type:** Dumping Area**Current OU:** 200-MG-1**Facility:** REDOX Area**Former OU:** 200-SW-1**Waste Site Description:**

The site consists of a soil mound with one 0.76-m (2.5-ft) aboveground plastic pipe and one 20-cm (8-in.) aboveground plastic pipe topped with tees and elbows. There are also insulated electrical wires and an electrical heat controller. During the 1970's, the Atlantic Richfield (ARCO) and Rockwell Research Departments used this area for testing equipment and processes to support the waste management operations. This area was selected for testing because it was adjacent to the REDOX facility (where the Research Department offices were located) and because the area did not contain any contaminated facilities or vadose contamination. This site is located near other test sites and pits that were used to test grout, slurry and soil infiltration in the late 1970's and early 1980's. It is suspected that this site was also a test site. Several employees that were involved in the grout, slurry and infiltration tests were interviewed. None of the employees had any knowledge of what this mound with polyvinyl chloride (PVC) piping was used for. The RCRA Permit General Inspection Report notes that "It appears there is a tank in the ground under the vents." The comment section of the Discovery Site Evaluation Checklist from 6/25/96 states that "Per discussion with K. Moss, unable to discount the potential for waste disposal based on interviews. Considered a SWMU based on discarded materials at the site." Thus, while this site is most likely another test site like the adjacent 200-W-35, it cannot be rejected as a waste management unit based on available information.

Related Site Structure: The site may be associated with other adjacent test sites. See 200-W-35 and 200-W-10.**Site Posting:** Solid Waste Management Unit**Release Mechanism:** Equipment Testing**Release Type:** Solid and Liquid (?)**Dimensions (estimated):**

Site Length:	3.7 m (12.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	1.8 m (6.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	6.7 m ² (72.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$149,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-W-14

No Image Available

Site Name: 200-W-14, 200 West Heavy Equipment Storage Area**Site Type:** Dumping Area**Current OU:** 200-MG-1**Facility:** T Plant Area**Former OU:** 200-UR-1**Waste Site Description:**

The site appears as a gravel parking lot. The site was a heavy equipment (including cranes, forklifts, diesel generators, backhoes, vehicles) parking area with five or six large spots of petroleum contaminated soil. Contaminated soil is encountered down to a depth of 0.61 m (2 ft) or more. During the 1995 site visit, the equipment continued to overflow and leak; no drip pans or containment were used.

Related Site Structure: The site is associated with the building trades craft shops.**Site Posting:** Not Specified**Release Mechanism:** Parking Area**Release Type:** Liquid**Dimensions (estimated):****Site Length:** 24.4 m (80.0 ft)**Site Depth:** 0.6 m (2.0 ft)**Site Width:** 9.1 m (30.0 ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** 223.0 m² (2400.1 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	None	None
Nonradiological	X	Petroleum

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$168,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-2

Site Name: 200-W-2, REDOX Berms West
Site Type: Spoils Pile/Berm
Current OU: 200-MG-1

Facility: REDOX Area
Former OU: 200-SW-1

Waste Site Description:

The majority of the area is level, with evidence of soil disturbance over several acres. The site consists of two bermed areas. One berm is approximately 1.5 m (5 ft) high by 9.2 m (30 ft) wide. The other berm is approximately 3.1 m (10 ft) high and 15.3 m (50 ft) wide. The berms are not marked or posted. The wastes at this unit are unknown, but the berms may cover contaminated soil or debris. It has been reported that ventilation equipment had been cleaned in the area, but the exact location cannot be identified.

Related Site Structure: None

Site Posting: None

Release Mechanism: Equipment Decontamination

Release Type: Solid and Liquid (?)

Dimensions (estimated):

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0 m (0 ft)
Site Area:	248.0 m ² (2670.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-W-21

Site Name: 200-W-21, 204-T Unloading Station, T-Plant Waste Railcar Unloading Facility, Unloading Station 1 and Unloading Station 2

Site Type: Pump Station

Current OU: 200-MG-1

Facility: T Plant Area

Former OU: 200-LW-1

Waste Site Description:

The unloading station consisted of two unloading platforms, Unloading Station 1 and Unloading Station 2. The platforms and piping from both stations were removed in 1996. The area has a short railroad siding extending from the main rail line into T-Plant. The concrete structure foundations remain and are posted with URM signs. The platform structures were used to unload 300 Area liquid laboratory waste sent in railroad tanker cars from the 340 Facility. The waste was pumped into the adjacent 216-T-34 and 216-T-35 Cribs. Approximately 30 m³ (40 yd³) of contaminated soil was removed from the base of the unloading station in 1967. Environmental Surveillance Inspection Report EP-87-51 written in 1987 and Radiological Problem Report T-009-89 written in 1989 identified additional surface contamination. In 1989, contamination was found in two drains (one drain for each unloading platform structure) that included 4,000 dpm of beta/gamma contamination and 1,800 dpm of alpha contamination. Smears of the eastern drain found 600 dpm of alpha contamination was removable.

Related Site Structure: The site is associated with the 216-T-34 crib, 216-T-35 crib and the 340 facility in the 300 Area. The pipeline from Unloading Station 1 to the 216-T-34 crib is site code 200-W-196-PL. The pipeline from Unloading Station 2 to the 216-T-35 crib is site code 200-W-197-PL.

Site Posting: URM

Release Mechanism: Leak/ Spill

Release Type: Liquid

Dimensions (estimated):

Site Length:	26.0 m (87.0 ft)	Site Depth:	1.5 m (5.0 ft)
Site Width:	7.0 m (23.0 ft)	Cover Thickness:	0.1 m (0.5 ft)
Site Area:	182.0 m ² (1959.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$612,000

References:

WIDS General Summary Report, DOE/RL-2001-66, DOE/RL-2006-56, DOE/RL-2005-61

200-W-22

Site Name: 200-W-22, 203-S/204-S/205-S Stabilized Area
Site Type: Unplanned Release
Current OU: 200-MG-1

Facility: REDOX Area
Former OU: 200-PW-2

Waste Site Description:

Waste processed and stored in this area included contaminated UNH from REDOX and PUREX, Thorium Nitrate from PUREX, 100-N Reactor decontamination waste and 300 Area Laboratory waste. Radiological contaminants may be present in and around the remaining contaminated structures (cement basins and piping) that were not removed in the 1983 stabilization efforts. All aboveground surface features have been removed. The site is currently posted as an URM. There are also two small, posted URMA's located under the abandoned steam line, on the south end of this site. The 203, and 205-S Facilities were constructed in the early 1950's to process and decontaminate the uranyl nitrate hexahydrate (UNH) produced by REDOX operations. The primary process unit consisted of a column filled with silica gel that removed traces of fission products from the UNH. The silica gel column (SG-1) was located in the underground 205-S Vault. The vault also contained a waste neutralization tank. Operations in the vault were accomplished remotely. The 205-S Facility was a two story, aboveground, chemical make-up building. It contained two chemical make-up tanks, a UNH sample room and extensive piping connected to the REDOX facility and the underground vault. The 203-S Facility was an aboveground UNH storage facility that consisted of two 19,000 L (5,000 gal) stainless steel tanks that were set in an open concrete basin. There was also a 204-S Tank Farm, that consisted of four 190,000 L (50,000 gal) aboveground tanks set in two open concrete basins. A UNH Unloading Facility was located at the adjacent railroad siding. An aboveground UNH pipeline connected the 203-S, 204-S, 205-S Area to the 224-U Facility. During the REDOX Plant operation, the UNH solution was pumped from REDOX to the 205-S silica gel column for purification. The purified UNH was stored in the 203 and 204 tanks and the routed to 224-U, via an above ground line, for final processing. The fission products left in the silica gel column were stripped out with nitric acid. The acid was neutralized and sent to cribs. UNH from the PUREX Plant were transported by truck to the unloading station and placed in the 204-S tanks. The PUREX solutions were then processed through the silica gel column. After REDOX shut down (1965), the 203-S and 205-S were placed on standby. The Unloading Station was converted to a railcar unloading station. The 204-S tanks continued to store material from the Unloading Station. Shipments included thorium nitrate from PUREX, 100-N Reactor decontamination solutions and 300 Area Laboratory wastes. The thorium nitrate was stored in tanks 204-S-1, 204-2 and 204-3. After an extended storage time, the thorium nitrate was shipped to Fernald, Ohio. The 203-1, 203-2 and 203-3 tanks were flushed. Tank 204-S-4 tank was used to hold the 100-N Reactor and 300 Area wastes. Tank 4 was connected to the 240-S-151 Diversion Box so that waste could be transferred to tank farms. Substantial dose rates were associated with these shipments. Several feet of sludge built up in the bottom of tank 4 and increased the dose rate problem. Increasing dose rate issues and contamination spreads lead to the construction of an enclosed unloading facility in 200 East Area (204-AR) that opened in 1981 and replaced this outdoor unloading station at REDOX.

Related Site Structure: The site is associated with the 203-S & 205-S UNH Processing Facilities, the REDOX UNH Unloading Facility and UPR-200-W-32, UPR-200-83, UPR-200-W-10, UPR-200-W-69, UPR-200-W-86, UPR-200-W-116 and UPR-200-W-123.

Site Posting: URM

Release Mechanism: Leak/ Spill

Release Type: Liquid

Dimensions (estimated):

Site Length:	84.0 m (276.0 ft)	Site Depth:	3.0 m (10.0 ft)
Site Width:	68.0 m (223.0 ft)	Cover Thickness:	0.6 m (2 ft)
Site Area:	5712.0 m ² (61548.0 ft ²)		

Potential Contaminants:

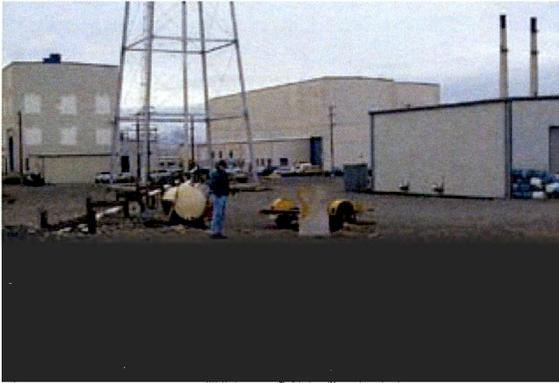
	Type	Constituents
Radiological	X	Uranium isotopes and unk others. A maximum of 10,000 counts per minute at 25 centimeters (1 inch) was found in this area in 1952.
Nonradiological	X	Uranium metal and unk others

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$1,850,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

200-W-3

No Image Available

Site Name: 200-W-3, 2713-W North Parking Lot, 220-W-1**Site Type:** Dumping Area**Current OU:** 200-MG-1**Facility:** T Plant Area**Former OU:** 200-SW-1**Waste Site Description:**

The unit is a parking lot, containing an area with discolored soil approximately 10 to 15 cm (4 to 6 in.) deep. The 2713-W building had been a gas station and also contained an oil changing pit for government vehicle maintenance. Oil was often used on gravel areas for dust abatement. Two soil samples were collected in 1989 indicate that PCBs (maximum 3 ppm), lead (maximum 2.1 mg/L EP-TOX), xylene (maximum 1640 ppb), and total petroleum hydrocarbons (maximum 620 mg/kg) were present.

Related Site Structure: The site is associated with the 291-S Stack.**Site Posting:** Not Specified**Release Mechanism:** Unknown**Release Type:** Liquid**Dimensions (estimated):****Site Length:** 91.0 m (300.0 ft)**Site Width:** 152.0 m (500.0 ft)**Site Area:** 13832.0 m² (150000.0 ft²)**Site Depth:** Unknown m (Unknown ft)**Cover Thickness:** 0 m (0 ft)**Potential Contaminants:**

	Type	Constituents
Radiological	None	None
Nonradiological	X	PCB's, lead, xylene, and petroleum hydrocarbons

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$728,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

200-W-33

Site Name: 200-W-33, Solid Waste Dumping Area, Debris near 609 gate

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: WM Area

Former OU: 200-SW-1

Waste Site Description:

The site consists of an area of debris covering approximately one acre in a stand of open sagebrush. In April 1996, a large amount of rusted cans, rusted 55 gal drums, steel containers, wood and other debris was found in this area. Some evidence of burning and oil spills were also noted.

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Dumping Area

Release Type: Solid and Liquid (?)

Dimensions (estimated):

Site Length: 245.0 m (804.0 ft)

Site Width: 215.0 m (705.0 ft)

Site Area: 52675.0 m² (566820.0 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Oil substance, burn residue

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$597,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-W-51

No Image Available

Site Name: 200-W-51, Septic Tank (Abandoned)**Site Type:** Septic System**Current OU:** 200-MG-1**Facility:** S/U Farm Area**Former OU:** 200-ST-1**Waste Site Description:**

The site is an abandoned septic tank that has been filled and covered. The septic tank was discovered during excavations (for exhaustor upgrades) outside 241-SY Tank Farm. The tank is not marked or posted. The Engineering Change Notice (ECN-637974) referenced below identifies the location of an abandoned septic tank found during the construction activities associated with the new SY Exhaustor. Work package 2W-94-1004 WCN #4 (listed in references) describes the activities associated with filling and covering the abandoned tank. The tank is not shown on any known drawings. The Engineering Change Notice requested drawing H-2-44511, sheets 46 and 54 be updated to show the presence of this abandoned septic tank. A released copy of the ECN will be coming to the WIDS Team. The site should then be closed.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Sanitary Effluent**Release Type:** Liquid**Tank:****Dimensions (estimated):****Site Length:** Unknown m (Unknown ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Unknown m (Unknown ft)**Cover Thickness:** None m (None ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:

Dimensions (estimated):

Site Length:	Unknown m (Unknown ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Unknown m (Unknown ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	Unknown m ² (Unknown ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$289,000

References:

WIDS General Summary Report, DOE/RL-2002-14

200-W-53

No Image Available

Site Name: 200-W-53, UPR-200-W-166, UN-216-W-31**Site Type:** Unplanned Release**Current OU:** 200-MG-1**Facility:** T Farm Area**Former OU:** 200-UR-1**Waste Site Description:**

This site was an area of surface soil contamination located east of the 207-T Retention Basins. Identified in 1994 with result of approximately 155,706 sq. ft of land being marked/posted as a SCA. The contaminated soil was scraped and placed inside the 207-T Retention Basin. The Tank Waste Remediation Group used the waste site number UN-216-W-31 (alias UPR-200-W-166) to document their 1996 clean up effort. However, this contaminated soil was not located at the same place as the original UN-216-W-31 that was consolidated/stabilized by RARA in 1992. The original UN-216-W-31 area of contamination was described as located north and east of 241-T Tank Farms. In 1996, the UN-216-W-31 number was used again for the contamination found further east. The second area of contamination was given a separate site code (200-W-53) to explain the two separate remediation activities. The Tank Waste Remediation Group used the waste site number UN-216-W-31 (alias UPR-200-W-166) to document their 1996 clean up effort. However, this contaminated soil was not located at the same place as the original UN-216-W-31 that was consolidated and stabilized by the Radiation Area Remedial Action (RARA) in 1992. The original UN-216-W-31 area of contamination was described as being located north and east of 241-T Tank Farms. In 1996, the UN-216-W-31 number was used again for the contamination found further east, because the source of the contamination was assumed to be the same as the source for UN-216-W-31. Due to programmatic responsibility issues, it was necessary to give the second area of contamination a separate site code (200-W-53) to explain the two separate remediation activities.

Related Site Structure: The site is associated with the 207-T Basin.**Site Posting:** URM**Release Mechanism:** Windblown Particulate**Release Type:** Solid**Dimensions (estimated):****Site Length:** 120.0 m (393.7 ft)**Site Width:** 120.0 m (393.7 ft)**Site Area:** 14400.0 m² (155015.4 ft²)**Site Depth:** Unknown m (Unknown ft)**Cover Thickness:** Unknown m (Unknown ft)**Potential Contaminants:**

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	Type	Constituents
Radiological	X	Unknown
Nonradiological	None	None

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$309,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-54

No Image Available

Site Name: 200-W-54, Contamination Migration from 241-SX Tank Farm

Site Type: Unplanned Release

Current OU: 200-MG-1

Facility: S/U Farm Area/ REDOX Area

Former OU: 200-UR-1

Waste Site Description:

This site is an expanding area of contamination migration. The original UPR was defined in 1997 as a large, irregular shaped SCA located on the east side of 241-S/SX Tank Farms. In 1997, it measured approximately 175 m (575 ft) by 100 m (330 ft). Another GPS was done in 1998 by Bruce Markes. The posted SCA had been extended approximately 50 m (165 ft) to the west (up to the tank farm fence) and approximately 200 m (660 ft) in the north-south direction. A site visit in 08/00 found multiple additional radiologically chained and posted areas in this vicinity. In 09/00, 10/00, and 11/00, the ISVAC group submitted several individual radiologically posted areas in the vicinity of the originally defined area to WIDS as Discovery sites. All the radiologically posted areas north and east of the tank farm fence are incorporated into the 200-W-54 waste site description. In September, October and November 2000, the Dyncorp ISVAC group submitted several individual radiologically posted areas in the vicinity of the originally defined area to WIDS as Discovery sites. All of the contamination in this area is assumed to be the result of tank farm activities or contamination migration from the adjacent posted contamination areas because they are the only apparent contamination sources. All the radiologically posted areas north and east of the tank farm fence are incorporated into the 200-W-54 waste site description. In 2002, 200-W-54 was consolidated with the 241-S, SX, SY Soil Site (200-W-96), but because of the increasing size of 200-W-54, it was un-consolidated from 200-W-96 in December 2004.

Related Site Structure: The site is associated with activity in the 241-S, SX and SY Tank Farms. There is also one separately posted CA located north of 241-SY Tank Farm, across a gravel road. In 2002, 200-W-54 was consolidated with the 241-S, SX, SY Soil Site (200-W-96), but because of the increasing size of 200-W-54, it was unconsolidated from 200-W-96 in 12/04.

Site Posting: SCA

Release Mechanism: Windblown Particulate

Release Type: Solid

Dimensions (estimated):

Site Length: 175.0 m (574.2 ft)

Site Width: 100.6 m (330.0 ft)

Site Area: 17601.5 m² (189469.5 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	X	Contamination migration from S/SX Tank Farm; 650 - 20000 cpm survey in November 1998.
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth: \$2,210,000****References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-55

Site Name: 200-W-55, Dumping Area North of 231-Z
Site Type: Dumping Area
Current OU: 200-MG-1

Facility: T Farm Area
Former OU: 200-SW-1

Waste Site Description:

The site consists of scattered debris approximately 10 feet in diameter inside the north end of a large depression. The site is not marked or radiologically posted. An area of debris was identified during a 1997 RCRA Permit General Inspection tour. The debris consists of concrete rubble, wood, cans, pipes and rusted sheet metal.

Related Site Structure: None

Site Posting: None

Release Mechanism: Dumping Area

Release Type: Solid

Dimensions (estimated):

Site Length: None m (None ft)

Site Width: 3.0 m (10.0 ft)

Site Area: 2790.0 m² (30031.0 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$122,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-W-6

No Image Available

No Image Available

Site Name: 200-W-6, 200-W Painter Shop paint solvent disposal area**Site Type:** Dumping Area**Facility:** T Plant Area**Current OU:** 200-MG-1**Former OU:** 200-SW-1**Waste Site Description:**

The site consists of contaminated soil. The soil was identified in 1993, while performing building modifications at the paint shop. The construction forces shop complex has been situated at this location for many years. Building modifications being done in 1993 required a portion of the concrete floor be removed. The soil beneath the floor was being excavated by hand (11/17/93) when a strong solvent odor was noticed. When the odor was discovered, the job was stopped. The soil was placed back into the excavation and reported to the construction supervisor. Long time employees indicate that prior to 1984, it had been a common practice to dispose of paint and solvents directly to the ground. A Suspect Waste Site Information Report was submitted to the monitoring group on November 23, 1993. The site was submitted to the WIDS database in January 1994.

Related Site Structure: None**Site Posting:** Not Specified**Release Mechanism:** Liquid Disposal**Release Type:** Liquid**Dimensions (estimated):**

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0 m (0 ft)
Site Area:	273.9 m ² (2948.3 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Paint solvents

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$795,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

200-W-63

No Image Available

Site Name: 200-W-63, Contaminated Concrete Pad
Site Type: Unplanned Release
Current OU: 200-MG-1

Facility: T Farm Area
Former OU: 200-UR-1

Waste Site Description:

The site was a "T" shaped concrete pad that had been posted with Surface CA signs. In 12/97, the pad was found posted with an old, faded "Surface Contamination Area" sign and rusted chain. It did not appear that anyone was responsible for surveillance and maintenance of this site. In the 1980s radiological contaminated equipment was stored on pad. Coyote tracks indicated the coyotes were drinking water from a low spot in the concrete. A 12/5/97 radiological survey confirmed the presence of both beta/gamma and alpha contamination. A site visit in 09/99 found the pad had been covered with gravel and reposted as URM. Employees who have worked in 200 West Area state the pad was used to store radiologically contaminated tanks in the late 1980's. The tanks were removed in 1991 and the pad was left posted as a Surface Contamination Area. In December of 1997, the pad was found posted with an old, faded "Surface Contamination Area" sign and rusted chain. It did not appear that anyone was responsible for surveillance and maintenance of this site. Dave Phipps, Fluor Daniel Hanford Radiological Control Group, was unable to identify a group that would claim responsibility for the contaminated pad. He also observed evidence of coyote tracks that indicated the coyotes were drinking water from a low spot in the concrete. A radiological survey done on December 5, 1997 confirmed the presence of both beta/gamma and alpha contamination.

Related Site Structure: None

Site Posting: URM

Release Mechanism: Contaminated Foundation

Release Type: Liquid

Dimensions (estimated):

Site Length:	42.7 m (140.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	13.7 m (45.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	585.3 m ² (6300.6 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	5000 - 300000 dpm beta/gamma and 3000 - 7000 alpha surveyed on December 5, 1997.
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$317,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-64

Site Name: 200-W-64, 2724-W Contaminated Laundry Facility Building Foundation

Site Type: Foundation

Current OU: 200-MG-1

Facility: T Plant Area

Former OU: 200-UR-1

Waste Site Description:

The building foundation is posted with "Underground Radioactive Material" signs. There is also an area approximately 3 m (10 ft) by 4.5 m (15 ft) on the north side of the foundation that is posted as "Fixed Contamination". Several drains and pipes were observed on the concrete pad. All drains and pipes were either capped or grouted. There are three radiologically posted manholes adjacent to the northwest corner of the foundation. The manholes are likely to be a portion of the process sewer. Six connex storage units and several equipment items such as pipe, valves, flanges, fence posts were observed on the southeastern portion of the pad. DOE/RL-2004-39 Rev 0 states: Contamination is part of remaining portion of building foundation. Extent of contamination in cracks is unknown. WHC-EP-0342 states the 2724-W building was built in 1952 and expanded several times. ARH-2155, however, indicates that the new laundry facility (2724-W) began discharging effluent in 1950. This building (2724-W) replaced the 2723-W "Old Laundry" facility which was then used as the mask washing facility. The laundry effluent was discharged via an underground pipeline (200-W-102) to the 216-U-14 Ditch, until it was diverted to the new Laundry Waste Crib (216-W-LWC) in 1981. By 1981, the Laundry Complex included the 2724-W, 2724-WA, 2724-WB and MO-406. MO-412 was placed adjacent to the Laundry Complex in 1984 and housed the Mask Cleaning and Maintenance Facility. Soiled protective work clothing (coveralls, gloves, hoods, canvas boots and rubber shoe covers) were sent to the laundry facility from all the Hanford work areas. Two thirds of the laundry received was radioactively contaminated. One third consisted of "blue" (non contaminated) coveralls and towels. The non-contaminated laundry was washed separately from the contaminated laundry. By 1981, approximately three million pounds of laundry was processed per year in 600 lbs capacity washing machines and 400 lbs capacity dryers. An average of 26,250,000 L (691,000 gal) of waste water was discharged to the 216-W-LWC crib each month. A Facilities Evaluation Board assessment, done in July 1998, documented a finding that the fixative coating on the Fixed Contamination Area of the pad has degraded. The area has broken into removable pieces. There is a concern that the cracked concrete could cause a loss of contamination control. There have been problems identifying a responsible company and organization to respond to the finding.

Related Site Structure: The site is associated with the demolished contaminated laundry facility complex which included 2724-WA, 2724 WB Laundry facilities, and the MO-412 Mask Cleaning facility. It replaced the 2723 -W (Old Laundry" Facility and mask cleaning station) which was located northeast of the 2724-W facility. Effluent was discharged via 200-W-102 to the U-14 Ditch until 1981 when it was diverted to the 216-W-LWC (Laundry Waste Crib).

Site Posting: URM/Fixed Contamination

Release Mechanism: Contaminated Foundation

Release Type: Liquid

Dimensions (estimated):

Site Length: 42.0 m (138.0 ft)

Site Width: 32.0 m (105.0 ft)

Site Area: 1344.0 m² (14490.0 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	X	Radiological contamination from soiled protective work clothing; There was 9000 dpm beta/gamma found in the Fixed Contamination Area in March 1998.
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$871,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-67

No Image Available

No Image Available

Site Name: 200-W-67, Contaminated Soil at the Corner of Cooper and 16th Street**Site Type:** Unplanned Release**Facility:** S/U Farm Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

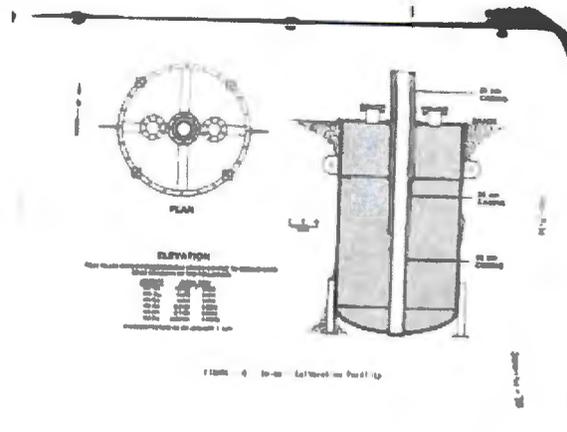
The site is currently posted as a URM area. A 4/98 radiological survey identified contamination specks and a contaminated ant hill near the intersection of 16th St. and Cooper Ave. with a maximum reading on the specks of 11 mr/hr. Another speck was found that read 6 mr/hr. Other contamination levels ranged from 500 cpm to 70,000 cpm. The ant hill read 3000 cpm. Some of the contamination was removed as it was found. The rest of the area was posted as a CA in 04/98. The Soil CA was posted in 1998. Even though some Radiation Surveys and Stabilization Reports identified the area surveyed and stabilized as UPR-200-W-24, the contaminated area south of 16th St has been given a new WIDS number (200-W-67).

Related Site Structure: None**Site Posting:** URM**Release Mechanism:** Biological Intrusion/ Animal Feces; Windblown Particulates**Release Type:** Solid**Dimensions (estimated):****Site Length:** 100.0 m (328.1 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 18.0 m (59.1 ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** 1800.0 m² (19376.9 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Contamination specks and a contaminated ant hill near the intersection of 16th St. and Cooper Ave with a maximum reading on the specks of 11 mr/hr; another speck was found that read 6 mr/hr; other contamination levels ranged from 500 cpm to 70,000 cpm; the ant hill read 3000 cpm, all in April 1998.
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$287,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-75

No Image Available

Site Name: 200-W-75, Radiological Logging System (RLS) Calibration Silos

Site Type: Experiment/Test Site

Current OU: 200-MG-1

Facility: REDOX Area

Former OU: 200-SW-2

Waste Site Description:

Three calibration silos are located west of the 202-S building, south of the 276-S building and north of the 211-S tanks. One calibration silo is located west of the 211-S tanks, across an asphalt access road. The site consists of four underground RLS equipment calibration silos. The silos are galvanized steel containers with metal lids bolted on top. The silos have somewhat different design constructions for calibrating different types of equipment. One type consisted of a 25 cm (6 in.) capped well casing inserted through the centers of the silos. There are two risers with bolted lids adjacent to the well casing. The silos are posted with URM signs. The calibration silos contained radioactive sources consisting of known quantities of cobalt-60, strontium-90, ruthenium-106 and cerium-144 in sealed capsules. Since the silo covers are posted with URM signs, it is assumed the sources are still inside the silos. In the late 1970's, test well mockups were used to calibrate in-well radionuclide detectors. The calibration mockups were constructed of a steel container approximately 2.4 m (8 ft) deep filled with soil. Tubes containing radioactive sources were inserted into the soil at distances of 2.5, 7.6, 15, 30, 46 and 61 cm from the well casing that was located in the center of the mockup. The mockup silo was buried so that a RLS vehicle could drive up to the calibration silo and drop its logging probe into the center well casing.

Related Site Structure: None

Site Posting: URM

Release Mechanism: Contaminated Calibration Silos

Release Type: Solid

Dimensions (estimated):

Site Length:	None m (None ft)	Site Depth:	2.4 m (8.0 ft)
Site Width:	1.2 m (4.0 ft)	Cover Thickness:	0.015 m (0.05 ft)
Site Area:	12.0 m ² (128.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Cobalt-60, Strontium-90, Ruthenium-106, Cerium-144
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$358,000

References:

WIDS General Summary Report, DOE/RL-2004-60

200-W-80

Site Name: 200-W-80; Mound of Contaminated Soil Southwest of T Plant

Site Type: Spoils Pile/Berm

Current OU: 200-MG-1

Facility: T Plant Area

Former OU: 200-UR-1

Waste Site Description:

The site is a gravel area surrounded with post and chain and URM signs (formerly a 1.5 m (5 ft) high, 8.2 m (27 ft) long, and 3 m (10 ft) wide mound of soil surrounded with radiation rope and posted CA signs). The mound and surrounding area contained many pieces of asphalt, similar to that in the adjacent T Plant parking lot. The mound and surrounding area is covered by a thin growth of cheatgrass/tumbleweeds. About 3 m (10 ft) east of the site is a small posted URM with one capped well inside the posted area and one just outside (locked with a warning of potential contamination). Across the north part of the contamination area are fence posts marking an underground pipeline, traveling east-west, posted as a URM. Another posted underground pipeline goes under the mound of soil, in a N-S direction, and is also posted as a URM. The Soil Contamination Area was posted in 1998. At the time the contamination was identified, it was believed to be part of UPR-200-W-24. UPR-200-W-24 occurred inside 241-U Tank Farm in 1953. It is not possible to positively link the contaminated soil found outside the 241-U Tank Farm in 1998 with a release that occurred 45 years previously. Even though some Radiation Surveys and Stabilization Reports identified the area surveyed and stabilized as UPR-200-W-24, the contaminated area south of 16th Street has been given a new WIDS number (200-W-67). In May 2000, the Dyncorp ISVAC group submitted the mound of soil with Contamination Area postings to WIDS as a Discovery Site. Their group performed a radiological survey of the area in 1999. No contamination was identified on the surface of the mound at that time. It is possible that the mound was created during a parking lot expansion at T Plant that occurred several years ago. The presence of asphalt in and surrounding the mound supports this idea.

Related Site Structure: None

Site Posting: URM

Release Mechanism: Soil Contamination

Release Type: Solid

Dimensions (estimated):

Site Length: 15.0 m (49.2 ft)

Site Width: 14.0 m (46.0 ft)

Site Area: 210.0 m² (2263.9 ft²)

Site Depth: 1.5 m (4.9 ft)

Cover Thickness: 0.3-0.6 m (1-2 ft)

Potential Contaminants:

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	Type	Constituents
Radiological	X	Unknown
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$279,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-81

Site Name: 200-W-81; Contaminated Tumbleweed Fragments Along Railroad Track East of 218-W-3AE

Site Type: Unplanned Release

Current OU: 200-MG-1

Facility: WM Area

Former OU: 200-UR-1

Waste Site Description:

The site is three posted Contamination Areas on the railroad track east of the burial ground, south of the 610 Gate of the 200 West Area fence. ISVAC submitted the 3 posted areas to WIDS as a Discovery Site. ISVAC states the CAs contain blown in tumbleweeds and tumbleweed fragments. An 8/15/97 Off Normal Occurrence Report (references Survey Report SW-242127) states that Solid Waste Management technicians were performing a routine radiation survey inside the burial ground and identified contaminated vegetation with contamination levels of 7,000 dpm. After removing the contaminated vegetation, a recheck of the dirt found beta/gamma readings of 70,000 dpm. The burial ground operators sprayed the area with soil cement and posted it as a CA. The Dyncorp ISVAC group submitted the three posted areas to WIDS as a Discovery Site. They state the CAs contain blown in tumbleweeds and tumbleweed fragments. A The Occurrence Report references Survey Report SW-242127. The windblown contaminated tumbleweeds are likely coming from the south end of 218-W-3AE.

Related Site Structure: The windblown contaminated tumbleweeds are likely coming from the south end of 218-W-3AE.

Site Posting: CA

Release Mechanism: Vegetation (tumbleweeds)

Release Type: Solid

Dimensions (estimated):

Site Length:	30.5 m (100.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	12.2 m (40.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	371.6 m ² (4000.4 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	70,000 dpm beta/gamma on August 15, 1997
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,084,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-82

Site Name: 200-W-82, Risers East of 216-TY-201 and 216-T-26, 216-T-27, and 216-T-28 Cribs, Crib Unloading Station

Site Type: Pump Station/Product Piping

Current OU: 200-MG-1

Facility: T Farm Area

Former OU: 200-LW-1

Waste Site Description:

The site consists of two concrete pads with flanged risers, surrounded by CA postings. Based on the available information, it is believed that this site is a liquid waste truck unloading station. It is assumed that the short pipeline, shown on drawing H-2-2733, extended eastward to the risers. The unloading station was built to accommodate tanker trucks unloading 300 Area liquid wastes into the 216-T-27 and 216-T-28 cribs. The unloading station jetted waste from the trucks to the cribs and was capable of unloading two trucks at a time. The cement pads with risers are located just east of a blanked pipeline (shown on drawing H-2-2733). The blanked pipe extended westward to the 216-T-26, 216-T-27, and 216-T-28 crib line (see 200-W-188-PL) at a point just south of the 216-TY-201 Flush Tank. From the drawing, it appears the pipe "T" was originally designed to allow the construction of three additional cribs to receive wastes from the 216-TY-201 Flush Tank. However, the additional cribs were never built. Sketch SK-2-3706 shows plans for a truck unloading station at the 216-T-34 crib. A note on the drawing says "relocate hose connections & support from existing truck unloading station 200W". Since the 300 Area liquid waste that had been going to the 216-T-28 crib was "rerouted" to the 216-T-34 crib (Lundgren 1971), the existing truck unloading station mentioned on the drawing is assumed to be this site. The visible riser configuration east of 216-TY-201 matches the design on Sketch SK-2-3706. Both the design sketch and the site east of 216-TY-201 have two small concrete pads with a metal pipe flange rising approximately 7 cm (3 in) above the level of the concrete. The document "Radioactive Liquid Waste Disposal Facilities—200 West Area" (Lundgren 1971) states that 300 Area wastes (from the 340 Waste Transfer Facility) were discharged to the 216-T-28 Crib. According to "Tank Wastes Discharged Directly to the Soil at the Hanford Site" (Waite 1991), the waste from the 340 Waste Transfer Facility was combined with T Plant and 2706-T waste and discharged to the 216-T-28 crib via the single-shell tanks, indicating the 300 Area waste was added to the tank farm tanks. This appears to be inaccurate based on drawings, the presence of the structure east of the cribs, and contradictory statements in the T Plant Source Aggregate Area Management Study Report (DOE/RL-91-61).

Related Site Structure: The site is associated with the 216-T-27 and 216-T-28 Cribs. The pipeline associated with the unloading station is described in 200-W-188-PL.

Site Posting: CA

Release Mechanism: Contaminated Foundation

Release Type: Solid and Liquid

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Dimensions (estimated):

Site Length:	12.0 m (40.0 ft)	Site Depth:	1.5 m (5.0 ft)
Site Width:	6.0 m (20.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	72.0 m ² (800.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$428,000

References:

WIDS General Summary Report, DOE/RL-2001-66, DOE/RL-2006-56, DOE/RL-2005-61

200-W-83

Site Name: 200-W-83, Contamination Area North of 2727W

Site Type: Unplanned Release

Current OU: 200-MG-1

Facility: T Plant Area

Former OU: 200-UR-1

Waste Site Description:

The site had been a posted CA extending across the railroad track north of the 2727-W Sodium Storage building. In April 2007, the contamination was backfilled with clean dirt and the area posting was changed to URM. The railroad tracks are no longer used.

Related Site Structure: 2727-W Building,

Site Posting: URM

Release Mechanism: Unknown

Release Type: None

Dimensions (estimated):

Site Length: 18.3 m (60.0 ft)

Site Width: 7.6 m (25.0 ft)

Site Area: 139.4 m² (1500.0 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: Unknown m (Unknown ft)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,775,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-86

Site Name: 200-W-86, Contamination Area Around Light Pole

Site Type: Unplanned Release

Current OU: 200-MG-1

Facility: T Plant Area

Former OU: 200-UR-1

Waste Site Description:

The site was originally a small, graveled Soil CA around an active (in use) light pole, near the intersection of the U plant railroad spur and Bridgeport Ave. The Dyncorp ISVAC group submitted this site to WIDS as a Discovery Site in 2000. No radiological survey could be found to determine when the power pole was posted, the radiological conditions inside the posting, or the source of the contamination.

Related Site Structure: The light pole is related to the electrical utility facilities.

Site Posting: URM

Release Mechanism: Unknown

Release Type: Solid, Liquid, ?

Dimensions (estimated):

Site Length: 3.0 m (10.0 ft)

Site Width: 3.0 m (10.0 ft)

Site Area: 9.3 m² (100.0 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0.3-0.6 m (1-2 ft)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$106,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-90

Site Name: 200-W-90, Underground Radioactive Material Areas posted along 23rd Street in 200 West Area

Site Type: Unplanned Release

Facility: T Farm Area

Current OU: 200-MG-1

Former OU: 200-UR-1

Waste Site Description:

The site is comprised of three posted URM areas. Two are located on the south side of 23rd St, across from the 218-W-2A Burial Ground. One is located further east, on the south side of 23rd Street, across from the 241-T Tank Farm. The Dyncorp Integrated Soil, Vegetation and Animal Control group submitted these posted areas to WIDS as a Discovery Site in 2000. They are similar in size. No radiological survey could be found to describe the radiological conditions inside the posted areas or when they were posted. There is no underground pipeline in this area. There is no vegetation growing inside any of the three posted areas.

Related Site Structure: It is possible the areas are related to UPR-200-W-63.

Site Posting: URM

Release Mechanism: Unknown

Release Type: Solid, Liquid, ?

Dimensions (estimated):

Site Length: 6.1 m (20.0 ft)

Site Depth: Unknown m (Unknown ft)

Site Width: 3.0 m (10.0 ft)

Cover Thickness: 0 m (0 ft)

Site Area: 18.6 m² (200.0 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$106,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

200-W-92

Site Name: 200-W-92, Contaminated Mound of Soil and Debris, Soil Mound West of 241-TY Tank Farm

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: T Farm Area

Former OU: 200-SW-2

Waste Site Description:

The waste site is a mound of soil approximately 1.5 m (5 ft) high. It had been surrounded with chain and posted with CA signs. Several radiation flags were placed in the mound to identify significant contamination. Rocks, asphalt and chunks of cement were visible. Some vegetation, including rabbitbrush, had been growing on the mound. In April 2007, clean gravel was placed on top of the contamination and the site was down posted to URM. The Dyncorp ISVAC group submitted this as a Discovery Site. Radiological Problem Report SS-01-045 states that maximum contamination levels of 1,600,000 dpm per 100 sq cm of beta gamma and 14,000 dpm per 100 sq cm of alpha were found on the soil and debris. The soil pile appears to have been dumped at this location several years ago.

Related Site Structure: None

Site Posting: URM

Release Mechanism: Dumping Area

Release Type: Solid

Dimensions (estimated):

Site Length: 24.0 m (80.0 ft)

Site Width: 9.1 m (30.0 ft)

Site Area: 219.5 m² (2400.1 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0.3-0.6 m (1-2 ft)

Potential Contaminants:

	Type	Constituents
Radiological	X	Misc. Trash and debris with maximum readings of 1,600,000 disintegrations per 100 sq. cm of beta gamma and 14,000 disintegrations per 100 sq. cm of alpha in May 2001.
Nonradiological	X	Misc. Trash and debris

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$633,000

References:

WIDS General Summary Report, DOE/RL-2004-60

207-B

Site Name: 207-B, B Plant Retention Basin, 207-B Retention Basin

Site Type: Retention Basin

Current OU: 200-MG-1

Facility: Solid Waste Area

Former OU: 200-CW-1

Waste Site Description:

The unit is a concrete-lined basin, divided into two equal sized sections. The basin is surrounded by a 2.4 meter (8 foot) chain link fence and posted with Contamination Area signs. The retention basins served as settling basins, receiving B Plant process sewer effluent through an underground pipeline prior to being discharged to the 216-B-2-1, 216-B-2-2, 216-B-2-3 ditches. It was possible to divert effluent to the 216-B-63 ditch. The 216-B-2-1, 216-B-2-2 and 216-B-2-3 ditches were connected to the 216-B-3 ditches and ponds. The concrete walls of this unit have been contaminated by a number of incidents over the years involving excessive radioactive effluent releases. In 1953, the residue contamination in the walls was covered with a coat of tar sealant. In December 1999, contaminated tumbleweeds were found growing outside the northeast corner of the fenced basin. The contaminated area measured approximately 6 meters by 6 meters (20 feet by 20 feet) and was posted as a Soil contamination Area (SCA). The maximum contamination reading recorded was 480,000 disintegrations per minute of beta/gamma contamination. The area was backfilled with clean soil and reposted as Underground Radioactive Material (URM).

Related Site Structure: The basin has an inlet structure on the west and an outlet structure on the east side. There are two 0.9 m² (3 ft²) sumps, one for each basin section. The basin is also associated with UPR-200-E-32. The 200-E-112-PL pipeline connects to the west side of the retention basin. The valve box on the east side of the retention basin tied into the pipeline that fed the 216-B-63 Ditch (site code 216-E-191-PL). The B Plant Chemical Sewer pipeline (200-E-188-PL), the pipeline to the 216-B-2-1 and 216-B-2-2 ditches (200-E-204-PL) and the pipeline to the 216-B-2-3 ditch (200-E-205-PL) are connected to the valve pit located east of the valve box. The pipeline from 242-B to the basin is site code 200-E-264-PL. The cooling water pipeline from 241-BY tank farm to the basin is 200-E-265-PL. In 1987, the entire 216-B-2 ditch system was replaced with a single pipeline (200-E-126-PL) that connected the 207-B retention basin to the 216-B-3 ditch and pond system.

Site Posting: SCA, URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length: 75.0 m (246.0 ft)

Site Width: 37.5 m (123.0 ft)

Site Area: 2812.5 m² (30258.0 ft²)

Site Depth: 2.0 m (6.6 ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	X	Cs-137, Sr-90, U-238, Tc-99. The maximum contamination reading recorded was 480,000 dpm of beta/gamma contamination in December 1999.
Nonradiological	X	As, Cd, Pb, Hg, Se, PCB Arochlor 1254

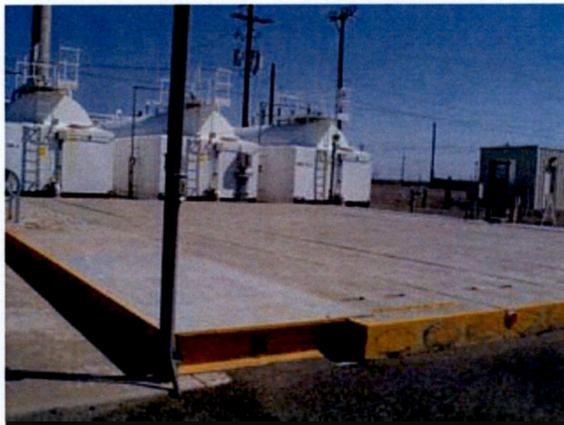
Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,523,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

207-SL



No Image Available

Site Name: 207-SL, 222-S Retention Basin, REDOX Lab Retention Basin, 207-SL Retention Basin

Site Type: Retention Basin

Facility: REDOX Area

Current OU: 200-MG-1

Former OU: 200-LW-2

Waste Site Description:

The site consists of a large below ground basin that is divided into two 94,625 liter (25,000 gallon) holding basins. The below ground basins are constructed of reinforced concrete walls 30 to 41 centimeters (12 to 16 inches) thick, and the floor is 38 centimeters (15 inches) thick. The unit also consists of three above ground 75,700 liter (20,000 gallon) holding tanks, added in 1994 to support the TEDF system. Before 1955, the site received low-level radioactive waste and discharged it to the 216-S-19 Pond. From 1955 to 1995 the effluent was discharged to the 216-S-26 crib. After 1995, non-radioactive, non-hazardous liquid effluents from the 222-S Laboratory, the 222-SA Laboratory, the 219-S Operating Gallery sump, and the package boiler unit, flow into the below ground basins for retention prior to transfer to the Treated Effluent Disposal Facility (TEDF). The effluents can be transferred to and from the below ground basins to the above ground holding tanks to provide additional extended storage before transfer. The area is not roped off, but has signs warning of surface radiation contamination. The inlet/outlet structure is outside of the basins on the east side; gratings, ladders, etc., are on the outside of the basins on the west side.

Related Site Structure: The basin is associated with the 216-S-19 Pond, the 216-S-26 crib and the TEDF system.

Site Posting: Surface radiation contamination

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	15.2 m (50.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	4.3 m (14.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	231.0 m ² (2500.0 ft ²)		

Potential Contaminants:

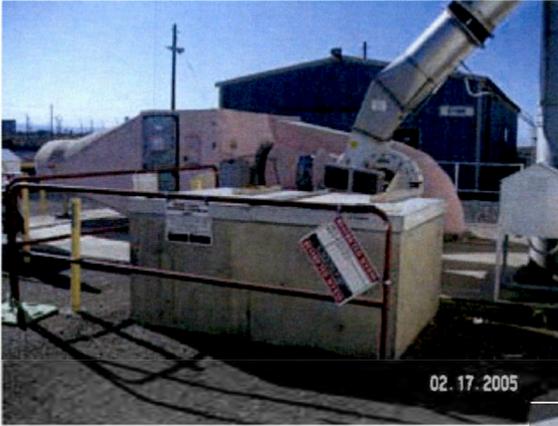
	Type	Constituents
Radiological	X	Site received low-level rad waste.
Nonradiological	Ventilation cooling water, and miscellaneous wastes from laboratory	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$690,000

References:

WIDS General Summary Report, DOE/RL-2005-61

209-E-WS-3

No Image Available

Site Name: 209-E-WS-3, Critical Mass Laboratory Valve Pit and Hold Up Tank (209-E-TK-111), IMUST, Inactive Miscellaneous Underground Storage Tank (See Subsites)

Site Type: Valve Pit

Facility: Semi-Works Area

Current OU: 200-MG-1

Former OU: 200-PW-4

Waste Site Description:

The Valve Pit has a steel lid and is posted (as of March 2001) with Radioactive Material, Internally Contaminated Systems Located Within, and Confined Space, Dome Loading, Ignition Control and IMUST warning signs. A 189 liter (50 gallon) holding tank (209-E-TK-111) is located under the valve pit. The tank was used as a drain tank. The tank held the condensate prior to being released to the cribs. The tank was routinely sampled for plutonium content to determine that the contents were below crib discharge levels. Present contents of the tank are estimated to consist of residual water from condensate collection, containing only low levels of plutonium. After sampling, the contents was discharged to the 216-C-7 crib. The 216-C-7 crib was placed on standby in 1983.

Related Site Structure: There is a thin, cadmium-lined Hold-Up Tank, 209-E-TK-111, associated with and under the Valve Pit. The pipelines to the valve pit are described in site code 200-E-248-PL.

Site Posting: Radioactive Material, Internally Contaminated Systems Located Within, and Confined Space, Dome Loading, Ignition Control and IMUST warning signs.

Release Mechanism: Contaminated Condensate

Release Type: Liquid

Dimensions (estimated):

Site Length:	3.4 m (11.0 ft)	Site Depth:	2.7 m (9.0 ft)
Site Width:	1.5 m (5.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	3.2 m ² (35.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Plutonium
Nonradiological	None	None

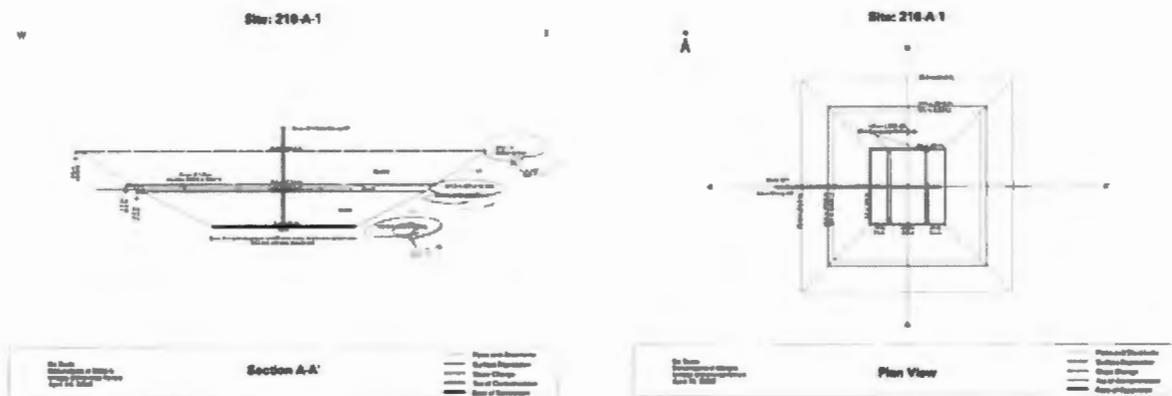
Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$316,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-A-1



Site Name: 216-A-1, 216-A-1 Cavern, 216-A-1 Trench
Site Type: Crib
Current OU: 200-MG-1

Facility: 200 E Ponds Area
Former OU: 200-PW-2

Waste Site Description:

The 216-A-1 and 216-A-7 cribs are located within the same radiologically posted area. They are marked and posted with URM signs. The site received start up waste from PUREX during November and December 1955 via an over-ground pipeline. When the specific retention capacity was reached, the site was deactivated by removing the over-ground piping and backfilling. The site is composed of 15 cm (6 in.) perforated Vitrified Clay Pipe (VCP), 9.1 m (30 ft) long, running horizontally at 2.7 m (9 ft) below grade, with two 9.1 m (30 ft) lengths of 15 cm (6 in.) perforated VCP placed perpendicularly to the first length of pipe, forming an H pattern. There is approximately 1.8 m (6 ft) or 310 m³ (11,000 ft³) of coarse rock in the excavation bottom. The side slope, surface to 2.1 m (7 ft) deep, is 1:1.5, 2.1 m (7 ft) to site bottom is 1:2.

Related Site Structure: The site is associated with the 202-A sample pit #3 and the 200-E-158-PL Pipeline.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	25.9 m (84.8 ft)	Site Depth:	4.6 m (15.0 ft)
Site Width:	25.9 m (84.8 ft)	Cover Thickness:	0.6 m (2 ft)
Site Area:	670.8 m ² (7191.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	U-238
Nonradiological	X	As, Mn, U

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-A-18



Site Name: 216-A-18, 216-A-18 Excavation, 216-A-18 Grave, 216-A-18 Sump, 216-A-18 Crib
Site Type: Trench
Current OU: 200-MG-1
Facility: 200 E Ponds Area
Former OU: 200-PW-2

Waste Site Description:

The site is marked and posted with URM signs. The trench received start up waste from PUREX via an aboveground pipeline. The site was an excavation with a side slope of 1:2. No crib structure was ever built. The site was deactivated by removing the overground piping and backfilling the excavation when the specific retention capacity was reached. The start date was November 1955. The trench was removed from service in December 1955. Some documents state the end date as January 1956.

Related Site Structure: The site is associated with the 202-A Facility.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	24.4 m (80.0 ft)	Site Depth:	4.9 m (16.0 ft)
Site Width:	24.4 m (80.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	595.4 m ² (6400.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	U-238
Nonradiological	X	As, Mn, U

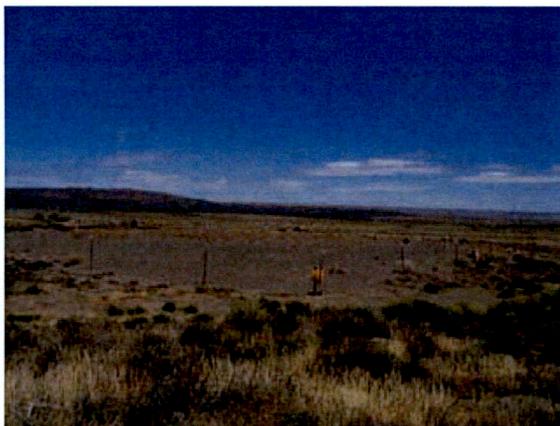
Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-A-20



Site Name: 216-A-20, 216-A-20 Test Hole, 216-A-20 Grave, 216-A-20 Sump, 216-A-20 Crib

Site Type: Trench

Current OU: 200-MG-1

Facility: 200 E Ponds Area

Former OU: 200-PW-2

Waste Site Description:

The site is marked and posted with URM signs. 216-A-20 was originally a test hole excavated with a drag line and used for PUREX start-up waste. The site also received cooling water from the 241-A-431 building contact condenser via the 216-A-34 Ditch. The site was backfilled when the specific retention capacity was reached. The site was deactivated in 1955 by removing the overground piping and backfilling the excavation when the specific retention capacity was reached. The start date was November 1955 and the end date was December 1955.

Related Site Structure: The site is associated with the 241-A-431 building, 202-A, and the 216-A-34 Ditch.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	7.6 m (25.0 ft)	Site Depth:	4.6 m (15.0 ft)
Site Width:	7.6 m (25.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	57.8 m ² (625.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	U-238
Nonradiological	X	As, Mn, U

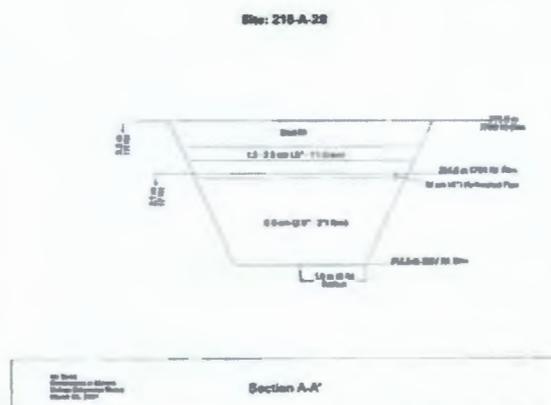
Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-A-28



Site Name: 216-A-28, 216-A-28 French Drain, 216-A-28 Crib

Site Type: Crib

Current OU: 200-MG-1

Facility: PUREX Area

Former OU: 200-PW-2

Waste Site Description:

The site is not currently marked or posted. The 203-A tank farm was used for storage and shipping of uranyl nitrate hexahydrate (UNH) product and concentration of UNH waste. It consisted of 460,000 L (100,000 gal) stainless steel tanks for UNH storage and three smaller nitric acid tanks. The french drain received liquid waste from the 203-A sumps and heating coil condensate from the uranyl nitrate tanks. The effluent piping to the site was blanked off in November 1976 when the flow rate exceeded the infiltration capacity. The excavation had a 6 m (20 ft) diameter at grade and a 3 m (10 ft) bottom diameter, with a truncated cone shape. The excavation contained approximately 2.7m (9 ft) of gravel fill and was backfilled to grade. The unit contained a 10 cm (4 in.) stainless steel 304 perforated pipe, 5.2 m (17 ft) long, extending horizontally 1.2 m (4 ft) below grade and a 5 cm (2 in) diameter, schedule 40, perforated stainless steel liquid level riser pipe, 4 m (13 ft) long. The site was activated in December 1958. The waste discharge from the 203-A Building to the 216-A-22 Crib was halted following Unplanned Release UPR-200-E-17. This waste stream was diverted to the 216-A-28 French Drain. In November 1967, the effluent flow rate to the french drain exceeded the infiltration capacity. The site was deactivated by blanking the effluent pipeline to the unit. The effluent was rerouted to the 216-A-3 Crib.

Related Site Structure: The site is associated with 216-A-22, 216-A-3 and the 200-E-159-PL pipeline.

Site Posting: None

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	None m (None ft)	Site Depth:	3.4 m (11.0 ft)
Site Width:	6.1 m (20.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	29.2 m ² (314.2 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Uranium

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$405,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-A-3

No Image Available

Site Name: 216-A-3, 216-A-3 Cavern, 216-A-3 Crib
Site Type: Crib
Current OU: 200-MG-1

Facility: PUREX Area
Former OU: 200-PW-2

Waste Site Description:

The start date was January 1956 and the end date was April 1981. After the crib was taken out of service, the waste stream was reworked through the uranium cycle. Low-level radioactive waste was sent to the 216-A-29 Ditch. The crib is marked and posted with Underground Radioactive Material signs. Received silica-gel regeneration waste and pump house drainage from 203-A and UNH storage pit. From 1956 to 1967, the site received silica-gel regeneration waste and pump house drainage from 203-A and drainage from the UNH storage pit. The silica gel discharge was discontinued in 1967. The site was taken out of service in April 1981. The waste was rerouted so that any low level radioactive waste was sent to the 216-A-29 Ditch. The unit contains a 10-centimeter (4-inch) Schedule 10 perforated 304 stainless steel pipe placed horizontally 2.4 meters (8 feet) below grade and two 6.1-meter (20-foot) lengths of this pipe placed perpendicularly to the first pipe, forming an H pattern. The site has approximately 2.4 meters (8 feet) of gravel fill with a volume of 280 cubic meters (10,000 cubic feet) and has been backfilled. The side slope surface to 2.1 meters (7 feet) deep is 1.5:1 and from 2.1 meters (7 feet) to the site bottom is 2:1.

Related Site Structure: The crib is associated with 203-A. The 216-A-3 pipeline is site code 200-E-168-PL.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	21.8 m (71.5 ft)	Site Depth:	4.9 m (16.0 ft)
Site Width:	21.8 m (71.5 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	475.2 m ² (5112.3 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Cesium-137, Strontium-90, and Ruthenium-106
Nonradiological	X	UNH, uranium,

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-A-34

Site Name: 216-A-34, 216-A-34 Ditch, 216-A-34 Crib
Site Type: Ditch
Current OU: 200-MG-1

Facility: 200 E Ponds Area
Former OU: 200-PW-4

Waste Site Description:

The site is marked and posted with URM signs. It has a small amount of bunch grass vegetation growing on it. In February 2001, a posted SCA extended northward from the edge of 216-A-34 to 216-A-19. The site received cooling water from the contact condenser in the 241-A-431 building. Drawings indicate a 38 cm (15 in.) diameter clay pipe fed 216-A-34 and was connected to the headwall. Ditch effluent was routed to the 216-A-19 and 216-A-20 trenches. Maxfield (1979) describes the site as two ditches; one ditch measuring 85 m (280 ft) long and 9 m (30 ft) wide and a second ditch measuring 39.6 m (130 ft) long and 9 m (30 ft) wide. However, it is not clear if there were two ditches or actually a headwall structure and a ditch. The Maxfield ditch dimensions are similar to the headwall structure dimensions. Drawings show the headwall width was 3 m (10 ft) wide at the west end fanning out to 12 m (40 ft) wide at the east end. The headwall structure had 1:2 side slopes. The headwall structure was 39.6 m (130 ft) long. It tapered off into an open ditch. The ditch terminated in the 216-A-20 Grave. No documentation has been located to describe how the effluent was directed to the 216-A-19 Grave. Disposal at this site was terminated due to the potential for release of contamination to the environment. The pipeline to the ditch was valved out and the effluent was rerouted to the 216-A-8 Crib. The ditch was backfilled. The start date was November 1955 and the end date was December 1957.

Related Site Structure: The site is associated with the 241-A-431 building, the 216-A-19 trench and the 216-A-20 trench. The pipeline to the 216-A-34 crib is discussed in site code 200-E-166-PL.

Site Posting: SCA, URM

Release Mechanism: Cooling Water

Release Type: Liquid

Dimensions (estimated):

Site Length:	85.0 m (280.0 ft)	Site Depth:	1.8 m (6.0 ft)
Site Width:	9.1 m (30.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	777.2 m ² (8400.4 ft ²)		

Potential Contaminants:

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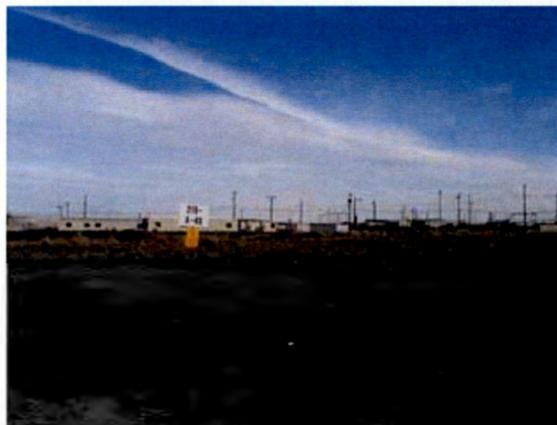
	Type	Constituents
Radiological	X	U-238, the site contains less than 1 Ci total beta activity
Nonradiological	X	As, Mn

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$1,378,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-A-40

No Image Available

Site Name: 216-A-40 Retention Basin, 216-A-39 Crib, 216-A-39 Trench

Site Type: Retention Basin

Current OU: 200-MG-1

Facility: PUREX Area

Former OU: 200-CW-1

Waste Site Description:

The site is currently a surface-stabilized area that is posted URM. The corners are marked with concrete AC-540 markers. Some contaminated equipment is being stored on top of the backfilled basin. The equipment is posted Radioactive Material Area/Contamination Area. The site was originally an open, rubber lined trench that was divided into 3 sections. A 0.3 m (12 in.) diameter schedule 40 distribution pipe ran horizontally through the south end of the unit, 3.7 m (12 ft) below grade. Collapsible rubber bladders were utilized to contain the contaminated cooling water and steam condensate. Contaminated cooling water and steam condensate from the 244-AR Vault were diverted to the 216-A-40 Retention Basin when the effluent was above standard release limits for the water to be sent to the 216-B-3 or 216-A-25 Ponds. The retention basin bladders failed in 1979 and the unit was removed from service. Although it was not being used, it remained an open basin until 1994. The site was stabilized in 1994. Contaminated soil and the bladders were consolidated into the east end of the trench (Trench sat on an angle. Could be considered the south end or the southeast end) Contaminated soil from the adjacent Soil Contamination Area. (UPR-200-E-143 and remnants of UPR-200-E-100) was also scraped into the east end of the basin. The basin was backfilled with clean material. This eastern end was posted as a URM Area. The remaining portion was released from radiological control. An employee concern was filed that indicated the waste site boundary markers on the southeast corner of the remediation area were not in the right place. After reviewing the remediation project files and interviewing employees involved with the project, a decision was made in 1999 to relocate two of the marker posts to be sure all of the underground radioactive material was properly posted. The stabilized area is smaller than the original size of the open basin.

Related Site Structure: The site is associated with the 244-AR Vault facility, UPR-200-E-143, UPR-200-E-100 and UPR-200-E-59. Pipelines associated with the basin are 200-E-274-PL and 200-E-275-PL.

Site Posting: URM, CA

Release Mechanism: Effluent Discharge

Release Type: Liquid

Dimensions (estimated):

Site Length:	122.0 m (400.0 ft)	Site Depth:	3.7 m (12.0 ft)
Site Width:	6.1 m (20.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	744.2 m ² (8000.0 ft ²)		

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Potential Contaminants:

	Type	Constituents
Radiological	X	Cs-137, Sr-90, U-238, Tc-99; rad survey reading of 50 cpm in April 1998.
Nonradiological	X	As, Cd, Pb, Hg, Se, PCB Arochlor 1254

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$1,589,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-A-42

Site Name: 216-A-42, 207-AA Retention Basin, 216-A-42 Trench, 216-A-42 Retention Basin

Site Type: Retention Basin

Current OU: 200-MG-1

Facility: PUREX Area

Former OU: 200-CW-1

Waste Site Description:

The site is surrounded with steel posts and chain. It is posted with Underground Radioactive Material signs. Concrete cover blocks are visible on the top of the basin. The chain link fence has been removed. The site consists of a rubber-lined trench divided into three holding basins by two internal berms. One end of the trench features the inlet structure for the 91-centimeter (36-inch) diameter cooling water line while the other end has the inlet structure for the 20.3-centimeter (8-inch) diameter steam condensate pipeline. Both lines enter at 2.9 meters (9.5 feet) below grade. Outlet drains are located at the low-points in each basin and connect to the 216-A-42A Pump Station. The capacity of the three basins is in excess of 6.1E+06 liters (1.6E+06 gallon). The trench is equipped with a float. Concrete cover blocks were installed over the basins in 1984. The 216-A-42 Retention Basin was built to hold cooling water or steam condensate that was contaminated above standard release limits and prevent its disposal to the Gable and B Pond systems or to cribs. After the retained effluent contents were analyzed, a built-in recovery system provided the capability of pumping solutions back into the PUREX facility for reprocessing (see site code 200-E-261-PL) or to cribs for disposal. Prior to the construction of the 241-AP Tank Farm (1983), the basin was connected to the 0.9 meter (36 inch) diameter corrugated metal pipeline (200-E-127-PL) that flowed to the Gable and B Ponds. A 0.3 meter (1 foot) diameter chemical sewer line (200-E-187-PL) tied the basin to the 216-A-29 ditch. Portions of the chemical sewer line and the corrugated metal pipe were removed during the 241- AP Tank Farm construction.

Related Site Structure: The basin is associated with PUREX facility effluents, 216-A-30, 216-A-37-2, 216-B-3, 216-A-25 and UPR-200-E-66. The PUREX Recycle pipeline is 200-E-261-PL.

Site Posting: URM

Release Mechanism: Steam Condensate/ Cooling Water

Release Type: Liquid

Dimensions (estimated):

Site Length:	104.0 m (342.0 ft)	Site Depth:	3.9 m (13.0 ft)
Site Width:	9.1 m (30.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	950.6 m ² (10260.0 ft ²)		

Potential Contaminants:

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	Type	Constituents
Radiological	X	Cs-137, Sr-90, U-238, Tc-99 ; Contamination levels of 40,000 cpm were found inside the fenced basin area and 3,000 cpm was found outside the fence and on the adjacent road in November 1984.
Nonradiological	X	As, Cd, Pb, Hg, Se, PCB 1254

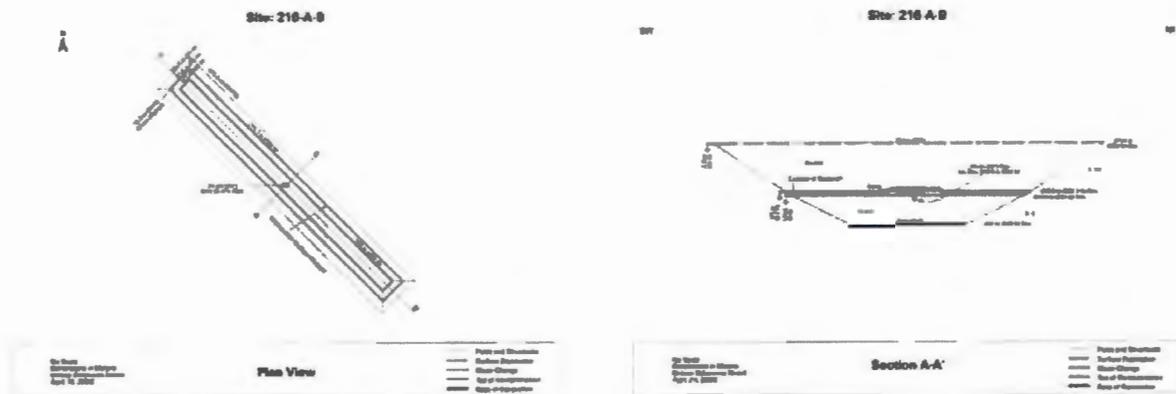
Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$4,575,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-A-9



Site Name: 216-A-9, 216-A-9 Crib

Site Type: Crib

Current OU: 200-MG-1

Facility: PUREX Area

Former OU: 200-CW-1

Waste Site Description:

The crib is a surface stabilized area, marked with light post and chain. It is posted as a URM area. The site was used for disposal of PUREX acid fractionator condensate and cooling water, the crib was also used for disposal of liquid N reactor decontamination waste. The site contains a 25 cm (10 in.) Schedule 30 steel perforated pipe, placed horizontally, 2.7 m (9 ft) below grade. The site has 1,840 m³ (65,000 ft³) of gravel fill and has been backfilled. The side slope is 2:1. The crib surpassed its capacity in 1958 and was taken out of service. In April 1966, the crib was approved for disposal of liquid N Reactor decontamination waste, that was to that was transported to the crib in tanker trucks. This process continued until October 1966. The crib was inactive until August 1969, when PUREX acid fractionator waste was again sent to the 216-A-9 crib. The site was deactivated by blanking the effluent pipeline to the unit after replacing 31 m (100 ft) of the pipeline that had failed. The effluents were rerouted to the 216-A-29 Ditch via the 202-A Building chemical sewer. The truck unloading station at this site was interim stabilized in 1991. In 1993, filters were removed from the crib risers, surveyed, and disposed of as nonradioactive waste. The crib surface was covered with 46 to 61 cm (18 to 24 in.) of uncontaminated backfill. In July 2000, the vent risers were sealed as a preventative measure for potential passive radioactive emissions.

Related Site Structure: The site is associated with PUREX processes and N Reactor liquid waste. The pipeline associated with this crib is site code 200-E-238-PL.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	128.0 m (420.0 ft)	Site Depth:	4.0 m (13.0 ft)
Site Width:	6.1 m (20.0 ft)	Cover Thickness:	0.6 m (2 ft)
Site Area:	780.8 m ² (8400.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Metals

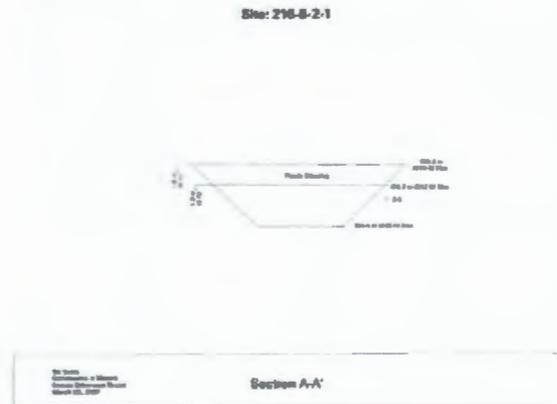
Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$4,374,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-B-2-1



Site Name: 216-B-2-1, 216-B-1, B Swamp Ditch, 216-B-2, B Ditch, 216-B-2W

Site Type: Ditch

Current OU: 200-MG-1

Facility: Solid Waste Area

Former OU: 200-CW-1

Waste Site Description:

The ditch has been backfilled and surface stabilized. It is located within a larger URM area that includes the 216-B-2-1, 216-B-2-2 and 216-B-2-3 stabilized ditches. Process effluent from B-Plant was routed to the 207-B Retention Basin. Effluent was released from the 207-B Retention Basin to the 216-B-2-1 ditch that connected to the 216-B-3-1 ditch and terminated in the 216-B-3 Pond. The 216-B-2-1 ditch was closed after it was grossly contaminated by a coil leak effluent release from B-Plant in 1963 (UPR-200-E-32). PNL-6456 and DOE/RL-92-05 both state the 216-B-2-1 ditch received effluent from the 284-E powerhouse. This statement is considered to be an error. The 200 East Powerhouse ditch transported 284-E effluent to the 216-B-3 ditches. Until March 1952, the site transported steam condensate, process cooling water, and chemical sewer from 221-B waste. After March 1952, the site transported the streams identified above in addition to the 241-CR Vault cooling water. The 300 m (1000 ft) of the contaminated section of the ditch was backfilled in 1964. The remainder of the ditch was reused and became part of the 216-B-2-2 ditch. In 1970, contaminated tumbleweeds were found growing on the backfilled contaminated portion of the ditch. The ditch was covered with a plastic weed root barrier to prevent further biological intrusion and covered with a layer of sand and gravel. This was completed in the fall of 1973. Final surface stabilization of the 216-B-2 Ditches area (including 216-B-2-1, 216-B-2-2 and 216-B-2-3) was accomplished in 1987.

Related Site Structure: The ditch is associated with B-Plant, 207-B, 216-B-3-1, 216-B-3 and UPR-200-E-32. The pipelines associated with the ditch are WIDS site codes 200-E-112-PL, 200-E-188-PL and 200-E-204-PL.

Site Posting: URM

Release Mechanism: Coil Leak/ Effluent Release

Release Type: Liquid

Dimensions (estimated):

Site Length:	1067.0 m (3500.0 ft)	Site Depth:	1.8 m (6.0 ft)
Site Width:	4.5 m (15.0 ft)	Cover Thickness:	0.6 m (2 ft)
Site Area:	4801.5 m ² (52500.0 ft ²)		

Potential Contaminants:

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	Type	Constituents
Radiological	X	Cs-137, Sr-90
Nonradiological	X	Ba, Pb, Hg, Ni, Ag, As

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,481,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-B-2-2



Site Name: 216-B-2-2, 216-B-2-2W, 216-B-1 Ditch
Site Type: Ditch
Current OU: 200-MG-1

Facility: Solid Waste Area
Former OU: 200-CW-1

Waste Site Description:

The ditch has been backfilled and surface stabilized. It is located within a large Underground Radioactive Material area that includes the 216-B-2-1, 216-B-2-2 and 216-B-2-3 backfilled ditches. The individual ditches are not marked. The head end of the ditch is located near the 207-B Retention Basin. The lower end terminated near the northeast corner of the 218-E-12A Burial Ground. The site received chemical process sewer effluent from B Plant and its support facilities. The construction of the 216-B-2-2 ditch reused 762 meters (2500 feet) of the 216-B-2-1 ditch. Approximately 330 meters (1100 feet) of new ditch was dug. When active, the open ditch was 4.6 meters (15 feet) wide at the top with a side slope of 2.5:1. This unit was backfilled in 1970 due to an unplanned liquid release from B Plant. The 216-B-2-3 ditch was dug to replace the 216-B-2-2 Ditch. The ditch's radionuclide inventory is included in 216-B-3 Pond. PNL-6456 and DOE/RL-92-05 both state the 216-B-2-2 ditch received effluent from the 284-E powerhouse. This statement is considered to be an error. The 200 East Powerhouse ditch transported 284-E effluent to the 216-B-3 ditches.

Related Site Structure: The following are related to the site: 207-B, 216-B-2-1, 216-B-2-3, 216-B-3-1, 216-B-3-2, and the 216-B-3 Pond. The pipelines associated with the ditch are WIDS site codes 200-E-112-PL, 200-E-188-PL and 200-E-204-PL.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	1070.0 m (3500.0 ft)	Site Depth:	1.8 m (6.0 ft)
Site Width:	4.6 m (15.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	4922.0 m ² (52500.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Cs-137, Sr-90
Nonradiological	X	Ba, Pb, Hg, Ni, Ag, As

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,481,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-B-2-3

Site Name: 216-B-2-3, B Pond Ditch, B Swamp Ditch, 216-B-2-3W

Site Type: Ditch

Current OU: 200-MG-1

Facility: Solid Waste Area

Former OU: 200-CW-1

Waste Site Description:

The ditch is currently backfilled and surface stabilized. It is located inside a large URM area that includes the 216-B-2-1, 216-B-2-2 and 216-B-2-3 ditches. The ditch was used to transport liquid waste from B plant to 216-B-3 pond. The ditch was used to transport liquid waste from B-Plant to 216-B-3 Pond. It was built to replace the contaminated of 216-B-2-2 Ditch in 1970. The side slope is 2.5:1. The radionuclide inventory for the ditch is included with the 216-B-3 Pond. The unit was backfilled and the surface stabilized in 1987. The open ditch was replaced in 1987 with a 22 in diameter, polyethylene, underground pipeline (see site code 200-E-126-PL). The polyethylene pipeline was installed parallel to (and south of) the 216-B-2-3 ditch. The pipeline turns to the north and crosses the stabilized 216-B-2-2 and 216-B-2-3 ditches. It continues eastward on the north side of the backfilled ditches and connects with the previous pipeline to the 216-B-3-3 ditch.

Related Site Structure: The ditch is associated with the 207-B Retention Basin. The pipelines associated with the ditch are WIDS site codes 200-E-188-PL and 200-E-205-PL.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	1219.0 m (4000.0 ft)	Site Depth:	1.8 m (6.0 ft)
Site Width:	6.1 m (20.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	7435.9 m ² (80000.0 ft ²)		

Potential Contaminants:

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	Type	Constituents
Radiological	X	Cs-137, Sr-90
Nonradiological	X	Ba, Pb, Hg, Ni, Ag, As

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,793,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-B-3-1



Site Name: 216-B-3-1, B Swamp Ditch, 216-B-2, 216-B-3 Ditch, 216-B-2E

Site Type: Ditch

Facility: 200 E Ponds Area

Current OU: 200-MG-1

Former OU: 200-CW-1

Waste Site Description:

The head end is located outside the 200 East perimeter fence, east of 218-E12A Burial Ground. The ditch continues due east to the 216-B-3 Pond. It widened into a swamp before entering the 216-B-3 Pond. The site is currently backfilled and surface stabilized. It is located within a large, posted URM area that also includes the 216-B-3-2 and 216-B-3-3 backfilled ditches. The ditch received B Plant effluent from the 216-B-2-1 ditch and Purex effluent via a diverter that divided the flow between Gable Pond and B Pond. The 216-A-29 Ditch entered the B Swamp near the east end of the 216-B-3-1 Ditch. The unit was backfilled in 1964 after it was contaminated due to a release from PUREX. The 216-B-3-2 Ditch was constructed to replace the 216-B-3-1 Ditch. Until March 1962, the site percolated and transported 221-B Plant steam condensate, process cooling water, chemical sewer waste, and 284-E Powerhouse waste. From March 1952 to November 1955, the site percolated and transported the above-listed streams plus 241-CR Vault cooling water. From November 1955 to December 1957, the site percolated and transported the above-listed streams plus effluent from 216-A-29 Ditch. Wastes include 202-A process cooling water and chemical sewer waste. From December 1957 to February 1958, the site percolated and transported the above-listed streams minus 202-A process cooling water. From February 1958 to December 1962, the site percolated and transported the above-listed streams plus 202-A Acid Fractionator condensate. From December 1962 to December 1963, the site percolated and transported the above-listed streams plus 202-A seal cooling water from air sampler vacuum pumps. After December 1963, the site percolated and transported the above-listed streams minus 202-A seal cooling water. In 1971, the ground was leveled and cleaned of all foreign objects that might puncture a plastic sheet. Ten-mil thick plastic sheets were placed on a 10 cm (4 in) cushion of sand. They were overlapped 0.6 m (2 ft) to provide an effective root barrier. The sheeting was covered with 46 cm (18 in.) of sand and topped with 10 cm (4 in.) of gravel to prevent surface erosion by the wind. The entire unit was treated in this manner except the first 31 m (100 ft) at the head end near the diverter station. At the eastern end, where the unit had widened into a swamp, the treated area is approximately 31 m (100 ft) wide. The west end is approximately 9.8 m (32 ft) wide. The start date was April 1945 and the end date was July 1964.

Related Site Structure: The site is associated with B Plant and PUREX facilities, UPR-200-E-34 and 216-B-2-1.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

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Dimensions (estimated):

Site Length:	975.0 m (3200.0 ft)	Site Depth:	1.8 m (6.0 ft)
Site Width:	11.0 m (36.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	10725.0 m ² (115200.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Cs-137 and a cooling leak in a process cooling tank in PUREX put an estimated 2,500 curies of fission products into the ditch
Nonradiological	X	As, Ba, Cd, Pb, Se, Hg, Hex Cr

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,086,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-B-3-2

No Image Available

No Image Available

Site Name: 216-B-3-2, 216-B Ditch, 216-B-1 Ditch, B Swamp Ditch, 216-B-2-2E**Site Type:** Ditch**Facility:** 200 E Ponds Area**Current OU:** 200-MG-1**Former OU:** 200-CW-1**Waste Site Description:**

The ditch has been backfilled and surface stabilized. It is located within a large URM Area that includes the 216-B-3-1, 216-B-3-2 and 216-B-3-3 covered ditches. The unit was open from the diverter station to the 216-B-3 Pond and was approximately 1.2 to 2.4 m (4 to 8 ft) deep. It was backfilled in July 1970 after a release of strontium-90 from 221-B Plant. The ditch received effluent from B Plant and PUREX and transported it to the 216-B-3 Main Pond. This ditch replaced the 216-B-3-1 Ditch after it became contaminated from an Unplanned Release in 1964. The 216-B-3-2 Ditch was backfilled due another unplanned release of radioactive liquid that occurred in 1970, which caused it to become highly contaminated. The 216-B-3-3 Ditch was constructed to replace the 216-B-3-2 Ditch. Until January 1965, the site transported 221-B Plant process cooling water, steam condensate, and chemical sewer; 241-CR Vault cooling water; 284-E Powerhouse water; and received and transported 202-A chemical sewer waste and fractionator condensate from 216-A-29 Ditch. From January 1965 to January 1966, the site transported the above mentioned streams plus 241-TY Tank Farm ITS Unit 1 condenser cooling water. From January 1966 to November 1967, the site transported the above mentioned streams plus condenser cooling water and air sampler vacuum pump seal cooling water from 202-A Building. From November 1967 to February 1968, the site transported the above mentioned streams minus 284-E Powerhouse wastewater. After February 1968, the site transported the above mentioned streams plus 241-BY Tank Farm ITS Unit 2 condenser cooling water.

Related Site Structure: The site is associated with 216-B-2-2, 216-B-3 and UPR-200-E-138.**Site Posting:** URM**Release Mechanism:** Contaminated Effluent**Release Type:** Liquid**Dimensions (estimated):**

Site Length:	1128.0 m (3700.0 ft)	Site Depth:	1.8 m (6.0 ft)
Site Width:	4.6 m (15.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	5188.8 m ² (55500.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Cs-137 and in 1970 a maximum dose rate of 450 mR/hr measured at the head of the ditch.
Nonradiological	X	As, Ba, Cd, Pb, Se, Hg, Hex Cr

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$2,449,000**References:**

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-B-3-3

No Image Available

Site Name: 216-B-3-3, B Swamp Ditch, 216-B-3-3 Ditch

Site Type: Ditch

Current OU: 200-MG-1

Facility: 200 E Ponds Area

Former OU: 200-CW-1

Waste Site Description:

The ditch has been backfilled and surface stabilized. It is posted as an URM area. The ditch received chemical process water effluent from B plant and PUREX facilities. The unit was an open ditch from the diverter station to the 216-B-3 Pond. The unit was 1.2 to 2.4 m (4 to 8 ft) deep and 0.3 m (3 ft) wide at the bottom. The 216-A-29 Ditch fed into this unit approximately 305 m (1,000 ft) upstream of the 216-B-3 Pond outfall. This ditch was built to replace the contaminated 216-B-3-2 Ditch. It operated between September 1970 and May 1994. Until July 1973, the site transported and percolated 221-B cooling water, 202-A chemical sewer from the 216-A-29 Ditch, 241-BY Tank Farm ITS Units 1 and 2 cooling water, and 244-CR Vault cooling water. From July 1973 to May 1978, the site received the same as above minus ITS Units 1 and 2 cooling water. From May 1978, the site received 221-B cooling water and 202-A chemical sewer from the 216-A-29 Ditch. The ditch was decommissioned and interim stabilized in 1994, along with the 216-B-3 Main Pond and 216-B-3A Pond Lobe. Although the sites have been backfilled and stabilized, they are combined in a the RCRA Part A Permit (Section 4.2.3.5) that has not yet been closed. Therefore the ditch is classified as active.

Related Site Structure: None

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	1127.8 m (3700.2 ft)	Site Depth:	1.8 m (6.0 ft)
Site Width:	6.0 m (20.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	6766.6 m ² (74003.6 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Cs-137
Nonradiological	X	As, Ba, Cd, Pb, Se, Hg, Hex Cr

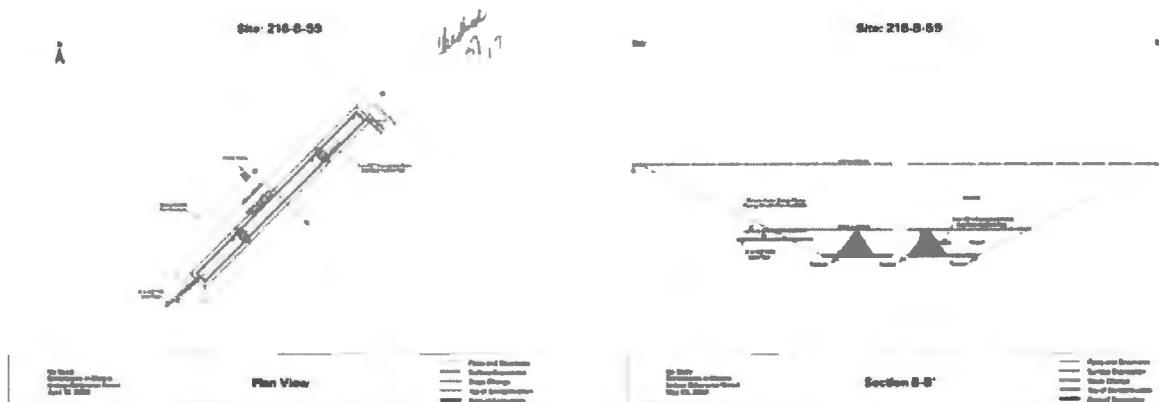
Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$1,828,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-B-59



Site Name: 216-B-59, 216-B-58 Trench, 216-B-58 Ditch

Site Type: Trench

Current OU: 200-MG-1

Facility: B Plant Area

Former OU: 200-CW-1

Waste Site Description:

The original 216-B-59 was an unlined trench. The site was upgraded to a retention basin in 1974 (see 216-B-59B). The trench was upgraded to a retention basin by adding a hypalon liner and changing its identification number to 216-B-59B. The lined retention basin was constructed over top of the unlined 216-B-59 trench. There are currently no visual features remaining of the unlined trench. The concrete-lined basin is enclosed by a 2 m (6 ft) chain link fence. The site was used as an emergency cooling water diversion for 221-B water with radionuclide concentrations above those allowed for existing ponds. The site was activated in 1967 and received only a single discharge of approximately 477,000 L (126,000 gal) of waste in March 1968. It was later upgraded again (in 1983) by replacing the hypalon liner with a concrete liner and cover. The site name 216-B-59 is often used to refer to the present concrete, haplon lined retention basin that is officially named the 216-B-59B basin.

Related Site Structure: This site is associated with 216-B-59B and the 221-B Facility. The pipeline that fed the site is 200-E-277-PL.

Site Posting: Not Specified

Release Mechanism: Cooling Water

Release Type: Liquid

Dimensions (estimated):

Site Length:	122.0 m (400.0 ft)	Site Depth:	3.7 m (12.0 ft)
Site Width:	6.1 m (20.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	744.2 m ² (8000.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,278,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-B-59B

No Image Available

Site Name: 216-B-59B, 216-B-59 Retention Basin**Site Type:** Retention Basin**Current OU:** 200-MG-1**Facility:** B Plant Area**Former OU:** 200-CW-1**Waste Site Description:**

The site is a concrete structure enclosed by a six foot (2 meter) chain link fence. The site was used as an emergency cooling water diversion for 221-B water with radionuclide concentrations above those allowed for existing ponds. It was upgraded to a retention basin in 1974. The 216-B-59B retention basin was designed to receive diverted 221-B Building cooling water that contained radionuclide concentrations above the limits allowed for disposal in the B Pond system. The diverted waste was pumped back into 221-B to be reprocessed. In 1974, the 216-B-59 unlined trench was upgraded to a Retention Basin by adding a hypalon liner and changing its identification number to 216-B-59B. The haplon liner was replaced, in 1983, with a concrete liner and cover. The lined retention basin was placed on top of the unlined 216-B-59 trench. The site name 216-B-59 is often used to refer to the present concrete, haplon lined retention basin that is officially named the 216-B-59B basin.

Related Site Structure: The 216-B-59B Retention Basin is associated with the 216-B-59 trench and the 221-B Facility. The pipeline that fed the site is 200-E-277-PL.

Site Posting: Not Specified**Release Mechanism:** Cooling Water**Release Type:** Liquid**Dimensions (estimated):****Site Length:** 93.5 m (307.0 ft)**Site Depth:** 3.0 m (10.0 ft)**Site Width:** 16.0 m (52.0 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 1496.0 m² (15964.0 ft²)**Potential Contaminants:**

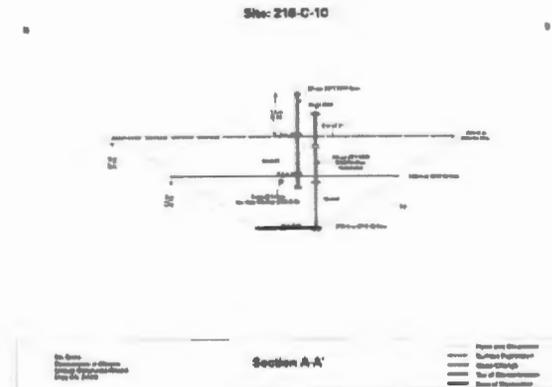
	Type	Constituents
Radiological	X	Cs-137, Sr-90, U-238, Tc-99
Nonradiological	X	As, Cd, Pb, Hg, Se, PCB 1254

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$2,278,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-C-10



Site Name: 216-C-10, 216-C-10 Crib
Site Type: Crib
Current OU: 200-MG-1

Facility: Semi-Works Area
Former OU: 200-PW-4

Waste Site Description:

The site is marked with concrete AC-540 markers and URM signs. The surface is covered with gravel. The crib received process condensate from the 201-C building by a 7.6 cm (3 in.) diameter stainless steel pipe, located horizontally, 1.2 m (4 ft) below grade. The site slope is 1:1.5. The site contains 48 m³ (1,700 ft³) of gravel fill and has been backfilled with dirt. The crib start date was November 1964 and the end date was October 1969.

Related Site Structure: The site is associated with the 201-C Facility and the 200-E-157-PL Pipeline.

Site Posting: URM

Release Mechanism: Process Condensate

Release Type: Liquid

Dimensions (estimated):

Site Length:	16.2 m (53.0 ft)	Site Depth:	2.4 m (8.0 ft)
Site Width:	7.9 m (26.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	128.0 m ² (1378.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-C-3



Site Name: 216-C-3, 201-C Leaching Pit, 216-C-3 Crib

Site Type: Crib

Current OU: 200-MG-1

Facility: Semi-Works Area

Former OU: 200-PW-4

Waste Site Description:

The crib is identified with a single AC-540 concrete marker post. The site is located inside a larger posted URM area known as 200-E-41 (Strontium Semi-works Stabilized Area). The site consists of 10 cm (4 in) pipes resting on a gravel bed creating a drain field type crib. The crib received acidic process wastes from the 201-C, 215-C, and 271-C buildings. The crib was deactivated by blanking the inlet pipeline and backfilling the excavation with sand and gravel. When the 216-C-3 leaching pit was blanked, the effluent was diverted to the 216-C-9 excavation. When the specific retention capacity of the unit was reached, the site was deactivated by blanking off the pipeline to the unit and backfilling the excavation. In 1979, the surfaces of the 216-C-1, 216-C-3, 216-C-4, and 216-C-5 Cribs were stabilized against wind erosion and plant root invasion. The top 10 cm (4 in.) of the crib surfaces were bladed off and the soil deposited in a depression on the 216-C-1 Crib; the ground was covered with a 10 cm (4 in.) sand pad; ureabor herbicide was applied at the rate of 450 kg/ha (500 lbs/ac); 10 mil plastic sheeting was installed over the entire area; a 31 cm (12 in.) pad of sand was installed over the plastic; and the surface was stabilized with 10 cm (4 in.) of pit run gravel.

Related Site Structure: The site is associated with the 201-C, 215-C and 271-C facility operations. The pipeline associated with this crib is site code 200-E-169-PL.

Site Posting: URM

Release Mechanism: Process Condensate

Release Type: Liquid

Dimensions (estimated):

Site Length:	21.4 m (70.1 ft)	Site Depth:	3.1 m (10.0 ft)
Site Width:	12.8 m (42.0 ft)	Cover Thickness:	0.3 m (1 ft)
Site Area:	273.9 m ² (2944.2 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

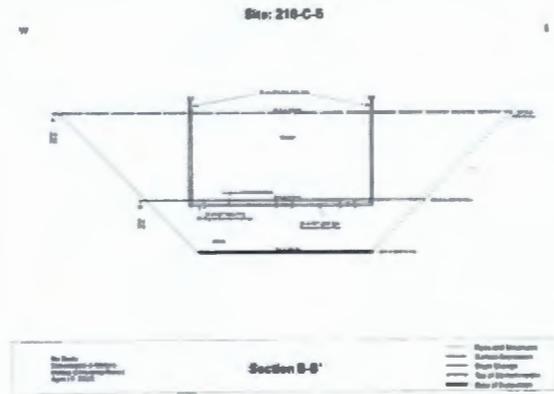
Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$497,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-C-5



Site Name: 216-C-5, 216-C-5 Crib

Site Type: Crib

Current OU: 200-MG-1

Facility: Semi-Works Area

Former OU: 200-PW-4

Waste Site Description:

The crib is marked with concrete AC-540 markers and URM signs. It is located within the larger, surface stabilized area known as 200-E-41. The crib received 201-C high salt waste. The crib received 201-C "high salt waste" cold run waste via a 15-cm (6-in.) diameter galvanized, corrugated, perforated piping placed horizontally at 3.4 m (11 ft) below grade. Two 6.1 m (20 ft) lengths are placed perpendicularly to the inlet pipe, forming an H pattern. The side slope is 1:1. The site contains approximately 1.8 m (6 ft) or 74 m³ (2,600 ft³) of gravel fill and has been backfilled. The waste release point is 1.5 m (5 ft) from the site bottom. The site was deactivated in 1955 by valving out the effluent pipeline when the specific retention capacity was reached. The crib start date was March 1955 and the end date was June 1955.

Related Site Structure: The crib is associated with the 201-C Facility, 241-CX-71 and 200-E-41. The pipeline associated with this crib is site code 200-E-173-PL.

Site Posting: URM

Release Mechanism: Process Condensate

Release Type: Liquid

Dimensions (estimated):

Site Length:	15.8 m (52.0 ft)	Site Depth:	4.9 m (16.0 ft)
Site Width:	12.8 m (42.0 ft)	Cover Thickness:	0.3 m (1 ft)
Site Area:	202.2 m ² (2184.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-C-6



Site Name: 216-C-6, 241-CX Crib
Site Type: Crib
Current OU: 200-MG-1

Facility: Semi-Works Area
Former OU: 200-PW-5

Waste Site Description:

The crib is covered with gravel and marked with cement posts on the four corners. It is posted with URM signs. The crib received radioactive REDOX and PUREX type process condensate. The unit is constructed of 15 cm (6 in.) diameter galvanized, corrugated, perforated piping placed horizontally at 3.4 m (11 ft) below grade. Two 6.1 m (20 ft) lengths are placed perpendicularly to the inlet pipe, forming an H pattern. The side slope is 1:1. The site contains approximately 1.8 m (6 ft) or 74 m³ (2,600 ft³) of gravel fill and has been backfilled. The waste release point is 1.5 m (5 ft) from the site bottom. The crib received radioactive REDOX and PUREX type process condensate from 201-C and 241-CX vault floor drainage. The site was deactivated by blanking the pipelines to the 241-CX area and use of the 241-CX Vault was discontinued. The start date was September 1955 and the end date was September 1964.

Related Site Structure: The site is associated with the 241-CX Vault and the 241-CX-72 crib. The pipeline associated with this crib is 200-E-171-PL.

Site Posting: URM

Release Mechanism: Process Condensate

Release Type: Liquid

Dimensions (estimated):

Site Length:	15.8 m (52.0 ft)	Site Depth:	4.9 m (16.0 ft)
Site Width:	12.8 m (42.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	202.2 m ² (2184.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

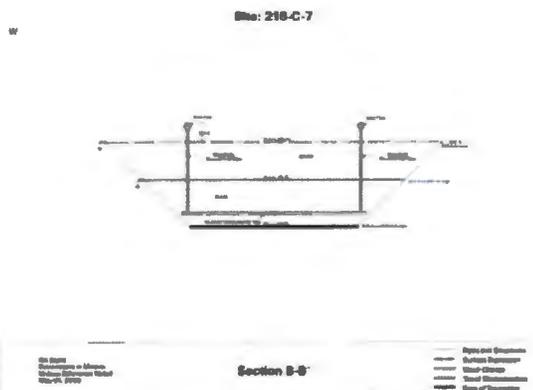
Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2003-64, DOE/RL-2002-42

216-C-7



No Image Available

Site Name: 216-C-7, 216-C-7 Crib

Site Type: Crib

Current OU: 200-MG-1

Facility: Semi-Works Area

Former OU: 200-PW-4

Waste Site Description:

The site is surrounded by steel post and chain. It is posted with URM signs. The crib received radioactive liquid waste from the 209-E Critical Mass Laboratory. The crib received radioactive liquid waste from the 209-E Critical Mass Laboratory via 5 cm (2 in.) diameter steel pipeline that connected to a 0.15 m (6 in.) diameter, perforated vitrified clay distribution pipe, placed horizontally 3 m (9 ft) below grade. Two lengths of clay pipe are placed perpendicularly to the first, forming an H pattern. The site contains 123 m³ (4,100 ft³) of gravel fill and has been backfilled. The crib was placed on standby in 1983. The 209-E floor drains and a 5 cm (2 in.) diameter drain pipe were sealed in 1984.

Related Site Structure: The crib is associated with 209-E-WS-3. The pipeline associated with this crib is site code 200-E-172-PL.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	13.7 m (45.0 ft)	Site Depth:	3.7 m (12.0 ft)
Site Width:	15.2 m (50.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	208.2 m ² (2250.0 ft ²)		

Potential Contaminants:

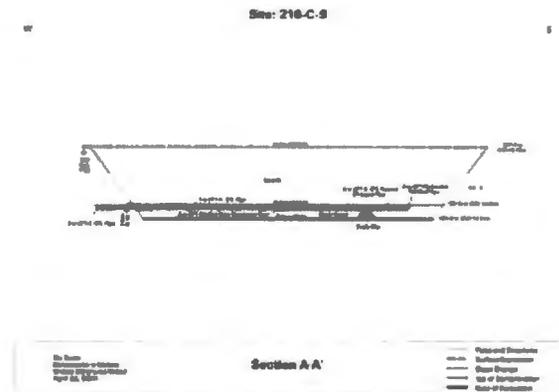
	Type	Constituents
Radiological	X	Plutonium, Uranium
Nonradiological	X	Nitric acid, boron, Cd, gadolinien

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$516,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-C-9

Site Name: 216-C-9, 216-C-9 Pond, 216-C-7 Swamp, Former 221-C Canyon Excavation, 216-C-9 Swamp, Semi-Works Swamp, 216-C-9 C Canyon Excavation Semiworks Swamp

Site Type: Pond

Facility: Semi-Works Area

Current OU: 200-MG-1

Former OU: 200-CW-1

Waste Site Description:

The entire site is currently backfilled and surface stabilized. It is posted as an URM area. The solid waste burial portion of the site is not separately marked or posted from the liquid waste portion of the site. Originally received cooling water from the semiworks facility. In 1985 it was used as a solid waste burial ground. The 221-C facility excavation was divided into sections with dikes. Piping was arranged to provide three discharge points, one to each section. The excavation was originally intended to be the foundation for the 221-C Canyon Facility that was never built. It was modified to receive cooling water from the 201-C Semiworks Facility. The Hot Semiworks ceased operation in 1967 and remained in a standby mode until 1983. During that time the pond decreased in size until it was only a small marshy area in the excavation bottom. No radioactivity was identified along the swamp perimeter in a radiological survey performed in 1978. The pond area was backfilled with approximately 0.9 m (3 ft) of washed gravel. The Semiworks facility decommissioning began in 1983. In December 1985, the east end of the dried pond excavation began to be used as a solid waste burial ground for waste associated with the Semiworks decommissioning (refer to waste site 218-C-9). All liquid discharge pipes were isolated. The entire area was backfilled to grade and surface stabilized in 1989. The start date was June 1953.

Related Site Structure: Pipelines that fed the 216-C-9 Pond are site codes 200-E-254-PL, 200-E-255-PL, 200-E-256-PL, 200-E-257-PL, 200-E-258-PL and 200-E-259-PL.

Site Posting: URM

Release Mechanism: Cooling Water/ Solid Waste Burial

Release Type: Solid and Liquid

Dimensions (estimated):

Site Length: 383.0 m (1257.0 ft)

Site Depth: 2.4 m (8.0 ft)

Site Width: 70.0 m (230.0 ft)

Cover Thickness: 0.9 m (3 ft)

Site Area: 26810.0 m² (289110.0 ft²)

Potential Contaminants:

DOE/RL-2008-44 DRAFT A

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

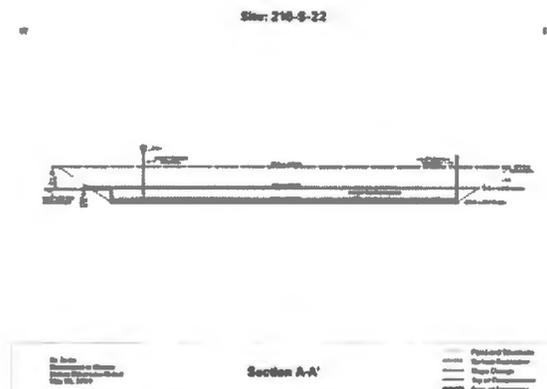
Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$1,137,000

References:

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

216-S-22



Site Name: 216-S-22, 216-S-22 Crib

Site Type: Crib

Current OU: 200-MG-1

Facility: REDOX Area

Former OU: 200-PW-4

Waste Site Description:

The crib is marked and posted with URM signs. The site provided subsurface liquid disposal for the 293-S Building waste. The crib is a gravel structure with a side slope of 1:1.5. A pipe enters the unit below grade, branches out at right angles downwards to the bottom, and runs along the bottom for the length of the unit. The section of pipe along the crib bottom has open joints. The rest of structure is filled with backfill (see site code 200-W-146 PL). The site was retired when production operations were shut down at REDOX. The site operated from October 1957 to June 1967.

Related Site Structure: The structure is associated with the 293-S Building. The crib pipeline is WIDS site code 200-W-146 PL.

Site Posting: URM

Release Mechanism: The site provided subsurface liquid disposal for the 293-S building waste

Release Type: Liquid

Dimensions (estimated):

Site Length:	39.6 m (130.0 ft)	Site Depth:	3.0 m (10.0 ft)
Site Width:	10.2 m (35.5 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	403.9 m ² (4615.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Tc-99, Sr-90, H3, U-238
Nonradiological	X	Ag, As, Hg, NO3, Hex Cr

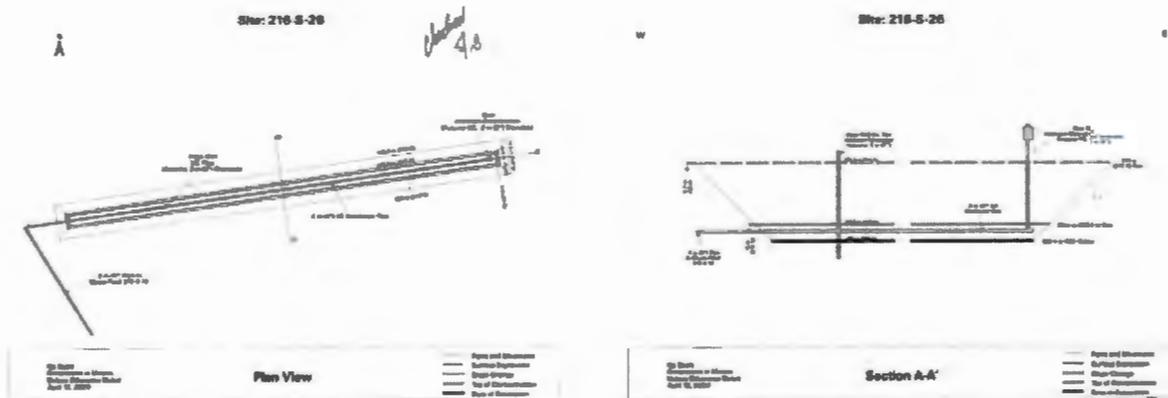
Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-S-26



Site Name: 216-S-26, 216-S-19 Replacement Facility, 216-S-26 Crib

Site Type: Crib

Current OU: 200-MG-1

Facility: 200 W Ponds Area

Former OU: 200-LW-2

Waste Site Description:

The crib is surrounded with metal posts and chain and is posted with Underground Radioactive Material signs. A 15 centimeter (6 inch) vitrified clay, perforated distribution pipe runs the length of the unit, 46 centimeters (18 inches) above the bottom of the crib. Eight centimeters (4 inches) of gravel covers a membrane barrier. The crib is filled with 2.9 meters (9.5 feet) of soil. One gage well with a liquid level indicator is located 100 ft (30 m) from the west end, and a vent riser is located at the east end. The crib received waste from the 222-S laboratory via the 207-SL retention basin. In 1988, crib infiltration rate problems were noted due to caustic flush water being periodically disposed to the 207-SL basin.

Related Site Structure: The pipeline associated with this crib is WIDS site code 200-W-148-PL.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length: 135.5 m (444.0 ft)

Site Depth: 3.7 m (12.0 ft)

Site Width: 10.4 m (34.0 ft)

Cover Thickness: 0 m (0 ft)

Site Area: 1409.2 m² (15096.0 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Sr-90, Tc-99, H3, U-238
Nonradiological	None	As, Hex Cr, Pb

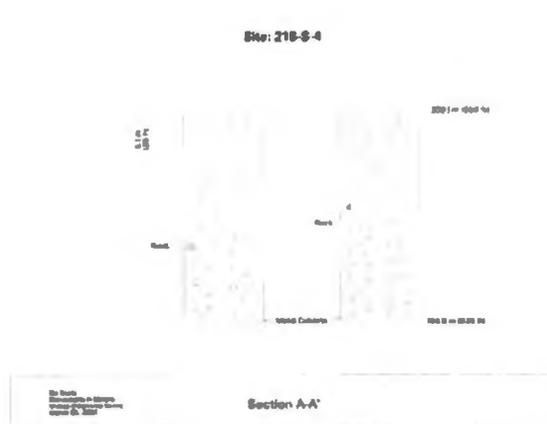
Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$983,000

References:

WIDS General Summary Report, DOE/RL-2001-66, DOE/RL-2006-56, DOE/RL-2005-61

216-S-4



Site Name: 216-S-4, 216-S-7, 216-S-4 Sump or Crib, UN-216-W-1

Site Type: French Drain

Current OU: 200-MG-1

Facility: 200 W Ponds Area

Former OU: 200-PW-4

Waste Site Description:

The site is marked and posted with URM signs. The site is constructed of two vertically buried metal culvert pipes. The site is constructed of two rock-filled, 6.1 m (20 ft) long metal culverts, connected in parallel. The site received liquid from the 241-S-101 and 241-S-104 tank condensers via an aboveground pipe. The site operated from August 1953 to August 1956. The site was retired when the 241-S Tank air condensers were reactivated. The site was deactivated by removing the above-ground piping in the tank farm to the units.

Related Site Structure: The site is associated with the condensers on the 241-S-101 and 241-S-104 Tanks located inside the 241-S Tank Farm.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	None m (None ft)	Site Depth:	6.6 m (21.8 ft)
Site Width:	0.9 m (2.5 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	1.0 m ² (10.8 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Tc-99, Sr-90, H3, U-238
Nonradiological	X	Ag, As, Hg, NO3, Hex Cr

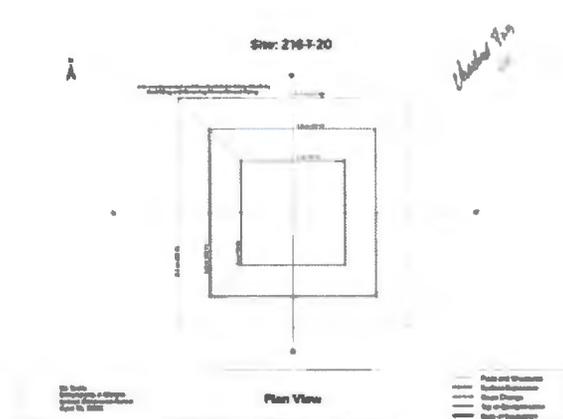
Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-T-20



Site Name: 216-T-20, 216-TX-2, 216-T-20 Crib, 241-TX-155 Contaminated Acid Grave
Site Type: Trench **Facility:** T Farm Area
Current OU: 200-MG-1 **Former OU:** 200-PW-4

Waste Site Description:

The site has a small concrete block structure on the surface with a metal lid labeled Confined Space and Potential Internal Contamination. There is a single concrete marker with an URM sign on it. The concrete block structure is surrounded with the same type of cobbles that surround the powerhouse pond. A single use pit dug specifically to receive acidic waste from the diversion box. The site also holds a small concrete block structure labeled possible internal contamination. The historical documentation describes the site as an excavation, similar to a pit. It was a single use pit dug specifically to receive contaminated acid from the 241-TX-155 Diversion Box. There is no mention of the concrete block access structure currently located at the site.

Related Site Structure: The site is associated with the 241-TX-155 Diversion Box.

Site Posting: URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	6.7 m (22.0 ft)	Site Depth:	1.2 m (4.0 ft)
Site Width:	6.7 m (22.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	44.9 m ² (484.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown, Nitric acid

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$163,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

216-T-4A



Site Name: 216-T-4A, 216-T-4 Swamp, 216-T-4-1 (P), 216-T-4-1 Pond

Site Type: Pond

Current OU: 200-MG-1

Facility: WM Area

Former OU: 200-CW-4

Waste Site Description:

The pond was located in a natural surface depression forming an L-shaped shallow pond covering approximately 6.5 hectares (16 acres). The pond is no longer visible. It was exhumed in 1972 to make room for the expansion of the 216-W-2A Burial Ground. The pond received cooling water and steam condensate from the retention basin and 221-T and 224-T. The pond received cooling water and steam condensate from 221-T and 224-T via the 207-T Retention Basin and the 216-T-4-1 Ditch. The pond became active in November 1944 with the startup of the 221-T Chemical Separation Plant. The waste water in the ditch flowed through a culvert that went under the 218-W-2A Burial Ground railroad spur and then ran into a shallow ditch cut to a natural surface depression in the desert floor. The pond no longer exists. The entire surface of the bottom of the original pond (216-T-4A) was scraped to a depth of 15 to 23 cm (6 to 9 in.) and placed in the 218-W-2A Burial Ground (Trench #27). The scraped area was covered with clean soil in February 1973. In April 1973, 20,000 m² (5 ac) of the scraped pond bottom were seeded with Siberian Wheat Grass to help stabilize the ground surface. In May 1972, an earthen dike was built to separate the replacement pond area (216-T-4B) from the 218-W-2A Burial Ground expansion. The official name 216-T-4A was established by the Facilities and Industrial Engineering Group in 1983.

Related Site Structure: The site is associated with the 216-T-4-1 Ditch and the 218-W-2A Burial Ground.

Site Posting: None

Release Mechanism: Steam Condensate/ Cooling Water

Release Type: Liquid

Dimensions (estimated):

Site Length: 548.6 m (1800.1 ft)

Site Width: 182.9 m (600.0 ft)

Site Area: 100335.3 m² (1080105.4 ft²)

Site Depth: 0.0 m (0.0 ft)

Cover Thickness: 0.6 m (2 ft)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

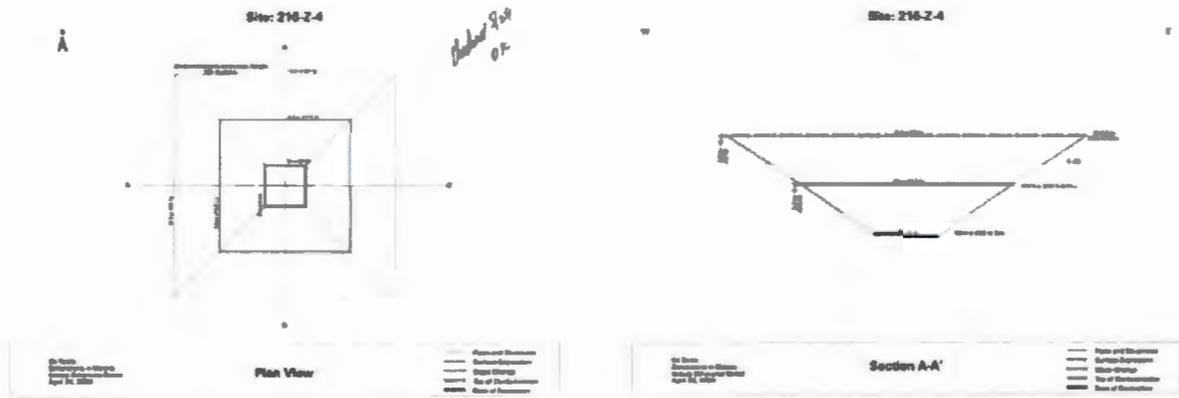
Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$1,386,000

References:

WIDS General Summary Report, DOE/RL-99-66, DOE/RL-2004-24, DOE/RL-2003-11

216-Z-4



Site Name: 216-Z-4, 231-W-3 Pit, 231-W-3 Sump, 231-W-3 Crib, 216-Z-3, 216-Z-4 Crib
Site Type: Trench **Facility:** PFP Area
Current OU: 200-MG-1 **Former OU:** 200-PW-6

Waste Site Description:

The 216-Z-4 Trench is an inactive waste management unit. The unit was backfilled and deactivated in 1945. The original configuration was a large unlined excavation. The site was used to temporarily receive liquid laboratory waste from the 231-Z building. The trench was constructed in 1945 to temporarily receive liquid laboratory waste from the 231-Z Building. The 216-Z-4 Trench was deactivated and backfilled when it was discovered to be too small for the waste stream. The laboratory effluent was rerouted to the 216-Z-6 Crib. (since the 216-Z-6 crib was fed with an aboveground pipeline, it is likely the 216-Z-4 was also fed with an aboveground pipeline). The site was interim stabilized in February 1990. When the effluent flow exceeded the infiltration capacity, the unit was deactivated by capping the pipeline west of the 231-W-151 Vault. The unit was used from June to July 1945.

Related Site Structure: Structures associated with this trench include the capped pipeline from the 231-Z Building and the 231-W-151 Vault Sump.

Site Posting: Not Specified

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	3.0 m (10.0 ft)	Site Depth:	4.6 m (15.0 ft)
Site Width:	3.0 m (10.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	9.1 m ² (100.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Am-241, Cs-137, Co-60, Sr-90, H3
Nonradiological	X	PCB Aroclor-1254, Se

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$447,000

References:

WIDS General Summary Report, DOE/RL-2001-01, DOE/RL-2006-51

216-Z-6



Site Name: 216-Z-6, 231-W-4 Crib, 231-Z-6, 216-W-4, 231-W Crib, 216-Z-4, 216-Z-6 & 6A Crib
Site Type: Crib
Current OU: 200-MG-1
Facility: PFP Area
Former OU: 200-PW-6

Waste Site Description:

The 216-Z-6 is a below grade, inactive waste management unit. The site consists of a rectangular wooden box set in the base of an excavation. The trench was fed by an above ground pipeline. The 216-Z-6 Crib received process waste from the 231-Z Building by an overground line from the 231-W-151 Sump. The site was only used for one month, and abandoned due to plugging of the surrounding soil by process sludge and precipitates. The site was surface stabilized in February 1990. When the site was retired in 1945, it was deactivated by capping the transfer line west of the 231-Z-151 Sump, and removing above ground piping. There have been previous cave-ins at this site and there is a potential for further collapse.

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	22.4 m (73.6 ft)	Site Depth:	2.4 m (8.0 ft)
Site Width:	9.3 m (30.5 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	208.3 m ² (2244.8 ft ²)		

Potential Contaminants:

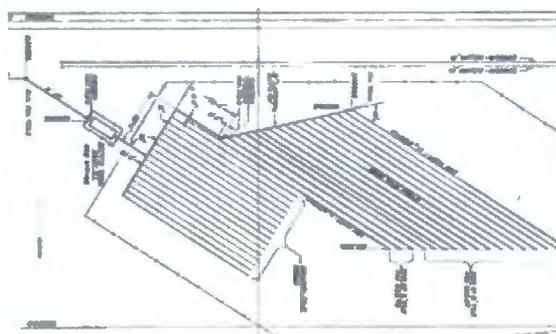
	Type	Constituents
Radiological	X	Am-241, Cs-137, Co-60, Sr-90, H3
Nonradiological	X	PCB Arochlor 1254, Se

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$495,000

References:

WIDS General Summary Report, DOE/RL-2001-01, DOE/RL-2006-51

2607-E1

Site Name: The 2607-E1 Septic Tank is associated with the 2607-E1 Tile Field, the 200 East shops and 282-E.
Site Type: Septic System
Current OU: 200-MG-1
Facility: 200 E Admin Area
Former OU: 200-ST-1

Waste Site Description:

This septic tank is constructed of reinforced concrete with walls and floors. The associated drain field is 778 square meters (8,376 square feet). The 2607-E1 Septic Tank and associated drain field were designed to accept and treat sanitary sewer effluent from facilities in central 200 East Area. According to WHC-SD-LL-SP-001 (1996), the 2607-E1 Septic Tank had been considered failed for last two years and was exhibiting evidence of stress. The system was replaced with a new regional system.

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:**Dimensions (estimated):**

Site Length:	7.9 m (26.0 ft)	Site Depth:	4.3 m (14.0 ft)
Site Width:	3.8 m (12.5 ft)	Cover Thickness:	None m (None ft)
Site Area:	30.0 m ² (325.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	92.9 m (305.0 ft)	Site Depth:	1.9 m (6.5 ft)
Site Width:	18.3 m (60.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	1700.1 m ² (18300.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:

Dimensions (estimated):

Site Length:	28.9 m (95.0 ft)	Site Depth:	1.9 m (6.5 ft)
Site Width:	19.8 m (65.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	572.2 m ² (6175.0 ft ²)		

Potential Contaminants:

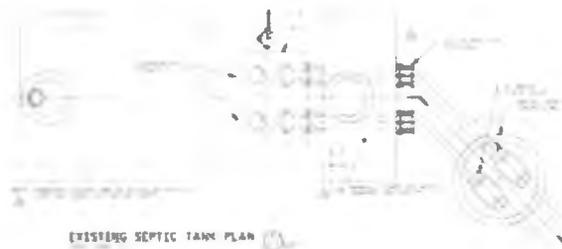
	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$866,000

References:

WIDS General Summary Report, DOE/RL-2002-14

2607-E12**Site Name:** 2607-E12, 2607-E12 Septic System**Site Type:** Septic System**Current OU:** 200-MG-1**Facility:** 200 E Ponds Area**Former OU:** 200-ST-1**Waste Site Description:**

The septic system consists of the old 5,000 gallon (18,927 liters) tank (the old drainfield was plugged off) that was converted to a dosing chamber when the new 10,000 gallon (37,854 liters) septic tank was installed approximately 45 feet (13.7 meters) to the south. The trench-like drainfield for this system is located approximately 400 feet (122 meters) east of the tanks. The settling chamber (the larger southern most tank) receives the effluent first. The effluent then goes to the dosing chamber (smaller northern tank) which is connected by underground pipeline to the trench-like drainfield.

Related Site Structure: None**Site Posting:** Not Specified**Release Mechanism:** Sanitary Effluent**Release Type:** Liquid**Tank:****Dimensions (estimated):****Site Length:** 6.2 m (20.4 ft)**Site Width:** 3.0 m (10.0 ft)**Site Area:** 19.0 m² (204.0 ft²)**Site Depth:** 4.6 m (15.0 ft)**Cover Thickness:** None m (None ft)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tank:

Dimensions (estimated):

Site Length: 2.4 m (8.0 ft) **Site Depth:** 2.1 m (7.0 ft)
Site Width: 2.4 m (8.0 ft) **Cover Thickness:** Not Specified m (Not Specified ft)
Site Area: 5.9 m² (64.0 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length: 27.4 m (90.0 ft) **Site Depth:** 2.0 m (6.5 ft)
Site Width: 18.3 m (60.0 ft) **Cover Thickness:** Not Specified m (Not Specified ft)
Site Area: 501.7 m² (5400.0 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length: 83.8 m (275.0 ft) **Site Depth:** 1.4 m (4.5 ft)
Site Width: 36.6 m (120.0 ft) **Cover Thickness:** Not Specified m (Not Specified ft)
Site Area: 3065.8 m² (33000.0 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

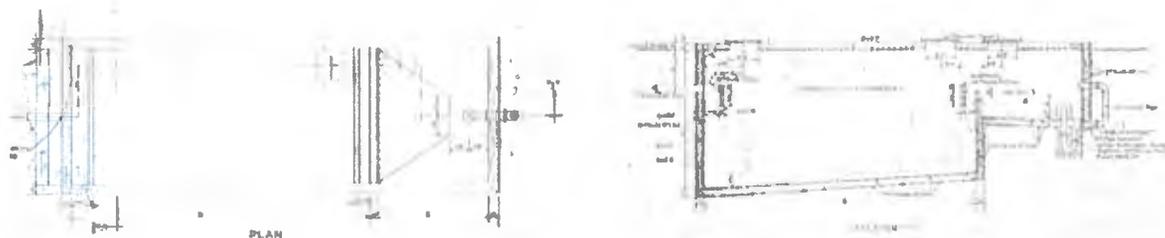
Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$1,416,000

References:

WIDS General Summary Report, DOE/RL-2002-14

2607-E3



Site Name: 2607-E3, 2607-E3 Septic Tank and Drainfield, 2607-E3 Septic System, TFS of 218-E-4, Tile Field South of 218-E-4

Site Type: Septic System

Facility: B Plant Area

Current OU: 200-MG-1

Former OU: 200-ST-1

Waste Site Description:

The site is a septic tank and drainfield. It is surrounded with a chain and marked with a sign that reads Sanitary Sewer/Drain Field. The septic tank is constructed of reinforced concrete. The tank is 8.7 m (28 ft 8 in.) long, 2.7 m (9 ft) wide, and 3.8 m (12 ft 6 in.) deep (interior dimensions). The tank had a design capacity of 38,680 L (10,220 gal) based on a user capacity of 292 persons, a flow of 132 L (35 gal) of sewage per capita per day, and an average detention time of 1 day. The top of the tank is at the ground surface. The tank was accessed through three 0.9 m (3 ft) manholes. The drainfield is comprised of at least 712 m (2,336 ft) of vitrified clay pipe or drain tile (at least 2.4 m [8 ft] per capita). The laterals are open jointed and are spaced 2.4 m (8 ft) apart.

Related Site Structure: The 2607-E3 Septic System was associated with B-Plant Facilities.

Site Posting: Sanitary Sewer/Drain Field

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:

Dimensions (estimated):

Site Length:	9.3 m (30.3 ft)	Site Depth:	4.2 m (13.9 ft)
Site Width:	3.3 m (10.7 ft)	Cover Thickness:	None m (None ft)
Site Area:	30.2 m ² (324.2 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:

Dimensions (estimated):

Site Length:	79.2 to 96.9 m (260 to 318 ft)	Site Depth:	1.77 to 2.44 m (5.8 to 8.0 ft)
Site Width:	65.5 to 76.2 m (215 to 250 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	Irregular m ² (Irregular ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

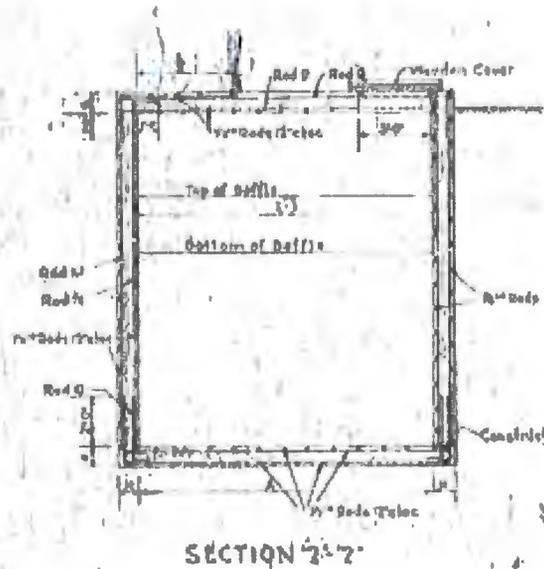
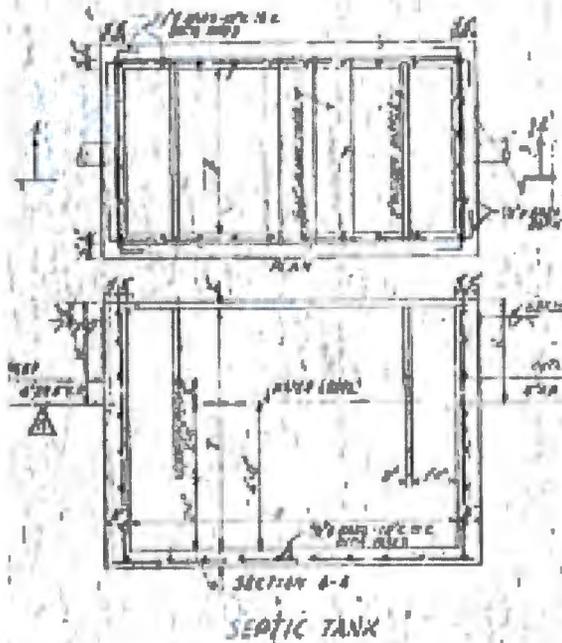
Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$855,000

References:

WIDS General Summary Report, DOE/RL-2002-14

2607-E4



Site Name: 2607-E4, 2607-E4 Septic Tank and Tile Field

Site Type: Septic System

Current OU: 200-MG-1

Facility: B Plant Area

Former OU: 200-ST-1

Waste Site Description:

The septic tank and tile field are marked with a Sanitary Sewer/Drain Field sign and lie with a posted URM area. The 2607-E4 Septic Tank is constructed of reinforced concrete that drains to an adjacent tile field. DOE/RL-92-05 states that this system is not known to contain radionuclide or hazardous chemicals. However, the site is posted with URM signs. No information has been located to explain the radiological posting.

Related Site Structure: The 2607-E4 Septic Tank is associated with the 2607-E4 Tile Field and B-Plant Facilities.

Site Posting: Sanitary Sewer/Drain Field and URM

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:

Dimensions (estimated):

Site Length: 1.6 m (5.3 ft)

Site Depth: 2.7 m (9.0 ft)

Site Width: 1.0 m (3.3 ft)

Cover Thickness: None m (None ft)

Site Area: 1.6 m² (17.5 ft²)

Potential Contaminants:

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	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:

Dimensions (estimated):

Site Length: Unknown m (Unknown ft) **Site Depth:** Unknown m (Unknown ft)
Site Width: Unknown m (Unknown ft) **Cover Thickness:** Not Specified m (Not Specified ft)
Site Area: Unknown m² (Unknown ft²)

Potential Contaminants:

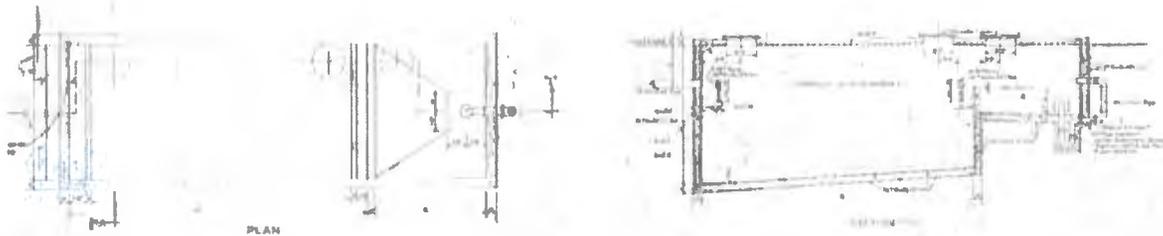
	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$289,000

References:

WIDS General Summary Report, DOE/RL-2002-14

2607-E5**Site Name:** 2607-E5**Site Type:** Septic System**Current OU:** 200-MG-1**Facility:** Semi-Works Area**Former OU:** 200-ST-1**Waste Site Description:**

This septic system receives sanitary wastewater and sewage. This system includes a single compartment tank with a dosing system and a leaching trench. An abandoned tile field which was replaced by the sanitary leaching trench is also included with this site. The construction details for the sanitary leach trench are contained in Hanford Drawing H-2-4602. The trench is 22.9 m (75 ft) long, 1.5 m (5 ft) wide at the bottom, and approximately 3.1 m (10 ft) deep. The excavation had a 1.5:1 side slope. Three rows of 20 x 20 x 41 cm (8 x 8 x 16 in.) bond beam concrete blocks that run the entire length of the trench site on top of 0.6 m (2 ft) of cobble fill. The trench was then covered with 0.3 m (1 ft) of gravel, a polyethylene cover and backfilled with the centerline of the trench filled to 0.3 m (1 ft) above the original grade. At the eastern end of the trench is a distribution box the received waste from the up gradient septic tanks and distributed it into the concrete block channels. The following information was obtained from HW-22955, Hot Semiworks Manual Part 1: All wastes from the 2704-C (Office and Gate House) and 2707-C (Change House) were considered sanitary waste and were disposed of separately from the chemical, or production waste. A 10.2 cm (4 in.) tile sewer ran from these buildings to a septic tank and tile field outside the Hot Semiworks exclusion area. The sewer ran parallel to and 20.7 m (68 ft) south of the exclusion area north fence. The septic tank is 19.2 m (63 ft) west of the exclusion area west fence. The septic tank is a buried concrete settling tank 3.65 m (12 ft) long by 1.8 m (6 ft) long by 1.5 m (5 ft) deep (inside dimensions). The bottom and walls are 20.3 cm (8 in.) thick. The top is 15.2 cm (6 in.) thick and has two 0.61 m (24 in.) diameter manholes. The overflow is 1.18 m (46.5 in.) from the bottom resulting in a hold-up of 7948.5 L (2100 gal). The overflow from the septic tank drained to a tile field. This field consists of 6 runs of 10.2 cm (4 in.) tile each 15.2 m (50 ft) long. The tile was laid with open joints in an 45.7 cm (18 in.) gravel bed 0.61 to 0.91 m (2 to 3 ft) below grade. Currently, the 2607-E5 Septic Tank and associated leaching trench accept and treat sanitary sewer effluent from the 209-E, the 2704-C, and the 2718-E Buildings. WHC-SD-LL-WP-001 indicates that 276-C (Solvent Handling Facility) was also serviced by this septic system. The referenced drawing M-2904-E, Sheet 27 does not show enough detail to make that determination. H-2-4033 shows that 276-C had no sanitary waste management. All liquid waste from this facility went to the 216-C-3 crib. Revision 7 of H-2-4033 (1963) revised the drawing to include the abandoned tile field and the two small inline septic tanks (2607-E7 and 2607-E). (The WIDS numbers for these two tanks are 2607-E7A and 2607-E7B). The two smaller tanks were probably added when 209-E (Critical Mass Laboratory) was tied into the system.

Related Site Structure: The 2607-E5 Septic Tank is associated with the 209-E, the 2704-C and the 2718-E Buildings. Original construction of the tank was for buildings 2704-C and 2707-C. Later modifications added two additional septic tanks, 2607-E7 (WIDS 2607-E7A), 2607-E (WIDS 2607-E7B), and the leaching trench. During the history of this system, mobile offices have been connected to the system. Two examples were the addition of MO-337 and MO-543. These mobile offices have since been moved.

Site Posting: Not Specified**Release Mechanism:** Sanitary Effluent**Release Type:** Liquid

Tank:**Dimensions (estimated):**

Site Length:	5.2 m (17.0 ft)	Site Depth:	1.9 m (6.1 ft)
Site Width:	2.2 m (7.3 ft)	Cover Thickness:	None m (None ft)
Site Area:	11.6 m ² (124.1 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Nondangerous/ nonradioactive sewer effluent
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	~15.2 m (~50 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	~15.2 m (~50 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	231.0 m ² (2500.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	~27.4 m (~90 ft)	Site Depth:	~3.4 m (~11 ft)
Site Width:	~4.6 m (~15 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	126.0 m ² (1350.0 ft ²)		

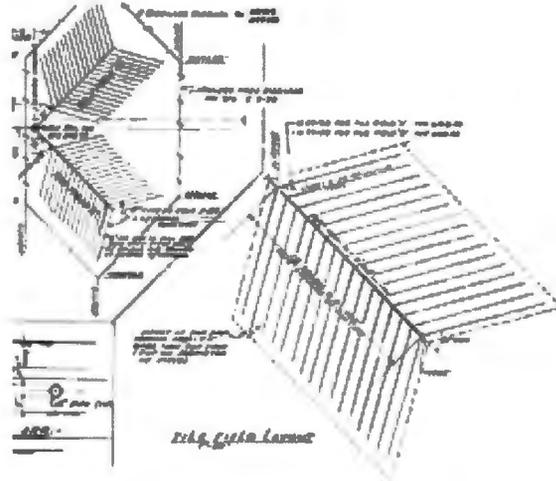
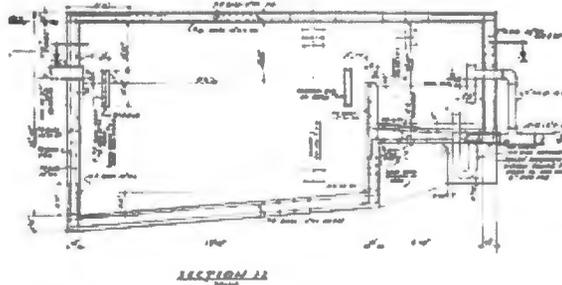
Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$348,000**References:**

WIDS General Summary Report, DOE/RL-2002-14

2607-E6



Site Name: 2607-E6, Septic Tank and Tile Field

Site Type: Septic System

Current OU: 200-MG-1

Facility: 200 E Admin Area

Former OU: 200-ST-1

Waste Site Description:

The site is a septic tank and drainfield. The drain field is surrounded by a wooden fence. The surface is vegetated with brush. The unit received sanitary waste from MO405 and the PUREX facility.

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:

Dimensions (estimated):

Site Length: 8.6 m (28.3 ft)

Site Width: 3.0 m (9.7 ft)

Site Area: 25.5 m² (274.5 ft²)

Site Depth: 4.2 m (13.8 ft)

Cover Thickness: None m (None ft)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

***2 Tile fields:**

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Dimensions (estimated):

Site Length: ~35.1 (each) m (~115 (each) ft) **Site Depth:** ~1.0 (min) m (~3.3 (min) ft)
Site Width: ~38.1 (each) m (~125 (each) ft) **Cover Thickness:** Not Specified m (Not Specified ft)
Site Area: 2671.0 m² (~28,750 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

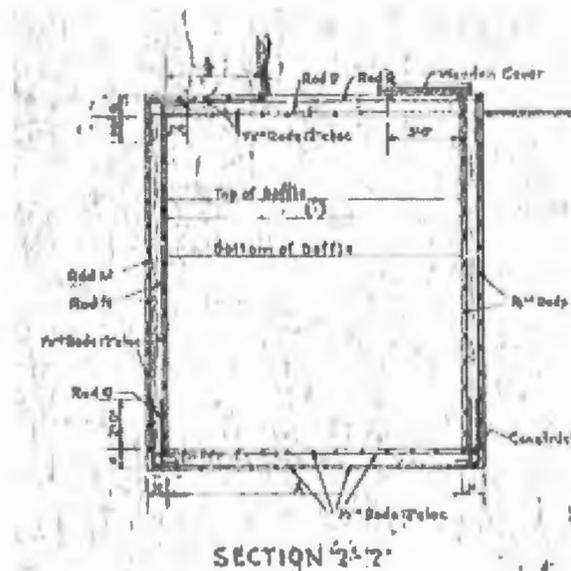
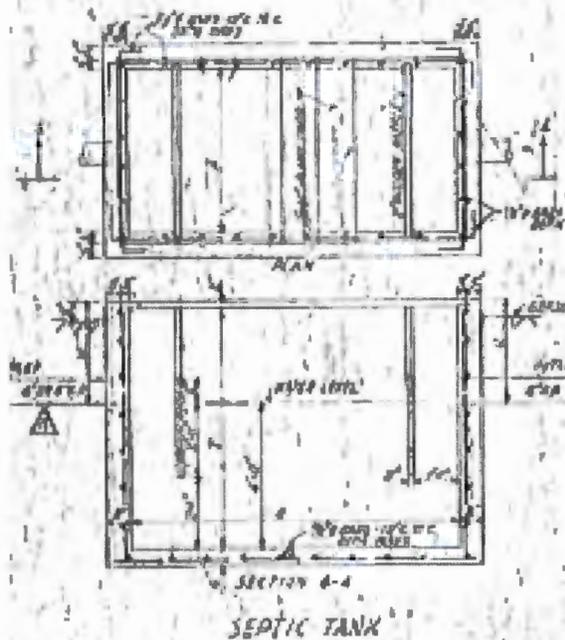
Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$623,000

References:

WIDS General Summary Report, DOE/RL-2002-14

2607-E7A



Site Name: 2607-E7A, 2607-E7
Site Type: Septic System
Current OU: 200-MG-1

Facility: Semi-Works Area
Former OU: 200-ST-1

Waste Site Description:

This septic tank receives sanitary wastewater and sewage. This tank is a 1.7 m (66 in.) by 2.7 m (105 in.) precast concrete septic tank with a single 61 cm (24 in.) diameter cover. The tank is inline with the 2607-E5 septic tank and the 2607-E (WIDS 2607-E7B). The septic tank drains to the sanitary leaching trench. The 2607-E7A Septic System and the associated leaching trench are designed to accept and treat sanitary sewer effluent from the 209-E, 2704-C, 2718-C, MO-337 (moved to another location), and MO-543 (moved to another location). The original tile field associated with 2607-E5 was abandoned at the time 2607-E7A and 2607-E7B were added. At the time of the addition of the two smaller septic tanks, a leaching trench was also added to the system. The 2607-E7A Septic System lies in a radiation zone. In 1995, Project W-364 provided a design to replace septic tanks 2607-E7A, 2607-E7B, and 2607-E5. The design was completed, approved, and a construction contract was awarded. Prior to any on-site construction activity, the project was cancelled.

Related Site Structure: The 2607-E7A Septic System is associated with the 209-E, 2704-C, 2718-E, MO-337 (moved) and the MO-543 (moved) Buildings. This system is in series with the 2607-E5, 2607-E7B Septic Tanks and a leaching trench.

Site Posting: Not Specified

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:

Dimensions (estimated):

Site Length:	2.7 m (8.8 ft)	Site Depth:	1.7 m (5.5 ft)
Site Width:	1.6 m (5.2 ft)	Cover Thickness:	None m (None ft)
Site Area:	4.2 m ² (45.5 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Nondangerous/ nonradioactive
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	~15.2 m (~50 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	~15.2 m (~50 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	231.0 m ² (2500.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	~27.4 m (~90 ft)	Site Depth:	~3.4 m (~11 ft)
Site Width:	~4.6 m (~15 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	126.0 m ² (1350.0 ft ²)		

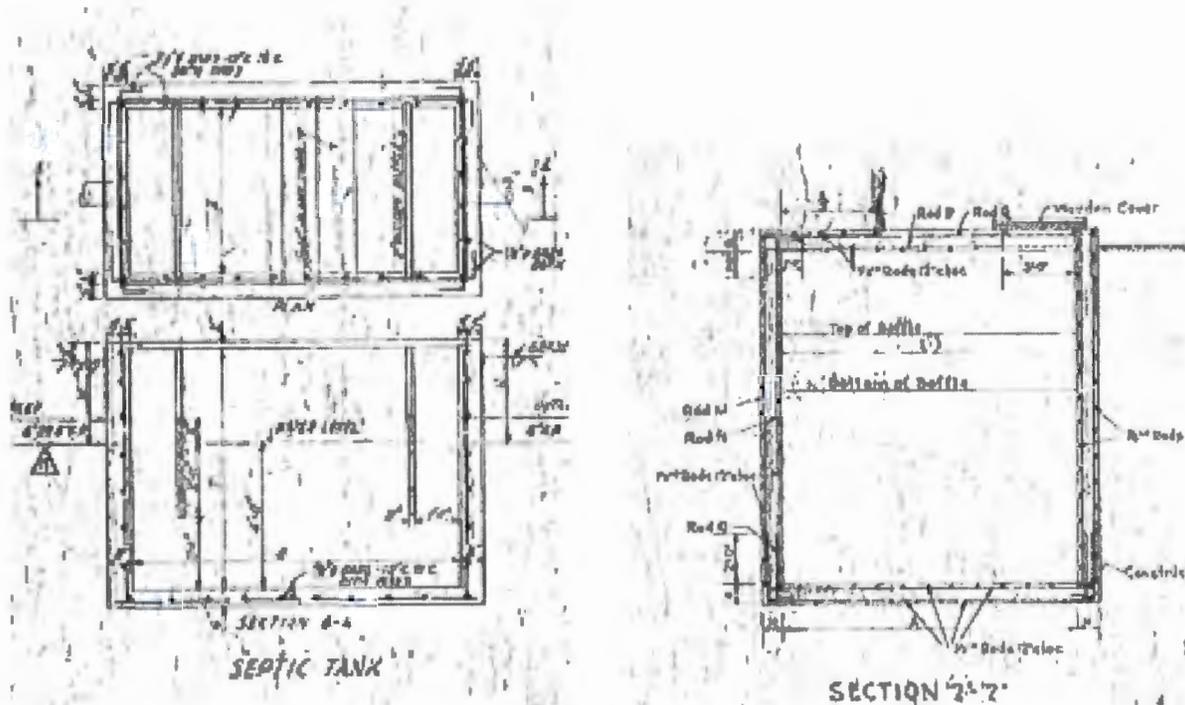
Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$168,000**References:**

WIDS General Summary Report, DOE/RL-2002-14

2607-E7B



Site Name: 2607-E7B, 2607-E7B Septic System, 2607-E7

Site Type: Septic System

Current OU: 200-MG-1

Facility: Semi-Works Area

Former OU: 200-ST-1

Waste Site Description:

This septic tank receives sanitary wastewater and sewage and drains to the sanitary leaching trench. This tank is a 1.7 m (66 in.) by 2.7 m (105 in.) cancelled concrete septic tank with a single 61 cm (24 in.) diameter cover. The tank is inline with the 2607-E5 septic tank and the 2607-E7 (WIDS 2607-E7A). The 2607-E7B Septic System and the associated leaching trench are designed to accept and treat sanitary sewer effluent from the 209-E, 2704-C, 2718-C, MO-337 (moved to another location), and MO-543 (moved to another location). The original tile field associated with 2607-E5 was abandoned when 2607-E7A and 2607-E7B were added. At the time of the addition of the two smaller septic tanks, a leaching trench was also added to the system. The 2607-E7B Septic System lies in a radiation zone. In 1995, Project W-364 provided a design to replace septic tanks 2607-E7A, 2607-E7B, and 2607-E5. The design was completed, approved, and a construction contract was awarded. Prior to any on-site construction activity, the project was cancelled.

Related Site Structure: The 2607-E7B Septic System is associated with the 209-E, 2704-C, 2718-E, MO-337 (moved) and the MO-543 (moved) Buildings. This system is in series with the 2607-E5, 2607-E7A Septic Tanks and a leaching trench.

Site Posting: Not Specified

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:

Dimensions (estimated):

Site Length:	2.7 m (8.8 ft)	Site Depth:	1.7 m (5.5 ft)
Site Width:	1.6 m (5.2 ft)	Cover Thickness:	None m (None ft)
Site Area:	4.2 m ² (45.5 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Nondangerous/ nonradioactive
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	~15.2 m (~50 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	~15.2 m (~50 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	231.0 m ² (2500.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	~27.4 m (~90 ft)	Site Depth:	~3.4 m (~11 ft)
Site Width:	~4.6 m (~15 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	126.0 m ² (1350.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$168,000**References:**

WIDS General Summary Report, DOE/RL-2002-14

2607-E9

No Image Available

No Image Available

Site Name: 2607-E9, 242B/BL Septic Tank and Drain Field, 2607-E9 Septic System
Site Type: Septic System **Facility:** B Farm Area
Current OU: 200-MG-1 **Former OU:** 200-ST-1

Waste Site Description:

This 1,900-L (500-gal) septic tank received sanitary wastewater and sewage from the 242-B and the 242-BL Buildings. This system has an associated drain field. It was abandoned and the tank filled with sand. The site is in a contamination area. A brief visit was made to the site in February 2000 to find the drainfield and to try to improve the mapping of the site. A "Drainfield" sign was found on the ground on the eastern side of the contamination area that surrounds the site. The former extent of the drainfield can be approximated using fence posts inside the contamination area (some of which still have chain attached), fallen chain on the ground plus the fence posts making up the eastern boundary of the contamination area. No access ports, lids or risers associated with the septic tank were visible. Evidence of the septic tank may have been obscured by tumbleweeds growing in the center of the contamination area near the drainfield. The 2607-E9 Septic Tank and associated drain field were designed to accept sanitary sewer effluent from the 242-B and the 242-BL Buildings. The area of the 242-B Building, where the 2607-E9 Septic Tank and associated drain field are located, is light chain barricaded with "Contamination Area" signs. Contaminated particulate releases from the B Tank Farm is the most likely source for the contamination.

Related Site Structure: The 2607-E9 Septic Tank is associated with a drain field and the 242-B and the 242-BL Buildings.

Site Posting: Drainfield, CA

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:**Dimensions (estimated):**

Site Length:	Unknown m (Unknown ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Unknown m (Unknown ft)	Cover Thickness:	None m (None ft)
Site Area:	Unknown m ² (Unknown ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	~12.2 to ~18.3 m (~40 to 60 ft)	Site Depth:	~1.1 (max) m (~3.5 (max) ft)
Site Width:	~12.2 m (~40 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	Not Specified m ² (Not Specified ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$289,000

References:

WIDS General Summary Report, DOE/RL-2002-14

2607-EA

No Image Available

No Image Available

Site Name: 2607-EA, 2607-EA Septic Tank and Drywell**Site Type:** Septic System**Current OU:** 200-MG-1**Facility:** PUREX Area**Former OU:** 200-ST-1**Waste Site Description:**

The 2607-EA Septic System is a small septic tank and an associated drywell (cesspool). The system became inactive when the water lines to the 244-AR Vault ruptured and were not repaired. When the facility was isolated, lines feeding the building were blanked off to eliminate the potential source of water if the ruptured lines were repaired.

Related Site Structure: 244-AR Vault**Site Posting:** Not Specified**Release Mechanism:** Sanitary Effluent**Release Type:** Liquid**Tank:****Dimensions (estimated):****Site Length:** Unknown m (Unknown ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Unknown m (Unknown ft)**Cover Thickness:** None m (None ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):****Site Length:** Not specified m (Not specified ft)**Site Depth:** ~2.13 m (~7 ft)**Site Width:** ~1.95 (outside diameter) m (~6.4 (outside diameter) ft)**Cover Thickness:** Not Specified m**Site Area:** Not Specified m² (Not Specified ft²)

(Not Specified ft)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$336,000**References:**

WIDS General Summary Report, DOE/RL-2002-14

2607-EE

No Image Available

No Image Available

Site Name: 2607-EE, 2607-EE Septic System**Site Type:** Septic System**Current OU:** 200-MG-1**Facility:** PUREX Area**Former OU:** 200-ST-1**Waste Site Description:**

The site is a septic tank with a drain field extending northeast of the septic tank. The area is surrounded with light duty posts and chain. One riser pipe is visible. The line to the toilet and sink feeding the septic system was blanked and taken out of service in 1993.

Related Site Structure: The site is associated with the 202-A Facility and the 200-E-107 Stabilized Area.**Site Posting:** URM**Release Mechanism:** Sanitary Effluent**Release Type:** Liquid**Tank:****Dimensions (estimated):****Site Length:** Unknown m (Unknown ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Unknown m (Unknown ft)**Cover Thickness:** None m (None ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

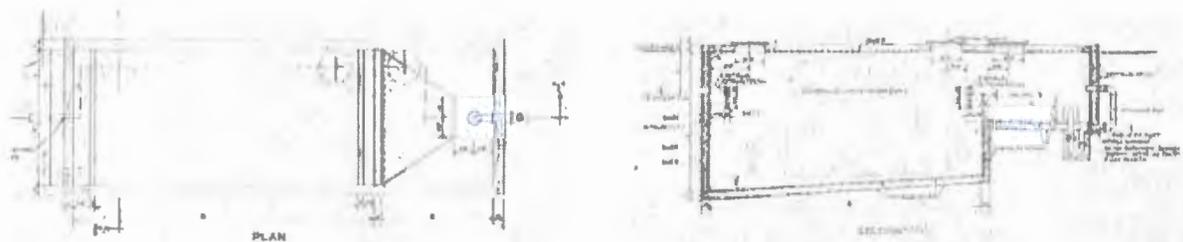
	Type	Constituents
Radiological	X	Unknown, received waste from PUREX so there is potential contamination
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):****Site Length:** 17.8 m (58.5 ft)**Site Depth:** ~0.76 to 0.91 m (~2.5 to 3 ft)**Site Width:** 17.4 m (57.0 ft)**Cover Thickness:** Not Specified m (Not Specified ft)**Site Area:** 309.7 m² (3334.5 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$289,000**References:**

WIDS General Summary Report, DOE/RL-2002-14

2607-W1

Site Name: 2607-W1
Site Type: Septic System
Current OU: 200-MG-1

Facility: T Plant Area
Former OU: 200-ST-1

Waste Site Description:

The 2607-W1 Septic Tank is constructed of reinforced concrete and receives sanitary wastewater and sewage. There is a drain field associated with the system. This system was reconstructed in 1994. The 2607-W1 Septic Tank and associated drain field are designed to accept sanitary sewer effluent from connected facilities. Parts of the previous system were reused (for example, the septic tank) during the 1994 upgrade, and an additional tank was added to the old tank. The two tanks were tied together in series, and are located on the east side of Bridgeport Avenue. The new drain field runs north-south.

Related Site Structure: The 2607-W1 Septic Tank is associated with the 2607-W1 drain field, 2707-W, 2713-W, 283-W, 277-W, 275-W, 274-W, 284-W, 2723-W, 2704-W, 2719-WB, 272-W, MO-278, MO-279, MO-235, MO-406, MO-412, MO-215, MO-056, MO-204, MO-240, and MO-287.

Site Posting: Not Specified

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:**Dimensions (estimated):**

Site Length:	3.0 m (10.0 ft)	Site Depth:	3.0 m (10.0 ft)
Site Width:	2.7 m (9.0 ft)	Cover Thickness:	None m (None ft)
Site Area:	8.4 m ² (90.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tank:**Dimensions (estimated):**

Site Length:	5.2 m (17.0 ft)	Site Depth:	3.7 m (12.0 ft)
Site Width:	2.7 m (9.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	14.2 m ² (153.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	162.8 m (534.0 ft)	Site Depth:	2.0 m (6.5 ft)
Site Width:	41.8 m (137.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	6796.6 m ² (73158.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	50.3 m (165.0 ft)	Site Depth:	1.6 m (5.2 ft)
Site Width:	36.6 m (120.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	1839.5 m ² (19800.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

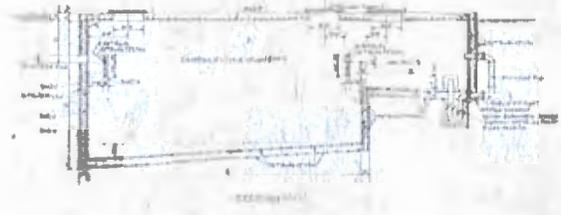
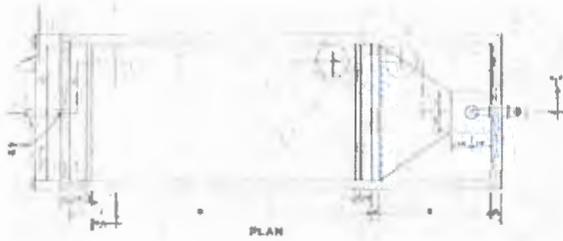
Site Length:	106.7 m (350.0 ft)	Site Depth:	1.7 m (5.5 ft)
Site Width:	39.6 m (130.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	4227.1 m ² (45500.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$1,347,000**References:**

WIDS General Summary Report, DOE/RL-2002-14

2607-W3

Site Name: 2607-W3
Site Type: Septic System
Current OU: 200-MG-1

Facility: T Plant Area
Former OU: 200-ST-1

Waste Site Description:

The 2607-W3 Septic Tank has been pumped, sampled, filled with sand and abandoned in place. The 2607-W3 Septic Tank was constructed of reinforced concrete. At one time, the eastern access was posted with a Radioactive Material warning sign. This system includes a drain field that was expanded in the 1950's. The 2607-W3 Septic Tank and associated drain field were designed to accept sanitary sewer effluent from the 221-T, the 222-T, the 224-T, and the 271-T Buildings. The 2607-W3 effluent was redirected to the 2607-W1 system. The tie-line is expected to remain operational throughout the remaining Hanford Site mission. A contaminated process sewer line runs parallel to the sanitary sewer line in this area.

Related Site Structure: The 2607-W3 Septic Tank as associated with the 221-T, the 222-T, the 224-T, and the 271-T Buildings.

Site Posting: RM

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:**Dimensions (estimated):**

Site Length:	9.3 m (30.3 ft)	Site Depth:	4.2 m (13.9 ft)
Site Width:	3.3 m (10.7 ft)	Cover Thickness:	None m (None ft)
Site Area:	30.2 m ² (324.2 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	~73.2 to ~107.3 m (~240 to ~352 ft)	Site Depth:	~.8 to ~2.3 m (~2.5 to ~7.5 ft)
Site Width:	~35.4 m (~116 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	Not Specified m ² (Not Specified ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

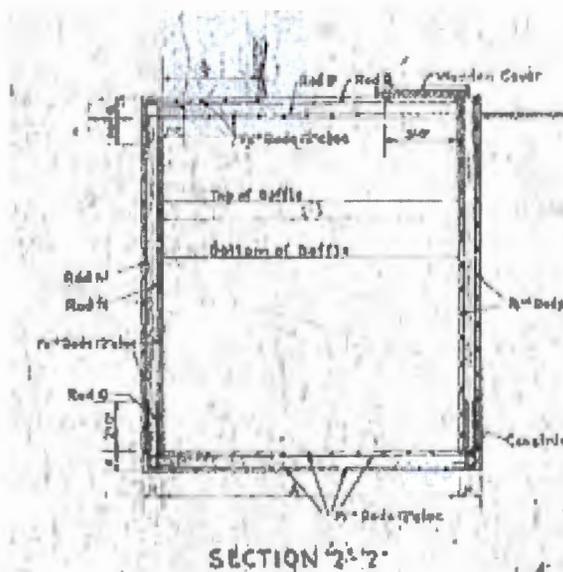
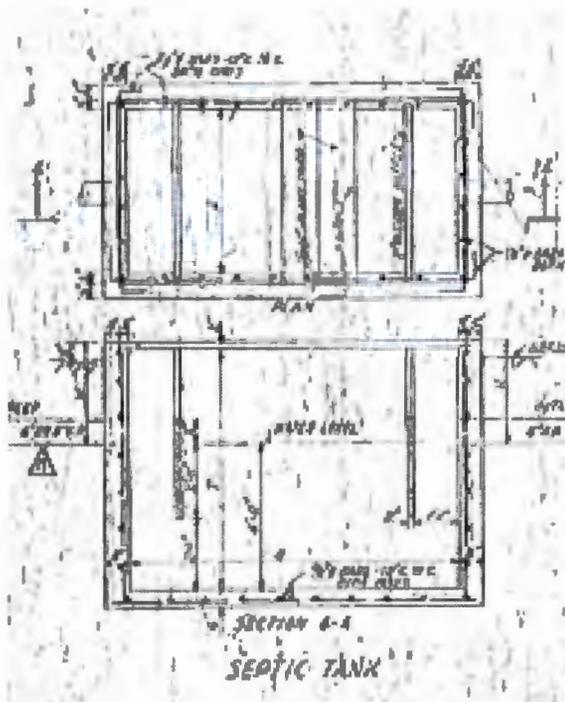
Tile Field:**Dimensions (estimated):****Site Length:** ~60.4 to ~84.7 m (~198 to ~278 ft)**Site Width:** ~25.6 m (~84 ft)**Site Area:** Not Specified m² (Not Specified ft²)**Site Depth:** ~.8 to ~2.3 m (~2.5 to ~7.5 ft)**Cover Thickness:** Not Specified m (Not Specified ft)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$509,000**References:**

WIDS General Summary Report, DOE/RL-2002-14

2607-W4



Site Name: 2607-W4, T Plant Septic Tank and Drain Field

Site Type: Septic System

Current OU: 200-MG-1

Facility: T Plant Area

Former OU: 200-ST-1

Waste Site Description:

The 2607-W4 Septic Tank is a single compartment tank constructed of reinforced concrete. The drain field measures 3.1 by 9.2 m (10 ft by 30 ft). The site is surrounded by a light chain barricade. At one time the area was marked with surface contamination warning signs. A site visit in October of 1998 indicated the area is no longer a Radiation Area. This system includes a drain field and receives sanitary wastewater and sewage from the 221-T Canyon Building. The 2607-W4 Septic Tank and associated drain field are designed to accept sanitary sewer effluent from the 221-T Canyon Building. In 1991, the 2607-W4 septic system was within a radiological zone. In 1998, the area had been downposted.

Related Site Structure: The 2607-W4 Septic Tank is associated with the 221-T Canyon Building.

Site Posting: SCA

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:

Dimensions (estimated):

Site Length: 1.6 m (5.3 ft)

Site Width: 1.0 m (3.3 ft)

Site Area: 1.6 m² (17.5 ft²)

Site Depth: 2.7 m (9.0 ft)

Cover Thickness: None m (None ft)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

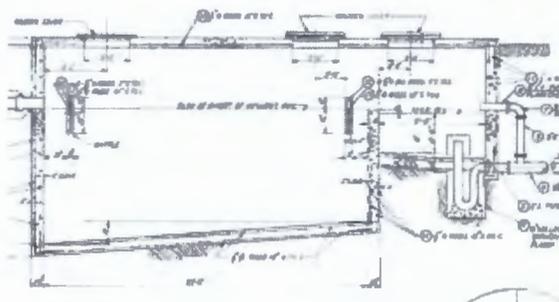
Site Length:	9.2 m (30.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	3.1 m (10.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	28.5 m ² (300.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$289,000**References:**

WIDS General Summary Report, DOE/RL-2002-14

2607-W6

Site Name: 2607-W6
Site Type: Septic System
Current OU: 200-MG-1

Facility: 200 W Ponds Area
Former OU: 200-ST-1

Waste Site Description:

The 2607-W6 system was reconstructed in 1995. The unit has a sign correctly labeling it. A concrete structure with three metal manhole covers lies on the surface. The 2607-W6 Septic Tank is constructed of reinforced concrete and receives sanitary wastewater and sewage. The 2607-W6 Septic Tank and associated drain field are designed to accept sanitary sewer effluent from the connected facilities. The dimensions are for the original septic system. No dimensions for the expanded septic tank were available. An upgrade or replacement of the existing larger on site system will be required in the year 2025, as the existing system will be beyond its useful life. Some components of this system may be reused (septic tank, etc.).

Related Site Structure: The 2607-W6 Septic Tank is associated with the 202-S, the 222-S, and the 2704-S Buildings and MO-037, MO-039, MO-028, MO-924, and MO-936.

Site Posting: Not Specified

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:**Dimensions (estimated):**

Site Length:	7.1 m (23.4 ft)	Site Depth:	4.6 m (15.0 ft)
Site Width:	3.8 m (12.5 ft)	Cover Thickness:	None m (None ft)
Site Area:	27.2 m ² (292.5 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:

Dimensions (estimated):

Site Length:	97.5 m (320.0 ft)	Site Depth:	2.0 m (6.5 ft)
Site Width:	73.2 m (240.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	7135.0 m ² (76800.0 ft ²)		

Potential Contaminants:

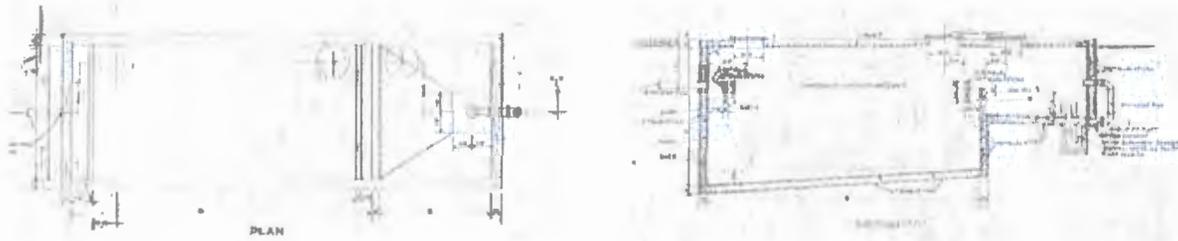
	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$1,008,000

References:

WIDS General Summary Report, DOE/RL-2002-14

2607-W8

Site Name: 2607-W8
Site Type: Septic System
Current OU: 200-MG-1

Facility: PFP Area
Former OU: 200-ST-1

Waste Site Description:

This system is located adjacent to posted radiation zone containing the 216-Z-5 and 216-Z-4 cribs. The 2607-W8 Septic Tank is constructed of reinforced concrete and has three manhole covers visible on the surface. It is a single compartment tank with an attached dosing siphon. This unit includes a tile field. The site is marked with a sign that read "Septic Tank - 2607-W8". The 2607-W8 Septic Tank and associated tile field were designed to accept sanitary sewer effluent from the 231-Z Building. The 231-Z Building was associated with the plutonium product finishing process. The tank capacity and dimensions include the settling tank and dosing siphon chamber.

Related Site Structure: The 2607-W8 Septic Tank is associated with a sanitary tile field and the 231-Z Building.

Site Posting: Radiation Zone

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:**Dimensions (estimated):**

Site Length:	5.9 m (19.3 ft)	Site Depth:	3.9 m (12.9 ft)
Site Width:	2.4 m (7.7 ft)	Cover Thickness:	None m (None ft)
Site Area:	13.8 m ² (148.6 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	Unknown m (Unknown ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Unknown m (Unknown ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	Unknown m ² (Unknown ft ²)		

Potential Contaminants:

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	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$301,000

References:

WIDS General Summary Report, DOE/RL-2002-14

2607-W9

No Image Available

No Image Available

Site Name: 2607-W9, 2707-SX Septic Tank**Site Type:** Septic System**Current OU:** 200-MG-1**Facility:** S/U Farm Area**Former OU:** 200-ST-1**Waste Site Description:**

A gravel surface covers the 2607-W9 Septic Tank and Tile Field. Two posts with a sun-bleached sign mark the location of the tile field.

Related Site Structure: The 2607-W9 Septic Tank is associated with the 2707-SX Change House.**Site Posting:** Not Specified**Release Mechanism:** Sanitary Effluent**Release Type:** Liquid**Tank:****Dimensions (estimated):****Site Length:** 5.9 m (19.5 ft)**Site Depth:** 3.7 m (12.0 ft)**Site Width:** 1.8 m (6.0 ft)**Cover Thickness:** None m (None ft)**Site Area:** 10.6 m² (117.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	no radionuclides are known to have been disposed to the septic system, the change trailer drains emptied into it.
Nonradiological	X	Unknown

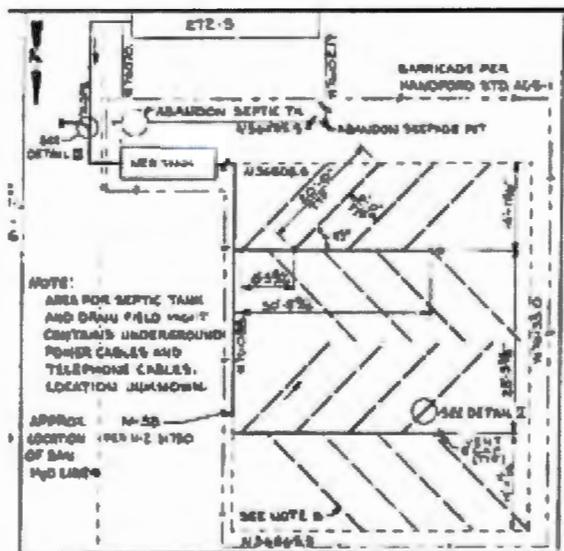
Tile Field:**Dimensions (estimated):****Site Length:** Unknown m (Unknown ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Unknown m (Unknown ft)**Cover Thickness:** Not Specified m (Not Specified ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$301,000**References:**

WIDS General Summary Report, DOE/RL-2002-14

2607-WC



No Image Available

Site Name: 2607-WC, 2607-WC Septic System

Site Type: Septic System

Current OU: 200-MG-1

Facility: 200 W Ponds Area

Former OU: 200-ST-1

Waste Site Description:

The 2607-WC Septic System consists of two tanks and a trench type drain field. This system is scheduled to be abandoned in 1998. In 1994, a soil investigation was performed to determine the soil type. Based on the soil type, there may not be enough non-contaminated land in close proximity for a new system. This system has been pumped twice a week for the past three years. An upgrade or replacement of the existing on site system is needed as the existing system is well beyond its useful life. Some components of the existing system may be reutilized (septic tank, etc.). This system may also pick up the sanitary wastewater flows from the 2607-W9 system.

Related Site Structure: The 2607-WC septic system is associated with the 272-S Building, the 242-S Building and MO-027.

Site Posting: Not Specified

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:

Dimensions (estimated):

Site Length:	5.2 m (17.0 ft)	Site Depth:	2.7 m (9.0 ft)
Site Width:	2.4 m (8.0 ft)	Cover Thickness:	None m (None ft)
Site Area:	12.6 m ² (136.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tank:**Dimensions (estimated):**

Site Length:	3.7 m (12.0 ft)	Site Depth:	1.5 m (5.0 ft)
Site Width:	2.4 m (8.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	8.9 m ² (96.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):**

Site Length:	17.4 m (57.0 ft)	Site Depth:	0.6 m (2.0 ft)
Site Width:	13.7 m (45.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	238.3 m ² (2565.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$289,000**References:**

WIDS General Summary Report, DOE/RL-2002-14

2607-WL

No Image Available

No Image Available

Site Name: Active system supports 272WA (tank farm support facility)**Site Type:** Septic System**Facility:** WM Area**Current OU:** 200-MG-1**Former OU:** 200-ST-1**Waste Site Description:**

The 2607-WL Septic System is constructed of reinforced concrete. The septic system includes a trench-type drainfield. The septic tank and drainfield are surrounded by a chain barricade with a sign stating "Septic Tank" posted. The 2607-WL Septic Tank was designed to accept and treat sanitary sewer effluent from the associated facility, and discharge the effluent to the 2607-WL Drain Field. This drain field, in turn, discharges the effluent into the ground.

Related Site Structure: The 2607-WL-Septic Tank is associated with a drain field and the 272-WA Building.**Site Posting:** Septic Tank**Release Mechanism:** Sanitary Effluent**Release Type:** Liquid**Tank:****Dimensions (estimated):****Site Length:** Unknown m (Unknown ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Unknown m (Unknown ft)**Cover Thickness:** None m (None ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):****Site Length:** 18.3 m (60.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 12.2 m (40.0 ft)**Cover Thickness:** Not Specified m (Not Specified ft)**Site Area:** 223.3 m² (2400.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$301,000**References:**

WIDS General Summary Report, DOE/RL-2002-14

2607-WZ

No Image Available

No Image Available

Site Name: 2607-WZ**Site Type:** Septic System**Current OU:** 200-MG-1**Facility:** S/U Farm Area**Former OU:** 200-ST-1**Waste Site Description:**

The 2607-WZ Septic System includes a drain field. A WIDS site code sign on a post marks the assumed location. The 2607-WZ Septic System is listed in WHC-EP-0216. However, the septic tank is not visible on Hanford Site drawing, H-2-44511, sheets 22, 23 or 30. Due to the limited reference material, field investigations are necessary to verify the existence of this system. Ground Penetrating Radar Scans of the area were done in April 2004 and July 2005. A potential location was noted on the 2005 scan.

Related Site Structure: The 2607-WZ Septic Tank is associated with the 241-SX Tank Farm.**Site Posting:** Not Specified**Release Mechanism:** Sanitary Effluent**Release Type:** Liquid**Tank:****Dimensions (estimated):****Site Length:** Unknown m (Unknown ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Unknown m (Unknown ft)**Cover Thickness:** None m (None ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

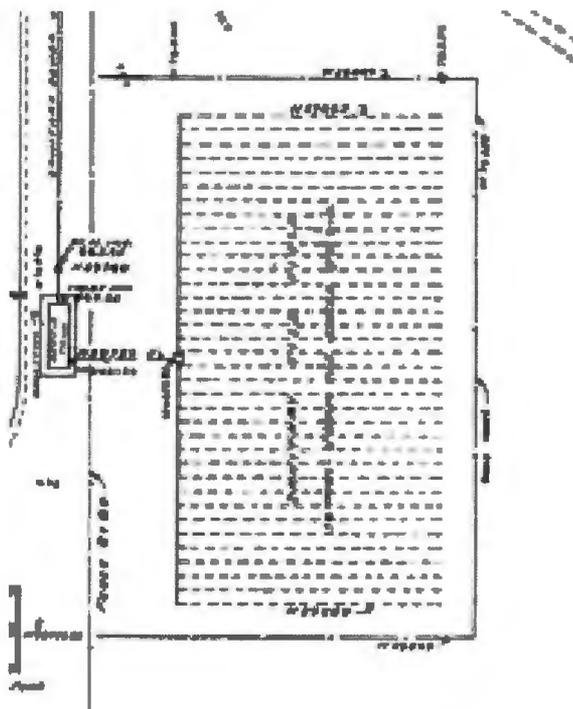
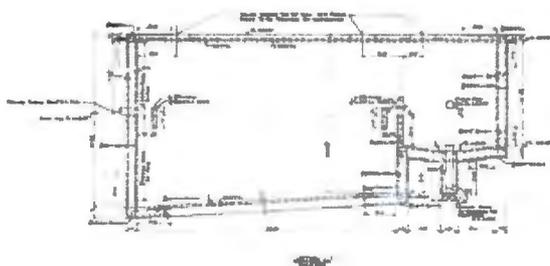
Tile Field:**Dimensions (estimated):****Site Length:** Unknown m (Unknown ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Unknown m (Unknown ft)**Cover Thickness:** Not Specified m (Not Specified ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$289,000

References:

WIDS General Summary Report, DOE/RL-2002-14

2607-Z

Site Name: 2607-Z

Site Type: Septic System

Current OU: 200-MG-1

Facility: PFP Area

Former OU: 200-ST-1

Waste Site Description:

The 2607-Z Septic Tank and drain field lie in a fenced area. The septic tank is constructed of concrete and is a two chamber tank. Three manholes are provided for personnel entry. The drain field measures approximately 86 m (282 ft) in length and 47 m (154 ft) in width. The tile field is located inside a fenced area.

Related Site Structure: The 2607-Z Septic Tank is associated with the 234-5Z, 2704-Z, 270-Z, 236-Z, 292-Z, 2701-Z, 2701-ZA, and the 2701-ZB Buildings.

Site Posting: Not Specified

Release Mechanism: Sanitary Effluent

Release Type: Liquid

Tank:

Dimensions (estimated):

Site Length: 11.8 m (38.7 ft)

Site Width: 4.1 m (13.5 ft)

Site Area: 48.5 m² (522.5 ft²)

Site Depth: 5.8 m (18.9 ft)

Cover Thickness: None m (None ft)

Potential Contaminants:

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	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Tile Field:

Dimensions (estimated):

Site Length:	45.7 m (150.0 ft)	Site Depth:	~1.5 to ~4.6 m (~ 3.5 to ~15 ft)
Site Width:	85.4 m (280.0 ft)	Cover Thickness:	Not Specified m (Not Specified ft)
Site Area:	3902.8 m ² (42000.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$526,000

References:

WIDS General Summary Report, DOE/RL-2002-14

2607-Z1

No Image Available

No Image Available

Site Name: 2607-Z1, Septic Tank and Drainfield**Site Type:** Septic System**Current OU:** 200-MG-1**Facility:** PFP Area**Former OU:** 200-ST-1**Waste Site Description:**

The system (septic tank and drainfield) was constructed in 1958 and was pumped once a week. The drainfield location has been used as a laydown area in the past and the underground laterals may have been damaged.

Related Site Structure: The site is associated with 234-5Z Building Annex and 2736-ZB.**Site Posting:** Not Specified**Release Mechanism:** Sanitary Effluent**Release Type:** Liquid**Tank:****Dimensions (estimated):****Site Length:** 2.6 m (8.5 ft)**Site Depth:** 1.8 m (6.0 ft)**Site Width:** 1.4 m (4.5 ft)**Cover Thickness:** None m (None ft)**Site Area:** 3.5 m² (38.3 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	no radionuclides or hazardous chemicals have been associated with this system, the facilities it serviced handled radioactive materials and may have contributed contaminants.
Nonradiological	X	Unknown

Tile Field:**Dimensions (estimated):****Site Length:** 30.5 m (100.0 ft)**Site Depth:** ~1.1 m (~3.5 ft)**Site Width:** 4.6 m (15.0 ft)**Cover Thickness:** Not Specified m (Not Specified ft)**Site Area:** 140.3 m² (1500.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$336,000

References:

WIDS General Summary Report, DOE/RL-2002-14

270-E-1

No Image Available

Site Name: 270-E-1, 270-E CNT, 270-E Condensate Neutralization Tank, 216-ER-1, IMUST, Inactive Miscellaneous Underground Storage Tank

Site Type: Neutralization Tank

Facility: B Plant Area

Current OU: 200-MG-1

Former OU: 200-PW-2

Waste Site Description:

The site is an underground steel tank. It is marked and posted with Restricted Access-Inactive Tank signs. It is located within a large URM Area that resulted from the stabilization of the adjacent 216-B-64 basin and UPR-200-E-64 sites. The tank was used to neutralize acidic process condensate from the 221-B and the 224-B facilities via the 241-ER-151 Diversion Box (lines V219, V225, 9719, 9653, 9808). Condensate entered the tank at the bottom and flowed upward through the limestone to an outlet pipe located 2.4 m (8 ft) above the tank bottom. The tank contained a limestone bed through which the condensate percolated, reacted, and then overflowed to the 216-B-12 Crib. The tank had a 100 cm (40 in) diameter chute and a 15 cm (6 in) diameter riser extending to the surface from the stainless steel below grade tank. The tank is buried approximately 20 ft (derived) deep. The tank stands vertically on a 0.46 m (1.5 ft) thick concrete pad. This tank was installed in 1952 as part of the 270-E Neutralization Facility. The tank was moved from 221-U, reworked and put to use as a neutralization tank. The 270-E wooden building with a wooden platform was located near the tank. A 100 cm (40 in) riser extended upward from the tank to the wooden platform. It is assumed that the riser was used to add limestone to the tank, as necessary, and that the wooden building was used to store the neutralization material. Drawing H-2-44502, sheet 22 indicates the 270-E Building was removed and the tank was capped and abandoned in the early 1960's. SK-2-56961, drawn in 1972, shows the 100 cm (40 in.) riser was cut below the ground surface and covered with earth. A 1974 letter states that an unsuccessful effort to sample the tank was made on July 1, 1974. The letter indicates a plan to cut the inlet line and pump the remaining liquid from the tank. The inlet and outlet lines would then be capped. Drawing H-2-44501 sheet 97 shows that the inlet and outlet lines have been capped. During the investigation of soil contamination surrounding the tank, a small diameter pipe, approximately 5 cm (2 in.) diameter, was visible near where the 270-E-1 is located. It is possible the pipe is a "Swab Riser" associated with an adjacent underground pipeline.

Related Site Structure: This site is associated with 270-E, the 221-B, 224-B Buildings and the 216-B-12 Crib. UPR-200-E-64 documents that ants brought contamination to the surface in the vicinity of the 270-E Tank and caused contamination to spread.

Site Posting: RA-IT, URM

Release Mechanism: Contaminated Effluent

Release Type: Liquid

Dimensions (estimated):

Site Length:	None m (None ft)	Site Depth:	2.6 m (8.5 ft)
Site Width:	2.7 m (9.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	7.0 m ² (76.5 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	U-238, Sr-90, Cs-137, Pu, beta-emitters
Nonradiological	X	Uranium, As

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$482,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

291-C-1

No Image Available

No Image Available

Site Name: 291-C-1, 291-C-1 Stack, 291-C Stack Burial Trench**Site Type:** Burial Ground**Facility:** Semi-Works Area**Current OU:** 200-MG-1**Former OU:** 200-SW-2**Waste Site Description:**

The 291-C Stack was a double-shell structure made of reinforced concrete, acid-resistant brick and mortar. The stack was demolished in 1988 and now lies in a trench south of where it stood. The area has been surface stabilized with an ash cover (site code 200-E-41). The stack burial trench is not marked and cannot be separately distinguished from the rest of the surface stabilized area. The site provided exhaust air ventilation for the 210-C cells and process vessels. The stack provided exhaust air ventilation for the 201-C cells and process vessels. Forty fiber glass filters were located in an underground concrete cell. An array of HEPA filters was contained in another below-grade enclosure. Prior to demolishing the stack, shielded borehole gamma energy analysis (GEA) equipment was lowered into the stack from the top to a depth of 59.7 meters (196 feet). Due to high background levels, only cesium-137 and strontium-90 were measured. A maximum of 0.137 microcuries per cm² of cesium and 8.70 microcuries per cm² of strontium were estimated at the stack base (196 foot level). A previous radiological survey found the stack base to have a dose rate of 8.5 Rad per hour. The majority of the contamination was found below the 45.7 m (150 ft) level.

Related Site Structure: The site is associated with 201-C and 200-E-41.**Site Posting:** Not Specified**Release Mechanism:** Burial Ground**Release Type:** Solid**Dimensions (estimated):**

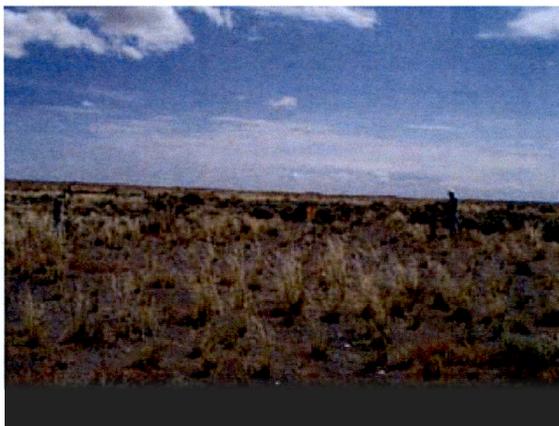
Site Length:	61.0 m (200.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	7.0 m (24.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	427.0 m ² (4800.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Cs-137, Sr-90, estimated 100 Ci of Pu and 600 Ci of beta contamination
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$730,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

600 OCL

No Image Available

Site Name: 600 OCL, 600 Area Original Central Landfill, Original CLF**Site Type:** Sanitary Landfill**Facility:** NRDWL/BC Control Area**Current OU:** 200-MG-1**Former OU:** 200-SW-1**Waste Site Description:**

This site is a backfilled trench that is posted "Underground Radioactive Material". The site received miscellaneous trash and debris from the Hanford site. This site contains general office wastes, some glass, electrical wastes, and minimal metal wastes. The site has been backfilled to grade. The unit was open for approximately nine months. Its poor location (within proximity to the road) allowed trash to blow across the road in times of high wind, creating a traffic hazard. On June 5, 1988, a test pit was dug to try to locate the burial trench. A special radiological survey found 1,500 cpm beta gamma in the test pit. After the discovery of radioactive contamination, the excavation was discontinued. This discovery resulted in the trench being posted as "Underground Radioactive Material."

Related Site Structure: None**Site Posting:** URM**Release Mechanism:** Dumping Area**Release Type:** Solid**Dimensions (estimated):****Site Length:** 91.0 m (300.0 ft)**Site Depth:** 4.6 m (15.0 ft)**Site Width:** 15.0 m (50.0 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 1365.0 m² (15000.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	1500 c/m beta gamma in test pit on June 5, 1988
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$2,383,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

600-218

No Image Available

Site Name: 600-218, H-61-H Anti-Aircraft Artillery Site Dumping Area**Site Type:** Dumping Area**Current OU:** 200-MG-1**Facility:** W. 200 W Area**Former OU:** 200-SW-1**Waste Site Description:**

The dumping area consists of demolition debris consisting of wood, pipe, barbed wire, metal fence posts, empty oil cans, empty paint cans, food cans, and sheet metal. The dumping area measures 20 m by 74 m (67 ft by 243 ft). [It] received miscellaneous construction debris from the Anti-Aircraft site.

Related Site Structure: This dumping area is related to the Anti-Aircraft site 600-216.**Site Posting:** Not Specified**Release Mechanism:** Dumping Area**Release Type:** Solid and Liquid (?)**Dimensions (estimated):****Site Length:** 74.0 m (243.0 ft)**Site Width:** 20.4 m (67.0 ft)**Site Area:** 1511.2 m² (16281.8 ft²)**Site Depth:** Unknown m (Unknown ft)**Cover Thickness:** 0 m (0 ft)**Potential Contaminants:**

	Type	Constituents
Radiological	None	None
Nonradiological	X	Oil and paint, misc. trash and construction debris

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$202,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

600-220

Site Name: 600-220, H-51 Anti-Aircraft Artillery Site Dumping Area

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: S.W. 200 W Ponds Area

Former OU: 200-SW-1

Waste Site Description:

The site consists of three dumping areas. The dumps are located in three general areas. One has T-posts around it and it contains metal, transite, fluorescent light bulbs, metal ducting, fiberglass insulation, an unknown white granular substance, pipe, and wire. The July 2000 fire burned off all flammable material, such as wood, that had remained at the site. The second area is mostly wood; little remains now. The third area is a relatively large area consisting of empty cans and empty food, oil, paint and bleach bottles. Several wooden ammunition boxes and cardboard canisters were observed before 2000, but are now gone. The area appears to have been scraped with a bulldozer. Several waste materials are partially buried. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures. The anti-aircraft sites were phased out of service in late 1957 and early 1958, and their structures and equipment were declared excess.

Related Site Structure: This site is associated with 600-53, the site building foundations, and 6607-3, the site's septic system.

Site Posting: Not Specified

Release Mechanism: Dumping Area

Release Type: Solid

Dimensions (estimated):

Site Length: 200.0 m (647.0 ft)

Site Width: 166.0 m (545.0 ft)

Site Area: 33200.0 m² (352615.0 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Asbestos, misc. trash and construction debris

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$638,000

References:

WIDS General Summary Report, DOE/RL-2004-60

600-222

Site Name: 600-222, H-60 Gun Site

Site Type: Military Compound

Current OU: 200-MG-1

Facility: W. 200 W Area

Former OU: 200-SW-1

Waste Site Description:

There is very little evidence of the former military gun site. A few trees, walkways, roads and an “underground telephone” warning sign are present (a second “underground telephone” sign burned in the July 2000 fire). After the July 2000 fire, other material left at the site has become visible, including pieces of ceramic pipe, a dumpsite with two oil filters, coat hangers, and a few small pieces of transite siding. South of the access road are several small piles of decayed batteries or fuses. A site visit on 3-3-98 identified two 1-1/2 in. diameter pipes protruding from a block of concrete. South of the site, a line of barbed wire stakes was also standing in 1998. In 2001, neither the concrete nor the line of stakes were present. Further south, next to a large granite boulder, is a pile of tent stakes. In 1998, “the deteriorated remains of what appears to be batteries or ammunition” were reported and mapped.

Related Site Structure: Unlike the other anti-aircraft gun sites, no septic system, concrete foundations, or large dumping area have been found for this site.

Site Posting: Underground Telephone warning sign

Release Mechanism: Abandoned Military Site

Release Type: Solid and Liquid (?)

Dimensions (estimated):

Site Length: 212.0 m (695.0 ft)

Site Depth: Unknown m (Unknown ft)

Site Width: 167.0 m (548.0 ft)

Cover Thickness: 0 m (0 ft)

Site Area: 35404.0 m² (380860.0 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Battery and oil wastes

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$533,000

References:

WIDS General Summary Report, DOE/RL-2004-60

600-226



No Image Available

Site Name: 600-226, Gun Site H-42 Dumping Area**Site Type:** Dumping Area**Current OU:** 200-MG-1**Facility:** S. NRDWL/BC Control Area**Former OU:** 200-SW-1**Waste Site Description:**

The site is an old dumping area for an anti-aircraft site. The surface of the site has scattered and decaying debris including pipe, glass, empty buckets, slightly rusted (not corroded) 55-gallon drum, dried paint, cans, transite, broken concrete, and dry cell batteries. Wood had formerly been present, but was burned in the July 2000 fire. Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 acres in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Related Site Structure: This is a dumping area for 600-49, the H-42 Gun Site Building Foundation and Ammunition Storage location. The septic system is site 6607-2. More debris is documented in site code 600-281.

Site Posting: Not Specified**Release Mechanism:** Dumping Area**Release Type:** Solid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	None	None
Nonradiological	X	Misc. construction debris

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$131,000

References:

WIDS General Summary Report, DOE/RL-2004-60

600-228

No Image Available

Site Name: 600-228, H-40 Gun Site Dumping Area

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: NRDWL/BC Control Area

Former OU: 200-SW-1

Waste Site Description:

The dumping areas are located in pits in the southern portion of the site. The pit located west of the main site measures about 12 m (40 ft) in diameter and contains sheetrock, metal, transite, glass and empty paint cans. Two small pits located in the south of the site are each about 4 m (15 ft) in diameter. One pit is empty and the other contains steel fence posts and barbed wire. The largest pit is to the south-southeast, and on the topographic slope facing to the south. It contains a large quantity of metal objects, as well as some transite and glass. The July 2000 fire burned much of the wood debris in this pit and the western pit. These pits received debris from several years of military operation of the anti-aircraft site. Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 acres in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.

Related Site Structure: This site is related to 600-227 (the building foundations), and 6607-1 (the septic tank).

Site Posting: Not Specified

Release Mechanism: Dumping Area

Release Type: Solid and Liquid (?)

Dimensions (estimated):

Site Length:	12.0 m (39.4 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	12.0 m (39.4 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	144.0 m ² (1552.4 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Misc. construction debris, possible lead paint

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$122,000

References:

WIDS General Summary Report, DOE/RL-2004-60

600-262

Site Name: 600-262, West Lake Test Crib

Site Type: Crib

Current OU: 200-MG-1

Facility: 200 E Ponds Area

Former OU: 200-UR-1

Waste Site Description:

The site includes a test crib and twenty one monitoring wells. The entire test site area is surrounded by metal fence posts. No warning signs or postings are visible at the site. The test crib has a wooden frame and a wooden lid, which has been set aside. Two approximately 2.5 cm (1 in.) diameter pipes are visible entering the crib and appear to enter the soil. Although only 7 wells are mentioned in HW-61476, 12 others are identified in HW-71573. Twenty one 5.1 cm (2 in) diameter metal pipes or monitoring wells are currently visible surrounding the crib. Some of the wells are approximately 0.9 m (3 ft) tall and are galvanized while others are only approximately 0.3 m (1 ft) tall and are not galvanized. In three out of the four wells examined, water was visible. Also visible at the site were wood debris, metal debris, wire, empty glass bottles, a wooden box and excess 5.1 cm (2 in.) pipe. The ground surface is gently rolling. Northeast of the test crib is a depressed area approximately the same size as the crib. The soil is sandy and no discoloration is apparent. Vegetation at the site is composed primarily of grasses but includes a few small shrubs. A model test crib was built in 1959 for a field experiment for predicting crib capacity and crib waste retention. The field experiment was designed to check the validity of laboratory results and allow the scientists to observe the behavior of solutions put into the ground in a field setting. The location near West Lake was chosen because the depth to groundwater was only 3.7 m (12 ft). In May 1959, 34,200 L (9,000 gal) of calcium nitrate solution spiked with strontium-85 was placed into the 0.36 m² (4 ft²) crib. According to HW-61476, seven 5 cm (2 in.) diameter wells were placed around the crib to monitor the infiltration of the solution through the soil. HW-61476 refers to them as wells "A" through "G." All the wells were drilled vertically except for well "F", located 1.2 m (4 ft) east of the crib. Well "F" was drilled at an angle that intersected the water table below the center of the crib. For the first week of the experiment, samples were collected from the wells every four hours. Nitrate was detected after 4256 L (1120 gal) of solution had been added to the crib. Well "F" detected strontium-85 after 16,900 L (4450 gal) of solution had been added to the crib. Well "E", located (4 ft) northeast of the crib, detected strontium-85 after 21,660 L (5700 gal) of solution had been added to the crib. The total infiltration of strontium-85 had not reached completion by the time the experiment was terminated. HW-71573, written in 1962, describes the test crib being used again for a similar experiment. Fifteen additional monitoring wells were placed in the area. The infiltrate solution was also calcium nitrate spiked with Strontium-85.

Related Site Structure: None

Site Posting: None

Release Mechanism: Test Site

Release Type: Liquid

Dimensions (estimated):

Site Length: 0.6 m (2.0 ft) **Site Depth:** 0.6 m (2.0 ft)
Site Width: 0.6 m (2.0 ft) **Cover Thickness:** 0 m (0 ft)
Site Area: 0.4 m² (4.0 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Sr-85
Nonradiological	X	Calcium nitrate

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

600-275

No Image Available

Site Name: 600-275, 218-W-14, Igloo Site, Army Ammo Site, Regulated Storage Area**Site Type:** Foundation**Current OU:** 200-MG-1**Facility:** W. 200 W Area**Former OU:** 200-UR-1**Waste Site Description:**

The bunkers, guard house and fence have been removed. Currently the access roads are visible with bladed areas where the seven bunkers had been located. Rectangular mounds of soil, each approximately 1 m (3 ft) high, remain where the igloo structures had been located. The seven army igloos were originally used for ammunition storage and Nike missile parts. Drilling equipment for the Basalt Waste Isolation Project was also stored in the igloos. Later, radioactive material (plutonium scrap waste) was stored in the igloos. A Hanford employee recalls doing a routine surveillance of the plutonium scrap that was stored in barrels of carbon tetrachloride. He discovered a spill had occurred in the igloo located in the northeast corner of the site. Since the floors of the igloos were sloped to from center outward to collection points, no contamination reached the outside of the igloo. The contamination was cleaned up when it was found. It is estimated to have occurred sometime in the 1960's.

Related Site Structure: None**Site Posting:** Not Specified**Release Mechanism:** Leak/ Spill**Release Type:** Solid and Liquid**Dimensions (estimated):****Site Length:** 624.8 m (2050.1 ft)**Site Width:** 495.3 m (1625.1 ft)**Site Area:** 309483.3 m² (3331575.1 ft²)**Site Depth:** Unknown m (Unknown ft)**Cover Thickness:** 0 m (0 ft)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Plutonium scrap
Nonradiological	X	Carbon tetrachloride

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$589,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

600-281

Site Name: 600-281, Scattered Debris South of Army Loop Road

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: S. NRDWL/BC Control Area

Former OU: 200-SW-1

Waste Site Description:

After the range fire in June 2000, additional areas of debris were visible. Five areas of concentrated debris were identified. The debris includes material suspected to be asbestos, charred wood, glass, metal pipes, gauges and green metal containers. A June 2002 site walkdown was conducted to document scattered debris. Five waste areas west of the powerline road were identified on GPS job #529. The five waste areas designated during GPS job 529 contain the following debris: Area 1 - scattered debris. Area 2 - Broken burlap bags in mound of dirt, metal straps, dried paint, military issue dishes, broken concrete, rusted 55-gallon empty drum. Area 3 - Lightly rusted (not corroded) 55-gallon drum, an air hole at one end is open and drum appears empty except solid sound in middle. Area 4 - Broken toilet, small military issue batteries, mound of transite and homemade dumbbell. Area 5 - east of powerline contains two mounds of transite. Three compressed gas cylinders were found adjacent to well 699-16-51.

Related Site Structure: The debris is associated with site code 600-49.

Site Posting: Not Specified

Release Mechanism: Dumping Area

Release Type: Solid

Dimensions (estimated):

Site Length:	Unknown m (Unknown ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Unknown m (Unknown ft)	Cover Thickness:	0 m (0 ft)
Site Area:	Unknown m ² (Unknown ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Demolition and inert waste, asbestos

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$168,000

References:

WIDS General Summary Report, DOE/RL-2004-60

600-36

Site Name: 600-36, Ethel Railroad Siding (Burn Pit)

Site Type: Burn Pit

Current OU: 200-MG-1

Facility: 200 E Ponds Area

Former OU: 200-SW-1

Waste Site Description:

The site is an area of scattered debris and some evidence of burning, adjacent to the Ethel railroad siding. In 1993 this site was submitted as a suspect waste site, evidenced by burned areas and oil spills. It consisted of an area measuring approximately 91.4 m by 18.3 m (300 ft by 60 ft), northwest of the 251 Substation, near the "Ethel" railroad siding. In October 1997, a site investigative team mapped and photographed several areas of debris. The debris consisted of metal canisters of bolts and nuts, batteries, abandoned rails, metal debris and an area with evidence of an oil spill. A site walkdown in 4/2/02, however, indicated that most of the debris shown in the 1997 photographs could not be located. Only the batteries and oil stained soil were observed.

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Dumping Area

Release Type: Solid and Liquid (?)

Dimensions (estimated):

Site Length: 18.0 m (60.0 ft)

Site Width: 91.4 m (300.0 ft)

Site Area: 1645.9 m² (18000.9 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Miscellaneous debris, demolition and inert waste

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$202,000

References:

WIDS General Summary Report, DOE/RL-2004-60

600-37

Site Name: 600-37, Browns Wells, Johnson's Wells
Site Type: French Drain
Current OU: 200-MG-1

Facility: ERDF Area
Former OU: 200-UR-1

Waste Site Description:

The unit consists of four steel tanks and four french drains. Three of the tanks are approximately 3 m (10 ft) long by 1.5 m (5 ft) in diameter, and the fourth tank is 6.7 m (22 ft) long by 1.5 m (5 ft) in diameter. The tanks had been resting on railroad ties approximately 1.2 m (4 ft) above ground. A range fire burned through the area in June 2000. The southern-most tank was untouched by the fire and the tank supports remain intact. The wooden support structures under the other three tanks were burned and the tanks are now sitting on the ground. The french drains are double encased with pipe used to center the inner casing within the outer casing. Three of the french drains have a inside diameter of 38 cm (15 in.) and are approximately 4.9 m (16 ft) deep. The fourth french drain has a much larger diameter. The french drains were unaffected by the fire in June 2000. There is a dirt road that runs through the unit that appears to be surfaced with used oil. The four steel tanks appear to be of military origin. The configuration of the drains and tanks appear appropriate for an infiltration test. Raw water was assumed to have been disposed of in the french drains, however sample testing should be conducted in the unit.

Related Site Structure: None
Site Posting: Not Specified

Release Mechanism: Unknown/ Testing
Release Type: Liquid

Dimensions (estimated):

Site Length:	3.0 m (10.0 ft)	Site Depth:	4.9 m (16.0 ft)
Site Width:	2.0 m (7.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	6.1 m ² (70.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	Unknown	Unknown
Nonradiological	Unknown	Unknown

Preferred Removal Action: CS-NA
Estimated Removal Action Present Worth: \$180,000

References:

WIDS General Summary Report, DOE/RL-2004-39

600-38

No Image Available

No Image Available

Site Name: 600-38, Railroad Siding Susie, 600-25, Susie Junction**Site Type:** Dumping Area**Current OU:** 200-MG-1**Facility:** W. 200 E Ponds Area**Former OU:** 200-SW-1**Waste Site Description:**

The site is at the "Susie" railroad junction. The northeast corner of the junction has an excavated area that may have contained a siding for decontamination of railroad cars. In an 1996 interview, Ray Johnson said that the site had been "picked up" by unknown parties, but most of the railroad maintenance equipment was left at the site. In 1989 Roos reported that in a large pit were 4 to 5 drums, one had leaked some oily liquid, another was labeled kerosene. On the side of the pit near the tracks was a small trash pile containing rubber boots, brooms, brushes, chisels mounted on poles, hoses, and various trash. These objects appeared to be associated with a cleaning/decontamination process, however, the small quantity would suggest that it was single event, or more careful disposal procedures were generally used. On the south side of the tracks, in the same general area, was evidence of a railroad siding. A small pile of ashes was present containing nails, cans, and some other ordinary looking trash. There was some fluffy white fibrous material on the ground that looked like insulation. It was beside the ash pile, and had ashes on it. It may have survived a fire hot enough to shatter cobbles in the area, suggesting that it may be some form of asbestos.

Related Site Structure: Railroad lines are associated with this unit.**Site Posting:** Not Specified**Release Mechanism:** Dumping Area**Release Type:** Solid and Liquid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 338067.9 m² (3638933.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	None	None
Nonradiological	X	Miscellaneous debris, demolition and inert waste, asbestos, petroleum hydrocarbon

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$446,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

600-40



Site Name: 600-40, West of West Lake Dumping Area

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: 200 E Ponds Area

Former OU: 200-SW-1

Waste Site Description:

The unit is an old dumping area. The debris is mostly consolidated in one of two locations, either along the road or on the hillside. The site along the road is approximately 364 m² (3918 ft²) in area. The site on the hillside is 123 m² (1324 ft²) in area. The area listed in the dimensions represents the total area of both dumping areas. Additionally, a few pieces of scattered debris can be found on the hillside. The waste along the dirt road includes chunks and slabs of concrete, lumber, miscellaneous metal debris, rusted cans approximately 30.5 cm in diameter and 40.6 cm tall (12 in. in diameter and 16 in. tall), and what appears to be roofing (black, tarry sheets with gravel) materials. On the hillside are 2 small wooden structures approximately 1.8 m by 1.8 m by 1.2 m (6 ft by 6 ft by 4 ft), a pile of wooden posts with each post approximately 20.3 cm in diameter and 1.8 m long (8 in. in diameter and 6 ft long), other wood debris, what appears to be a wheelbarrow, and 2 large rusted metal cans approximately 20.3 cm by 20.3 cm by 35.6 cm tall (8 in. by 8 in. by 14 in. tall) and 30.5 cm in diameter by 35.6 cm tall (12 in. in diameter by 14 in. tall).

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Dumping Area

Release Type: Solid

Dimensions (estimated):

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0 m (0 ft)
Site Area:	487.0 m ² (5242.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Miscellaneous debris, demolition and inert waste

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$168,000

References:

WIDS General Summary Report, DOE/RL-2004-60

600-51

Site Name: 600-51, Chemical Dump, Pile of White Powder

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: N. 200 E Ponds Area

Former OU: 200-SW-1

Waste Site Description:

The site is an elliptical area with little or no vegetation. This site consisted of a pile of white powdered chemical substance. Sampling determined the powder was a sodium compound. During a site visit on October 27, 1999, it was observed that the pile of white powder was gone. There does not appear to be any signs of soil discoloration or traces of the white powder. It is unknown how long the pile of white powder has been gone or whether the lack of vegetation is temporary or long term. The surrounding area was covered with grasses, tumbleweeds and tumble mustard. The material was located next to the 1901-Z Building. This building is a concrete block structure housing valves for the export water lines.

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Dumping Area

Release Type: Solid

Dimensions (estimated):

Site Length: 1.0 m (3.0 ft)

Site Depth: Unknown m (Unknown ft)

Site Width: 1.5 m (5.0 ft)

Cover Thickness: 0 m (0 ft)

Site Area: 1.5 m² (15.0 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$131,000

References:

WIDS General Summary Report, DOE/RL-2004-60

600-65

No Image Available

Site Name: 600-65, 607 Batch Plant Drum Site

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: N. ERDF Area

Former OU: 200-SW-1

Waste Site Description:

In 1995, the site had two crushed and flattened 55-gal drums, one oil filter housing (approximately 2 qts [1.9 L]), a metal cable, one large concrete block (0.5 yds³ [0.4 m³]), and indications of possible petroleum disposal. In 2001, the items noted above could not be located, and the area is possibly being used for fill material.

Related Site Structure: This Site is associated with the 607 Batch Plant Gravel Pit.

Site Posting: Not Specified

Release Mechanism: Dumping Area

Release Type: Solid and Liquid (?)

Dimensions (estimated):

Site Length: 3.0 m (10.0 ft)

Site Depth: Unknown m (Unknown ft)

Site Width: 3.0 m (10.0 ft)

Cover Thickness: 0 m (0 ft)

Site Area: 9.1 m² (100.0 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Miscellaneous debris, petroleum hydrocarbons

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$132,000

References:

WIDS General Summary Report, DOE/RL-2004-60

600-66



No Image Available

Site Name: 600-66, 607 Batch Plant Orphan Drums**Site Type:** Dumping Area**Current OU:** 200-MG-1**Facility:** ERDF Area**Former OU:** 200-SW-1**Waste Site Description:**

The site consists of one rusted 55-gallon (208 L) drum laying on the ground surface on its side. No label or hazardous substance are evident. In 1995 a site visit found two rusted drums, contents unknown. Notes from the logbook indicate one drum was a rusted 55-gal and one a 5-gal drum. Also noted from the site walkdown was that one drum was labeled "Cutting Oil", but not specifically which one. A subsequent field visit in 1997 identified only one 55 gal drum and some metal sheeting. No mention of labels. On 3/26/02 and 11/04/03, only one unlabeled 55 gal drum was observed during site walk downs by Curt Clement.

Related Site Structure: The abandoned drum may be associated with the Batch Plant.**Site Posting:** None**Release Mechanism:** Dumping Area**Release Type:** Solid and Liquid (?)**Dimensions (estimated):****Site Length:** 1.5 m (5.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 1.5 m (5.0 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 2.3 m² (25.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	None	None
Nonradiological	X	Unknown liquids

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$131,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

600-70



Site Name: 600-70, Solid Waste Management Unit (SWMU) #2 - Miscellaneous Solid Waste

Site Type: Dumping Area

Current OU: 200-MG-1

Facility: REDOX Area

Former OU: 200-SW-1

Waste Site Description:

The site is located on relatively flat terrain except for natural depressions and evidence that trenches may have been dug. Large amounts of construction materials such as concrete, wood, metal, cans, barrels and transite are visible. Numerous areas of burned materials were also observed. In early 1950, the United States Government began construction of the REDOX plant in the south portion of the 200-West Area. A construction storage, heavy equipment vehicle parking and maintenance, concrete truck washdown area, and a waste disposal area associated with the REDOX plant construction were at this site. Likely waste disposal during the 2-year construction period included trash burning (evident from photographs provided by DOE), acid "pickling" (metal preparation) wastes, cooling water from heliarc welding operations (into a french drain), and sandblasting wastes. Other possible contaminants disposed of in this area include gasoline, oil, other lubricants, anti-freeze, and other vehicle-related fluids. The exact locations of the french drain and other disposal units are unknown.

Related Site Structure: None

Site Posting: Not Specified

Release Mechanism: Dumping Area

Release Type: Solid and Liquid

Dimensions (estimated):

Site Length: 425.0 m (1394.0 ft)

Site Width: 280.0 m (918.4 ft)

Site Area: 119000.0 m² (1280249.6 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Miscellaneous debris, demolition and inert waste, asbestos, petroleum hydrocarbon

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$347,000

References:

WIDS General Summary Report, DOE/RL-2004-60

600-71



Site Name: 600-71, 607 Batch Plant Burn Pit
Site Type: Burn Pit
Current OU: 200-MG-1

Facility: ERDF Area
Former OU: 200-SW-1

Waste Site Description:

The site consists of an area of charred ground, a piece of rusted sheet metal and small pieces of debris. In June 2004, the expansion of Gravel Pit 30 pushed soil over the northern portion of the 600-71 Burn Pit. The initial site review on 8/14/95 found charred material, wood, corrugated metal, oil cans, aerosol cans, paint cans, glass jars, paper, rope, rubber, roofing, metal pipe, and metal scattered around the site. Photos taken on the 4/1/02 site walkdown identified charred ground, wood scraps and rusted metal debris. No hazardous substances were found. This area has the appearance of being more recently burned and is located closer to the 607 Batch Plant building than the areas identified in 1995. In June 2004, the expansion of Gravel Pit 30 pushed soil over the northern portion of the 600-71 Burn Pit.

Related Site Structure: The 607 Batch Plant is adjacent to the Burn Pit.

Site Posting: Not Specified

Release Mechanism: Unknown

Release Type: Solid

Dimensions (estimated):

Site Length:	30.0 m (100.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	24.4 m (80.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	731.5 m ² (8000.4 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Miscellaneous debris, demolition and inert waste

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$122,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

CTFN 2703-E

No Image Available

No Image Available

Site Name: CTFN 2703-E, 200-E Chemical Drain Field, Chemical Tile Field North of 2703-E**Site Type:** Drain/Tile field**Facility:** 200 E Admin Area**Current OU:** 200-MG-1**Former OU:** 200-LW-2**Waste Site Description:**

The waste site consists of a trench and seepage basin. As of 1994, this unit had no free standing liquids nor any sign of natural vegetative growth. The seepage basin is referred to as the 200-E Chemical Drain Field. It has not been backfilled or filled with any materials that would facilitate drainage. The drain field was designed to receive non-hazardous liquid waste from the 272-E and 2703-E Buildings. Wastewater from the 272-E Building floor drain was discharged to a process sewer line which extends to the disposal site (see 200-E-287-PL). Wastewater from two floor sumps in the 2703-E Building was discharged to the same process sewer line and combined with the 272-E Building effluent before reaching the disposal site. DOE/RL-94-24 gave the dimensions for the basin as 47m x 47m, and also gave a length of the trench as 47m.

Related Site Structure: 272-E Building and the 2703-E Building. The pipeline associated with this tile field is site code 200-E-287-PL.

Site Posting: None**Release Mechanism:** Liquid disposal**Release Type:** Liquid**Dimensions (estimated):****Site Length:** 47.0 m (155.0 ft)**Site Depth:** 1.8 m (6.0 ft)**Site Width:** 47.0 m (155.0 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 2209.0 m² (24025.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$330,000**References:**

WIDS General Summary Report, DOE/RL-2006-56, DOE/RL-2005-61

OCSA



Site Name: OCSA, Old Central Shop Area, Central Shop Area

Site Type: Foundations

Current OU: 200-MG-1

Facility: 200 E Ponds Area

Former OU: 200-SW-1

Waste Site Description:

The site consists of building foundations and scattered debris. A site visit on 12-4-97 observed pieces of lumber, corrugated metal, bricks, shingles, buckets, a barrel, office furniture, and wooden tables. There are two pits containing debris and nails. During Hanford construction the central shops were established as a staging area, repair shops, and specialized fabrications area. It was a central location for construction being conducted at 200 East, 200 West, 100-B, 100-D, and 100-F Areas. It included materials storage areas for construction materials and fuel storage. All facilities in the central shops area were considered temporary construction facilities and were identified as TC-29 Buildings. The sanitary sewer system consisted of a gravity feed septic tank system open trench and open settling ponds. There were three fuel storage areas. One was associated with a gas station and had kerosene as well as diesel and gasoline in 3,000 gal storage tanks (also "white" in a 2,000 gal tank). The second was a fuel storage yard, with six 25,000 gal tanks and two 12,000 gal tanks; the drawings show this as both "Gasoline storage area" on one side and "Fuel Oil storage" on the other. The third is one 100,000 gal storage tank that was connected to a Boiler, which was likely the heat source for the area buildings.

Related Site Structure: None

Site Posting: None

Release Mechanism: Former Construction Staging Area With Fuel Tanks

Release Type: Solid and Liquid (?)

Dimensions (estimated):

Site Length: Irregular m (Irregular ft)
Site Width: Irregular m (Irregular ft)
Site Area: 1002921.0 m² (10795351.5 ft²)

Site Depth: Unknown m (Unknown ft)

Cover Thickness: 0 m (0 ft)

Potential Contaminants:

	Type	Constituents
Radiological	None	None
Nonradiological	X	Miscellaneous debris, demolition and inert waste, petroleum hydrocarbons

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$721,000

References:

WIDS General Summary Report, DOE/RL-2004-60

UPR-200-E-10

No Image Available

No Image Available

Site Name: UPR-200-E-10, Contaminated Purex Railroad Spur, UN-200-E-10**Site Type:** Unplanned Release**Facility:** PUREX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

A contamination spread occurred along the railroad tracks while transporting tube bundles from PUREX to the burial ground. The release is not separately marked or posted. The railroad cut was decontaminated by excavation and flushing. All smearable contamination was removed from the railroad tunnel and fixed contamination was reduced to a maximum of 25 mR/hr; the major portion of the affected tunnel was repainted. The canyon was restored to its former status. The craneway was restored to its former status with the exception of spotty contamination of 1.6 Rad/hr in the extreme east end of the craneway. The bulk of high-level contamination was removed from the crane. Most of the railroad right-of-way was decontaminated by flushing with water using a specially equipped tank car. In September 1957, contamination ranging from 5 to 20 Rad/hr was spread in the craneway, canyon, railroad tunnel, and on the remote crane and railroad right-of-way during transport of two failed waste concentrator tube bundles. An unplanned release occurred while transporting tube bundles. Contamination was spread in the craneway, canyon, railroad tunnel and on the remote crane.

Related Site Structure: The site is associated with 200-E-44 (PUREX Railroad Cut).**Site Posting:** Not separately marked or posted from other postings on the railroad tracks**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Contamination ranging from 5 to 20 Rads/hr in September 1957
Nonradiological	Unknown	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$4,972,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-101

No Image Available

No Image Available

Site Name: UPR-200-E-101, UN-216-E-30, UN-216-E-101, UN-200-E-101, Radioactive Spill Near 242-B Evaporator

Site Type: Unplanned Release

Facility: B Farm Area

Current OU: 200-MG-1

Former OU: 200-UR-1

Waste Site Description:

The site, adjacent to the B Tank Farm perimeter fence, is currently a posted as a URM area. Surface contamination was identified between the 241-B Tank Farm fence and the 242-B Evaporator building. It was assigned the UPR Site Number UN-216-E-30 in August 1985. The area adjacent to the tank farm fence is prone to contamination migrating outside the tank farm. In the past, CA postings periodically extended beyond the chain link fence, but the postings were removed as the contamination was removed. In 2000 and 2001, a large zone extension covered the area previously stabilized. Windblown particulates from the tank farm or spills from the 242-B Evaporator may have been the cause of the contamination, but an exact cause for this area of contamination has not been determined. A routine radiological survey done in September 1986 found tumbleweeds growing at the site that were reading 1,000 cpm beta-gamma.

Related Site Structure: The site is associated with 241-B Tank Farm and 200-E-120.

Site Posting: URM

Release Mechanism: Windblown Particulate/ Vegetation

Release Type: Solid

Dimensions (estimated):

Site Length: 25.6 m (84.0 ft)

Site Depth: Unknown m (Unknown ft)

Site Width: 12.2 m (40.0 ft)

Cover Thickness: 0.3-0.6 m (1-2 ft)

Site Area: 312.2 m² (3360.3 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Tumbleweeds reading 1,000 cpm beta-gamma in September 1986
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$241,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-11

No Image Available

Site Name: UPR-200-E-11, Railroad Track Contamination Spread, UN-200-E-11**Site Type:** Unplanned Release**Facility:** Solid Waste Area/ B Plant Area/ 200 E Admin Area/ Semi-Works Area/ PUREX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

This unplanned release is no longer marked or posted. Portions of the TC-4 Spur (a.k.a. UPR-200-E-88) and a section of track south of the 218-E-5 Burial Ground (UPR-200-E-95) have been covered with dirt and posted with URM signs. There have been contaminated spots found on the railroad track extending from PUREX to the 218-E-5 Burial Ground at various times when the tracks were actively being used to transport material into and out of the PUREX facility. The track extending from the PUREX tunnel entrance to the western PUREX exclusion area fence has been given a separate WIDS site code (200-E-44). The railcar storage area at the north end of the "TC" spur is WIDS site code 200-E-43. This 1957 unplanned release effected the entire length of the railroad track. No exact date is recorded, however UPR-200-E-12 is documented as occurring on November 15, 1957. The events are very similar and could be a duplicated of this event. In 1957, fission product contamination spots dripped along the railroad track extending from PUREX to the 218-E-5 Burial Ground. Contaminated tracks sections included the track from the PUREX tunnel entrance to the west exclusion area fence, the spur into the 218-E-5 Burial Ground, and the "TC" spur. Specific release details are unknown. Some burial casks were shielded with water that was removed before placing the material into the burial ground. Sometimes railcars were washed down to remove loose contamination before transporting the load to the solid waste burial ground.

Related Site Structure: The site is associated with UPR-200-E-11, UPR-200-E-88, UPR-200-E-95, 200-E-43 and 200-E-44.

Site Posting: None; URM (portions of the TC spur and sections of track south of burial grounds)

Release Mechanism: Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):**

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	11473.3 m ² (123497.7 ft ²)		

Potential Contaminants:

DOE/RL-2008-44 DRAFT A

	Type	Constituents
Radiological	X	Fission product contamination spots
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$4,972,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-112

No Image Available

No Image Available

Site Name: UPR-200-E-112, UN-200-E-112, Contaminated Railroad Track from B-Plant to the Burial Ground**Site Type:** Unplanned Release**Facility:** B Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

UPR-200-E-112 occurred on February 12, 1979. The contaminated section of track and the Atlantic Avenue crossing were cleaned by noon, February 12, 1979. During a canyon equipment burial transfer, some contaminated liquid spilled out of a cesium ion exchange column that was being loaded into a burial box atop a railcar. The liquid spilled onto the tracks inside the B Plant railroad tunnel and was carried outside by one wheels of the railroad car, contaminating the track from B Plant to the east boundary of the burial ground. Contamination levels ranged from 40,000 cpm to 80,000 cpm. Approximately 15 m (50 ft) of track that crossed Atlanta Ave. was decontaminated immediately. Occurrence Report 79-24 also recommends an effort to continue to clean the contaminated track.

Related Site Structure: UPR-200-E-112 was associated with the 221-B Building and the B Plant Aggregate Area Railroad Cut and Tunnel.

Site Posting: Not Specified**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** 15.2 m (50.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 6354.8 m² (68403.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	40,000-80,000 cpm detected in 1979
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$2,444,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-12

No Image Available

No Image Available

Site Name: UPR-200-E-12, Contaminated Purex Railroad Spur, UN-200-E-12**Site Type:** Unplanned Release**Facility:** PUREX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

This unplanned release is no longer marked or posted. Portions of the TC-4 Spur (a.k.a. UPR-200-E-88) and a section of track south of the 218-E-5 Burial Ground (UPR-200-E-95) have been covered with dirt and posted with URM signs. Contamination occurred on the PUREX railroad bed and right-of-way to the Burial Ground, both inside and outside the PUREX exclusion fence. The contamination inside the PUREX fence is considered part of the PUREX Railroad Cut, site code 200-E-44. No exact date is recorded for UPR-200-E-11, that also occurred in 1957. The release descriptions are very similar and could be a duplicate of the same event. On 11/15/57, a burial box containing failed process jumpers dripped contaminated liquid while in transit to the burial ground. This resulted in spotty contamination of 40 to 1,700 mR/hr to the railroad roadbed. Contamination also spread to the canyon deck, tunnel, and tunnel cut. Some burial casks were shielded with water that was removed before placing the material into the burial ground. Sometimes railcars were washed down to remove loose contamination before transporting the load to the burial ground.

Related Site Structure: This site is associated with UPR-200-E-11, UPR-200-E-88, 200-E-43 and 200-E-44.**Site Posting:** None**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	40-1700 mR/hr; dose rate on burial box equal to 450 mR/hr at 150 ft in November 15, 1957
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$4,972,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-143

No Image Available

No Image Available

Site Name: UPR-200-E-143, Contamination Adjacent to 244-A Lift Station, UN-216-E-43**Site Type:** Unplanned Release**Facility:** PUREX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

Various radiological postings exist in this vicinity that are associated with the 244-A Lift Station and 241-C Tank Farm contamination migration. A WIDS sign has been placed at the approximate location of the release. The same area is known to have been contaminated with animal feces in 1985 (see UPR-200-E-100). Additional radiological surveys and decontamination attempts changed the size and shape of the posted contaminated area several times. In October 1990, radiologically contaminated rabbit feces, with a maximum dose of 900 mRem/hr, was found south of the 244-A Lift Station and west of the 216-A-40 Basin. An investigation was initiated to identify the contaminating source. The same area is known to have been contaminated with animal feces in 1985 (see UPR-200-E-100). Additional radiological surveys and decontamination attempts changed the size and shape of the posted contaminated area several times.

Related Site Structure: This release is associated with the 244-A Lift Station, 200-E Powerhouse Ditch and UPR-200-E-100.

Site Posting: The release is not separately marked or posted. Various radiological postings exist in the vicinity.

Release Mechanism: Windblown Particulate/ Biological Intrusion

Release Type: Solid

Dimensions (estimated):

Site Length: Unknown m (Unknown ft) **Site Depth:** Unknown m (Unknown ft)
Site Width: Unknown m (Unknown ft) **Cover Thickness:** 0 m (0 ft)
Site Area: 4645.2 m² (50000.0 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Rad survey readings of 900 mR/hr in October 1990. Analytical results detected Cs-137.
Nonradiological	None	None

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$310,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-2

No Image Available

No Image Available

Site Name: UPR-200-E-2, UN-200-E-2, Spotty Contamination Around the B and T Plant Stacks**Site Type:** Unplanned Release**Facility:** B Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

This unplanned release is not physically posted or marked. This documented contamination spread was noted in the ARH-780 and given an UPR number. ARCHO document ARH-780 discusses "Process Ventilation Particulate and Gaseous Emissions". It mentions five Hanford Works documents written in 1947 and 1948 that discuss the identification of contaminated particles around the B Plant and T Plant exhaust stacks (HW-7997 dated 11-18-1947). It discusses contamination in both 200 East and 200 West; document UN-200-E-2 emphasized the B Plant location. The ARCHO document summaries describe the investigation into the contamination source. Currently, the area around the B-Plant stack and filtration systems is delimited with a light-weight chain barricade and surface contamination signs. HW-8267 states that in addition to providing a filtration system, sections of the stacks were to be removed and inspected. If the ductwork was determined to be the source of the contamination, steps should be taken to replace the existing ductwork. HW-8438 states that the contamination source was found to be the exhaust fans. A change of equipment was made to one stack. Plant operation forces were to eliminate the conditions within 60 days (document written 1/21/48). Proposed filter work was suspended in favor of replacing the electrical fans with stainless steel inlet and outlet ducts. HW-8931 (2/20/48) states that a marked decrease in particulate discharge was observed. HW-9595 (4/26/48) states that the large particle discharge has been eliminated, but smaller, mist-like particle contamination is still a problem. Smaller particles were identified over a wider area. Cell ventilation ducts are to be equipped with filters and scrubbers are to be installed in the dissolver off gas lines. A document written on 11/18/1947 states radioactive particulate matter was found within a 305 m (1,000 ft) radius around the B Plant and T Plant stacks. A study of the ground contamination found that mist-like particles were released over a larger area and that the particulate matter had magnetic properties.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Ventilation Particulate**Release Type:** Solid**Dimensions (estimated):**

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	609.6 m (2000.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	Unknown m ² (Unknown ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	None	None

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$207,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-E-20

No Image Available

No Image Available

Site Name: UPR-200-E-20, Contaminated Purex Railroad Spur, UN-200-E-20**Site Type:** Unplanned Release**Facility:** PUREX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The site is located at the PUREX railroad right-of-way. The release is not separately marked or posted. On November 20, 1959, PUREX tube bundles in transit for burial provided some spotty ground contamination.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$4,972,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-28

No Image Available

No Image Available

Site Name: UPR-200-E-28, Contamination Release Inside the PUREX Exclusion Area, UN-200-E-28**Site Type:** Unplanned Release**Facility:** PUREX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

This release occurred in the eastern half of the PUREX exclusion area. The exclusion area is posted as a Contamination Area. The release can not be individually distinguished within the zone. The November 30, 1961 release was reported in the Chemical Processing Department monthly report dated 12/21/61. Some documents have cited the report date instead of the release date. On November 30, 1961, a general spread of low-level contamination to the eastern half of the PUREX exclusion area occurred. Fission products escaped from a trap pit because of failures in a process vessel steam coil and in the trap pit piping.

Related Site Structure: The surface contaminated areas inside the PUREX facility fence were surface stabilized in 1999 and 2001. See WIDS site codes 200-E-103 and 200-E-107.

Site Posting: CA**Release Mechanism:** Leak/ Spill**Release Type:** Solid, Liquid, ?**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$133,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-E-33

No Image Available

Site Name: UPR-200-E-33, Contaminated Purex Railroad tracks, UN-200-E-33**Site Type:** Unplanned Release**Facility:** PUREX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

A contamination spread occurred on the PUREX railroad bed and right-of-way to the burial ground. The contamination was located both inside and outside the PUREX exclusion fence. The contamination inside the fence is considered part of the PUREX Railroad Cut (Waste Information Data System [WIDS] site code 200-E-44). On March 20, 1964, a leaking tube bundle burial box in transit to the burial ground contaminated a portion of the railroad right-of-way and area adjacent to the 216-A-9 Crib. The contamination spread occurred in February 1964. The February Monthly Report for 1964 (HW-81078) was issued on 3-20-64. This report states that decontamination was successful, but does not give any details of the decontamination activity.

Related Site Structure: None**Site Posting:** Not Specified**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$4,972,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-35

No Image Available

No Image Available

Site Name: UPR-200-E-35, Buried Contaminated Pipe, UN-218-E-1, 218-E-13**Site Type:** Unplanned Release**Facility:** PUREX Area**Current OU:** 200-MG-1**Former OU:** 200-SW-2**Waste Site Description:**

The site is the location of a contaminated concrete pipe repair completed in August 1966. The site is no longer marked or posted. It is inside the PUREX exclusion fence. In 1980 a surface radiological survey did not detect any contamination so the posting was changed from Surface Contamination to URM. However, a site visit in 1991 could not identify any posting or markings for this site. This site received broken pieces of contaminated concrete from the pipe trench, which were left in the excavation hole and buried following repair to the piping at that location. The site contains less than 1 curie fission products. It was estimated to be located 107 m (350 ft) west of the PUREX badge house.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Pipeline Release**Release Type:** Solid**Dimensions (estimated):****Site Length:** 14.0 m (46.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 12.0 m (40.0 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 168.0 m² (1840.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Less than 1 Ci fission products reported in August 1966
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$441,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

UPR-200-E-37

No Image Available

No Image Available

Site Name: UPR-200-E-37, Contamination East of Hot Semi-Works, UN-200-E-37, UN-216-E-37**Site Type:** Unplanned Release**Facility:** Semi-Works Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

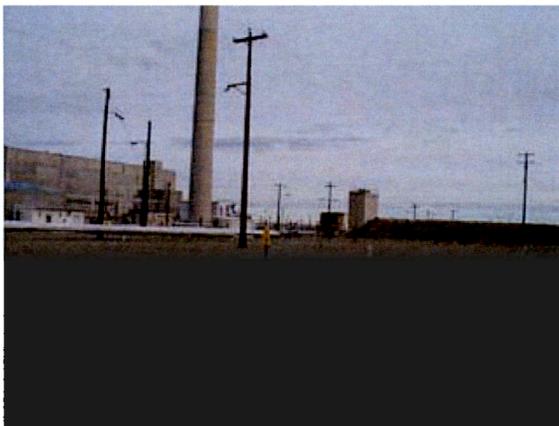
There is currently no physical evidence of the unplanned release site. It is no longer marked or posted. This UPR was documented on an Occurrence Report in 1967. However, a documented remediation of a contaminated area east of Semi-Works was done 22 years later in 08/89 and 09/89. The size of the posted contaminated area described in 1989 is considerably larger than the area described in 1967. The southern boundary of the posted contaminated zone in 1989 began near the SE corner of the 209-E Facility fence and extended E approximately 500 m (1,640 ft), 200 m (660 ft) wide. The contaminated soil in the field E and S of Semi-Works was scraped up and placed in dump trucks. The soil was disposed of in the 216-C-9 Dry Waste Burial Trench. Following the removal of the contaminated soil, a radiological survey was done with the MSCM tractor. Ninety-six soil samples were collected and analyzed: concentrations of radionuclides in all the samples were below the values listed in Table K-2 of the Westinghouse Environmental Compliance Manual WHC-CM-7-5. No contamination was identified with the MSCM tractor; thus, radiological posting were removed from the area. On July 31, 1967, a release from the Strontium Semi-Works (SSW) facility was documented on a Radiation Occurrence Report. At the time of the occurrence, a fence surrounded the facility. The original occurrence description stated that the contamination was confined to the east side of the Strontium Semi-Works, extending a length of 183 m (200 yards) and also to a dirt road outside the facility fence. The area was roped off, roads were blocked and sprinklers were set up in the contaminated areas. The blacktop roads were cleaned.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Windblown particulate**Release Type:** Solid**Dimensions (estimated):****Site Length:** 182.9 m (600.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	None	None

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$452,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-E-39

No Image Available

Site Name: UPR-200-E-39, Release from 216-A-36B Crib Sampler (295-A), UN-200-E-39**Site Type:** Unplanned Release**Facility:** PUREX Area**Current OU:** 200-MG-1**Former OU:** 200-PW-2**Waste Site Description:**

The release site is not separately marked or posted. It is located inside a large surface-stabilized area known as 200-E-103 that is posted as a URM area. On 2/6/68, pressurized ammonia scrubber liquid was found to be spewing from the vent filter at the 216-A-36B Crib Sampling Shack (295-A). The contaminated ammonia scrubber water erupted through the vent and filter and onto the ground around the outside of the sample shack. Approximately 60.4 m² (650 ft²) of ground and blacktop was affected. Contamination levels ranged from 20 to 450 mRAD/hr. The reported cause indicated that the export pressure was too high, resulting in back-pressure through the vent.

Related Site Structure: The site is associated with 216-A-36 Crib, the 295-A Sample Shack, and 200-E-103.**Site Posting:** URM**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):**

Site Length:	7.9 m (26.0 ft)	Site Depth:	0.9 m (3.0 ft)
Site Width:	7.9 m (26.0 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	62.4 m ² (676.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	20-450 mRad/hr on February 6, 1968.
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$137,000**References:**

WIDS General Summary Report, DOE/RL-2004-60, DOE/RL-2004-85, DOE/RL-2004-25

UPR-200-E-43

No Image Available

No Image Available

Site Name: UPR-200-E-43, Road Contamination near 241-BY Tank Farm, UN-200-E-43**Site Type:** Unplanned Release**Facility:** B Farm Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The location of this release is not marked or posted. On 1/10/72, while in transit for burial, the 102-BY Pump contaminated a section of the road from the 241-BY Tank Farm to the burial ground. Contamination readings ranged from 1,000 to 100,000 cpm.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Contamination readings were from 1,000-100,000 cpm
Nonradiological	None	None

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$109,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-50

No Image Available

No Image Available

Site Name: UPR-200-E-50, Soil Contamination at the Overground Equipment Storage Yard, UN-200-E-50
Site Type: Unplanned Release **Facility:** WTP/A Farm Area
Current OU: 200-MG-1 **Former OU:** 200-UR-1

Waste Site Description:

In 1974, an area of ground contamination was identified that measured from 15 to 30 m (50 to 100 ft) wide and 137 m (450 ft) long south southeast of the Overground Storage Area. The release is not currently marked or posted. The location description in the original occurrence report is vague. A location sketch in RHO-CD-1048 shows an Above-ground Storage Area north of 241-C, west of the 200 East Burn Pit, southeast of 218-E-8. Photographs from 1982 show material being stored at this location. See site code 200-E-53. On 9/24/74, ground contamination was identified outside the radiation zone at the Overground Radioactive Equipment Storage Yard, north of 241-C Tank Farm. A resulting swath of ground contamination was identified with particle contamination ranging from 3,000 - 100,000 cpm, decreasing in intensity and frequency with distance from the source. Follow-up surveys of the Overground Storage Area identified a possible source to be a 6-m x 9-m (20-ft by 30-ft) area of contaminated soil inside the radiation zone. Highly contaminated pumps (250 Rad/hr) had been stored in that area with readings of 300 mrem/hr under the where pumps had been sitting. The pumps were moved to the burial ground on 4/26/74 but the soil beneath the pumps was not completely decontaminated. It was covered with plastic and secured with dirt. On 9/26/74, high winds blew the plastic cover loose, spreading contamination downwind of the Overground Storage Yard. An additional survey in the Overground Storage Yard identified two empty capsules with smearable contamination of 30,000 cpm and more soil contamination beneath the capsules reading 1.5 Rad/hr. The capsules were taken to the burial ground to avoid further contamination spreads.

Related Site Structure: This release is associated with 200-E-53.

Site Posting: None

Release Mechanism: Windblown Particulate/ Vegetation

Release Type: Solid

Dimensions (estimated):

Site Length:	137.2 m (450.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	22.9 m (75.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	3135.5 m ² (33753.3 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Rad survey readings on pumps were 250 Rad/hr with 300 mrem/hr measured on soil under pumps. Particle contamination readings ranged from 3,000 - 100,000 cpm on September 24, 1974.
Nonradiological	None	None

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$207,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-52

No Image Available

No Image Available

Site Name: UPR-200-E-52, UN-200-E-52, Contamination Spread Outside the North Side of 221-B**Site Type:** Unplanned Release**Facility:** B Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

In 1998, a 3 m (10 ft) by 15.25 m (50 ft) area was posted with CA signs. On 8/1/75, soil contamination ranging to 20,000 cpm was detected under the drain of the steam pressure relief pipe discharge from the E-5-2 Strontium Concentrator, and an area about 0.91 m (3 ft) wide and 2.74 m (9 ft) high on the north side of the 221-B Building was contaminated to 100,000 cpm outdoors. Soil on the western berm adjacent to the railroad cut was also contaminated. The apparent cause was that contamination migrated from the leaking tube bundle of the recently replaced E-5-2 strontium concentrator to the pipe gallery piping. It was then forced outside by operation of the relief valve when the operating steam pressure was increased to 35 pounds per square inch while the relief valve setting remained at 32 pounds per square inch.

Related Site Structure: None**Site Posting:** CA (WIDS), also Underground radiation zone (WIDS)**Release Mechanism:** Pipeline Release**Release Type:** Liquid**Dimensions (estimated):****Site Length:** 7.6 m (25.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 1.2 m (4.0 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 9.1 m² (100.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Radiological survey readings of 20000 - 100000 cpm surveyed in August 1975
Nonradiological	Unknown	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$148,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-E-54

No Image Available

No Image Available

Site Name: UPR-200-E-54, UN-200-E-54, Contamination Outside 225-B Doorway**Site Type:** Unplanned Release**Facility:** B Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

There is a sign posted on the south wall of 225-B, next to Door 130, that reads UPR-200-E-54. There is no radiological posting around the doorway or in the soil adjacent to the concrete door pad. On 7/20/77, water used for decontaminating a manipulator seeped under an exit door of the 225-B Building spreading low-level contamination onto the concrete door pad and adjacent soil. Radiation readings on the pad were 25 mR/hr direct and 20,000 cpm smearable. While decontaminating the manipulator, the water spray wand was accidentally directed toward the corridor door by the operator. Water was forced under the door into the corridor. The water trickled down the corridor to a drain in the Service Gallery. As water passed the exit door about 1.89 L (0.5 gal) seeped under the unsealed threshold onto the pad and soil.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	25 mR/hr (direct) and 20,000 cpm smearable on July 20, 1977
Nonradiological	Unknown	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$122,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-E-55

No Image Available

No Image Available

Site Name: UPR-200-E-55, UN-200-E-55, Contamination Spread South of B Plant**Site Type:** Unplanned Release**Facility:** B Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

A single post with a sign that reads UPR-200-E-55 is currently located under an aboveground line. The area is not radiologically posted. It marks the approximate location of the release. Another note in Site Comments states that the contamination "spread south and west of 212-B." On 4/27/79, wind spread contamination from a plastic sheeting in a radiation zone near the 212-B Building to an adjacent area. The incident occurred after the K-3 east filter was changed out. During the changeout plastic was laid down for contamination control within a radiation zone. The wind whipped the contamination plastic as it was being packaged for burial. The general area was surveyed and spots of contamination ranging from 5,000 - 30,000 cpm were found outside the radiation zone.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Windblown particulate**Release Type:** Solid**Dimensions (estimated):****Site Length:** 30.5 m (100.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 30.5 m (100.0 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 929.0 m² (10001.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Beta/gamma particles reading 5,000-30,000 cpm on April 27, 1979
Nonradiological	None	None

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$86,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-E-62

No Image Available

Site Name: UPR-200-E-62, Transportation Spill near 200-E Burning Ground, UN-216-E-62, UN-200-E-62,
Site Type: Unplanned Release **Facility:** Solid Waste Area
Current OU: 200-MG-1 **Former OU:** 200-UR-1

Waste Site Description:

Radioactive liquid was spilled from a pressure test assembly on 3/19/82 while in transit. The release occupied an area approximately 5 cm (2 in.) wide and 30 m (100 ft) long on a hill near the 200 East Overground Storage Area. The release was cleaned up within 3 days. The site is no longer marked or posted. The location of the 200 East Area Overground Storage Area is unclear. It is assumed to be adjacent to the 200 East Burn Pit, currently known as site code 200-E-53. Although this site was Proposed to be Rejected in 2001, an Ecology review in 2004 determined more information is required to disposition this site. Additional radiation surveys and possible sampling were recommended. The site status was changed to Accepted, pending the results of the investigation. No definite time has been determined for when the information might be collected.

Related Site Structure: The release is associated with the Overground Storage Area, site code 200-E-53.

Site Posting: None

Release Mechanism: Leak/ Spill

Release Type: Liquid

Dimensions (estimated):

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0 m (0 ft)
Site Area:	Unknown m ² (Unknown ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	350 mRad/hr beta/gamma in 1982
Nonradiological	None	None

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$86,000

References:

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-E-64

No Image Available

Site Name: UPR-200-E-64, Radioactive Soil and Ant Hills, UN-200-E-64, UN-216-E-36
Site Type: Unplanned Release **Facility:** B Plant Area
Current OU: 200-MG-1 **Former OU:** 200-PW-2

Waste Site Description:

The site is a large area posted with chain and URM Area signs. The size and shape of the posted area has changed periodically as a result of annual radiological surveys and clean up efforts. Drawing H-2-44502, sheet 22 indicates the 270-E Building was removed and the tank was capped and abandoned in the early 1960's. SK-2-56961, drawn in 1972, shows the 1 m (40 in.) riser was cut below the ground surface and covered with earth. In 1984, a small diameter pipe (approximately 2 in. diameter) was visible on the west side of the 216-B-64 Basin, near where the 270-E-1 is located. In 1985, the pipe had a dose rate of 30 mR/hr. The pipe is most likely a "Swab Riser" associated with an underground pipeline. This pipe is the apparent source of contamination and not the riser from the 270-E-1 Tank. The contamination had been transported to the surface by ants and spread with the wind. The size of the area in 1995 was approximately 8100 sq m (2 acres). The shape of the posted zone has been periodically redefined. Additional contaminated soil and ant hills were identified both north and south of 7th Street and around the 241-ER-151 Diversion Box in 9/98. The original unplanned release documentation states ants burrowed into contaminated soil that was caused by leakage from the 270-E-1 Tank and brought the contamination to the surface. Later documentation suggests the contamination source was the small diameter vertical pipe (swab riser) located west of 216-B-64 basin. The release consists of migrating radioactive speck contamination that was identified in 1984. The source was originally assumed to be the vent riser for the buried 270-E-1 Neutralization Tank.

Related Site Structure: None

Site Posting: URM

Release Mechanism: Pipeline Release/ Windblown Particulate/ Biological Intrusion

Release Type: Liquid

Dimensions (estimated):

Site Length:	Irregular m (Irregular ft)	Site Depth:	0.0 m (0.0 ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0.6 m (2 ft)
Site Area:	8100.0 m ² (87187.6 ft ²)		

Potential Contaminants:

DOE/RL-2008-44 DRAFT A

	Type	Constituents
Radiological	X	Sr-90, Cs-137; 60,000 cpm on soil and ant hills in May 1987; 30 mRad/hr found on a pipe in 1985.
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$851,000

References:

WIDS General Summary Report, DOE/RL-2000-60, DOE/RL-2004-85, DOE/RL-2004-25

UPR-200-E-66

No Image Available

No Image Available

Site Name: UPR-200-E-66, 216-A-42 Basin Contamination Release, UN-216-E-66, UN-200-E-66**Site Type:** Unplanned Release**Facility:** PUREX Area**Current OU:** 200-MG-1**Former OU:** 200-CW-1**Waste Site Description:**

The release is not separately marked or posted. The 216-A-42 Basin had been surrounded by a wire fence and posted with Soil Contamination signs. In 2001, the fence was removed and the area was surface stabilized. It was covered with clean backfill and downposted to URM. The release site is located within the URM area. At the time the contamination release was identified, a project to construct a cover over the basin was in progress. A 11/7/84 radiation survey identified contamination both inside and outside of the area posted as a radiation zone around the perimeter of the 216-A-42 Basin. Contaminated liquid in the basin had evaporated allowing dried contamination specks to be spread by wind. At the time of this release, contamination levels were 40,000 cpm on the ground within the retention basin fence. Smears of the walls and bottom of the basin ranged from 200-100,000 cpm. The area outside the retention basin fence revealed specks with a maximum level of 3,000 cpm located between the road and fence. A radiation survey of the 216-A-42 Basin perimeter fence done on 12-8-98 did not identify any contamination.

Related Site Structure: The release is associated with the 216-A-42 Basin.**Site Posting:** URM**Release Mechanism:** Windblown particulate**Release Type:** Solid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** 4046.9 m² (43560.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	40,000 cpm on ground within retention basin fence. Smears on the walls and bottom of the basin were 200-100,000 cpm. Beta/gamma particulates w/ readings inside the basin of 40,000 cpm and outside the basin at 3,000 cpm in November 7, 1984.
Nonradiological	None	None

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$241,000**References:**

WIDS General Summary Report, DOE/RL-99-07, DOE/RL-2002-69, DOE/RL-2000-35

UPR-200-E-69

No Image Available

No Image Available

Site Name: UPR-200-E-69, UN-216-E-69, Railroad Car Flush Water Radioactive Spill, UN-200-E-69**Site Type:** Unplanned Release**Facility:** B Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The railroad tunnel area has a 1.2 m (4 ft) high fence along the side of the tracks. The area was posted with Radiologically Controlled Area signs. In 1998, the track from the tunnel door to Atlanta Ave. was covered with gravel and reposted as URM. On 6/19/84, a concrete burial box (K-3 filter type) was removed from the 221-B railroad tunnel containing waste drums from 225-B and 221-B canyon waste. After loading, the burial string was bumped by the locomotive several times to remove the flush water from the lid of the burial box. No water was seen on the lid of the box or the deck of the flat car when the car left the tunnel. When the train stopped with the burial box about 180 m (600 ft) from the tunnel door, contamination was noted on and near the west rail of the track. Contamination levels were 20,000 cpm with 4000 cpm smearable on the track. The water was not noted before the box was moved because high dose rates coming from the burial box (400 mrem/hr at a distance of 100 ft) prevented personnel from getting close enough to identify any liquid. After the contamination was identified, the train could not move back into the tunnel without contaminating the locomotive.

Related Site Structure: None**Site Posting:** URM**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** 10092.3 m² (108632.1 ft²)**Potential Contaminants:**

Type		Constituents
Radiological	X	20,000 cpm w/ 4000 cpm beta/gamma smearable on the track. 400 mrem/hr at a distance of 100 ft on burial box in 1991.
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$755,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-88

Site Name: UPR-200-E-88, TC-4 Spur Contaminated Railroad Track, UN-216-E-88, UN-216-E-16, UN-200-E-88.
Ground Contamination Around the Western Purex Railroad Spur

Site Type: Unplanned Release

Facility: 200 E Admin Area

Current OU: 200-MG-1

Former OU: 200-UR-1

Waste Site Description:

The site is located northwest of the 202-A Building at the TC-4 Railroad Spur. The unfenced portion of the spur was posted as a "Contamination Area." Additional posting on portions of the spur included "Soil Contamination Area" and "Buffer Area." The spur is tracked with the property number "F187418". The site was interim stabilized in December 1998. The stabilized area was posted as a URM area. A chain link fenced storage area is located on the north end of the spur (see site code 200-E-43). The UPR was originally considered to be the fenced railcar storage area. Later, the contamination outside the fenced area became the focus of the contamination problem. In 1981, 2 hectares (5 acres) surrounding the spur was surveyed and released after tumbleweed clean up activities were completed. 0.4 hectare (1 acre) (approximately 6 m [20 ft] wide on both sides of the spur) remained posted as a "Surface Contamination Area." 1984 and 1986 radiation surveys show contamination south of the chain link fenced area (date this condition first existed is unknown). The railroad spur was intended to be used for the short-term parking of railroad cars transporting radioactive material. An Environmental Surveillance Compliance Report was issued in 1989 (8901EP200-001) identifying the spur as a surface contamination problem. The compliance report issue was closed in September 1996. A 1997 site inspection reports that the spur is posted as a "Contamination Area", with portions being posted as "Soil Contamination" and "Buffer Area." Radioactive particulates spread from contaminated railcars using the tracks. Surface radiological surveys performed in 1991 identified contamination of 20,000 to 60,000 dpm on the railroad track near where the tank cars were being staged. South of the tank cars, along the railway, contaminated areas of 2,000 to 20,000 dpm were also identified. In 1981, Harold Maxfield stated that the large radiation zone associated with the TC-4 railroad spur has been incorrectly designated as an unplanned release site. The original perimeter of the zone was posted where the gamma dose rates from radioactive tank cars parked on the railroad spur would be less than 1 mRad/hr. The site in question was properly known as a Regulated Equipment Storage Area.

Related Site Structure: The site is associated with 200-E-43.

Site Posting: URM

Release Mechanism: Leak/ Spill/ Windblown Particulate/ Vegetation

Release Type: Liquid

Dimensions (estimated):

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	3271.0 m ² (35208.4 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Gamma dose rates are less than 1 mRad/hr in 1981; Identified contamination of 20,000 to 60,000 dpm on the railroad track near where the tank cars were being staged. South of the tank cars, along the railway, contaminated areas of 2,000 to 20,000 dpm were also identified in 1991.
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$902,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-89

No Image Available

No Image Available

Site Name: UPR-200-E-89, UN-216-E-17, UN-200-E-89, Contamination Migration to the North, East & West of BX-BY Tank Farms

Site Type: Unplanned Release

Facility: B Farm Area

Current OU: 200-MG-1

Former OU: 200-UR-1

Waste Site Description:

The site is located north of the 241-BY Tank Farm. It is believed the contamination occurred over time due to operations in the BY Tank Farm. The exact date of the release is unknown. The contaminated area east of the BY Tank Farm was identified in 1978. It was given an unplanned release number September of 1980. Over time, additional contamination was found north of BY Tank Farm. The size of the contaminated area increased due to wind blown particulate contamination migration from the tank farms and contaminated tumbleweeds. Airborne particulate matter contaminated the area bounding the north and northeast sides of the 241-BY Tank Farm. The airborne particulate matter was resuspended by wind from activities during the time of 241-BY Tank Farm operations. Airborne particulate matter from the 241-BX Tank Farm spread onto Baltimore Avenue roadway. Ground contamination was discovered at the 241-BX Tank Farm. The contamination was probably due to tank leakage. In 1991, the contaminated soil area was scraped from the site and consolidated on top of the 216-B-43 through 216-B-50 Cribs and covered the cribs with a layer of clean dirt. Following the scraping 83 soil samples were collected and analyzed for total alpha and total beta. All of the samples were below release limits. The UPR-200-E-89 area was surface stabilized and zoned off against casual entry and marked with "Underground Radioactive Material" signs. The site also includes an irregularly shaped drill pad area and a contaminated concrete pad that were also covered with clean dirt.

Related Site Structure: UPR-200-E-89 is associated with the 241-BX Tank Farm and the 241-BY Tank Farm.

Site Posting: URM

Release Mechanism: Windblown Particulate/ Vegetation

Release Type: Solid

Dimensions (estimated):

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	12141.0 m ² (130684.5 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Beta and gamma contamination 500-2,000 cpm were detected at the site. Beta/gamma contamination were detected on the sides of the Baltimore Ave. roadway in 1978.
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$202,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-E-95

No Image Available

Site Name: UPR-200-E-95, UN-216-E-23, UN-200-E-95, Ground Contamination Around RR Spur Between 218-E-2A and 218-E-2

Site Type: Unplanned Release

Facility: Solid Waste Area

Current OU: 200-MG-1

Former OU: 200-SW-2

Waste Site Description:

The site is a railroad spur located south of the 218-E-2 and 218-E-5 Burial Grounds and north of the 218-E-2A Burial Ground. It had been barricaded with steel chain and posted as a Contamination Area. In 1998, the track was covered with gravel and reposted as a URM area. The contaminated area was established as an unplanned release site in September of 1980. In 1996, no railcars were observed on the spur. There are no known plans to store more railcars on the spur in the future. In March 2001, a single post was found in the gravel road north of the railroad track with a URM sign. It was determined that a small amount of contamination had migrated out of the posted area onto the road. The single post will be incorporated into the larger posted area. The railroad spur was used as an aboveground storage zone for low level contaminated equipment. Equipment from the B Plant and PUREX Plant operations were stored, for the most part, on the beds of railroad flat cars. UPR-200-E-95 is associated with this storage area. The contamination is possibly the result of the accumulation of many small releases over time. It became contaminated over time as a result of contaminated equipment on railroad flat cars being stored on the spur. The material stored on the rail cars contained unknown beta and gamma contamination with a maximum reading of 100,000 cpm. The contamination on the rail bed is the result of contaminated equipment being stored on the tracks over an extended amount of time.

Related Site Structure: UPR-200-E-95 is associated with the 218-E-2A and the 218-E-5 Burial Grounds and B-Plant operations.

Site Posting: URM

Release Mechanism: Contaminated Equipment Storage

Release Type: Solid

Dimensions (estimated):

Site Length: 250.0 m (820.0 ft)

Site Depth: Unknown m (Unknown ft)

Site Width: 5.0 m (16.0 ft)

Cover Thickness: 0.3-0.6 m (1-2 ft)

Site Area: 1250.0 m² (13120.0 ft²)

Potential Contaminants:

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	Type	Constituents
Radiological	X	September 20, 1991 inside contaminated area average reading of 2,000 counts per minute (beta) and a general rail reading of 3,000 - 6,000 cpm (beta) with a maximum of 350,000 dpm (beta) at one spot. Material on railcars had 100,000 beta and gamma contamination. 1996 perimeter survey found all levels to less than detectable.
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$821,000

References:

WIDS General Summary Report, DOE/RL-2004-60

UPR-200-E-98

No Image Available

Site Name: UPR-200-E-98, UN-216-E-26, Ground Contamination East of C Plant (Hot Semi Works), UN-200-E-98
Site Type: Unplanned Release **Facility:** Semi-Works Area
Current OU: 200-MG-1 **Former OU:** 200-UR-1

Waste Site Description:

UPR-200-E-98 was established as a site in September 1980. The actual date of occurrence is unknown. The location of this site is currently within a large surface stabilized area known as 200-E-41. Much of the contamination was removed and placed into the 218-C-9 Burial Pit in 1992. The area has been surface stabilized with powerhouse ash. The covered area has "Underground Radioactive Material" warning signs posted. Radioactive particulate matter from the "Hot Semiworks" operations (1955 to 1965) was inadvertently spread to the ground surface. It contaminated the ground near the base of the 291-C Stack and around the 216-C-2 Reverse Well.

Related Site Structure: UPR-200-E-98 was associated with the C Plant (Hot Semiworks) Facility, the 291-C Stack and the 216-C-2 Reverse Well. The surface stabilized area is now known as 200-E-41.

Site Posting: URM

Release Mechanism: Windblown particulate

Release Type: Solid

Dimensions (estimated):

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	Unknown m ² (Unknown ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Sr-90
Nonradiological	None	None

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$106,000

References:

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-W-101

No Image Available

No Image Available

Site Name: UPR-200-W-101, UN-216-W-9, 221-U Acid Spill R-1 through R-9, UN-200-W-101**Site Type:** Unplanned Release**Facility:** U Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

UPR-200-W-101 occurred in March 1957, when reclaimed acid was spilled onto the ground at the northeast end of the 221-U Building. Approximately 1 Ci. of fission products was released. An area 19.8 m (65 ft) by 27.5 m (90 ft) was covered with 3 in. of sand and gravel after the occurrence. In 1967, a Radiation Monitoring Management Report stated that approximately 1900 m² (20,000 ft²) of ground surface at the rear of the 221-U Building was resealed. The original tar surface over an old radioactive spill area had decomposed and allowed weeds to grow and bring contamination to the surface. The release site was posted with "Surface Contamination" warning signs. The contaminated ground was covered with sand and gravel. A larger contaminated area on the east side of 221-U was surface stabilized in 1998 (UPR-200-W-162). This unplanned release area was located within the UPR-200-W-162 posted area. After being covered with clean material, the posting was changed to URM. UPR-200-W-101 is not separately marked or posted within the area.

Related Site Structure: UPR-200-W-101 was associated with sections R-1 through R-9 of the 221-U Building and UPR-200-W-162.

Site Posting: URM**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** 27.4 m (90.0 ft)**Site Depth:** 0.9 m (3.0 ft)**Site Width:** 19.8 m (65.0 ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** 543.5 m² (5850.6 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	1 Ci of fission products were released; acid contained 1 Ci of Sr-90. 300 cpm detected in September 1976
Nonradiological	X	Acid

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$168,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-W-116

No Image Available

No Image Available

Site Name: UPR-200-W-116, UN-216-W-26, Ground Contamination North of 202-S, UN-200-W-116**Site Type:** Unplanned Release**Facility:** REDOX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The site has a light chain barricade and is posted with URM signs. It is possible that UPR-200-W-69 (a 1973 contamination spread from a contaminated drain pit) also contributed to the contamination at this location. The area designated as UPR-200-W-116 in 1980 was contaminated with particulates spreading by wind from the 204-S Waste Storage Tank exhaust and the related Railroad Tanker Waste Unloading Station. Radioactive particulates traveled eastward and affected an area approximately 0.8 hectares (2 acres) in size. In 1974, ground contamination, with radioactive levels up to 20,000 cpm, was identified.

Related Site Structure: UPR-200-W-116 was associated with the 204-S Waste Storage Tank, the 204-S Railroad Tanker Waste Unloading Station, and site code 200-W-22 (a larger area posted as Underground Radioactive Material).

Site Posting: URM**Release Mechanism:** Windblown particulate**Release Type:** Solid**Dimensions (estimated):****Site Length:** 110.9 m (364.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 70.1 m (230.0 ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** 7777.8 m² (83720.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Ground contamination levels up to 20,000 cpm in 1974; beta/gamma ranging from 200 - 3000 cpm in 1981.
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$736,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-W-165

No Image Available

No Image Available

Site Name: UPR-200-W-165, Contamination Area East of 241-S, UN-216-W-30**Site Type:** Unplanned Release**Facility:** S/U Farm Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The originally posted area was scraped and the contaminated soil combined with other waste sites. The site had been a large area of posted Surface Contamination, located east of the 241-S Tank Farm, north of the steam line. The 216-S-23 and 216-S-9 cribs and the 216-S-18 excavation were inside the Surface Contamination Area posting. Some of the contaminated soil was placed on top of the 216-S-9 crib. Some was used to backfill the 216-S-18 depression. After collecting soil samples of the scraped area, the site was removed from radiological control. Radioactive surface contamination migrated from the 241-S, 241-SX, and 241-SY Tank Farms, eventually contaminating an area of approximately 4.7 hectares (11.5 acres).

Related Site Structure: UPR-200-W-165 was associated with contamination migration from operational activities in the 241-S, the 241-SX, and the 241-SY Tank Farms.

Site Posting: None**Release Mechanism:** Windblown particulate**Release Type:** Solid**Dimensions (estimated):****Site Length:** 115.0 m (377.3 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 115.0 m (377.3 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 13225.0 m² (142366.6 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	200 cpm to 45 mRads/hr (original speck contamination) in 1995
Nonradiological	None	None

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$241,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-W-23

No Image Available

No Image Available

Site Name: UPR-200-W-23, Waste Box Fire at 234-5Z, UN-200-W-23**Site Type:** Unplanned Release**Facility:** PFP Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

A 1999 facility walkdown could not locate this unplanned release site. The approximate area is marked with a WIDS sign painted on the asphalt. In June 1953, a fire in a waste box resulted in approximately 28 m² (300 ft²) of ground contamination. The fire caused a spread of plutonium contamination with readings up to 10,000 dpm.

Related Site Structure: None

Site Posting: 1999 walkdown could not locate UPR; approximate area marked w/WIDS sign; Danger - Do Not Excavate In This Area Without SWP Permission

Release Mechanism: Fire**Release Type:** Solid**Dimensions (estimated):****Site Length:** 5.3 m (17.4 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 5.3 m (17.4 ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** 28.1 m² (302.4 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Plutonium
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$108,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-W-3

No Image Available

Site Name: UPR-200-W-3, Railroad Contamination, UN-200-W-3**Site Type:** Unplanned Release**Facility:** T Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The T-Plant Railroad Cut is a posted Contamination Area from the tunnel door westward to a chain link gate. In May 2000, a 1.8 m by 1.8 m (6 ft by 6 ft) posted Contamination Area was reported to the WIDS database as a Discovery Site by the ISVAC team. It is located approximately 6 m (20 ft) west of the T-Plant chain link fence that crosses the railroad cut track and encloses the T-Plant facility. No radiological survey could be found to define the radiological conditions inside the posted area. It is not known which radiological control team erected the posting. Coordinates indicate that UPR-200-W-4 occurred near UPR-200-W-3 although no markers or signs of stabilization are apparent. On several occasions in 1949, contaminated equipment being hauled to the 200 West Burial Ground from T Plant contaminated ground near the railroad.

Related Site Structure: This site is associated with the 291-S Stack.**Site Posting:** None**Release Mechanism:** Unknown**Release Type:** Solid, Liquid, ?**Dimensions (estimated):**

Site Length:	1.8 m (5.9 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	1.8 m (5.9 ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	3.2 m ² (34.9 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$2,273,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-W-39

No Image Available

No Image Available

Site Name: UPR-200-W-39, UN-200-W-39, 224-U Buried Contamination Trench**Site Type:** Unplanned Release**Facility:** U Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The release site is not marked because the 224-UA Building was built over the release location. The disposal trench is now covered by the 224-UA building addition. The area was removed from radiation zone status in June 1972. A leak from 224-U, during March 1954, spread to an area southeast of the 224-U Building. The contamination was placed in a trench that measured 3.1 m (10 ft) wide by 15.2 m (50 ft) long. The contamination was covered with 0.9 m (3 ft) of clean soil.

Related Site Structure: The release is associated with the 224-U Facility.**Site Posting:** None**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** 15.2 m (50.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 3.0 m (10.0 ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** 46.5 m² (500.0 ft²)**Potential Contaminants:**

Potential Contaminants:		Constituents
	Type	
Radiological	X	Less than 10 nanoCi/g Uranium
Nonradiological	None	None

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$415,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-W-4

No Image Available

No Image Available

Site Name: UPR-200-W-4, Railroad Contamination, UN-200-W-4**Site Type:** Unplanned Release**Facility:** T Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The release is not physically marked or posted. The 218-W-1A Burial Ground is known to contain large pieces of contaminated equipment and is likely to be the Heavy Equipment Burial Ground mentioned in HW-13190. In 1949, contamination spread from a burial box that had been transported from the 221-T Canyon Building to the Heavy Equipment Burial Ground. After the box was buried, the bulldozer used to cover the trench was found to be contaminated with dust which had readings up to 10,000 cpm. A complete survey was made from the Canyon Building to the Heavy Equipment Burial Ground, which revealed a spread of contaminated particles. The most contamination was found in the vicinity northeast of the burial ground.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Leak/ Spill/ Windblown Particulates**Release Type:** Solid and Liquid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Average readings on the track were 7 mrem/hr. Dust reading of up to 10,000 c/m in 1949.
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$2,273,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-W-41

No Image Available

Site Name: UPR-200-W-41, Railroad Contamination, UN-200-W-41, REDOX Railroad Cut Contamination
Site Type: Unplanned Release **Facility:** REDOX Area
Current OU: 200-MG-1 **Former OU:** 200-UR-1

Waste Site Description:

Radiologically contaminated fuel rods were transported to the REDOX facility for processing by railcar. Contaminated material and equipment were transported to the burial grounds on the same railroad track. Over time the railroad track became contaminated. The railroad track from the 202-S Tunnel to the first gravel road intersection has been covered with clean backfill material. The berms on the sides of railroad cut have been pushed in and posted as an "Underground Radioactive Material" area. On 7/7/56, during the transit of a box containing the J-5 Filter and miscellaneous equipment from the 202-S Building Canyon, spotty contamination up to 1,000 mRads/hr at surface was spread along the right-of-way from the 202-S Building railroad cut to the burial ground presumably from liquid contained in the burial box. Six spots of 1,000 mRads/hr were found on the east side of the track on the blacktop at the 16th Avenue crossing. The area was immediately roped off and was eventually decontaminated to less than 1,000 cpm. Initial surveys indicated spotty contamination from 100 to 500 mRads/hr along the east side of the right-of-way diminishing in frequency from 19th Avenue to the burial ground. A check of the flat car used for the burial revealed low level contamination on all horizontal surfaces of 10,000 to 20,000 cpm and several areas on the paper in the southeast corner of the flat car to 3,000 mRads/hr at surface. Special fiberglass deposition filters placed along the tracks did not indicate a general contamination spread.

Related Site Structure: The site is associated with 202-S and UPR-200-W-42.

Site Posting: URM

Release Mechanism: Leak/ Spill

Release Type: Liquid

Dimensions (estimated):

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	22087.4 m ² (237747.3 ft ²)		

Potential Contaminants:

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	Type	Constituents
Radiological	X	Waste was contaminated with beta/gamma 1000 mRads/hr; 100 to 500 mRads/hr along east side of right-of-way. Flat car: 10,000-20,000 cpm; paper in Flat car had 3,000 mRad/hr. All in 1956.
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,775,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-W-43

No Image Available

No Image Available

Site Name: UPR-200-W-43, Contaminated Blacktop East of 233-S, UN-200-W-43**Site Type:** Unplanned Release**Facility:** REDOX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The site is no longer marked or posted. The 233-S building was demolished in 2003 and 2004. The electrical substation referred to is probably the two transformers labeled C2465E and C2466E located adjacent to the north wall of the REDOX facility and approximately 80 m (260 ft) east of 233-S. In 1957, references to contamination in dpm indicate alpha contamination. A radiation zone was originally established in this area in 1/57, but was surveyed and found to be free of contamination. On 2/12/57, a small roped area at the corner of the electrical substation east of 233-S was being surveyed for release after being decontaminated. An area of blacktop beyond the posted area was found to be contaminated with levels up to 2,000 dpm. The Records Management Officer (RMO) day supervisor, who was observing the survey, contaminated his shoes to 1,000 dpm. The contaminated shoes were cleaned to less than 500 dpm released. The cause of the contamination spread could not be determined. However, it is presumed that the contamination from inside the posted area blew out during a wind storm. In 1957, the area was posted as a Radiation Zone pending clean up.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Windblown particulate**Release Type:** Solid**Dimensions (estimated):****Site Length:** 10.5 m (34.6 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 10.5 m (34.6 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 111.2 m² (1197.3 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	2000 dpm alpha on February 12, 1957.
Nonradiological	None	None

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$86,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-W-44

No Image Available

No Image Available

Site Name: UPR-200-W-44, Railroad Track Contamination, UN-200-W-44**Site Type:** Unplanned Release**Facility:** T Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

In 1957, a burial box in transit to a decontamination facility fell to the ground while the train was in motion and lodged against a steam line support. The exact location is unknown. On October 24, 1957, a burial box, used to transport failed equipment from REDOX to the T Plant Canyon, was inadvertently pulled from the railcar when one of the box sling cables caught on a railroad tie, or possibly a switch frog. The area was contaminated up to 2 Rads/hr. In May 2004, a radiation survey of the 200 West Area railroad tracks was from REDOX to T Plant, to try to verify the location of the release. A sodium iodide detector was used. No contamination above background was noted.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Leak/ Spill**Release Type:** Solid and Liquid (?)**Dimensions (estimated):****Site Length:** 7.6 m (25.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 6.1 m (20.0 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 46.5 m² (500.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	2 rads/hr beta/gamma on October 24, 1957.
Nonradiological	Unknown	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$2,775,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-W-46

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Site Name: UPR-200-W-46, Contaminated Railroad Track, H-2 Centrifuge Burial, UN-200-W-46
Site Type: Unplanned Release **Facility:** REDOX Area
Current OU: 200-MG-1 **Former OU:** 200-UR-1

Waste Site Description:

The railroad track from the 202-S Tunnel to the first gravel road intersection has been covered with clean backfill material. The railroad cut located inside the facility fence is posted as a "Contamination Area." The section of covered track from the fence to the first gravel road intersection is posted as an "Underground Radioactive Material" area. Shortly after the H-2 Centrifuge was placed in a burial box in the REDOX RR Tunnel on 12/30/57, fumes were observed coming from the centrifuge. After about 4 hours, fumes escaped the tunnel and began circulating throughout the REDOX Bldg via the ventilation system requiring respiratory protection for all personnel entering the N side of REDOX or the 233-S Building (and extended to the south operating areas of REDOX). Considerable surface contamination was deposited in/around REDOX, including construction work areas outside the building. The centrifuge was transported by train to the burial ground; no contamination was observed along the railroad right-of-way. It was buried at about 10:00 A.M on 12/31/57. Dose rates related to the burial were 185 mRads/hr at 177 m (580 ft); about 2 mRads/hr at 0.8 km (0.5 mi.). Radiation fields averaging 1 Rad/hr during backfilling prevented the box from being completely buried in 1 day; 2 employees received face/nostril contamination; 2 days later, radiation surveys revealed a general low level smearable contamination along the railroad right-of-way.

Related Site Structure: None
Site Posting: CA/URM

Release Mechanism: Leak/ Spill
Release Type: Solid

Dimensions (estimated):

Site Length: Irregular m (Irregular ft) **Site Depth:** Unknown m (Unknown ft)
Site Width: Irregular m (Irregular ft) **Cover Thickness:** 0.3-0.6 m (1-2 ft)
Site Area: Unknown m² (Unknown ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	185 mRads/hr at 177 m (580 ft) on December 30, 1957
Nonradiological	X	Unknown

Preferred Removal Action: RTD
Estimated Removal Action Present Worth: \$2,775,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-W-51

No Image Available

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Site Name: UPR-200-W-51, Release from 241-S Diversion Box, UN-200-W-51, UPR-200-W-52**Site Type:** Unplanned Release**Facility:** S/U Farm Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

On 9/12/58, high pressure steam was applied to the D-8 line of the 241-S Diversion box in an attempt to unplug it. The pressure bled back into the diversion box and caused a release of contamination. A follow-up survey revealed contamination readings up to 1 Rad/hr immediately around the box. Contamination levels 30 m (100 ft) south of the diversion box were 50 mRads/hr. A narrow strip of contamination extended southward, across Tenth St, with contamination levels of 4,000 cpm. The contamination continued southward approximately 91.44 m (100 yds) beyond the 200 West Area fence. The particles outside of the 200 West Area fence read on the order of 5,000 cpm. The contaminated areas were posted and the gross contamination was flushed with water. The release site is not currently marked or posted. The area where this release had been located (in 1958) is near an area that was surface stabilized in 1992 (UPR-200-W-165). Because the plume was 100 m wide extending southward from the 241-S-151 diversion box, the release effected a portion of the area known as UPR-200-W-165.

Related Site Structure: The site is associated with the 241-S-151 Diversion Box, UPR-200-W-52, UPR-200-W-114 and UPR-200-W-165.

Site Posting: None

Release Mechanism: Diversion Box Release

Release Type: Solid and Liquid

Dimensions (estimated):

Site Length: 525.0 m (1722.5 ft)

Site Depth: Unknown m (Unknown ft)

Site Width: 91.4 m (300.0 ft)

Cover Thickness: 0 m (0 ft)

Site Area: 48006.0 m² (516782.7 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	1 Rad/hr - 50 mRad/hr; 4,000-5,000 cpm on September 12, 1958
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$241,000

References:

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-W-56

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Site Name: UPR-200-W-56, Contamination at the REDOX Column Carrier Trench, UN-200-W-56**Site Type:** Unplanned Release**Facility:** REDOX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The site is located inside the REDOX facility fence. It is not separately marked or posted. On 2/6/61, a sudden heavy rainstorm washed contamination from a papered area of an outside radiation zone into a ground recess adjacent to the zone. A grossly contaminated steel cable was being decontaminated and contamination was spread out of the radiation zone across the sloping terrain. Contamination to 30,000 cpm was detected over about 19 m² (200 ft²) of the graveled surface and 4.7 m² (50 ft²) of blacktop directly beneath the paper. The blacktop was contaminated to 80,000 cpm by the rainwater soaking through the seams of the paper. The contaminated area was immediately roped off from traffic.

Related Site Structure: None**Site Posting:** Posted within a larger Area; Not separately.**Release Mechanism:** Stormwater Runoff**Release Type:** Liquid**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Beta/gamma contamination 30,000 cpm on gravel and 80,000 dpm on blacktop on February 6, 1961
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$161,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-W-57

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Site Name: UPR-200-W-57, UPR-200-E-120 (error in area number assignment), UN-200-W-57, 233-S Fire**Site Type:** Unplanned Release**Facility:** REDOX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

A fire, which started in the 233-S Building, spread plutonium contamination throughout the building and to a small degree outside of the building. The release site is not physically marked or posted. Decontamination of the 233-S Building began in 1997. Building demolition began in 2001 and was completed in 2004. On 11/6/63, a fire started in the 233-S Building. The underlying cause of the incident was not positively identified. Plutonium contamination was spread within and outside the building by smoke and firefighting operations. It took about 1.5 hr to put out the fire with dry chemical extinguishers (sodium bicarbonate). Alpha radiation levels after the fire were greater than 5 million dpm from plutonium-contaminated materials in the soot, ashes, and in the air.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Fire**Release Type:** Solid, Liquid, ?**Dimensions (estimated):****Site Length:** Irregular m (Irregular ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** Unknown m² (Unknown ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Plutonium. Alpha radiation measured at greater than 5 million dpm in the soot, ashes and in the air on November 6, 1963
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$122,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-W-58

No Image Available

Site Name: UPR-200-W-58, Railroad Track Contamination, UN-200-W-58

Site Type: Unplanned Release

Current OU: 200-MG-1

Facility: T Plant Area

Former OU: 200-UR-1

Waste Site Description:

The Unplanned Release is not separately marked or posted from other postings on the railroad track. A site visit in October 1991 found no site identification markers or signs of stabilization along the railroad track. In 1991, a portion of the track leading into T-Plant was marked with a surface contamination barricade. On 4/26/65, a beta-gamma contamination spread occurred during the process of transporting 221-T Plant canyon cell blocks from the 221-T canyon and burying them in the 200 West Burial Ground. Two small spots approximately 15 cm (6 in.) in diameter with reading of 5 Rads/hr were found on one end of the deck of flat car #19382. Railroad bed surfaces in the 221-T cut were found to have spotty contamination to a maximum of 100,000 cpm. The undercarriage of the locomotive used was contaminated generally to 20,000 cpm. A rigger and a train crew brakeman received contamination on their shoes and socks. The contamination spread from the underside of an improperly prepared cell block to the deck of the flat car. Further spread occurred when the radiation monitor failed to capture the train following detection of loss of radiological control in the 221-T cut.

Related Site Structure: None

Site Posting: Not separately posted from other postings on the railroad tracks.

Release Mechanism: Leak/ Spill

Release Type: Solid and Liquid

Dimensions (estimated):

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0 m (0 ft)
Site Area:	6760.0 m ² (72763.6 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Beta/gamma, 5 Rads/hr (end of flat car); 100,000 cpm (RR bed surface); 20,000 cpm (underside of railcar) on April 26, 1965.
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,084,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-W-61

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Site Name: UPR-200-W-61, REDOX Ground Contamination, UN-200-W-61**Site Type:** Unplanned Release**Facility:** REDOX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The area is not currently marked or posted. On 4/24/66, a fire hose ruptured while flushing the H-10 to 241-SX transfer line. Back flow from the transfer line contaminated an outside ground area. Readings were from 4,000 to 100,000 cpm over an area of about 19 m² (200 ft²).

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** 4.3 m (14.1 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 4.3 m (14.1 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 18.5 m² (199.0 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Unknown
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$180,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-W-63

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Site Name: UPR-200-W-63, Road Contamination along the South Shoulder of 23rd Street, UN-200-W-63**Site Type:** Unplanned Release**Facility:** T Farm Area**Current OU:** 200-MG-1**Former OU:** 200-SW-2**Waste Site Description:**

The release site is not currently marked. On 9/21/66, Strontium-90 in the form of particulate matter spread from a used diversion box jumper as it was being transported from the 200 West Dry Waste Burial Ground to the 221-T Canyon. The jumper had just previously been removed from the 241-TX-153 Diversion Box. Spotty contamination on 23rd Street was found along the road and shoulder. Speck contamination approximated one per sq. yd. of ground surface along the shoulder of 23rd St.

Related Site Structure: It is possible this release is associated with the radiologically posted areas 200-W-90.**Site Posting:** None**Release Mechanism:** Windblown particulate**Release Type:** Solid**Dimensions (estimated):****Site Length:** 152.4 m (500.0 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** Irregular m (Irregular ft)**Cover Thickness:** 0.1 m (0.5 ft)**Site Area:** 1090.4 m² (11737.4 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Sr-90 activity of 1 Ci. Spots of contamination 500 mRads/hr on road in 1966.
Nonradiological	None	None

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$86,000**References:**

WIDS General Summary Report, DOE/RL-2004-60

UPR-200-W-65

Site Name: UPR-200-W-65, Contamination in the T-Plant Railroad Cut, UN-200-W-65

Site Type: Unplanned Release

Facility: T Plant Area

Current OU: 200-MG-1

Former OU: 200-UR-1

Waste Site Description:

The railroad cut is currently posted as a Contamination Area, extending from the tunnel door westward to a chain link gate and fence. On 10/27/69, contamination was found during a routine survey of the 221-T Plant railroad cut. Spots of contamination from 5,000 cpm to 150 mRads/hr were found between the rails of the spur line and adjacent to the spur line. One area, about 45.72 m (50 yds) from the tunnel door, was generally contaminated over an area measuring 0.9 m (3 ft) by 3 m (10 ft). From this area west, the contamination spots were spaced a few inches to a few feet until approximately 114.3 m (125 yds) from the tunnel door, where the contamination was non-detectable. The exact source of the contamination is unknown, but the location limits the cause to a railcar carrying radioactive material which was not effectively contained.

Related Site Structure: None

Site Posting: CA

Release Mechanism: Leak/ Spill

Release Type: Liquid

Dimensions (estimated):

Site Length: 114.0 m (374.0 ft)

Site Depth: Unknown m (Unknown ft)

Site Width: 1.0 m (3.3 ft)

Cover Thickness: 0 m (0 ft)

Site Area: 114.0 m² (1227.2 ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	5000 cpm to 150 mRads/hr on October 27, 1969
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$2,273,000

References:

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-W-67

No Image Available

No Image Available

Site Name: UPR-200-W-67, Contamination near 2706-T, UN-200-W-67**Site Type:** Unplanned Release**Facility:** T Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

On 8/5/70, a contaminated electric lift was parked outside a radiation zone on the north side of the 2706-T building. Contamination from the vehicle affected the ground beneath the vehicle; an area of approximately 0.91 m (3 ft) by 7.32 m (24 ft). The ground was contaminated with a maximum of 20,000 cpm. The lift had been positioned outside of the radiation zone awaiting a radiological release survey. The electric lift was from 221-B Plant, but had not been properly surveyed before being moved to 2706-T. A site visit in October 1991 found a fence surrounding the 2706-T Building on the south, west, and north sides extending about 30.48 m (100 ft) from the building. The north side of the building is paved with gravel and is used for equipment storage. There were no radiation hazard postings. The unplanned release site is no longer marked or posted.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Contaminated Vehicle**Release Type:** Solid**Dimensions (estimated):**

Site Length:	7.3 m (24.0 ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	0.9 m (3.0 ft)	Cover Thickness:	0 m (0 ft)
Site Area:	6.7 m ² (72.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	20,000 cpm beta/gamma on the ground; 500 mRads/hr on the electric lift both on August 5, 1970.
Nonradiological	None	None

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$86,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-W-70



No Image Available

Site Name: UPR-200-W-70, Contamination Found at the 200 West Burning Ground East of Beloit Ave.

Site Type: Unplanned Release

Current OU: 200-MG-1

Facility: T Plant Area

Former OU: 200-SW-1

Waste Site Description:

The release site is not marked or posted. A mapping data point (dot) estimates the location, placing it adjacent to the northwest access road into the 200-W ADB (ash disposal basin). The area is currently covered with several feet of ash. The 200 West Ash Disposal Basin and 200 West Burn Pit do not currently have any radiological or hazardous postings. The southwest portion of the pit contains coarse gravel; the northern part is covered with ash to the former ground surface. On 1/22/73, a quarterly routine survey of the 200 West Area Burning Pit revealed several spots of beta-gamma contamination measuring 5,000 to 50,000 cpm along the bumper rails at the edge of the combustible trench. Additional surveys disclosed other contamination measuring from 20,000 cpm to 30 mRads/hr in the trench proper and a one-gallon bucket contaminated in excess of 100,000 cpm (250 mRads/hr). Samples of the contamination were obtained for laboratory analysis. A dump area on the south side of the combustible trench, about 3.7 by 6.7 m (12 by 22 ft), was found to contain alpha contamination with readings ranging from 5,000 to 200,000 dpm. The cause of the contamination was the unauthorized disposal of contaminated material in a non contaminated burning trench.

Related Site Structure: The site is associated with the 200 West Burn Pit, and is within the 200-W ADB.

Site Posting: None

Release Mechanism: Dumping Area

Release Type: Solid

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Dimensions (estimated):

Site Length: Irregular m (Irregular ft) **Site Depth:** Unknown m (Unknown ft)
Site Width: Irregular m (Irregular ft) **Cover Thickness:** 0.6-0.9 m (2-3 ft)
Site Area: Unknown m² (Unknown ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	5,000-50,000 cpm beta/gamma; 20,000 cpm to 30 mRads/hr; 100,000 (250 mRads/hr); alpha ranging from 5,000 to 200,00 dpm. Americium-plutonium contamination on sample from trench. All in 1973.
Nonradiological	X	Unknown

Preferred Removal Action: RTD

Estimated Removal Action Present Worth: \$137,000

References:

WIDS General Summary Report, DOE/RL-2004-60

UPR-200-W-71

No Image Available

No Image Available

Site Name: UPR-200-W-71, UN-200-W-71, Contamination Spread along 16th Street**Site Type:** Unplanned Release**Facility:** WM Area/ PFP Area/200 W Ponds Area/S/U Area,**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

Contamination was spread onto the road along the route from the 241-U Tank Farm to the 200 West Burial Ground, affecting 16th Street and Dayton Ave. The site is no longer marked or posted. The information does not include the burial ground site number. Since there are several burial grounds on Dayton Ave., it is not possible to determine the length of the contamination spread. On 1/24/74, contamination spread occurred along the roadways in 200 West Area. ARHCO personnel removed a heel-jet from the 241-U-102 Tank in the 241-U Farm. The jet was taken to the burial ground by truck. After the jet was removed from the truck and placed in the burial trench, the truck was found to be contaminated. A follow-up survey revealed contamination along the route of the truck. At the exit of the 241-U Farm, on 16th Street, spots to 600 mRads/hr were found. Numerous contaminated spots from 20,000 to 100,000 cpm were found along 16th Street to the intersection of 16th St and Dayton Ave, and on Dayton Ave. to the burial ground. The cause of the contamination spread included inadequate packaging of the failed equipment, inadequate surveillance of the load during transit, and transporting the equipment while it was raining, which made surveillance difficult.

Related Site Structure: None**Site Posting:** None**Release Mechanism:** Contaminated Equipment**Release Type:** Liquid**Dimensions (estimated):**

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0 m (0 ft)
Site Area:	7809.0 m ² (84055.7 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	20,000 to 100,000 cpm; Beta-gamma contamination up to 600 mRads/hr on January 24, 1974
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$347,000**References:**

WIDS General Summary Report, DOE/RL-2004-39

UPR-200-W-73

No Image Available

No Image Available

Site Name: UPR-200-W-73, Contaminated Railroad Track at 221-T, UN-200-W-73**Site Type:** Unplanned Release**Facility:** T Plant Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

The railroad cut adjacent to the 221-T tunnel is currently posted as a Contamination Area. The rail spur leading into the 2706-T facility is currently not posted. The Unplanned Release area is not specifically marked or posted. On 10/16/74, a contamination spread from a leaking multi-purpose transfer box was discovered. During a routine survey in the 221-T Building Tunnel, on 10/14/74, contamination levels up to 3,800 mRads/hr were detected on the bed of the multi-purpose transfer box railroad car. During the decontamination effort (10/15/74), a hair-line crack was observed in a weld of the outer shell of the transfer box. Radiation readings on the transfer box were reduced to 350 mRads/hr and 600 cpm smearable on 10/16/74. The railcar was moved to the 2706-T Building so repairs could be made. A follow-up survey of the railcar at 2706-T indicated that additional contamination had seeped out; radiation readings on the railcar had increased to 50,000 cpm smearable. A survey of approximately 365.76 m (400 yds) of railroad track between 221-T Building Tunnel and the 2706-T Building revealed spots of contamination up to 40 mRads/hr. The cause of the leakage was migration of decontamination solution to the hair-line crack area and subsequent leaking due to rail movement of the transfer box.

Related Site Structure: None**Site Posting:** CA**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** 365.8 m (1200.1 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 6.1 m (20.0 ft)**Cover Thickness:** 0 m (0 ft)**Site Area:** 2229.7 m² (24002.3 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	3800 mRads/hr on bed of RR car; 40 mRads/hr on RR track beta/gamma in 1974
Nonradiological	X	Unknown

Preferred Removal Action: RTD**Estimated Removal Action Present Worth:** \$2,273,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-200-W-96

No Image Available

No Image Available

Site Name: UPR-200-W-96, UN-216-W-4, 233-S Floor Overflow, 233-SA Floor Overflow**Site Type:** Unplanned Release**Facility:** REDOX Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

WHC-SP-0331 states the 233-S Plutonium Concentration Facility was sealed off and retired from service in 1967. Although The S Plant Aggregate Area Management Study Technical Baseline report states the release site lies within the UPR-200-W-116 Site boundaries and is posted with URM signs, the release actually occurred adjacent to the 233-SA building and not totally within the UPR-200-W-116 stabilized area. The release effected the floor of the 233-SA Filter Exhaust Building, the concrete pad outside the north door of the filter exhaust building, the electric motor pad, and the ground surface on the north side of the 233-SA filter exhaust building. The 233-S facility was demolished in 2003 and 2004. The release site is not specifically marked or posted. On 1/9/69, plutonium-contaminated water backed up in the 233-SA Filter House drain and overflowed to a low spot on the ground directly north of the 233-S Building. Because the ground was frozen, the water could not percolate, so a pool formed. The area effected was reported as 150 yd² (125.42 m²).

Related Site Structure: UPR-200-W-96 was associated with the 233-SA Filter Exhaust Building.**Site Posting:** None**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):**

Site Length:	Irregular m (Irregular ft)	Site Depth:	Unknown m (Unknown ft)
Site Width:	Irregular m (Irregular ft)	Cover Thickness:	0.3-0.6 m (1-2 ft)
Site Area:	125.4 m ² (1350.0 ft ²)		

Potential Contaminants:

	Type	Constituents
Radiological	X	Pu-239. 600-40,000 dpm in October 1975.
Nonradiological	None	None

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$109,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-600-12

No Image Available

No Image Available

Site Name: UPR-600-12, UN-600-12, UNH Spill to Route 4S**Site Type:** Unplanned Release**Facility:** NRDWL/BC Control Area**Current OU:** 200-MG-1**Former OU:** 200-UR-1**Waste Site Description:**

A small radiologically posted area (URM area) is located on the south shoulder of Route 4S, near the top of the hill, southeast of 200 East Area. After the accident, most of the contamination was removed from the road surface. The remaining contamination was washed off the road and covered with dirt. A portion of Route 4S was resurfaced in 1954 and the spill area was marked with an Underground Contamination sign. Although previous documentation indicated the area had been excavated and released, the presence of uranium in the 1998 soil sample indicates the presently posted area is the same site as the spill incident. On 12/30/54 a tractor-trailer overturned on the 200 East Hill, spilling 6,060 L (1,600 gal) of uranium nitrate hexahydrate solution onto the road and shoulder. General contamination levels of 60 mRad/hr were found on the road and the shoulder. Part of the contamination was removed and the balance was washed off the road. A thin layer of blacktop was added to the road to cover the spill area. The shoulder contamination was covered with dirt. The contamination levels were reduced to a maximum of 20,000 cpm.

Related Site Structure: None**Site Posting:** URM**Release Mechanism:** Leak/ Spill**Release Type:** Liquid**Dimensions (estimated):****Site Length:** 6.5 m (21.3 ft)**Site Depth:** Unknown m (Unknown ft)**Site Width:** 2.5 m (8.2 ft)**Cover Thickness:** 0.3-0.6 m (1-2 ft)**Site Area:** 16.3 m² (174.9 ft²)**Potential Contaminants:**

	Type	Constituents
Radiological	X	Uranium, uranium nitrate hexahydrate solution
Nonradiological	X	Unknown

Preferred Removal Action: CS-NA**Estimated Removal Action Present Worth:** \$168,000**References:**

WIDS General Summary Report, DOE/RL-2006-50, DOE/RL-2004-39

UPR-600-21

Site Name: UPR-600-21, Contamination found Northeast of 200 East Area, UN-216-E-31

Site Type: Unplanned Release

Current OU: 200-MG-1

Facility: 200 E Ponds Area

Former OU: 200-UR-1

Waste Site Description:

Contamination specks and tumbleweed fragments were originally identified near the railroad track northeast of 200 East Area. The site had been a large radiologically posted area. Additional radiation surveys enlarged the area of contamination to include a large area (approximately 30 acres) extending north of the railroad track to Route 11A and southward to the 216-E-28 Contingency Pond area, near B Pond. The area is no longer marked or posted but was originally posted with Radiological Controlled Area warning signs. In 1990, the Health Physics group changed the posting to Surface Contamination. In 1991, all radiological postings were removed. In 2004, Ecology determined more information is required to disposition and reclassify the site. No definitive time has been determined for when to collect information. The release was a result of contaminated tumble weeds that migrated and decomposed in the area and possibly specks from the PUREX stack or a nearby burial ground.

Related Site Structure: None

Site Posting: None

Release Mechanism: Vegetation (tumbleweeds)

Release Type: Solid

Dimensions (estimated):

Site Length: Irregular m (Irregular ft)

Site Depth: Unknown m (Unknown ft)

Site Width: Irregular m (Irregular ft)

Cover Thickness: 0 m (0 ft)

Site Area: Unknown m² (Unknown ft²)

Potential Contaminants:

	Type	Constituents
Radiological	X	Unknown
Nonradiological	None	None

Preferred Removal Action: CS-NA

Estimated Removal Action Present Worth: \$86,000

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APPENDIX B

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WASTE SITE ATTRIBUTES

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APPENDIX B WASTE SITE ATTRIBUTES

B1.0 INTRODUCTION

Appendix B was used to consider the attributes of the site to determine the preferred removal action alternative. Table B-1 is organized by site type thus enabling a row-by-row comparison by waste site type of much of the same information as contained in Appendix A. Table B-1 is a listing of the waste site attributes of the 200-MG-1 Operable Unit waste sites. The following attributes are given in the table:

- | | |
|--|--|
| <ul style="list-style-type: none"> • waste site code • current status • waste site type • waste site name • facility area • waste site description • related sites/structure • physical setting • backfill status | <ul style="list-style-type: none"> • surface cover status • surface cover thickness • site area, length, width, depth • potential contaminant interval • summary of prior cleanup activities • release mechanism • release type • potential constituents (radioactive and nonradioactive). |
|--|--|

Table B-2 is a subset of the 200-MG-1 Operable Unit waste sites not presented in Table B-1. The list consists of 25 septic systems that were put into a separate table on the basis that each site consists of at least one septic tank and one tile field. The tank and tile fields were costed differently and have different attributes. This table was used to evaluate information on each part of the septic system so a preferred alternative could be chosen.

There are columns not shown in Table B-2 that are seen on Table B-1. "Release Mechanism" was removed because the release mechanism for all septic system sites is sanitary effluent. Also, "Release Type" was removed because all septic sites received liquid waste. "Stabilization Cover Present" and "Surface Cover Thickness" also were removed because surface stabilization covers are not present on the tanks or tile fields.

The "Backfilled Septic Tank" column is used to distinguish those septic tanks that have been filled with sand or some other material under WAC 246-272A-0300, "Abandonment." The tile fields associated with the septic tanks technically have a "backfill," but that is due to the construction methods for tile fields. Thus, the tile fields were listed as "not applicable" in the "Backfilled Septic Tank" column.

Waste site descriptions and other information are quoted directly from the *Waste Information Data System* database and other references. No modifications have been made to maintain consistent format, and references cited in those descriptions are not provided.

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Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
291-C-1	Inactive	Burial Ground	291-C-1, 291-C-1 Stack, 291-C Stack Burial Trench	Semi-Works Area	The 291-C Stack was a double-shell structure made of reinforced concrete, acid-resistant brick and mortar. The stack was demolished in 1988 and now lies in a trench south of where it stood. The area has been surface stabilized with an ash cover (site code 200-E-41). The stack burial trench is not marked and cannot be separately distinguished from the rest of the surface stabilized area. The site provided exhaust air ventilation for the 210-C cells and process vessels. The stack provided exhaust air ventilation for the 201-C cells and process vessels. Forty fiber glass filters were located in an underground concrete cell. An array of HEPA filters was contained in another below-grade enclosure. Before demolishing the stack, shielded borehole gamma energy analysis equipment was lowered into the stack from the top to a depth of 59.7 m (196 ft). Because of high background levels, only cesium-137 and strontium-90 were measured. A maximum of 0.137 μ Ci per square centimeter of cesium and 8.70 μ Ci per square centimeter of strontium were estimated at the stack base (196 ft level). A previous radiological survey found the stack base to have a dose rate of 8.5 Rad per hour. The majority of the contamination was found below the 45.7 m (150-ft) level.	Burial Ground	Y	Y	1-2	4800	200	24	Unk.	0-7	In 8/88 explosives were used to fell the stack into a trench south of the base of the stack. Before demolition, the interior of the stack was partially decontaminated by remote sand blasting. The remainder of the contamination was stabilized with late	Burial Ground	Solid	Cs-137, Sr-90, estimated 100 Ci of Pu and 600 Ci of beta contamination	Unk.
200-E BP	Inactive	Burn Pit	200-E BP, 200-E Burning Pit, 200 East Burn Pit	Solid Waste Area	The burn pit is a large depression. There is limited growing vegetation. The surface is mostly rock and gravel. The burn pit was used for disposal of nonradioactive construction and office wastes. It was also used to burn tumbleweed that were collected off the 200 East Area perimeter fences and to detonate nonradioactive, shock sensitive chemicals. Sometimes paint, solvents, and chemicals were dumped there. The 200-E Borrow Pit Demolition Site (200-E8 BPDS) RCRA TSD unit (now clean closed) was located within the 200 East Burn Pit. The site of the chemical detonations is no longer marked or posted. During a 1991 site visit, three enclosures were noted within the basin. A 12-m (40 ft) by 12-m (40-ft) area in the southwest corner (south of 218-E-8) contained several drums, pallets, and sections of steel pipes. A triangular enclosure, extending from two points along the sites border with 218-E-8, to 6 m (20 ft) into the unit, was found empty. In the middle of the basin was a 4.6 m (15 ft) by 4.6 m (15 ft) light chain barricade with asbestos warning signs. The east end of the open ditch became radiologically contaminated from contaminated animal feces and windblown speck contamination from adjacent contaminated sites (216-A-40 and 244-A Lift Station).	Burn Pit	N	N	None	7.9E+4	394	201	15	0-1 (spotty)	None	Dumping Area/Burning	Solid and Liquid	Unk.	Asbestos, organics, metals

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
200-W BP	Active	Burn Pit	200-W BP, 200-W Burning Pit, Pit 34	T Plant Area	The site is a large open pit. The 200 Area office waste and non-radioactive construction debris and tumbleweeds have been brought to this site and burned. According to Dave Phipps in April 2002, this site is used as a staging area for uncontaminated tumbleweeds from the 200 Area fences. They are burned bi-annually in the spring and the fall. The area is also used as a source of clean backfill (gravel) material. In 1984, a onetime chemical demolition event occurred inside the northern portion of the current 200-W Burn Pit. However, the title of the closure document is the 200 West Area Ash pit Demolition Site Closure Plan (DOE/RL-92-54). A review of this document confirms the location of the chemical demolition was inside the 200-W Burn Pit. Drawing H-2-1495 and historical photograph #3755 show another disposal pit/burn pit, located south of 16th Street, east of Beloit Ave. Early references to the 200 West Burn Pit could be referring to this location. The 200 West Area Ash Disposal Basin had been a very large, irregularly shaped excavation. The burn pit is considered to be the southern portion of the large excavation. Hanford Site drawings generally refer to the entire large, irregular shaped excavation east of Beloit Ave. as the Ash Pit or Ash Basin. Some site drawings refer to the southern portion of the large area as the Burn Pit or Burning Ground. The burn pit portion is shown as being located in the southwest corner of the Ash Disposal Basin on drawing H-2-34762. Reference to the 200 West Area Burn Pit and 200 West Ash Disposal Basin are often confused. Now that the northern portion of the original Ash Disposal Basin has been filled to grade with ash, only the 200-W Burn Pit portion is an open excavation. In October 1992, Before being used as a source of clean backfill material, radiological surveys and soil sampling were performed. A total of ten samples were collected from five locations inside the burn pit area. One sample at each location was collected at the surface and a second sample at each location was collected at a depth of approximately 1 meter (3 ft).	Burn Pit	N	N	None	4.0E+4	200	200	Unk.	0-1 (spotty)	None	Dumping Area	Solid	Beta-gamma radiation measuring from 5,000-50,000 cpm.	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
600-36	Inactive	Burn Pit	600-36, Ethel Railroad Siding (Burn Pit)	200 E Ponds Area	The site is an area of scattered debris and some evidence of burning, adjacent to the Ethel railroad siding. In 1993 this site was submitted as a suspect waste site, evidenced by burned areas and oil spills. It consisted of an area measuring approximately 91.4 m by 18.3 m (300 ft by 60 ft), northwest of the 251 Substation, near the "Ethel" railroad siding. In October 1997, a site investigative team mapped and photographed several areas of debris. The debris consisted of metal canisters of bolts and nuts, batteries, abandoned rails, metal debris and an area with evidence of an oil spill. A site walkdown in 4/2/02, however, indicated that most of the debris shown in the 1997 photographs could not be located. Only the batteries and oil stained soil were observed.	Burn Pit	N	N	None	1.8E+4	60	300	Unk.	0-1 (spotty)	None	Dumping Area	Solid and Liquid	None	Misc. debris, demolition and inert waste
600-71	Inactive	Burn Pit	600-71, 607 Batch Plant Burn Pit	ERDF Area	The site consists of an area of charred ground, a piece of rusted sheet metal and small pieces of debris. In June 2004, the expansion of Gravel Pit 30 pushed soil over the northern portion of the 600-71 Burn Pit. The initial site review on 8/14/95 found charred material, wood, corrugated metal, oil cans, aerosol cans, paint cans, glass jars, paper, rope, rubber, roofing, metal pipe, and metal scattered around the site. Photos taken on the 4/1/02 site walkdown identified charred ground, wood scraps and rusted metal debris. No hazardous substances were found. This area has the appearance of being more recently burned and is located closer to the 607 Batch Plant building than the areas identified in 1995. In June 2004, the expansion of Gravel Pit 30 pushed soil over the northern portion of the 600-71 Burn Pit.	Burn Pit	N	N	None	8000	100	80	Unk.	0-1 (spotty)	None	Unk.	Solid	None	Misc. debris, demolition and inert waste

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
200-W ADB	Inactive	Coal Ash Pit	200-W ADB, 200-W Ash Disposal Basin	T Plant Area	The site is an area of dark soil with cheat grass growing on the surface. A small depression can be seen in the middle of the site. The Ash Disposal Basin received coal ash slurry and ash from the operation of the coal fired 284-W Powerhouse. A 1954 drawing shows an underground ash slurry pipeline extending from the northeast corner of the 284-W Powerhouse to the northwest corner of the Ash Disposal Basin. Later, the site received trucked material, dredged from the 200 West Powerhouse Ash Pit, located south of the powerhouse, on the west side of Beloit Ave. Hanford Site drawings generally refer to the entire large, irregular-shaped excavation east of Beloit Ave. as the Ash Pit or Ash Basin. Some site drawings refer to the southern portion of the large area as the Burn Pit or Burning Ground. Reference to the 200 West Area Burn Pit and 200 West Ash Disposal Basin are often confused. A Tiger Team finding for disposing of steam plant ash without a permit prompted sampling of wet flyash and bottom ash from the 200 Area power plants. Sample results determined the ash to be non-dangerous and non-corrosive and not regulated under Washington Administrative Codes. Therefore, no permit was required to dispose of the steam plant ash.	Coal Ash Pit	N	N	None	4.8E+5	800	600	Unk.	0-1 (spotty)	None	Ash Disposal	Solid	None	Unk.
216-A-1	Inactive	Crib	216-A-1, 216-A-1 Cavern, 216-A-1 Trench	200 E Ponds Area	The 216-A-1 and 216-A-7 cribs are located within the same radiologically posted area. They are marked and posted with URM signs. The site received start up waste from PUREX during November and December 1955 via an over ground pipeline. When the specific retention capacity was reached, the site was deactivated by removing the over ground piping and backfilling. The site is composed of 15 cm (6 in.) perforated Vitriified Clay Pipe (VCP), 9.1 m (30 ft) long, running horizontally at 2.7 m (9 ft) below grade, with two 9.1 m (30 ft) lengths of 15 cm (6 in.) perforated VCP placed perpendicularly to the first length of pipe, forming an H pattern. There is approximately 1.8 m (6 ft) or 310 m ³ (11,000 ft ³) of coarse rock in the excavation bottom. The side slope, surface to 2.1 m (7 ft) deep, is 1:1.5, 2.1 m (7 ft) to site bottom is 1:2.	Crib	Y	Y	2	7191	85	85	15	15-20	In 1992 the contaminated soil was scraped and consolidated, then backfilled.	Contaminated Effluent	Liquid	U-238	As, Mn, U

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
216-A-28	Inactive	Crib	216-A-28, 216-A-28 French Drain, 216-A-28 Crib	PUREX Area	The site is not currently marked or posted. The 203-A tank farm was used for storage and shipping of uranyl nitrate hexahydrate (UNH) product and concentration of UNH waste. It consisted of 460,000 L (100,000 gal) stainless steel tanks for UNH storage and three smaller nitric acid tanks. The French drain received liquid waste from the 203-A sumps and heating coil condensate from the uranyl nitrate tanks. The effluent piping to the site was blanked off in November 1976 when the flow rate exceeded the infiltration capacity. The excavation had a 6 m (20 ft) diameter at grade and a 3 m (10 ft) bottom diameter, with a truncated cone shape. The excavation contained approximately 2.7m (9 ft) of gravel fill and was backfilled to grade. The unit contained a 10 cm (4 in.) stainless steel 304 perforated pipe, 5.2 m (17 ft) long, extending horizontally 1.2 m (4 ft) below grade and a 5 cm (2 in.) diameter, schedule 40, perforated stainless steel liquid level riser pipe, 4 m (13 ft) long. The site was activated in December 1958. The waste discharge from the 203-A Building to the 216-A-22 Crib was halted following Unplanned Release UPR-200-E-17. This waste stream was diverted to the 216-A-28 French Drain. In November 1967, the effluent flow rate to the French drain exceeded the infiltration capacity. The site was deactivated by blanking the effluent pipeline to the unit. The effluent was rerouted to the 216-A-3 Crib.	Crib	Y	N	None	314	None	20	11	11-15	The site was excavated 6 m diameter at grade and 3 m bottom diameter, then backfilled to grade.	Contaminated Effluent	Liquid	Unk.	Uranium

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
216-A-3	Inactive	Crib	216-A-3, 216-A-3 Cavern, 216-A-3 Crib	PUREX Area	The start date was January 1956 and the end date was April 1981. After the crib was taken out of service, the waste stream was reworked through the uranium cycle. Low-level radioactive waste was sent to the 216-A-29 Ditch. The crib is marked and posted with Underground Radioactive Material signs. Received silica-gel regeneration waste and pump house drainage from 203-A and UNH storage pit. From 1956 to 1967, the site received silica-gel regeneration waste and pump house drainage from 203-A and drainage from the UNH storage pit. The silica gel discharge was discontinued in 1967. The site was taken out of service in April 1981. The waste was rerouted so that any low level radioactive waste was sent to the 216-A-29 Ditch. The unit contains a 10-cm (4-in.) Schedule 10 perforated 304 stainless steel pipe placed horizontally 2.4 m (8 ft) below grade and two 6.1-meter (20-foot) lengths of this pipe placed perpendicularly to the first pipe, forming an H pattern. The site has approximately 2.4 m (8 ft) of gravel fill with a volume of 280 m ³ (10,000 ft ³) and has been backfilled. The side slope surface to 2.1 m (7 ft) deep is 1.5:1 and from 2.1 m (7 ft) to the site bottom is 2:1.	Crib	Y	N	None	5112	72	72	16	16-20	The site has been surface stabilized.	Contaminated Effluent	Liquid	Cesium-137, Strontium-90, and Ruthenium-106	UNH, uranium,

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
216-A-9	Inactive	Crib	216-A-9, 216-A-9 Crib	PUREX Area	The crib is a surface stabilized area, marked with light post and chain. It is posted as a URM area. The site was used for disposal of PUREX acid fractionator condensate and cooling water, the crib was also used for disposal of liquid N reactor decontamination waste. The site contains a 25 cm (10 in.) Schedule 30 steel perforated pipes, placed horizontally, 2.7 m (9 ft) below grade. The site has 1,840 m ³ (65,000 ft ³) of gravel fill and has been backfilled. The side slope is 2:1. The crib surpassed its capacity in 1958 and was taken out of service. In April 1966, the crib was approved for disposal of liquid N Reactor decontamination waste that was to that was transported to the crib in tanker trucks. This process continued until October 1966. The crib was inactive until August 1969, when PUREX acid fractionator waste was again sent to the 216-A-9 Crib. The site was deactivated by blanking the effluent pipeline to the unit after replacing 31 m (100 ft) of the pipeline that had failed. The effluents were rerouted to the 216-A-29 Ditch via the 202-A Building chemical sewer. The truck unloading station at this site was interim stabilized in 1991. In 1993, filters were removed from the crib risers, surveyed, and disposed of as nonradioactive waste. The crib surface was covered with 46 to 61 cm (18 to 24 in.) of uncontaminated backfill. In July 2000, the vent risers were sealed as a preventative measure for potential passive radioactive emissions.	Crib	Y	Y	2	8400	420	20	13	13-25	The site was deactivated by blanking the pipeline. The site unloading station was interim stabilized in 1991. In 1993 the filters were removed from the crib risers, the site was backfilled. In 7/00 the vent risers were sealed.	Contaminated Effluent	Liquid	Unk.	Metals
216-C-10	Inactive	Crib	216-C-10, 216-C-10 Crib	Semi-Works Area	The site is marked with concrete AC-540 markers and URM signs. The surface is covered with gravel. The crib received process condensate from the 201-C building by a 7.6 cm (3 in.) diameter stainless steel pipe, located horizontally, 1.2 m (4 ft) below grade. The site slope is 1:1.5. The site contains 48 m ³ (1,700 ft ³) of gravel fill and has been backfilled with dirt. The crib start date was November 1964 and the end date was October 1969.	Crib	Y	Y	1-2	1378	53	26	8	8-15	The crib was surface stabilized in 1989, and the vent risers were sealed in 2000.	Process Condensate	Liquid	Unk.	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
216-C-3	Inactive	Crib	216-C-3, 201-C Leaching Pit, 216-C-3 Crib	Semi-Works Area	The crib is identified with a single AC-540 concrete marker post. The site is located inside a larger posted URM area known as 200-E-41 (Strontium Semi-works Stabilized Area). The site consists of 10 cm (4-in.) pipes resting on a gravel bed creating a drain field type crib. The crib received acidic process wastes from the 201-C, 215-C, and 271-C buildings. The crib was deactivated by blanking the inlet pipeline and backfilling the excavation with sand and gravel. When the 216-C-3 leaching pit was blanked, the effluent was diverted to the 216-C-9 excavation. When the specific retention capacity of the unit was reached, the site was deactivated by blanking off the pipeline to the unit and backfilling the excavation. In 1979, the surfaces of the 216-C-1, 216-C-3, 216-C-4, and 216-C-5 Cribs were stabilized against wind erosion and plant root invasion. The top 10 cm (4 in.) of the crib surfaces were bladed off and the soil deposited in a depression on the 216-C-1 Crib; the ground was covered with a 10 cm (4 in.) sand pad; ureabor herbicide was applied at the rate of 450 kg/hectars (500 lb/a); 10 mil plastic sheeting was installed over the entire area; a 31 cm (12 in.) pad of sand was installed over the plastic; and the surface was stabilized with 10 cm (4 in.) of pit run gravel.	Crib	Y	Y	1	2944	70	42	10	10-15	In 1979 the crib surface was decontaminated and surface stabilized.	Process Condensate	Liquid	Unk.	Unk.
216-C-5	Inactive	Crib	216-C-5, 216-C-5 Crib	Semi-Works Area	The crib is marked with concrete AC-540 markers and URM signs. It is located within the larger, surface stabilized area known as 200-E-41. The crib received 201-C high salt waste. The crib received 201-C "high salt waste" cold run waste via a 15-cm (6-in.) diameter galvanized, corrugated, perforated piping placed horizontally at 3.4 m (11 ft) below grade. Two 6.1 m (20 ft) lengths are placed perpendicularly to the inlet pipe, forming an H pattern. The side slope is 1:1. The site contains approximately 1.8 m (6 ft) or 74 m ³ (2,600 ft ³) of gravel fill and has been backfilled. The waste release point is 1.5 m (5 ft) from the site bottom. The site was deactivated in 1955 by valving out the effluent pipeline when the specific retention capacity was reached. The crib start date was March 1955 and the end date was June 1955.	Crib	Y	Y	1	2184	52	42	16	16-20	In 1979 the crib surface was decontaminated and surface stabilized.	Process Condensate	Liquid	Unk.	Unk.

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Waste Site Attributes. (99 Pages)

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216-C-6	Inactive	Crib	216-C-6, 241-CX Crib	Semi-Works Area	The crib is covered with gravel and marked with cement posts on the four corners. It is posted with URM signs. The crib received radioactive REDOX and PUREX type process condensate. The unit is constructed of 15 cm (6 in.) diameter galvanized, corrugated, perforated piping placed horizontally at 3.4 m (11 ft) below grade. Two 6.1 m (20 ft) lengths are placed perpendicularly to the inlet pipe, forming an H pattern. The side slope is 1:1. The site contains approximately 1.8 m (6 ft) or 74 m ³ (2,600 ft ³) of gravel fill and has been backfilled. The waste release point is 1.5 m (5 ft) from the site bottom. The crib received radioactive REDOX and PUREX type process condensate from 201-C and 241-CX vault floor drainage. The site was deactivated by blanking the pipelines to the 241-CX area and use of the 241-CX Vault was discontinued. The start date was September 1955 and the end date was September 1964.	Crib	Y	N	None	2184	52	42	16	16-20	The pipes were blanked and the crib surface stabilized with gravel.	Process Condensate	Liquid	Unk.	Unk.
216-C-7	Inactive	Crib	216-C-7, 216-C-7 Crib	Semi-Works Area	The site is surrounded by steel post and chain. It is posted with URM signs. The crib received radioactive liquid waste from the 209-E Critical Mass Laboratory. The crib received radioactive liquid waste from the 209-E Critical Mass Laboratory via 5 cm (2 in.) diameter steel pipeline that connected to a 0.15 m (6 in.) diameter, perforated vitrified clay distribution pipe, placed horizontally 3 m (9 ft) below grade. Two lengths of clay pipe are placed perpendicularly to the first, forming an H pattern. The site contains 123 m ³ (4,100 ft ³) of gravel fill and has been backfilled. The crib was placed on standby in 1983. The 209-E floor drains and a 5 cm (2 in.) diameter drain pipe were sealed in 1984.	Crib	Y	N	None	2250	45	50	12	12-15	The site has been backfilled.	Contaminated Effluent	Liquid	Plutonium, Uranium	Nitric acid, boron, Cd, gadolinium
216-S-22	Inactive	Crib	216-S-22, 216-S-22 Crib	REDOX Area	The crib is marked and posted with URM signs. The site provided subsurface liquid disposal for the 293-S Building waste. The crib is a gravel structure with a side slope of 1:1.5. A pipe enters the unit below grade, branches out at right angles downwards to the bottom, and runs along the bottom for the length of the unit. The section of pipe along the crib bottom has open joints. The rest of structure is filled with backfill (see site code 200-W-146 PL). The site was retired when production operations were shut down at REDOX. The site operated from October 1957 to June 1967.	Crib	Y	N	None	4615	130	36	10	10-15	The site has been backfilled and in 7/00, the vent risers were sealed.	The site provided subsurface liquid disposal for the 293-S building waste	Liquid	Tc-99, Sr-90, H3, U-238	Ag, As, Hg, NO ₃ , Hex Cr

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
216-S-26	Inactive	Crib	216-S-26, 216-S-19 Replacement Facility, 216-S-26 Crib	200 W Ponds Area	The crib is surrounded with metal posts and chain and is posted with Underground Radioactive Material signs. A 15 cm (6 in.) vitrified clay, perforated distribution pipe runs the length of the unit, 46 cm (18 in.) above the bottom of the crib. A total of 8 cm (4 in.) of gravel covers a membrane barrier. The crib is filled with 2.9 m (9.5 ft) of soil. One gage well with a liquid level indicator is located 100 ft (30 m) from the west end, and a vent riser is located at the east end. The crib received waste from the 222-S laboratory via the 207-SL retention basin. In 1988, crib infiltration rate problems were noted due to caustic flush water being periodically disposed to the 207-SL basin.	Crib	Y	N	None	1.5E+4	444	34	12	12-15	The crib was permanently isolated by filling manhole with concrete.	Contaminated Effluent	Liquid	Sr-90, Tc-99, H3, U-238	As, Hex Cr, Pb
216-Z-6	Inactive	Crib	216-Z-6, 231-W-4 Crib, 231-Z-6, 216-W-4, 231-W Crib, 216-Z-4, 216-Z-6 & 6A Crib	PFP Area	The 216-Z-6 is a below grade, inactive waste management unit. The site consists of a rectangular wooden box set in the base of an excavation. The trench was fed by an above ground pipeline. The 216-Z-6 Crib received process waste from the 231-Z Building by an over ground line from the 231-W-151 Sump. The site was only used for one month, and abandoned due to plugging of the surrounding soil by process sludge and precipitates. The site was surface stabilized in February 1990. When the site was retired in 1945, it was deactivated by capping the transfer line west of the 231-Z-151 Sump, and removing above ground piping. There have been previous cave-ins at this site and there is a potential for further collapse.	Crib	Y	Y	1-2	2245	74	31	8	8-15	All of the aboveground piping was removed and the site was surface stabilized in 1990.	Contaminated Effluent	Liquid	Am-241, Cs-137, Co-60, Sr-90, H3	PCB Arochlor 1254, Se

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600-262	Inactive	Crib	600-262, West Lake Test Crib	200 E Ponds Area	The site includes a test crib and twenty one monitoring wells. The entire test site area is surrounded by metal fence posts. No warning signs or postings are visible at the site. The test crib has a wooden frame and a wooden lid, which has been set aside. Two approximately 2.5 cm (1 in.) diameter pipes are visible entering the crib and appear to enter the soil. Although only 7 wells are mentioned in HW-61476, 12 others are identified in HW-71573. Twenty one 5.1 cm (2 in.) diameter metal pipes or monitoring wells are currently visible surrounding the crib. Some of the wells are approximately 0.9 m (3 ft) tall and are galvanized while others are only approximately 0.3 m (1 ft) tall and are not galvanized. In three out of the four wells examined, water was visible. Also visible at the site were wood debris, metal debris, wire, empty glass bottles, a wooden box and excess 5.1 cm (2 in.) pipe. The ground surface is gently rolling. Northeast of the test crib is a depressed area approximately the same size as the crib. The soil is sandy and no discoloration is apparent. Vegetation at the site is composed primarily of grasses but includes a few small shrubs. A model test crib was built in 1959 for a field experiment for predicting crib capacity and crib waste retention. The field experiment was designed to check the validity of laboratory results and allow the scientists to observe the behavior of solutions put into the ground in a field setting. The location near West Lake was chosen because the depth to groundwater was only 3.7 m (12 ft). In May 1959, 34,200 L (9,000 gal) of calcium nitrate solution spiked with strontium-85 was placed into the 0.36 m ² (4 ft ²) crib. According to HW-61476, seven 5 cm (2 in.) diameter wells were placed around the crib to monitor the infiltration of the solution through the soil. HW-61476 refers to them as wells "A" through "G." All the wells were drilled vertically except for well "F", located 1.2 m (4 ft) east of the crib. Well "F" was drilled at an angle that intersected the water table below the center of the crib. For the first week of the experiment, samples were collected from the wells every four hours. Nitrate was detected after 4256 L (1120 gal) of solution had been added to the crib. Well "F" detected strontium-85 after 16,900 L (4450 gal) of solution had been added to the crib. wells were placed in the area.	Test Crib and Wells	N	N	None	4	2	2	2	2-15	None	Test Site	Liquid	Sr-85	Calcium nitrate

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					Well "E," located 1.2 m (4 ft) northeast of the crib, detected Sr-85 after 21,660 L (5700 gal) of solution had been added to the crib. The total infiltration of strontium-85 had not reached completion by the time the experiment was terminated. HW-71573, written in 1962, describes the test crib being used again for a similar experiment. Fifteen additional monitoring wells were placed in the area. The infiltrate solution was also calcium nitrate spiked with Strontium-85.														
200 CP	Inactive	Depression/Pit (nonspecific)	200 CP, 200 Area Construction Pit, 200 Area Construction Waste Site, Hanford Site Gravel Pit 29	200 E Admin Area	The site is a large, open gravel area. The pit has been used as a source of gravel for various Hanford projects, but is no longer being used. Several truck loads of nonhazardous solid waste, broken blocks of concrete foundation and other debris have been reported to have been placed in the pit over the years. Although older documentation states that the pit was used for disposal of concrete blocks and debris, a 1997 site visit did not visually identify anything in the pit. An email from Rusty Knight, Fluor 600 Area Landlord, states that he believes the concrete and debris was in the portion of the old gravel pit that was paved over to become the parking lot for the 2704-HV building.	Depression/Pit	N	N	None	7.5E+5	1500	500	20	0-1 (spotty)	Believed that a portion of the old gravel pit has been paved over for the parking lot for the 2704 HV building.	Construction	Solid	None	Unk.
200-E PD	Active	Ditch	200-E PD 200-E Powerhouse Ditch, 200 East Powerhouse Pond	Semi-Works/Area, PUREX Area	The site currently consists of an open ditch, measuring approximately 580 m, running east to west. The eastern portion of the original ditch was backfilled in 1996, due to a contamination spread. This portion is currently posted with Underground Radioactive signs. The ditch is fed from a 42-in. diameter underground pipeline connected to the 282-E, 283-E and 284-E facilities. The water was discharged from the ditch to a 24-in. diameter pipeline that led to the 216-B-3C Pond. In 1997, when discharges to the 216-B-3C Pond were discontinued, the effluent from the Powerhouse Ditch was diverted to the 200 Area Treated Effluent Disposal Facility (TEDF). The 284-E powerhouse was completely shut down in 1998. After the powerhouse was shutdown, a small amount of effluent continued to be discharged to the ditch from the 282-E and 283-E water treatment facility and reservoir. During 1997 and 1998, blowdown/boiler condensate from the Johnson Controls facility also discharged to the ditch.	Ditch	Y	Y	2	1.3E+5	2666	50	6	6-8	The contaminated portion of the ditch was backfilled, surface stabilized, and the stabilized portion of the ditch was replaced with 366 ft of new underground pipeline.	Contaminated Effluent	Liquid	Radiological animal feces and windblown specs from nearby contaminated area.	Unk.

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216-A-34	Inactive	Ditch	216-A-34, 216-A-34 Ditch, 216-A-34 Crib	200 E Ponds Area	The site is marked and posted with URM signs. It has a small amount of bunch grass vegetation growing on it. In February 2001, a posted SCA extended northward from the edge of 216-A-34 to 216-A-19. The site received cooling water from the contact condenser in the 241-A-431 building. Drawings indicate a 38 cm (15 in.) diameter clay pipe fed 216-A-34 and was connected to the headwall. Ditch effluent was routed to the 216-A-19 and 216-A-20 trenches. Maxfield (1979) describes the site as two ditches; one ditch measuring 85 m (280 ft) long and 9 m (30 ft) wide and a second ditch measuring 39.6 m (130 ft) long and 9 m (30 ft) wide. However, it is not clear if there were two ditches or actually a headwall structure and a ditch. The Maxfield ditch dimensions are similar to the headwall structure dimensions. Drawings show the headwall width was 3 m (10 ft) wide at the west end fanning out to 12 m (40 ft) wide at the east end. The headwall structure had 1:2 side slopes. The headwall structure was 39.6 m (130 ft) long. It tapered off into an open ditch. The ditch terminated in the 216-A-20 Grave. No documentation has been located to describe how the effluent was directed to the 216-A-19 Grave. Disposal at this site was terminated due to the potential for release of contamination to the environment. The pipeline to the ditch was valved out and the effluent was rerouted to the 216-A-8 Crib. The ditch was backfilled. The start date was November 1955 and the end date was December 1957.	Ditch	Y	Y	1-2	8400	280	30	6	6-15	The pipeline to the ditch was valved out and the ditch was backfilled. In 1990 the site was surface stabilized.	Cooling Water	Liquid	U-238, the site contains less than 1 Ci total beta activity	As, Mn

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216-B-2-1	Inactive	Ditch	216-B-2-1, 216-B-1, B Swamp Ditch, 216-B-2, B Ditch, 216-B-2W	Solid Waste Area	The ditch has been backfilled and surface stabilized. It is located within a larger URM area that includes the 216-B-2-1, 216-B-2-2 and 216-B-2-3 stabilized ditches. Process effluent from B Plant was routed to the 207-B Retention Basin. Effluent was released from the 207-B Retention Basin to the 216-B-2-1 ditch that connected to the 216-B-3-1 ditch and terminated in the 216-B-3 Pond. The 216-B-2-1 ditch was closed after it was grossly contaminated by a coil leak effluent release from B Plant in 1963 (UPR-200-E-32). PNL-6456 and DOE/RL-92-05 both state the 216-B-2-1 ditch received effluent from the 284-E powerhouse. This statement is considered to be an error. The 200 East Powerhouse ditch transported 284-E effluent to the 216-B-3 Ditches. Until March 1952, the site transported steam condensate, process cooling water, and chemical sewer from 221-B waste. After March 1952, the site transported the streams identified above in addition to the 241-CR Vault cooling water. The 300 m (1000 ft) of the contaminated section of the ditch was backfilled in 1964. The remainder of the ditch was reused and became part of the 216-B-2-2 ditch. In 1970, contaminated tumbleweeds were found growing on the backfilled contaminated portion of the ditch. The ditch was covered with a plastic weed root barrier to prevent further biological intrusion and covered with a layer of sand and gravel. This was completed in the fall of 1973. Final surface stabilization of the 216-B-2 Ditches area (including 216-B-2-1, 216-B-2-2 and 216-B-2-3) was accomplished in 1987.	Ditch	Y	Y	2	5.3E+4	3500	15	6	6-10	The site was backfilled in 1964, followed by a covering with a weed barrier as well as a layer of sand and gravel in 1973.	Coil Leak/Effluent Release	Liquid	Cs-137, Sr-90	Ba, Pb, Hg, Ni, Ag, As

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216-B-2-2	Inactive	Ditch	216-B-2-2, 216-B-2-2W, 216-B-1 Ditch	Solid Waste Area	The ditch has been backfilled and surface stabilized. It is located within a large Underground Radioactive Material area that includes the 216-B-2-1, 216-B-2-2 and 216-B-2-3 backfilled ditches. The individual ditches are not marked. The head end of the ditch is located near the 207-B Retention Basin. The lower end terminated near the northeast corner of the 218-E-12A Burial Ground. The site received chemical process sewer effluent from B Plant and its support facilities. The construction of the 216-B-2-2 ditch reused 762 m (2500 ft) of the 216-B-2-1 ditch. Approximately 330 m (1100 ft) of new ditch was dug. When active, the open ditch was 4.6 m (15 ft) wide at the top with a side slope of 2.5:1. This unit was backfilled in 1970 due to an unplanned liquid release from B Plant. The 216-B-2-3 ditch was dug to replace the 216-B-2-2 Ditch. The ditch's radionuclide inventory is included in the 216-B-3 Pond. PNL-6456 and DOE/RL-92-05 both state the 216-B-2-2 ditch received effluent from the 284-E powerhouse. This statement is considered to be an error. The 200 East Powerhouse ditch transported 284-E effluent to the 216-B-3 ditches.	Ditch	Y	Y	1-2	5.3E+4	3500	15	6	6-10	The entire ditch was backfilled in 1970 following an UPR. In 1971, after contaminated vegetation was found growing, a biobarrier was laid over the first 730 m.	Contaminated Effluent	Liquid	Cs-137, Sr-90	Ba, Pb, Hg, Ni, Ag, As
216-B-2-3	Inactive	Ditch	216-B-2-3, B Pond Ditch, B Swamp Ditch, 216-B-2-3W	Solid Waste Area	The ditch is currently backfilled and surface stabilized. It is located inside a large URM area that includes the 216-B-2-1, 216-B-2-2 and 216-B-2-3 ditches. The ditch was used to transport liquid waste from B Plant to 216-B-3 Pond. The ditch was used to transport liquid waste from B Plant to 216-B-3 Pond. It was built to replace the contaminated of 216-B-2-2 Ditch in 1970. The side slope is 2.5:1. The radionuclide inventory for the ditch is included with the 216-B-3 Pond. The unit was backfilled and the surface stabilized in 1987. The open ditch was replaced in 1987 with a 22-in. diameter, polyethylene, underground pipeline (see site code 200-E-126-PL). The polyethylene pipeline was installed parallel to (and south of) the 216-B-2-3 Ditch. The pipeline turns to the north and crosses the stabilized 216-B-2-2 and 216-B-2-3 Ditches. It continues eastward on the north side of the backfilled ditches and connects with the previous pipeline to the 216-B-3-3 Ditch.	Ditch	N	Y	1-2	8.E+4	4000	20	6	6-10	The site was surface stabilized in 1987.	Contaminated Effluent	Liquid	Cs-137, Sr-90	Ba, Pb, Hg, Ni, Ag, As

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Waste Site Attributes. (99 Pages)

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216-B-3-1	Inactive	Ditch	216-B-3-1, B Swamp Ditch, 216-B-2, 216-B-3 Ditch, 216-B-2E	200 E Ponds Area	The head end is located outside the 200 East perimeter fence, east of 218-E12A Burial Ground. The ditch continue due east to the 216-B-3 Pond. It widened into a swamp before entering the 216-B-3 Pond. The site is currently backfilled and surface stabilized. It is located within a large, posted URM area that also includes the 216-B-3-2 and 216-B-3-3 backfilled ditches. The ditch received B Plant effluent from the 216-B-2-1 Ditch and PUREX effluent via a diverter that divided the flow between Gable Pond and B Pond. The 216-A-29 Ditch entered the B Swamp near the east end of the 216-B-3-1 Ditch. The unit was backfilled in 1964 after it was contaminated due to a release from PUREX. The 216-B-3-2 Ditch was constructed to replace the 216-B-3-1 Ditch. Until March 1962, the site percolated and transported 221-B Plant steam condensate, process cooling water, chemical sewer waste, and 284-E Powerhouse waste. From March 1952 to November 1955, the site percolated and transported the above-listed streams plus 241-CR Vault cooling water. From November 1955 to December 1957, the site percolated and transported the above-listed streams plus effluent from 216-A-29 Ditch. Wastes include 202-A process cooling water and chemical sewer waste. From December 1957 to February 1958, the site percolated and transported the above-listed streams minus 202-A process cooling water. From February 1958 to December 1962, the site percolated and transported the above-listed streams plus 202-A Acid Fractionater condensate. From December 1962 to December 1963, the site percolated and transported the above-listed streams plus 202-A seal cooling water from air sampler vacuum pumps. After December 1963, the site percolated and transported the above-listed streams minus 202-A seal cooling water. In 1971, the ground was leveled and cleaned of all foreign objects that might puncture a plastic sheet. Ten-mil thick plastic sheets were placed on a 10 cm (4 in.) cushion of sand. They were overlapped 0.6 m (2 ft) to provide an effective root barrier. The sheeting was covered with 46 cm (18 in.) of sand and topped with 10 cm (4 in.) of gravel to prevent surface erosion by the wind. The entire unit was treated in this manner except the first 31 m (100 ft) at the head end near the diverter station.	Ditch	Y	Y	1-2	1.2 E+5	3200	36	6	6-10	The unit was backfilled in 1964. In 1984 the site was covered with sheets of plastic, sand and gravel to provide a weed barrier.	Contaminated Effluent	Liquid	Cs-137 and a cooling leak in a process cooling tank in PUREX put an estimated 2,500 Ci of fission products into the ditch	As, Ba, Cd, Pb, Se, Hg, Hex Cr

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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					At the eastern end, where the unit had widened into a swamp, the treated area is approximately 31 m (100 ft) wide. The west end is approximately 9.8 m (32 ft) wide. The start date was April 1945 and the end date was July 1964.														
216-B-3-2	Inactive	Ditch	216-B-3-2, 216-B Ditch, 216-B-1 Ditch, B Swamp Ditch, 216-B-2-2E	200 E Ponds Area	The ditch has been backfilled and surface stabilized. It is located within a large URM Area that includes the 216-B-3-1, 216-B-3-2 and 216-B-3-3 covered ditches. The unit was open from the diverter station to the 216-B-3 Pond and was approximately 1.2 to 2.4 m (4 to 8 ft) deep. It was backfilled in July 1970 after a release of Sr-90 from 221-B Plant. The ditch received effluent from B Plant and PUREX and transported it to the 216-B-3 Main Pond. This ditch replaced the 216-B-3-1 Ditch after it became contaminated from an Unplanned Release in 1964. The 216-B-3-2 Ditch was backfilled due another unplanned release of radioactive liquid that occurred in 1970, which caused it to become highly contaminated. The 216-B-3-3 Ditch was constructed to replace the 216-B-3-2 Ditch. Until January 1965, the site transported 221-B Plant process cooling water, steam condensate, and chemical sewer; 241-CR Vault cooling water; 284-E Powerhouse water; and received and transported 202-A chemical sewer waste and fractionator condensate from 216-A-29 Ditch. From January 1965 to January 1966, the site transported the above mentioned streams plus 241-TY Tank Farm ITS Unit 1 condenser cooling water. From January 1966 to November 1967, the site transported the above mentioned streams plus condenser cooling water and air sampler vacuum pump seal cooling water from 202-A Building. From November 1967 to February 1968, the site transported the above mentioned streams minus 284-E Powerhouse wastewater. After February 1968, the site transported the above mentioned streams plus 241-BY Tank Farm ITS Unit 2 condenser cooling water.	Ditch	N	Y	1-2	5.6E+4	3700	15	6	6-10	The ditch was surface stabilized in 1984.	Contaminated Effluent	Liquid	Cs-137 and in 1970 a maximum dose rate of 450 mr/h measured at the head of the ditch.	As, Ba, Cd, Pb, Se, Hg, Hex Cr

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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216-B-3-3	Inactive	Ditch	216-B-3-3, B Swamp Ditch, 216-B-3-3 Ditch	200 E Ponds Area	The ditch has been backfilled and surface stabilized. It is posted as an URM area. The ditch received chemical process water effluent from B Plant and PUREX facilities. The unit was an open ditch from the diverter station to the 216-B-3 Pond. The unit was 1.2 to 2.4 m (4 to 8 ft) deep and 0.3 m (3 ft) wide at the bottom. The 216-A-29 Ditch fed into this unit approximately 305 m (1,000 ft) upstream of the 216-B-3 Pond outfall. This ditch was built to replace the contaminated 216-B-3-2 Ditch. It operated between September 1970 and May 1994. Until July 1973, the site transported and percolated 221-B cooling water, 202-A chemical sewer from the 216-A-29 Ditch, 241-BY Tank Farm ITS Units 1 and 2 cooling water, and 244-CR Vault cooling water. From July 1973 to May 1978, the site received the same as above minus ITS Units 1 and 2 cooling water. From May 1978, the site received 221-B cooling water and 202-A chemical sewer from the 216-A-29 Ditch. The ditch was decommissioned and interim stabilized in 1994, along with the 216-B-3 Main Pond and 216-B-3A Pond Lobe. Although the sites have been backfilled and stabilized, they are combined in the RCRA Part A Permit (Section 4.2.3.5) that has not yet been closed. Therefore the ditch is classified as active.	Ditch	N	N	None	7.4E+4	3700	20	6	6-10	The site was surface stabilized in 1994.	Contaminated Effluent	Liquid	Cs-137	As, Ba, Cd, Pb, Se, Hg, Hex Cr
CTFN 2703-E	Inactive	Drain/Tile field	CTFN 2703-E, 200-E Chemical Drain Field, Chemical Tile Field North of 2703-E	200 E Admin Area	The waste site consists of a trench and seepage basin. As of 1994, this unit had no free standing liquids nor any sign of natural vegetative growth. The seepage basin is referred to as the 200-E Chemical Drain Field. It has not been backfilled or filled with any materials that would facilitate drainage. The drain field was designed to receive non-hazardous liquid waste from the 272-E and 2703-E Buildings. Wastewater from the 272-E Building floor drain was discharged to a process sewer line which extends to the disposal site (see 200-E-287-PL). Wastewater from two floor sumps in the 2703-E Building was discharged to the same process sewer line and combined with the 272-E Building effluent before reaching the disposal site. DOE/RL-94-24 gave the dimensions for the basin as 47 by 47 m, and also gave a length of the trench as 47 m.	Drain/Tile Field	N	N	None	2.4E+4	155	155	6	6-10	None	Liquid disposal	Liquid	Unk.	Unk.

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200-E-1	Inactive	Dumping Area	200-E-1, 284-E Landfill	200 E Admin Area	There is no visible evidence of a landfill at this location. A covered concrete pad has been built over the area where the landfill was supposed to be located. The unit consists of asbestos waste encountered during below grade trenching activities. A WIDS site entry form, submitted in 1993 (but initiated in December 1992) states asbestos material was found approximately 9 m (30 ft) west of the 284-E building while digging a water line trench. The form also indicates the material is underneath a 90 Day Storage Pad. The WIDS submittal form cited an October 22, 1990 "DSI" from DR Herman to JW Schmidt as a reference. No dimensions or waste volume was documented. There is no information to indicate if the material was removed from the trench.	Dumping Area	N	N	None	Unk.	Irr.	Irr.	Unk.	0-6	A concrete pad is located where the landfill was supposed to be located.	Landfill	Solid	None	Asbestos
200-E-110	Inactive	Dumping Area	200-E-110, Contaminated Tumbleweed Dump Site	200 E Ponds Area	DynCorp Environmental erected the posts and chain around the pile of discarded tumbleweeds in 1998. The pile of weeds had the appearance of being compacted with a garbage compactor truck. The original pile was quite large and it was estimated to be more than one truck load of compacted tumbleweeds. In 1999, the Integrated Soil, Vegetation and Animal Control team removed the bulk of the compacted tumbleweeds and downposted the area to a CA. Some tumbleweed fragments remain in the radiation zone. In October 2003, the area was down posted to a non-controlled area. The radiological posting signs were removed. The site had been surrounded with light duty steel chain and posts and posted as a CA. The CA was surrounded with light duty steel chain and posts and is posted as a RBA. The area was also posted as a RCA. The ground is sandy soil with rocks and chunks of concrete. The area is free of growing vegetation and the tumbleweeds have been removed. Only tumbleweed fragments remained.	Dumping Area	N	N	None	5046	87	58	Unk.	0-1 (spotty)	In 1999, the bulk of the tumbleweeds were removed, leaving only fragments.	Vegetation (tumbleweeds)	Solid	Contaminated Vegetation	None

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200-E-13	Inactive	Dumping Area	200-E-13, Rubble Piles from RCRA General Inspection #200EFY95 Item #7	ILAW Area	A 1995 site inspection identified this site and described it as numerous rubble piles. These piles contained inert construction debris, such as wood, asphalt, dirt, pipe and concrete. Another site visit occurred in February 1997 when following debris was identified: asphalt paving, concrete, steel pipe, rebar and PVC pipe. A GPS survey on 8/26/1998 observed that debris was concentrated in piles south of an old borrow area. However, there were also isolated piles/berms of debris beyond this concentration, primarily to the west. Some scattered debris and half-buried towels or rags were observed in the borrow area. A site visit on 7/26/1999, confirmed the previous site conditions. A Hanford Facility RCRA Permit General Inspection was conducted on July 17 and 18, 1995. During the inspection a site containing numerous rubble piles was identified as meeting the criteria for "solid waste site not previously identified for remedial action" (Hanford Facility RCRA Permit General Inspection Plan, WHC-EP-0850).	Dumping Area	N	N	None	1.4E+5	Irr.	Irr.	Unk.	0-1 (spotty)	None	Dumping Area	Solid	None	Inert construction debris
200-E-46	Inactive	Dumping Area	200-E-46, RCRA Permit General Inspection #200EFY96 Item #3	200 E Admin Area	The site appears to be an old lay down area. Scattered debris is visible over a large area. Some of the items mentioned in the RCRA inspection have been removed as stated in the Cleanup Activities Section. Materials observed at the site include wire rope, a steel railroad rail, a metal bar, wood, fiberglass insulation, aluminum cans coal, pipe, aluminum wire, copper wire, concrete, and glass. Most of the debris is in relatively small pieces. Large debris includes the steel railroad rail, iron bar, wire rope, and concrete.	Dumping Area	N	N	None	8.1E+4	492	164	Unk.	0-1 (spotty)	Some wastes have been removed from the site an aerosol can, a transformer core, and a gallon can containing a tar-like substance.	Dumping Area	Solid and Liquid	None	Unk.

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200-W-101	Inactive	Dumping Area	200-W-101, Contaminated Material West of 216-S-12 Crib	REDOX Area	The site consists of two large boxes and a rusted metal shaft surrounded with light post and chain. The area had been posted with CA and RA signs. The metal shaft is approximately 18 m (60 ft) long and extends beyond (outside) the posted area chain. The radiological posting was changed to CA in April 2002. Conversations with BHI and CHG employees revealed that this material has been sitting at this location for approximately 15 years. In 1999, an attempt was made to remove and bury the material. In 1999, BHI was responsible for both the REDOX inactive facility and the 216-S-12 Crib, but had no knowledge of the source of the material or who erected the radiological zone. In 1999, BHI was surface stabilizing the adjacent REDOX railroad cut and considered placing the material into the area being covered with dirt and burying it along with the railroad track. They contacted the Tank Farm contractor to see if they claimed ownership of the material. The Tank Farm contractor personnel had no knowledge of this material either. BHI stabilized the railroad cut in 1999 without disturbing this posted material, because they could not find a responsible individual to give them permission to move it. A radiological survey was done on April 2, 2002 to determine the radiological conditions inside the posted area. No contamination was detected on the wooden boxes or the ground surface. A small amount of contamination (2000 dpm) was found on a piece of hose. The radiological posting was changed from RA/CA to CA.	Dumping Area	N	N	None	800	40	20	Unk.	0-1	None	Dumping Area	Solid	Unk.	Minor debris
200-W-11	Inactive	Dumping Area	200-W-11, Concrete Foundation South of 241-S, S-Farm Foundation and Dump Site	200 W Ponds Area	A concrete foundation, small burn areas, bare areas and scattered debris are located south of 241-S Tank Farm. The site was identified on April 19, 1995 during a RCRA General Inspection. No drawings related to the foundation have been identified. The debris includes barbed wire, welding rods, oil cans, paint cans, glass, and vehicle parts. It may have been used as a laydown yard, support fabrication area, or vehicle maintenance. It is possible it supported the construction of the S Farm.	Dumping Area	N	N	None	1.2E+5	Irr.	Irr.	Unk.	0-1 (spotty)	None	Unk.	Solid and Liquid	None	Paint, solvent

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200-W-12	Inactive	Dumping Area	200-W-12, 201-W Soil Mound and Plastic Pipe	REDOX Area	The site consists of a soil mound with one 0.76-m (2.5-ft) aboveground plastic pipe and one 20 cm (8-in.) aboveground plastic pipe topped with tees and elbows. There are also insulated electrical wires and an electrical heat controller. During the 1970s, the Atlantic Richfield and Rockwell Research Departments used this area for testing equipment and processes to support the waste management operations. This area was selected for testing because it was adjacent to the REDOX facility (where the Research Department offices were located) and because the area did not contain any contaminated facilities or vadose contamination. This site is located near other test sites and pits that were used to test grout, slurry and soil infiltration in the late 1970's and early 1980s. It is suspected that this site was also a test site. Several employees that were involved in the grout, slurry and infiltration tests were interviewed. None of the employees had any knowledge of what this mound with polyvinyl chloride (PVC) piping was used for. The RCRA Permit General Inspection Report notes that "It appears there is a tank in the ground under the vents." The comment section of the Discovery Site Evaluation Checklist from 6/25/96 states that "Per discussion with K. Moss, unable to discount the potential for waste disposal based on interviews. Considered a SWMU based on discarded materials at the site." Thus, while this site is most likely another test site like the adjacent 200-W-35, it cannot be rejected as a waste management unit based on available information.	Dumping Area	N	N	None	72	12	6	Unk.	0-3	None	Equipment Testing	Solid and Liquid	None	Unk.
200-W-3	Inactive	Dumping Area	200-W-3, 2713-W North Parking Lot, 220-W-1	T Plant Area	The unit is a parking lot, containing an area with discolored soil approximately 10 to 15 cm (4 to 6 in.) deep. The 2713-W building had been a gas station and also contained an oil changing pit for government vehicle maintenance. Oil was often used on gravel areas for dust abatement. Two soil samples were collected in 1989 indicate that PCBs (maximum 3 ppm), lead (maximum 2.1 mg/L EP-TOX), xylene (maximum 1640 ppb), and total petroleum hydrocarbons (maximum 620 mg/kg) were present.	Dumping Area	N	N	None	1.5E+5	300	500	Unk.	0-3 (spotty)	None	Unk.	Liquid	None	PCB's, lead, xylene, and petroleum hydrocarbons

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200-W-33	Inactive	Dumping Area	200-W-33, Solid Waste Dumping Area, Debris near 609 gate	WM Area	The site consists of an area of debris covering approximately one acre in a stand of open sagebrush. In April 1996, a large amount of rusted cans, rusted 55 gal drums, steel containers, wood and other debris was found in this area. Some evidence of burning and oil spills was also noted.	Dumping Area	N	N	None	5.7E+5	804	705	Unk.	0-3 (spotty)	None	Dumping Area	Solid and Liquid	None	Oil substance, burn residue
200-W-55	Inactive	Dumping Area	200-W-55, Dumping Area North of 231-Z	T Farm Area	The site consists of scattered debris approximately 10 ft in diameter inside the north end of a large depression. The site is not marked or radiologically posted. An area of debris was identified during a 1997 RCRA Permit General Inspection tour. The debris consists of concrete rubble, wood, cans, pipes and rusted sheet metal.	Dumping Area	N	N	None	3.0E+4	None	10	Unk.	0-1 (spotty)	A radiological survey was done 1991 and no contamination was found.	Dumping Area	Solid	None	Unk.
200-W-6	Inactive	Dumping Area	200-W-6, 200-W Painter Shop paint solvent disposal area	T Plant Area	The site consists of contaminated soil. The soil was identified in 1993, while performing building modifications at the paint shop. The construction forces shop complex has been situated at this location for many years. Building modifications being done in 1993 required a portion of the concrete floor be removed. The soil beneath the floor was being excavated by hand (11/17/93) when a strong solvent odor was noticed. When the odor was discovered, the job was stopped. The soil was placed back into the excavation and reported to the construction supervisor. Long-time employees indicate that before 1984, it had been a common practice to dispose of paint and solvents directly to the ground. A Suspect Waste Site Information Report was submitted to the monitoring group on November 23, 1993. The site was submitted to the WIDS database in January 1994.	Dumping Area	N	N	None	2948	Irr.	Irr.	Unk.	0-15 (spotty)	None	Liquid Disposal	Liquid	None	Paint solvents

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200-W-92	Inactive	Dumping Area	200-W-92, Contaminated Mound of Soil and Debris, Soil Mound West of 241-TY Tank Farm	T Farm Area	The waste site is a mound of soil approximately 1.5 m (5 ft) high. It had been surrounded with chain and posted with CA signs. Several radiation flags were placed in the mound to identify significant contamination. Rocks, asphalt, and chunks of cement were visible. Some vegetation, including rabbitbrush, had been growing on the mound. In April 2007, clean gravel was placed on top of the contamination and the site was down posted to URM. The Dyncorp ISVAC group submitted this as a Discovery Site. Radiological Problem Report SS-01-045 states that maximum contamination levels of 1,600,000 dpm per 100 cm ² of beta gamma and 14,000 dpm per 100 cm ² of alpha were found on the soil and debris. The soil pile appears to have been dumped at this location several years ago.	Dumping Area	N	Y	1-2	2400	80	30	Unk.	5 ft above ground	The site was surface stabilized with clean gravel in 4/07.	Dumping Area	Solid	Misc. trash and debris with maximum readings of 1,600,000 disintegrations per 100 sq. cm of beta gamma and 14,000 disintegrations per 100 sq. cm of alpha in May 2001.	Misc. trash and debris	
600-218	Inactive	Dumping Area	600-218, H-61-H Anti-Aircraft Artillery Site Dumping Area	W. 200 W Area	The dumping area consists of demolition debris consisting of wood, pipe, barbed wire, metal fence posts, empty oil cans, empty paint cans, food cans, and sheet metal. The dumping area measures 20 m by 74 m (67 ft by 243 ft). It received miscellaneous construction debris from the Anti-Aircraft site.	Dumping Area	N	N	None	1.6E+4	243	67	Unk.	0-3 (spotty)	None	Dumping Area	Solid and Liquid	None	Oil and paint, misc. trash and construction debris	
600-220	Inactive	Dumping Area	600-220, H-51 Anti-Aircraft Artillery Site Dumping Area	S.W. 200 W Ponds Area	The site consists of three dumping areas. The dumps are located in three general areas. One has T-posts around it and it contains metal, transite, fluorescent light bulbs, metal ducting, fiberglass insulation, an unknown white granular substance, pipe, and wire. The July 2000 fire burned off all flammable material, such as wood, that had remained at the site. The second area is mostly wood; little remains now. The third area is a relatively large area consisting of empty cans and empty food, oil, paint and bleach bottles. Several wooden ammunition boxes and cardboard canisters were observed before 2000, but are now gone. The area appears to have been scraped with a bulldozer. Several waste materials are partially buried. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures. The anti-aircraft sites were phased out of service in late 1957 and early 1958, and their structures and equipment were declared excess.	Dumping Area	N	N	None	3.5E+5	647	545	Unk.	0-1 (spotty)	None	Dumping Area	Dumping Area	Solid	None	Asbestos, misc. trash and construction debris

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600-226	Inactive	Dumping Area	600-226, Gun Site H-42 Dumping Area	S. NRDWL/BC Controlled Area	The site is an old dumping area for an anti-aircraft site. The surface of the site has scattered and decaying debris including pipe, glass, empty buckets, slightly rusted (not corroded) 55-gal (208-L) drum, dried paint, cans, transite, broken concrete, and dry cell batteries. Wood had formerly been present, but was burned in the July 2000 fire. Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 a in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.	Dumping Area	N	N	None	Unk.	Irr.	Irr.	Unk.	0-1 (spotty)	None	Dumping Area	Solid	None	Misc. construction debris

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Waste Site Attributes. (99 Pages)

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600-228	Inactive	Dumping Area	600-228, H-40 Gun Site Dumping Area	NRDWL/BC Controlled Area	The dumping areas are located in pits in the southern portion of the site. The pit located west of the main site measures about 12 m (40 ft) in diameter and contains sheetrock, metal, transite, glass and empty paint cans. Two small pits located in the south of the site are each about 4 m (15 ft) in diameter. One pit is empty and the other contains steel fence posts and barbed wire. The largest pit is to the south-southeast, and on the topographic slope facing to the south. It contains a large quantity of metal objects, as well as some transite and glass. The July 2000 fire burned much of the wood debris in this pit and the western pit. These pits received debris from several years of military operation of the anti-aircraft site. Typically, Camp Hanford's anti-aircraft artillery sites were each roughly 20 a in size and contained any number of buildings (typically around 20), various utility distribution systems, roads, and sidewalks. Each site consisted of emplacements protected by revetments made of sandbags and wood planking, wooden structures, prefabricated metal buildings, and, later, permanent, concrete block structures. The prefabricated buildings had aluminum walls and roofs with wooden or concrete floors set on concrete pier blocks and were the most commonly constructed. The permanent structures included barracks, latrines, mess halls, craft shops, pump houses, motor pools, and radar facilities. Each site typically had a small arms range, water storage cistern, sanitary, and sewage disposal facilities. Pathways, sidewalks, roadways, and parking lots connected the structures.	Dumping Area	N	N	None	1552	39	39	Unk.	0-2 (spotty)	None	Dumping Area	Solid and Liquid	None	Misc. construction debris, possible lead paint

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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600-281	Inactive	Dumping Area	600-281, Scattered Debris South of Army Loop Road	S. NRDWL/BC Controlled Area	After the range fire in June 2000, additional areas of debris were visible. Five areas of concentrated debris were identified. The debris includes material suspected to be asbestos, charred wood, glass, metal pipes, gauges and green metal containers. A June 2002 site walkdown was conducted to document scattered debris. Five waste areas west of the power line road were identified on GPS job #529. The five waste areas designated during GPS job 529 contain the following debris: Area 1 - scattered debris. Area 2 - Broken burlap bags in mound of dirt, metal straps, dried paint, military issue dishes, broken concrete, and rusted 55-gal empty drum. Area 3 - Lightly rusted (not corroded) 55-gal (208-L) drum, an air hole at one end is open and drum appears empty except solid sound in middle. Area 4 - Broken toilet, small military issue batteries, mound of transite and homemade dumbbell. Area 5 - east of power line contains two mounds of transite. Three compressed gas cylinders were found adjacent to well 699-16-51.	Dumping Area	N	N	None	Unk.	Unk.	Unk.	Unk.	0-1 (spotty)	In February 2007, the three compressed gas cylinders were removed from the area. The cylinders previously contained argon, but were confirmed to be empty.	Dumping Area	Solid	None	Demolition and inert waste, asbestos
600-38	Inactive	Dumping Area	600-38, Railroad Siding Susie, 600-25, Susie Junction	W. 200 E Ponds Area	The site is at the "Susie" railroad junction. The northeast corner of the junction has an excavated area that may have contained a siding for decontamination of railroad cars. In a 1996 interview, Ray Johnson said that the site had been "picked up" by unknown parties, but most of the railroad maintenance equipment was left at the site. In 1989 Roos reported that in a large pit were 4 to 5 drums, one had leaked some oily liquid, another was labeled kerosene. On the side of the pit near the tracks was a small trash pile containing rubber boots, brooms, brushes, chisels mounted on poles, hoses, and various trash. These objects appeared to be associated with a cleaning/decontamination process, however, the small quantity would suggest that it was single event, or more careful disposal procedures were generally used. On the south side of the tracks, in the same general area, was evidence of a railroad siding. A small pile of ashes was present containing nails, cans, and some other ordinary looking trash. There was some fluffy white fibrous material on the ground that looked like insulation. It was beside the ash pile, and had ashes on it. It may have survived a fire hot enough to shatter cobbles in the area, suggesting that it may be some form of asbestos.	Dumping Area	N	N	None	3.6E+6	Irr.	Irr.	Unk.	0-3 (spotty)	Most of the trash, including the drums, had been removed by 1996.	Dumping Area	Solid and Liquid	None	Misc. debris, demolition and inert waste, asbestos, petroleum hydrocarbon

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600-40	Inactive	Dumping Area	600-40, West of West Lake Dumping Area	200 E Ponds Area	The unit is an old dumping area. The debris is mostly consolidated in one of two locations, either along the road or on the hillside. The site along the road is approximately 364 m ² (3918 ft ²) in area. The site on the hillside is 123 m ² (1324 ft ²) in area. The area listed in the dimensions represents the total area of both dumping areas. Additionally, a few pieces of scattered debris can be found on the hillside. The waste along the dirt road includes chunks and slabs of concrete, lumber, miscellaneous metal debris, rusted cans approximately 30.5 cm in diameter and 40.6 cm tall (12 in. in diameter and 16 in. tall), and what appears to be roofing (black, tarry sheets with gravel) materials. On the hillside are 2 small wooden structures approximately 1.8 m by 1.8 m by 1.2 m (6 ft by 6 ft by 4 ft), a pile of wooden posts with each post approximately 20.3 cm in diameter and 1.8 m long (8 in. in diameter and 6 ft long), other wood debris, what appears to be a wheelbarrow, and 2 large rusted metal cans approximately 20.3 by 20.3 by 35.6 cm tall (8 by 8 by 14 in. tall) and 30.5 cm in diameter by 35.6 cm tall (12 in. diameter by 14 in. tall).	Dumping Area	N	N	None	5242	Irr.	Irr.	Unk.	0-1 (spotty)	None	Dumping Area	Solid	None	Misc. debris, demolition and inert waste
600-51	Inactive	Dumping Area	600-51, Chemical Dump, Pile of White Powder	N. 200 E Ponds Area	The site is an elliptical area with little or no vegetation. This site consisted of a pile of white powdered chemical substance. Sampling determined the powder was a sodium compound. During a site visit on October 27, 1999, it was observed that the pile of white powder was gone. There does not appear to be any signs of soil discoloration or traces of the white powder. It is unknown how long the pile of white powder has been gone or whether the lack of vegetation is temporary or long term. The surrounding area was covered with grasses, tumbleweeds and tumble mustard. The material was located next to the 1901-Z Building. This building is a concrete block structure housing valves for the export water lines.	Dumping Area	N	N	None	15	3	5	Unk.	0-1	A sample of this material was analyzed with the HAZCAT field analysis kit. The bulk of this material appears to be a sodium compound. The sodium compound has been removed.	Dumping Area	Solid	None	Unk.
600-65	Inactive	Dumping Area	600-65, 607 Batch Plant Drum Site	N. ERDF Area	In 1995, the site had two crushed and flattened 55-gal drums, one oil filter housing (approximately 2 quarts [1.9 L]), a metal cable, one large concrete block (0.5 yds ³ [0.4 m ³]), and indications of possible petroleum disposal. In 2001, the items noted above could not be located, and the area is possibly being used for fill material.	Dumping Area	N	N	None	100	10	10	Unk.	0-3 (spotty)	In 2001, the listed materials were not present at this site.	Dumping Area	Solid and Liquid	None	Misc. debris, petroleum hydrocarbons

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600-66	Inactive	Dumping Area	600-66, 607 Batch Plant Orphan Drums	ERDF Area	The site consists of one rusted 55-gal (208 L) drum laying on the ground surface on its side. No label or hazardous substances are evident. In 1995 a site visit found two rusted drums, contents unknown. Notes from the logbook indicate one drum was a rusted 55-gal (208 L) and one a 5-gal (19 L) drum. Also noted from the site walkdown was that one drum was labeled "Cutting Oil", but not specifically which one. A subsequent field visit in 1997 identified only one 55 gal (208 L) drum and some metal sheeting. No mention of labels. On 3/26/02 and 11/04/03, only one unlabeled 55 gal (208 L) drum was observed during site walk downs by Curt Clement.	Dumping Area	N	N	None	25	5	5	Unk.	0-3 (spotty)	None	Dumping Area	Solid and Liquid	None	Unk. liquids
600-70	Inactive	Dumping Area	600-70, Solid Waste Management Unit (SWMU) #2 - Miscellaneous Solid Waste	REDOX Area	The site is located on relatively flat terrain except for natural depressions and evidence that trenches may have been dug. Large amounts of construction materials such as concrete, wood, metal, cans, barrels and transite are visible. Numerous areas of burned materials were also observed. In early 1950, the United States Government began construction of the REDOX plant in the south portion of the 200-West Area. Construction storage, heavy equipment vehicle parking and maintenance, concrete truck washdown area, and a waste disposal area associated with the REDOX plant construction were at this site. Likely waste disposal during the 2-year construction period included trash burning (evident from photographs provided by DOE), acid "pickling" (metal preparation) wastes, cooling water from heliarc welding operations (into a french drain), and sandblasting wastes. Other possible contaminants disposed of in this area include gasoline, oil, other lubricants, anti-freeze, and other vehicle-related fluids. The exact locations of the French drain and other disposal units are unknown.	Dumping Area	N	N	None	1.3E+6	1394	918	Unk.	0-3 (spotty)	None	Dumping Area	Solid and Liquid	None	Misc. debris, demolition and inert waste, asbestos, petroleum hydrocarbon
200-W-14	Inactive	Dumping Area	200-W-14, 200 West Heavy Equipment Storage Area	T Plant Area	The site appears as a gravel parking lot. The site was a heavy equipment (including cranes, forklifts, diesel generators, backhoes, vehicles) parking area with five or six large spots of petroleum contaminated soil. Contaminated soil is encountered down to a depth of 0.61 m (2 ft) or more. During the 1995 site visit, the equipment continued to overflow and leak; no drip pans or containment were used.	Storage Yard	N	Y	1-2	2400	80	30	2	0-6 (spotty)	None	Parking Area	Liquid	None	Petroleum

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200-E-101	Active	Experiment/Test Site	200-E-101, 200 East Deep Lysimeter Site	BC Controlled Area	The site consisted of three features, one open bottom pit, one closed bottom pit and an underground equipment storage room. The pits were located 34.6 m (114 ft) apart. Both pits were constructed from corrugated steel cylinders that were buried and backfilled with soil. 2/2001, the underground equipment storage room access hatch and vents were found inside a chained area, just west of the dirt access road. The closed bottom pit was found to the north of the equipment room, enclosed in a triangular shaped chained area. Lysimeter access pipes were protruding up through the soil and the rim of the closed bottom lysimeter caisson were visible. The lysimeter pits were used to collect soil information. The sensors in the pits were hard wired to the instrument recorders, located inside the underground equipment storage room. Three, 4-cm (1.6-in.) diameter aluminum pipes were installed to a depth of 18.3 m (60 ft) to allow access of a neutron moisture probe. Other pipes contained soil temperature thermocouples and pressure sensor tubes. The closed bottom lysimeter has a 20 cm (8-in.) poured concrete slab at the bottom. Holes were bored through the cement slab so the instruments could access the soil below the caisson. The instrument room housed the recording and measurement instruments. The room was buried approximately 0.3 m (1 ft) below ground level to eliminate climatological influences, such as wind and temperature that could interfere with readings. The room measures 4.5 m (14.8 ft) by 4.8 m (15.8 ft) and was located between the two lysimeter pits. The open bottom lysimeter has been decommissioned. The closed bottom lysimeter remains in a "Standby" mode. It is still operational, but is not being used. The neutron probe is likely to still be in place inside the lysimeter. Verbal reports indicate that early experiments included the use of short-lived isotope tracers. During construction, the instrument cables were hung inside the lysimeter. To hold the cables straight during the filling of the lysimeter with soil, the cables were anchored with 500 g (1.1 lb) lead bricks. The lead bricks remain buried in the lysimeter structures. The closed bottom pit has not been used since 1991, but is considered to be on stand-by.	Experiment /Test Site	N	N	None	591	59	10	Unk.	58-60	The open bottom pit was decommissioned in 1994, the access pipes and cables were removed.	Test Site	Unk.	Short-lived isotope tracers	Lead bricks

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200-W-75	Unk.	Experiment/ Test Site	200-W-75, Radiological Logging System (RLS) Calibration Silos	REDOX Area	Three calibration silos are located west of the 202-S building, south of the 276-S building and north of the 211-S tanks. One calibration silo is located west of the 211-S tanks, across an asphalt access road. The site consists of four underground RLS equipment calibration silos. The silos are galvanized steel containers with metal lids bolted on top. The silos have somewhat different design constructions for calibrating different types of equipment. One type consisted of a 25 cm (6 in.) capped well casing inserted through the centers of the silos. There are two risers with bolted lids adjacent to the well casing. The silos are posted with URM signs. The calibration silos contained radioactive sources consisting of known quantities of Co-60, Sr-90, Ru-106, and Ce-144 in sealed capsules. Since the silo covers are posted with URM signs, it is assumed the sources are still inside the silos. In the late 1970's, test well mockups were used to calibrate in-well radionuclide detectors. The calibration mockups were constructed of a steel container approximately 2.4 m (8 ft) deep filled with soil. Tubes containing radioactive sources were inserted into the soil at distances of 2.5, 7.6, 15, 30, 46 and 61 cm from the well casing that was located in the center of the mockup. The mockup silo was buried so that an RLS vehicle could drive up to the calibration silo and drop its logging probe into the center well casing.	Experiment/ Test Site	N	Y	0.05	128	None	4	8	0-8	The site has been surface stabilized.	Contaminated Calibration Silos	Solid	Cobalt-60, Strontium-90, Ruethinium-106, Cerium-144	None

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200-W-64	Inactive	Foundation	200-W-64, 2724-W Contaminated Laundry Facility Building Foundation	T Plant Area	<p>The building foundation is posted with "Underground Radioactive Material" signs. There is also an area approximately 3 m (10 ft) by 4.5 m (15 ft) on the north side of the foundation that is posted as "Fixed Contamination". Several drains and pipes were observed on the concrete pad. All drains and pipes were either capped or grouted. There are three radiologically posted manholes adjacent to the northwest corner of the foundation. The manholes are likely to be a portion of the process sewer. Six connex storage units and several equipment items such as pipe, valves, flanges, and fence posts were observed on the southeastern portion of the pad. DOE/RL-2004-39 Rev 0 states: Contamination is part of remaining portion of building foundation. Extent of contamination in cracks is unknown. WHC-EP-0342 states the 2724-W building was built in 1952 and expanded several times. ARH-2155, however, indicates that the new laundry facility (2724-W) began discharging effluent in 1950. This building (2724-W) replaced the 2723-W "Old Laundry" facility which was then used as the mask washing facility. The laundry effluent was discharged via an underground pipeline (200-W-102) to the 216-U-14 Ditch, until it was diverted to the new Laundry Waste Crib (216-W-LWC) in 1981. By 1981, the Laundry Complex included the 2724-W, 2724-WA, 2724-WB and MO-406. MO-412 was placed adjacent to the Laundry Complex in 1984 and housed the Mask Cleaning and Maintenance Facility. Soiled protective work clothing (coveralls, gloves, hoods, canvas boots and rubber shoe covers) were sent to the laundry facility from all the Hanford work areas. Two thirds of the laundry received was radioactively contaminated. One third consisted of "blue" (noncontaminated) coveralls and towels. The non-contaminated laundry was washed separately from the contaminated laundry. By 1981, approximately three million pounds of laundry was processed per year in 600 lb capacity washing machines and 400 lb capacity dryers. An average of 26,250,000 L (691,000 gal) of waste water was discharged to the 216-W-LWC crib each month. A Facilities Evaluation Board assessment, done in July 1998, documented a finding that the fixative coating on the Fixed Contamination Area of the pad has degraded. The area has broken into removable pieces.</p>	Foundation	N	N	None	1.4E+4	138	105	Unk.	0-1	The laundry facility building was demolished in 1995, the foundation remains.	Contaminated Foundation	Liquid	Radiological contamination from soiled protective work clothing; There was 9000 dpm beta/gamma found in the Fixed Contamination Area in March 1998.	None

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					There is a concern that the cracked concrete could cause a loss of contamination control. There have been problems identifying a responsible company and organization to respond to the finding.														
600-275	Inactive	Foundation	600-275, 218-W-14, Igloo Site, Army Ammo Site, Regulated Storage Area	W. 200 W Area	The bunkers, guard house and fence have been removed. Currently the access roads are visible with bladed areas where the seven bunkers had been located. Rectangular mounds of soil, each approximately 1 m (3 ft) high, remain where the igloo structures had been located. The seven army igloos were originally used for ammunition storage and Nike missile parts. Drilling equipment for the Basalt Waste Isolation Project was also stored in the igloos. Later, radioactive material (plutonium scrap waste) was stored in the igloos. A Hanford employee recalls doing a routine surveillance of the plutonium scrap that was stored in barrels of carbon tetrachloride. He discovered a spill had occurred in the igloo located in the northeast corner of the site. Since the floors of the igloos were sloped to from center outward to collection points, no contamination reached the outside of the igloo. The contamination was cleaned up when it was found. It is estimated to have occurred sometime in the 1960's.	Storage Yard	N	N	None	3.3E+6	2050	1625	Unk.	0-6 (spotty)	The bunkers, guard house and fence have been removed. The stored scrap has been removed.	Leak/ Spill	Solid and Liquid	Plutonium scrap	Carbon tetrachloride

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OCSA	Inactive	Foundation	OCSA, Old Central Shop Area, Central Shop Area	200 E Ponds Area	The site consists of building foundations and scattered debris. A site visit on 12-4-97 observed pieces of lumber, corrugated metal, bricks, shingles, buckets, a barrel, office furniture, and wooden tables. There are two pits containing debris and nails. During Hanford construction the central shops were established as a staging area, repair shops, and specialized fabrications area. It was a central location for construction being conducted at 200 East, 200 West, 100-B, 100-D, and 100-F Areas. It included materials storage areas for construction materials and fuel storage. All facilities in the central shops area were considered temporary construction facilities and were identified as TC-29 Buildings. The sanitary sewer system consisted of a gravity feed septic tank system open trench and open settling ponds. There were three fuel storage areas. One was associated with a gas station and had kerosene as well as diesel and gasoline in 3,000-gal storage tanks (also "white" in a 2,000 gal tank). The second was a fuel storage yard, with six 25,000-gal tanks and two 12,000 gal tanks; the drawings show this as both "Gasoline storage area" on one side and "Fuel Oil storage" on the other. The third is one 100,000 gal storage tank that was connected to a boiler, which was likely the heat source for the area buildings.	Foundations	N	N	None	1.1E+7	Irr.	Irr.	Unk.	0-2 (spotty)	None	Former Construction Staging Area With Fuel Tanks	Solid and Liquid	None	Misc. debris, demolition and inert waste, petroleum hydrocarbons
216-S-4	Inactive	French Drain	216-S-4, 216-S-7, 216-S-4 Sump or Crib, UN-216-W-1	200 W Ponds Area	The site is marked and posted with URM signs. The site is constructed of two vertically buried metal culvert pipes. The site is constructed of two rock-filled, 6.1 m (20 ft) long metal culverts, connected in parallel. The site received liquid from the 241-S-101 and 241-S-104 tank condensers via an aboveground pipe. The site operated from August 1953 to August 1956. The site was retired when the 241-S Tank air condensers were reactivated. The site was deactivated by removing the above-ground piping in the tank farm to the units.	French Drain	Y	Y	1-2	11	None	3	22	22-30	The site was surface stabilized with clean backfill in 1991.	Contaminated Effluent	Liquid	Tc-99, Sr-90, H3, U-238	Ag, As, Hg, NO3, Hex Cr

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600-37	Inactive	French Drain	600-37, Browns Wells, Johnson's Wells	ERDF Area	The unit consists of four steel tanks and four French drains. Three of the tanks are approximately 3 m (10 ft) long by 1.5 m (5 ft) in diameter, and the fourth tank is 6.7 m (22 ft) long by 1.5 m (5 ft) in diameter. The tanks had been resting on railroad ties approximately 1.2 m (4 ft) above ground. A range fire burned through the area in June 2000. The southern-most tank was untouched by the fire and the tank supports remain intact. The wooden support structures under the other three tanks were burned and the tanks are now sitting on the ground. The French drains are double encased with pipe used to center the inner casing within the outer casing. Three of the French drains have a inside diameter of 38 cm (15 in.) and are approximately 4.9 m (16 ft) deep. The fourth French drain has a much larger diameter. The French drains were unaffected by the fire in June 2000. There is a dirt road that runs through the unit that appears to be surfaced with used oil. The four steel tanks appear to be of military origin. The configuration of the drains and tanks appear appropriate for an infiltration test. Raw water was assumed to have been disposed of in the French drains, however sample testing should be conducted in the unit.	Tanks and French drains	N	N	None	70	10	7	16	16-20	None	Unk./ Testing	Liquid	Unk.	Unk.
600-222	Inactive	Military Compound	600-222, H-60 Gun Site	W. 200 W Area	There is very little evidence of the former military gun site. A few trees, walkways, roads and an "underground telephone" warning sign are present (a second "underground telephone" sign burned in the July 2000 fire). After the July 2000 fire, other material left at the site has become visible, including pieces of ceramic pipe, a dumpsite with two oil filters, coat hangers, and a few small pieces of transite siding. South of the access road are several small piles of decayed batteries or fuses. A site visit on 3-3-98 identified two 1-1/2 in. diameter pipes protruding from a block of concrete. South of the site, a line of barbed wire stakes was also standing in 1998. In 2001, neither the concrete nor the line of stakes was present. Further south, next to a large granite boulder, is a pile of tent stakes. In 1998, "the deteriorated remains of what appears to be batteries or ammunition" were reported and mapped.	Military Compound	N	N	None	3.8E+5	695	548	Unk.	0-1 (spotty)	None	Abandoned Military Site	Solid and Liquid	None	Battery and oil wastes

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200-W-1	Inactive	Mud Pit	200-W-1, REDOX Mud Pit West	REDOX Area	The site was originally described as a pit that is approximately 15.3 m (50 ft) by 31 m (100 ft). The surface of the area has the appearance of drilling mud, and has the typical surface that is left from evaporated or percolated liquid. Vegetation is absent from the area. The following observations were made during a field visit in August 1999. The site is in a shallow depression. It is difficult to discern the precise boundaries of the site because the general area appears to have been disturbed by heavy equipment. One section of the site is devoid of vegetation and appears to have some soil discoloration. West of this section is an area where the ground surface is broken up and sparsely vegetated. These two distinctive areas are surrounded by sparse to moderate vegetation cover, composed primarily of cheatgrass and tumbleweeds. An approximately 2.5 cm (1-in.) diameter rubber hose was seen near the west edge of the site and some lumber and a wooden stake were found at the unvegetated spot. Some older employees that were interviewed stated that plutonium contaminated ventilation equipment was rinsed somewhere near this area.	Mud Pit	N	N	None	5000	100	50	Unk.	0-3	None	Equipment Decontamination	Liquid	Unk.	Unk.

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Waste Site Attributes. (99 Pages)

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200-E-58	Inactive	Neutralization Tank	200-E-58, 216-A-5 Neutralization Tank, 216-A-5 NU, Tank A5, IMUST, Inactive Miscellaneous Underground Storage Tank	PUREX Area	The site is an underground tank used to neutralize acidic waste before disposal. A 101 cm (40 in.) riser is visible at the surface. The cylindrical tank sits vertically on a concrete pad. The tank is constructed of welded stainless steel and has a capacity of approximately 28,400 L (7,500 gal). A 20-cm (8 in.) inlet pipe enters from the north near the base of the tank. The inlet connects into distribution piping constructed of 20 cm (8 in.) stainless steel pipe welded into a cross with 1.9 cm (3/4 in.) holes drilled at 23 cm (9 in.) intervals. A 20 cm (8 in.) outlet pipe exits to the south near the top of the tank. A 101 cm (40 in.) riser extends 30 cm (12 in.) above the surface. The "charging riser" is for adding limestone to the tank to act as a neutralizing agent. Acidic liquid waste entered the tank from the bottom and was forced upward through a bed of limestone. Interaction with the limestone neutralized the waste before overflow through the outlet pipe. The neutralized waste was discharged to a crib. Because of the design of the tank and the orientation of the inlet and outlet piping, it is highly likely that this tank and some of the inlet piping still contain liquid waste. Because the inlet piping angles sharply downward before entering the tank and the outlet piping is at the top of the tank, the structure would act like a trap where liquid collects at the lowest point, in this case, the tank. The tank was used to neutralize acid waste from PUREX before ground disposal. From 1955 to 1961, the neutralized waste was discharged to the 216-A-5 Crib. From 1961 to 1987 the neutralized waste was discharged to the 216-A-10 Crib. The 216-A-10 Crib is a permitted RCRA Treatment, Storage or Disposal (TSD) unit. Even though the 216-A-5 Neutralization Tank was connected to the crib, it is not covered under its Part A permit.	Neutralization Tank	Y	N	None	93	None	11	16	0-20	The site has been stabilized.	Contaminated Effluent	Liquid	Unk.	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
270-E-1	Inactive	Neutralization Tank	270-E-1, 270-E CNT, 270-E Condensate Neutralization Tank, 216-ER-1, IMUST, Inactive Miscellaneous Underground Storage Tank	B Plant Area	The site is an underground steel tank. It is marked and posted with Restricted Access-Inactive Tank signs. It is located within a large URM Area that resulted from the stabilization of the adjacent 216-B-64 basin and UPR-200-E-64 sites. The tank was used to neutralize acidic process condensate from the 221-B and the 224-B facilities via the 241-ER-151 Diversion Box (lines V219, V225, 9719, 9653, 9808). Condensate entered the tank at the bottom and flowed upward through the limestone to an outlet pipe located 2.4 m (8 ft) above the tank bottom. The tank contained a limestone bed through which the condensate percolated, reacted, and then overflowed to the 216-B-12 Crib. The tank had a 100 cm (40 in.) diameter chute and a 15 cm (6 in.) diameter riser extending to the surface from the stainless steel below grade tank. The tank is buried approximately 6 m (20 ft) (derived) deep. The tank stands vertically on a 0.46 m (1.5 ft) thick concrete pad. This tank was installed in 1952 as part of the 270-E Neutralization Facility. The tank was moved from 221-U, reworked and put to use as a neutralization tank. The 270-E wooden building with a wooden platform was located near the tank. A 100 cm (40 in.) riser extended upward from the tank to the wooden platform. It is assumed that the riser was used to add limestone to the tank, as necessary, and that the wooden building was used to store the neutralization material. Drawing H-2-44502, sheet 22 indicates the 270-E Building was removed and the tank was capped and abandoned in the early 1960's. SK-2-56961, drawn in 1972, shows the 100 cm (40 in.) riser was cut below the ground surface and covered with earth. A 1974 letter states that an unsuccessful effort to sample the tank was made on July 1, 1974. The letter indicates a plan to cut the inlet line and pump the remaining liquid from the tank. The inlet and outlet lines would then be capped. Drawing H-2-44501 sheet 97 shows that the inlet and outlet lines have been capped. During the investigation of soil contamination surrounding the tank, a small diameter pipe, approximately 5 cm (2 in.) diameter, was visible near where the 270-E-1 is located. It is possible the pipe is a "Swab Riser" associated with an adjacent underground pipeline.	Neutralization Tank	N	N	None	77	None	9	9	0-20	The stabilization of surrounding sites led to the URM posting.	Contaminated Effluent	Liquid	U-238, Sr-90, Cs-137, Pu, beta-emitters	Uranium, As

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216-C-9	Inactive	Pond	216-C-9, 216-C-9 Pond, 216-C-7 Swamp, Former 221-C Canyon Excavation, 216-C-9 Swamp, Semi-Works Swamp, 216-C-9 C Canyon Excavation Semiworks Swamp	Semi-Works Area	The entire site is currently backfilled and surface stabilized. It is posted as an URM area. The solid waste burial portion of the site is not separately marked or posted from the liquid waste portion of the site. Originally received cooling water from the semiworks facility. In 1985 it was used as a solid waste burial ground. The 221-C facility excavation was divided into sections with dikes. Piping was arranged to provide three discharge points, one to each section. The excavation was originally intended to be the foundation for the 221-C Canyon Facility that was never built. It was modified to receive cooling water from the 201-C Semiworks Facility. The Hot Semiworks ceased operation in 1967 and remained in a standby mode until 1983. During that time the pond decreased in size until it was only a small marshy area in the excavation bottom. No radioactivity was identified along the swamp perimeter in a radiological survey performed in 1978. The pond area was backfilled with approximately 0.9 m (3 ft) of washed gravel. The Semiworks facility decommissioning began in 1983. In December 1985, the east end of the dried pond excavation began to be used as a solid waste burial ground for waste associated with the Semiworks decommissioning (refer to waste site 218-C-9). All liquid discharge pipes were isolated. The entire area was backfilled to grade and surface stabilized in 1989. The start date was June 1953.	Pond	Y	Y	3	2.9E+5	1257	230	8	8-11	The area was backfilled and surface stabilized in 1989.	Cooling Water/ Solid Waste Burial	Solid and Liquid	Unk.	Unk.

Table B-1. 200-MG-1 Operable Unit
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216-T-4A	Inactive	Pond	216-T-4A, 216-T-4 Swamp, 216-T-4-1 (P), 216-T-4-1 Pond	WM Area	The pond was located in a natural surface depression forming an L-shaped shallow pond covering approximately 6.5 ha (16 a). The pond is no longer visible. It was exhumed in 1972 to make room for the expansion of the 216-W-2A Burial Ground. The pond received cooling water and steam condensate from the retention basin and 221-T and 224-T. The pond received cooling water and steam condensate from 221-T and 224-T via the 207-T Retention Basin and the 216-T-4-1 Ditch. The pond became active in November 1944 with the startup of the 221-T Chemical Separation Plant. The waste water in the ditch flowed through a culvert that went under the 218-W-2A Burial Ground railroad spur and then ran into a shallow ditch cut to a natural surface depression in the desert floor. The pond no longer exists. The entire surface of the bottom of the original pond (216-T-4A) was scraped to a depth of 15 to 23 cm (6 to 9 in.) and placed in the 218-W-2A Burial Ground (Trench #27). The scraped area was covered with clean soil in February 1973. In April 1973, 20,000 m ² (5 a) of the scraped pond bottom were seeded with Siberian Wheat Grass to help stabilize the ground surface. In May 1972, an earthen dike was built to separate the replacement pond area (216-T-4B) from the 218-W-2A Burial Ground expansion. The official name 216-T-4A was established by the Facilities and Industrial Engineering Group in 1983.	Pond	Y	Y	2	1.1E+6	1800	600	0	0-3	The pond has been exhumed, backfilled, interim stabilized and revegetated.	Steam Condensate/ Cooling Water	Liquid	Unk.	Unk.

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200-W-21	Inactive	Pump Station	200-W-21, 204-T Unloading Station, T-Plant Waste Railcar Unloading Facility, Unloading Station 1 and Unloading Station 2	T Plant Area	The unloading station consisted of two unloading platforms, Unloading Station 1 and Unloading Station 2. The platforms and piping from both stations were removed in 1996. The area has a short railroad siding extending from the main rail line into T Plant. The concrete structure foundations remain and are posted with URM signs. The platform structures were used to unload 300 Area liquid laboratory waste sent in railroad tanker cars from the 340 Facility. The waste was pumped into the adjacent 216-T-34 and 216-T-35 Cribs. Approximately 30 m ³ (40 yd ³) of contaminated soil was removed from the base of the unloading station in 1967. Environmental Surveillance Inspection Report EP-87-51 written in 1987 and Radiological Problem Report T-009-89 written in 1989 identified additional surface contamination. In 1989, contamination was found in two drains (one drain for each unloading platform structure) that included 4,000 dpm of beta/gamma contamination and 1,800 dpm of alpha contamination. Smears of the eastern drain found 600 dpm of alpha contamination was removable.	Pump Station/Rail road	N	Y	0.5	1959	87	23	5	0-6	The area was partially surface stabilized in 1989 by removing all of the equipment. In 1996 the platform structures, storage structures and light fixtures were removed.	Leak/ Spill	Liquid	Unk.	Unk.

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200-W-82	Inactive	Pump Station/Product Piping	200-W-82, Risers East of 216-TY-201 and 216-T-26, 216-T-27, and 216-T-28 Cribs, Crib Unloading Station	T Farm Area	The site consists of two concrete pads with flanged risers, surrounded by CA postings. Based on the available information, it is believed that this site is a liquid waste truck unloading station. It is assumed that the short pipeline, shown on Drawing H-2-2733, extended eastward to the risers. The unloading station was built to accommodate tanker trucks unloading 300 Area liquid wastes into the 216-T-27 and 216-T-28 cribs. The unloading station jetted waste from the trucks to the cribs and was capable of unloading two trucks at a time. The cement pads with risers are located just east of a blanked pipeline (shown on drawing H-2-2733). The blanked pipe extended westward to the 216-T-26, 216-T-27, and 216-T-28 crib line (see 200-W-188-PL) at a point just south of the 216-TY-201 Flush Tank. From the drawing, it appears the pipe "T" was originally designed to allow the construction of three additional cribs to receive wastes from the 216-TY-201 Flush Tank. However, the additional cribs were never built. Sketch SK-2-3706 shows plans for a truck unloading station at the 216-T-34 crib. A note on the drawing says "relocate hose connections & support from existing truck unloading station 200W". Since the 300 Area liquid waste that had been going to the 216-T-28 crib was "rerouted" to the 216-T-34 crib (Lundgren 1971), the existing truck unloading station mentioned on the drawing is assumed to be this site. The visible riser configuration east of 216-TY-201 matches the design on Sketch SK-2-3706. Both the design sketch and the site east of 216-TY-201 have two small concrete pads with a metal pipe flange rising approximately 7 cm (3 in.) above the level of the concrete. The document "Radioactive Liquid Waste Disposal Facilities--200 West Area" (Lundgren 1971) states that 300 Area wastes (from the 340 Waste Transfer Facility) were discharged to the 216-T-28 Crib. According to "Tank Wastes Discharged Directly to the Soil at the Hanford Site" (Waite 1991), the waste from the 340 Waste Transfer Facility was combined with T Plant and 2706-T waste and discharged to the 216-T-28 crib via the single-shell tanks, indicating the 300 Area waste was added to the tank farm tanks. This appears to be inaccurate based on drawings, the presence of the structure east of the cribs, and contradictory statements in the T Plant Source Aggregate Area Management Study Report (DOE/RL-91-61).	Pump Station/Product Piping	N	N	None	800	40	20	5	0-6	None	Contaminated Foundation	Solid and Liquid	Unk.	Unk.

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207-B	Inactive	Retention Basin	207-B, B Plant Retention Basin, 207-B Retention Basin	Solid Waste Area	The unit is a concrete-lined basin, divided into two equal sized sections. The basin is surrounded by a 2.4-m (8-ft) chain link fence and posted with Contamination Area signs. The retention basins served as settling basins, receiving B Plant process sewer effluent through an underground pipeline prior to being discharged to the 216-B-2-1, 216-B-2-2, 216-B-2-3 Ditches. It was possible to divert effluent to the 216-B-63 Ditch. The 216-B-2-1, 216-B-2-2 and 216-B-2-3 Ditches were connected to the 216-B-3 ditches and ponds. The concrete walls of this unit have been contaminated by a number of incidents over the years involving excessive radioactive effluent releases. In 1953, the residue contamination in the walls was covered with a coat of tar sealant. In December 1999, contaminated tumbleweeds were found growing outside the northeast corner of the fenced basin. The contaminated area measured approximately 6 m by 6 m (20 ft by 20 ft) and was posted as a Soil Contamination Area (SCA). The maximum contamination reading recorded was 480,000 disintegrations per minute of beta/gamma contamination. The area was backfilled with clean soil and reposted as Underground Radioactive Material (URM).	Retention Basin	N	N	None	3.0E+4	246	123	7	6-9	In 1997 the 207-B inlet valve box and outlet drains were isolated by filling with concrete. In 2005 an area of reoccurring contamination was covered with a bio barrier and clean gravel.	Contaminated Effluent	Liquid	Cs-137, Sr-90, U-238, Tc-99. The maximum contamination reading recorded was 480,000 dpm of beta/gamma contamination in December 1999.	As, Cd, Pb, Hg, Se, PCB Arochlor 1254

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207-SL	Active	Retention Basin	207-SL, 222-S Retention Basin, REDOX Lab Retention Basin, 207-SL Retention Basin	REDOX Area	The site consists of a large below ground basin that is divided into two 94,625 L (25,000 gal) holding basins. The below ground basins are constructed of reinforced concrete walls 30 to 41 cm (12 to 16 in.) thick, and the floor is 38 cm (15 in.) thick. The unit also consists of three above ground 75,700 L (20,000 gal) holding tanks, added in 1994 to support the TEFD system. Before 1955, the site received low-level radioactive waste and discharged it to the 216-S-19 Pond. From 1955 to 1995 the effluent was discharged to the 216-S-26 crib. After 1995, non-radioactive, non-hazardous liquid effluents from the 222-S Laboratory, the 222-SA Laboratory, the 219-S Operating Gallery sump, and the package boiler unit, flow into the below ground basins for retention prior to transfer to the Treated Effluent Disposal Facility (TEDF). The effluents can be transferred to and from the below ground basins to the above ground holding tanks to provide additional extended storage before transfer. The area is not roped off, but has signs warning of surface radiation contamination. The inlet/outlet structure is outside of the basins on the east side; gratings, ladders, etc., are on the outside of the basins on the west side.	Retention Basin	N	N	None	2500	50	50	14	14-15	None	Contaminated Effluent	Liquid	Site received low-level rad waste.	Unk.

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216-A-40	Inactive	Retention Basin	216-A-40 Retention Basin, 216-A-39 Crib, 216-A-39 Trench	PUREX Area	The site is currently a surface-stabilized area that is posted URM. The corners are marked with concrete AC-540 markers. Some contaminated equipment is being stored on top of the backfilled basin. The equipment is posted Radioactive Material Area/Contamination Area. The site was originally an open, rubber lined trench that was divided into 3 sections. A 0.3 m (12-in.) diameter Schedule 40 distribution pipe ran horizontally through the south end of the unit, 3.7 m (12 ft) below grade. Collapsible rubber bladders were utilized to contain the contaminated cooling water and steam condensate. Contaminated cooling water and steam condensate from the 244-AR Vault were diverted to the 216-A-40 Retention Basin when the effluent was above standard release limits for the water to be sent to the 216-B-3 or 216-A-25 Ponds. The retention basin bladders failed in 1979 and the unit was removed from service. Although it was not being used, it remained an open basin until 1994. The site was stabilized in 1994. Contaminated soil and the bladders were consolidated into the east end of the trench (trench sat on an angle. Could be considered the south end or the southeast end) Contaminated soil from the adjacent Soil Contamination Area (UPR-200-E-143 and remnants of UPR-200-E-100) was also scraped into the east end of the basin. The basin was backfilled with clean material. This eastern end was posted as a URM Area. The remaining portion was released from radiological control. An employee concern was filed that indicated the waste site boundary markers on the southeast corner of the remediation area were not in the right place. After reviewing the remediation project files and interviewing employees involved with the project, a decision was made in 1999 to relocate two of the marker posts to be sure all of the underground radioactive material was properly posted. The stabilized area is smaller than the original size of the open basin.	Retention Basin	Y	Y	1-2	8000	400	20	12	12-20	The site was stabilized in 1994, contaminated soil and bladders were consolidated into the east side of the trench. The basin was backfilled with clean material.	Effluent Discharge	Liquid	Cs-137, Sr-90, U-238, Tc-99; rad survey reading of 50 cpm in April 1998.	As, Cd, Pb, Hg, Se, PCB Arochlor 1254

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216-A-42	Inactive	Retention Basin	216-A-42, 207-AA Retention Basin, 216-A-42 Trench, 216-A-42 Retention Basin	PUREX Area	The site is surrounded with steel posts and chain. It is posted with Underground Radioactive Material signs. Concrete cover blocks are visible on the top of the basin. The chain link fence has been removed. The site consists of a rubber-lined trench divided into three holding basins by two internal berms. One end of the trench features the inlet structure for the 91 cm (36-in.) diameter cooling water line while the other end has the inlet structure for the 20.3 cm (8-in.) diameter steam condensate pipeline. Both lines enter at 2.9 m (9.5 ft) below grade. Outlet drains are located at the low-points in each basin and connect to the 216-A-42A Pump Station. The capacity of the three basins is in excess of 6.1*10 ⁶ L (1.6*10 ⁶ gal). The trench is equipped with a float. Concrete cover blocks were installed over the basins in 1984. The 216-A-42 Retention Basin was built to hold cooling water or steam condensate that was contaminated above standard release limits and prevent its disposal to the Gable and B Pond systems or to cribs. After the retained effluent contents were analyzed, a built-in recovery system provided the capability of pumping solutions back into the PUREX facility for reprocessing (see site code 200-E-261-PL) or to cribs for disposal. Prior to the construction of the 241-AP Tank Farm (1983), the basin was connected to the 0.9 meter (36 in.) diameter corrugated metal pipeline (200-E-127-PL) that flowed to the Gable and B Ponds. A 0.3 m (1 ft) diameter chemical sewer line (200-E-187-PL) tied the basin to the 216-A-29 Ditch. Portions of the chemical sewer line and the corrugated metal pipe were removed during the AP Tank Farm construction.	Retention Basin	Y	N	None	1.0E+4	342	30	13	13-20	In 7/01 the area was leveled and backfilled, radiological surveys of the surface are performed annually.	Steam Condensate/ Cooling Water	Liquid	Cs-137, Sr-90, U-238, Tc-99; Contamination levels of 40,000 cpm were found inside the fenced basin area and 3,000 cpm was found outside the fence and on the adjacent road in November 1984.	As, Cd, Pb, Hg, Se, PCB 1254

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216-BB	Inactive	Retention Basin	216-B-59B, 216-B-59 Retention Basin	B Plant Area	The site is a concrete structure enclosed by a 2-m (6-ft) chain link fence. The site was used as an emergency cooling water diversion for 221-B water with radionuclide concentrations above those allowed for existing ponds. It was upgraded to a retention basin in 1974. The 216-B-59B retention basin was designed to receive diverted 221-B Building cooling water that contained radionuclide concentrations above the limits allowed for disposal in the B Pond system. The diverted waste was pumped back into 221-B to be reprocessed. In 1974, the 216-B-59 unlined trench was upgraded to a Retention Basin by adding a hypalon liner and changing its identification number to 216-B-59B. The hypalon liner was replaced, in 1983, with a concrete liner and cover. The lined retention basin was placed on top of the unlined 216-B-59 trench. The site name 216-B-59 is often used to refer to the present concrete, hypalon lined retention basin that is officially named the 216-B-59B basin.	Retention Basin	Y	N	None	1.6E+4	307	52	10	10-12	The 216-B-59B retention basin was built on top of the trench. In 1997 the discharge valve and extension handle were removed and the site was filled with concrete.	Cooling Water	Liquid	Cs-137, Sr-90, U-238, Tc-99	As, Cd, Pb, Hg, Se, PCB 1254
600 OCL	Inactive	Sanitary Landfill	600 OCL, 600 Area Original Central Landfill, Original CLF	NRDWL/BC Controlled Area	This site is a backfilled trench that is posted "Underground Radioactive Material". The site received miscellaneous trash and debris from the Hanford site. This site contains general office wastes, some glass, electrical wastes, and minimal metal wastes. The site has been backfilled to grade. The unit was open for approximately nine months. Its poor location (within proximity to the road) allowed trash to blow across the road in times of high wind, creating a traffic hazard. On June 5, 1988, a test pit was dug to try to locate the burial trench. A special radiological survey found 1,500 cpm beta gamma in the test pit. After the discovery of radioactive contamination, the excavation was discontinued. This discovery resulted in the trench being posted as "Underground Radioactive Material."	Sanitary Landfill	Y	N	None	1.5E+4	300	50	15	0-15	The site has been backfilled to grade. Radiological surveys are performed on this site.	Dumping Area	Solid	1500 cpm beta gamma in test pit on June 5, 1988	Unk.
200-W-2	Inactive	Spoils Pile/Berm	200-W-2, REDOX Berms West	REDOX Area	The majority of the area is level, with evidence of soil disturbance over several acres. The site consists of two bermed areas. One berm is approximately 1.5 m (5 ft) high by 9.2 m (30 ft) wide. The other berm is approximately 3.1 m (10 ft) high and 15.3 m (50 ft) wide. The berms are not marked or posted. The wastes at this unit are unknown, but the berms may cover contaminated soil or debris. It has been reported that ventilation equipment had been cleaned in the area, but the exact location cannot be identified.	Spoils Pile/Berm	N	N	None	2670	Irr.	Irr.	Unk.	0-3	None	Equipment Decontamination	Solid and Liquid	Unk.	Unk.

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Waste Site Attributes. (99 Pages)

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200-W-80	Inactive	Spoils Pile/Berm	200-W-80; Mound of Contaminated Soil Southwest of T Plant	T Plant Area	The site is a gravel area surrounded with post and chain and URM signs (formerly a 1.5 m (5 ft) high, 8.2 m (27 ft) long, and 3 m (10 ft) wide mound of soil surrounded with radiation rope and posted CA signs). The mound and surrounding area contained many pieces of asphalt, similar to that in the adjacent T Plant parking lot. The mound and surrounding area is covered by a thin growth of cheatgrass/tumbleweeds. About 3 m (10 ft) east of the site is a small posted URM with one capped well inside the posted area and one just outside (locked with a warning of potential contamination). Across the north part of the contamination area are fence posts marking an underground pipeline, traveling east-west, posted as a URM. Another posted underground pipeline goes under the mound of soil, in a N-S direction, and is also posted as a URM. The Soil Contamination Area was posted in 1998. At the time the contamination was identified, it was believed to be part of UPR-200-W-24. UPR-200-W-24 occurred inside 241-U Tank Farm in 1953. It is not possible to positively link the contaminated soil found outside the 241-U Tank Farm in 1998 with a release that occurred 45 years previously. Even though some Radiation Surveys and Stabilization Reports identified the area surveyed and stabilized as UPR-200-W-24, the contaminated area south of 16th Street has been given a new WIDS number (200-W-67). In May 2000, the Dyncorp ISVAC group submitted the mound of soil with Contamination Area postings to WIDS as a Discovery Site. Their group performed a radiological survey of the area in 1999. No contamination was identified on the surface of the mound at that time. It is possible that the mound was created during a parking lot expansion at T Plant that occurred several years ago. The presence of asphalt in and surrounding the mound supports this idea.	Spoils Pile/Berm	N	Y	1-2	2264	49	46	5	0-1	The mound of soil was flattened and the site was covered with clean gravel.	Soil Contamination	Solid	Unk.	None

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
200-E-43	Inactive	Storage	200-E-43, Tank Car Storage Area, Regulated Equipment Storage Area, TC-4 Spur Tank Car Storage Area	200 E Admin Area	This site consists of a chain link fenced portion of the TC-4 Spur located northwest of the PUREX facility. The site was used to store railroad tank cars containing liquid radioactive material that require controls due to radiological dose rate conditions. The fence gate is locked. The area had been posted as a RMA and a URM. However, in January 1999, it was only posted as an URM area. It is also posted with "Danger- Unauthorized Personnel Keep Out" signs. The ties between the rails are covered with gravel. The fenced area was used to stage railroad tank cars that transported liquid waste to the 204-AR waste unloading facility. The fenced in area was originally part of the TC-4 Railroad Spur. It became a separate waste site in 1997 due to programmatic responsibility issues. The inactive railroad spur was assigned to the Environmental Restoration Contractor and the fenced area was assigned to the Project Hanford Contractor. Because of site activities, the number of railcars stored within the fenced area will vary. However, as of January 1999, no railcars are being stored in the fenced area.	Railroad	N	Y	1-2	3.5E+4	215	164	Unk.	0-2 (spotty)	The railcars have been removed, but the site is still posted URM.	Leak/ Spill	Liquid	Unk.	Unk.
216-A-18	Inactive	Trench	216-A-18, 216-A-18 Excavation, 216-A-18 Grave, 216-A-18 Sump, 216-A-18 Crib	200 E Ponds Area	The site is marked and posted with URM signs. The trench received start up waste from PUREX via an aboveground pipeline. The site was an excavation with a side slope of 1:2. No crib structure was ever built. The site was deactivated by removing the over ground piping and backfilling the excavation when the specific retention capacity was reached. The start date was November 1955. The trench was removed from service in December 1955. Some documents state the end date as January 1956.	Trench	Y	Y	1-2	6400	80	80	16	16-20	The site was deactivated by removing the over ground piping and backfilling. The site was surface stabilized in 1990.	Contaminated Effluent	Liquid	U-238	As, Mn, U
216-A-20	Inactive	Trench	216-A-20, 216-A-20 Test Hole, 216-A-20 Grave, 216-A-20 Sump, 216-A-20 Crib	200 E Ponds Area	The site is marked and posted with URM signs. 216-A-20 was originally a test hole excavated with a drag line and used for PUREX start-up waste. The site also received cooling water from the 241-A-431 building contact condenser via the 216-A-34 Ditch. The site was backfilled when the specific retention capacity was reached. The site was deactivated in 1955 by removing the over ground piping and backfilling the excavation when the specific retention capacity was reached. The start date was November 1955 and the end date was December 1955.	Trench	Y	Y	1-2	625	25	25	15	15-25	The site was surface stabilized in 1990, in 4/07 more surface contamination was backfilled with clean dirt.	Contaminated Effluent	Liquid	U-238	As, Mn, U

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
216-B-59	Inactive	Trench	216-B-59, 216-B-58 Trench, 216-B-58 Ditch	B Plant Area	The original 216-B-59 was an unlined trench. The site was upgraded to a retention basin in 1974 (see 216-B-59B). The trench was upgraded to a retention basin by adding a hypalon liner and changing its identification number to 216-B-59B. The lined retention basin was constructed over top of the unlined 216-B-59 Trench. There are currently no visual features remaining of the unlined trench. The concrete-lined basin is enclosed by a 2 m (6 ft) chain link fence. The site was used as an emergency cooling water diversion for 221-B water with radionuclide concentrations above those allowed for existing ponds. The site was activated in 1967 and received only a single discharge of approximately 477,000 L (126,000 gal) of waste in March 1968. It was later upgraded again (in 1983) by replacing the hypalon liner with a concrete liner and cover. The site name 216-B-59 is often used to refer to the present concrete, hypalon lined retention basin that is officially named the 216-B-59B basin.	Trench	N	Y	1-2	8000	400	20	12	12-15	The 216-B-59B retention basin was built on top of the trench. In 1997 the discharge valve and extension handle were removed and the site was filled with concrete.	Cooling Water	Liquid	Unk.	Unk.
216-S-8	Inactive	Trench	216-S-8, Cold Aqueous Trench, Cold Aqueous Crib, 216-S-3, Unirradiated Uranium Waste Trench, Cold Aqueous Grave	REDO X Area	The site consists of one trench that has been backfilled to grade. It is marked and posted with URM signs. This site received start up waste from the 202-S building. The site was a single use trench that received unirradiated uranium start-up waste from the 202-S Building. The site was retired when the discharge of start-up waste to the unit was completed. The site was deactivated by removing the above-ground piping and backfilling the unit. The unit operated from November 1951 to February 1952.	Trench	Y	Y	1-2	6000	100	60	25	25-30	The aboveground piping has been removed and the site has been backfilled. The surface was interim stabilized in 1994.	Contaminated Effluent	Liquid	Unk.	Uranium
216-T-20	Inactive	Trench	216-T-20, 216-TX-2, 216-T-20 Crib, 241-TX-155 Contaminated Acid Grave	T Farm Area	The site has a small concrete block structure on the surface with a metal lid labeled Confined Space and Potential Internal Contamination. There is a single concrete marker with an URM sign on it. The concrete block structure is surrounded with the same type of cobbles that surround the powerhouse pond. A single use pit dug specifically to receive acidic waste from the diversion box. The site also holds a small concrete block structure labeled possible internal contamination. The historical documentation describes the site as an excavation, similar to a pit. It was a single use pit dug specifically to receive contaminated acid from the 241-TX-155 Diversion Box. There is no mention of the concrete block access structure currently located at the site.	Trench	Y	N	None	484	22	22	4	4-6	The aboveground piping was removed and the unit backfilled.	Contaminated Effluent	Liquid	Unk.	Unk., Nitric acid

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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216-Z-4	Inactive	Trench	216-Z-4, 231-W-3 Pit, 231-W-3 Sump, 231-W-3 Crib, 216-Z-3, 216-Z-4 Crib	PFP Area	The 216-Z-4 Trench is an inactive waste management unit. The unit was backfilled and deactivated in 1945. The original configuration was a large unlined excavation. The site was used to temporarily receive liquid laboratory waste from the 231-Z building. The trench was constructed in 1945 to temporarily receive liquid laboratory waste from the 231-Z Building. The 216-Z-4 Trench was deactivated and backfilled when it was discovered to be too small for the waste stream. The laboratory effluent was rerouted to the 216-Z-6 Crib (because the 216-Z-6 crib was fed with an aboveground pipeline, it is likely the 216-Z-4 was also fed with an aboveground pipeline). The site was interim stabilized in February 1990. When the effluent flow exceeded the infiltration capacity, the unit was deactivated by capping the pipeline west of the 231-W-151 Vault. The unit was used from June to July 1945.	Trench	Y	Y	1-2	100	10	10	15	15-20	The site was backfilled in 1945 and interim stabilized in 1990.	Contaminated Effluent	Liquid	Am-241, Cs-137, Co-60, Sr-90, H3	PCB Aroclor-1254, Se
200-E-117	Inactive	Unplanned Release	200-E-117, Contamination Zone South of B Plant	B Plant Area	The site is a small, posted CA. Inside the chained area, two steel pipes extend approximately 0.6 m (2 ft) above the ground surface. The pipes have valves on them. The DynCorp ISVAC group submitted this posted area to WIDS as a Discovery site. The reason the area was posted is not known. In 09/00, the blown in tumbleweeds were removed from the posted area. At that time, the valves were surveyed and found to be contaminated with 800 cpm (direct) beta/gamma contamination. No removable contamination was found. According to H-2-44501, Sheet 85, a raw water line extends southward from the 292-B Building and connects to a 30-cm (12-in.) raw water line. The water line on the drawing is in the same location as the valves inside the Contamination Area.	Above ground valves	N	N	None	100	10	10	Unk.	0-1	The area was surveyed and tumbleweeds were removed.	Unk.	Solid and Liquid	Area was surveyed and found to be contaminated with 800 cpm (direct) beta/gamma in September 2000.	None

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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UPR-200-W-96	Inactive	Unplanned Release	UPR-200-W-96, UN-216-W-4, 233-S Floor Overflow, 233-SA Floor Overflow	REDOX Area	WHC-SP-0331 states the 233-S Plutonium Concentration Facility was sealed off and retired from service in 1967. Although the S Plant Aggregate Area Management Study Technical Baseline report states the release site lies within the UPR-200-W-116 Site boundaries and is posted with URM signs, the release actually occurred adjacent to the 233-SA Building and not totally within the UPR-200-W-116 stabilized area. The release affected the floor of the 233-SA Filter Exhaust Building, the concrete pad outside the north door of the filter exhaust building, the electric motor pad, and the ground surface on the north side of the 233-SA filter exhaust building. The 233-S facility was demolished in 2003 and 2004. The release site is not specifically marked or posted. On 1/9/69, plutonium-contaminated water backed up in the 233-SA Filter House drain and overflowed to a low spot on the ground directly north of the 233-S Building. Because the ground was frozen, the water could not percolate, so a pool formed. The area affected was reported as 125.42 m ² (150 yd ²).	Adjacent to Building	N	Y	1-2	1350	Irr.	Irr.	Unk.	0-6	The release site was covered with clean gravel and was eventually covered with an asphalt roadway.	Leak/ Spill	Liquid	Pu-239. 600-40,000 dpm in October 1975.	None
UPR-200-W-43	Inactive	Unplanned Release	UPR-200-W-43, Contaminated Blacktop East of 233-S, UN-200-W-43	REDOX Area	The site is no longer marked or posted. The 233-S building was demolished in 2003 and 2004. The electrical substation referred to is probably the two transformers labeled C2465E and C2466E located adjacent to the north wall of the REDOX facility and approximately 80 m (260 ft) east of 233-S. In 1957, references to contamination in dpm indicate alpha contamination. A radiation zone was originally established in this area in 1/57, but was surveyed and found to be free of contamination. On 2/12/57, a small roped area at the corner of the electrical substation east of 233-S was being surveyed for release after being decontaminated. An area of blacktop beyond the posted area was found to be contaminated with levels up to 2,000 dpm. The Records Management Officer (RMO) day supervisor, who was observing the survey, contaminated his shoes to 1,000 dpm. The contaminated shoes were cleaned to less than 500 dpm released. The cause of the contamination spread could not be determined. However, it is presumed that the contamination from inside the posted area blew out during a wind storm. In 1957, the area was posted as a Radiation Zone pending cleanup.	Blacktop	N	N	None	1197	35	35	Unk.	0-1	In 1957, 1200 sq ft of black top was posted as a Radiation Zone pending cleanup. No record of the cleanup activity has been found.	Windblown particulate	Solid	2000 dpm alpha on February 12, 1957.	None

Table B-1. 200-MG-1 Operable Unit Waste Site Attributes. (99 Pages)

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UPR-200-E-54	Inactive	Unplanned Release	UPR-200-E-54, UN-200-E-54, Contamination Outside 225-B Doorway	B Plant Area	There is a sign posted on the south wall of 225-B, next to Door 130, that reads UPR-200-E-54. There is no radiological posting around the doorway or in the soil adjacent to the concrete door pad. On 7/20/77, water used for decontaminating a manipulator seeped under an exit door of the 225-B Building spreading low-level contamination onto the concrete door pad and adjacent soil. Radiation readings on the pad were 25 mR/h direct and 20,000 cpm smearable. While decontaminating the manipulator, the water spray wand was accidentally directed toward the corridor door by the operator. Water was forced under the door into the corridor. The water trickled down the corridor to a drain in the Service Gallery. As water passed the exit door about 1.89 L (0.5 gal) seeped under the unsealed threshold onto the pad and soil.	Building	N	N	None	Unk.	Irr.	Irr.	Unk.	0-1	The door pad was decontaminated from 25 mR/h to 4,000 cpm. Remaining contamination was covered with plastic. The contaminated soil (0.028 m ³ [about one cubic foot]) was packaged for disposal. The contaminated concrete was removed and a new pad poured.	Leak/ Spill	Liquid	25 mR/h (direct) and 20,000 cpm smearable on July 20, 1977	Unk.
UPR-200-W-39	Inactive	Unplanned Release	UPR-200-W-39, UN-200-W-39, 224-U Buried Contamination Trench	U Plant Area	The release site is not marked because the 224-UA Building was built over the release location. The disposal trench is now covered by the 224-UA building addition. The area was removed from radiation zone status in June 1972. A leak from 224-U, during March 1954, spread to an area southeast of the 224-U Building. The contamination was placed in a trench that measured 3.1 m (10 ft) wide by 15.2 m (50 ft) long. The contamination was covered with 0.9 m (3 ft) of clean soil.	Building/ Disposal Trench	N	Y	1-2	500	50	10	Unk.	0-6	The soil affected by the release was moved to a nearby trench and covered with clean dirt. The buried contamination was released from radiation zone status in 6/72.	Leak/ Spill	Liquid	Less than 10 nCi/g Uranium	None
UPR-200-W-57	Inactive	Unplanned Release	UPR-200-W-57, UPR-200-E-120 (error in area number assignment), UN-200-W-57, 233-S Fire	REDOX Area	A fire, which started in the 233-S Building, spread plutonium contamination throughout the building and to a small degree outside of the building. The release site is not physically marked or posted. Decontamination of the 233-S Building began in 1997. Building demolition began in 2001 and was completed in 2004. On 11/6/63, a fire started in the 233-S Building. The underlying cause of the incident was not positively identified. Plutonium contamination was spread within and outside the building by smoke and firefighting operations. It took about 1.5 hours to put out the fire with dry chemical extinguishers (sodium bicarbonate). Alpha radiation levels after the fire were greater than 5 million dpm from plutonium-contaminated materials in the soot, ashes, and in the air.	Building/ Outlying Area	N	N	None	Unk.	Irr.	Irr.	Unk.	0-1	In 1997, field crews began decontamination of 233-S Building; 2004 building was demolished.	Fire	Solid, Liquid	Plutonium. Alpha radiation measured at greater than 5 million dpm in the soot, ashes and in the air on November 6, 1963	Unk.

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UPR-200-W-70	Inactive	Unplanned Release	UPR-200-W-70, Contamination Found at the 200 West Burning Ground East of Beloit Ave.	T Plant Area	The release site is not marked or posted. A mapping data point (dot) estimates the location, placing it adjacent to the northwest access road into the 200-W ADB. The area is currently covered with several feet of ash. The 200 West Ash Disposal Basin and 200 West Burn Pit do not currently have any radiological or hazardous postings. The southwest portion of the pit contains coarse gravel; the northern part is covered with ash to the former ground surface. On 1/22/73, a quarterly routine survey of the 200 West Area Burning Pit revealed several spots of beta-gamma contamination measuring 5,000 to 50,000 cpm along the bumper rails at the edge of the combustible trench. Additional surveys disclosed other contamination measuring from 20,000 cpm to 30 mrad/h in the trench proper and a one-gallon bucket contaminated in excess of 100,000 cpm (250 mrad/h). Samples of the contamination were obtained for laboratory analysis. A dump area on the south side of the combustible trench, about 3.7 by 6.7 m (12 by 22 ft), was found to contain alpha contamination with readings ranging from 5,000 to 200,000 dpm. The cause of the contamination was the unauthorized disposal of contaminated material in a noncontaminated burning trench.	Burn Pit/Roadway	N	Y	2-3	Unk.	Irr.	Irr.	Unk.	0-1	In 1973, fabro-film was sprayed on contaminated areas and a locked chained gate installed.	Dumping Area	Solid	5,000-50,000 cpm beta/gamma; 20,000 cpm to 30 mrad/h; 100,000 (250 mrad/h); alpha ranging from 5,000 to 200,000 dpm. Americium-plutonium contamination on sample from trench. All in 1973.	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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200-E-29	Inactive	Unplanned Release	200-E-29, Unplanned Release From 241-ER-152 Diversion Box	B Plant Area	The site is a large, irregular shaped, posted URM area. A smaller triangular shaped URM area is located adjacent to the east shoulder of Atlanta Ave., northwest of the larger, stabilized 200-E-29 area. Another small URM area is located adjacent to a row of connex boxes, east of the larger stabilized area. In 11/00, the ISVAC submitted a small posted URM (located adjacent to the east side of the posted 200-E-29 site and a row of connex boxes) to WIDS as a Discovery site. Ground surface contaminated from biological intrusion by mice and ants. In 1996, mouse feces, urine, a mouse nest, several mouse carcasses and an ant hill were identified as contaminated in this area; contamination levels ranged from 7,000 dpm to 300 mrem/h. The posted area was surveyed/mapped with GPS equipment in 1996. A smaller, adjacent area measured 14.71 m ² (158.30 ft ²). The Dyncorp RCT remembers a contaminated backhoe being parked at this location for approximately two years that had originally been parked next to the 241-ER-152 Diversion Box. Two rodent nests were found in the engine compartment of the backhoe that had maximum contamination levels of 50 mR/h. The contaminated backhoe was moved next to the row of connex boxes in 1996 when the 200-E-29 site was being stabilized. The area surrounding the backhoe was posted as a CA. The backhoe was moved again in 1998; the CA where the backhoe had been sitting was reposted as a URM area. The area remains posted; no radiological surveys can be found to document the radiological conditions inside the area.	Diversion Box	N	Y	1-2	6.2E+4	315	197	Unk.	0-1 (spotty)	The site has been stabilized.	Biological Intrusion	Solid	7000 dpm - 300 mrem/h from mouse feces, urine, a mouse nest, several mouse carcasses and an ant hill in 1996; A backhoe engine compartment had 50 mR/h from mice nests in 1996; Radiation survey found 200 cpm above background where paint was cracked in September 2000.	None

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UPR-200-W-51	Inactive	Unplanned Release	UPR-200-W-51, Release from 241-S Diversion Box, UN-200-W-51, UPR-200-W-52	S/U Farm Area	On 9/12/58, high pressure steam was applied to the D-8 line of the 241-S Diversion box in an attempt to unplug it. The pressure bled back into the diversion box and caused a release of contamination. A follow-up survey revealed contamination readings up to 1 rad/h immediately around the box. Contamination levels 30 m (100 ft) south of the diversion box were 50 mrad/h. A narrow strip of contamination extended southward, across Tenth St, with contamination levels of 4,000 cpm. The contamination continued southward approximately 91.44 m (100 yd) beyond the 200 West Area fence. The particles outside of the 200 West Area fence read on the order of 5,000 cpm. The contaminated areas were posted and the gross contamination was flushed with water. The release site is not currently marked or posted. The area where this release had been located (in 1958) is near an area that was surface stabilized in 1992 (UPR-200-W-165). Because the plume was 100 m wide extending southward from the 241-S-151 diversion box, the release affected a portion of the area known as UPR-200-W-165.	Diversion Box	N	N	None	5.2E+5	1723	300	Unk.	0-1 (spotty)	In 1958, contaminated areas were zoned off, gross contamination flushed with water. In 1992, two nearby SCAs were scraped and consolidated onto other existing nearby waste sites and into the 207-S Retention Basin. Some residual contamination from this UPR may have contributed to the contaminated soil in the nearby SCAs.	Diversion Box Release	Solid and Liquid	1 rad/h - 50 mrad/h; 4,000-5,000 cpm on September 12, 1958	Unk.

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200-W-63	Inactive	Unplanned Release	200-W-63, Contaminated Concrete Pad	T Farm Area	The site was a "T" shaped concrete pad that had been posted with Surface CA signs. In 12/97, the pad was found posted with an old, faded "Surface Contamination Area" sign and rusted chain. It did not appear that anyone was responsible for surveillance and maintenance of this site. In the 1980s radiological contaminated equipment was stored on pad. Coyote tracks indicated the coyotes were drinking water from a low spot in the concrete. A 12/5/97 radiological survey confirmed the presence of both beta/gamma and alpha contamination. A site visit in 09/99 found the pad had been covered with gravel and reposted as URM. Employees who have worked in 200 West Area state the pad was used to store radiologically contaminated tanks in the late 1980s. The tanks were removed in 1991 and the pad was left posted as a Surface Contamination Area. In December of 1997, the pad was found posted with an old, faded "Surface Contamination Area" sign and rusted chain. It did not appear that anyone was responsible for surveillance and maintenance of this site. Dave Phipps, Fluor Daniel Hanford Radiological Control Group, was unable to identify a group that would claim responsibility for the contaminated pad. He also observed evidence of coyote tracks that indicated the coyotes were drinking water from a low spot in the concrete. A radiological survey done on December 5, 1997, confirmed the presence of both beta/gamma and alpha contamination.	Foundation	N	Y	1-2	6301	140	45	Unk.	0-1	The site has been surface stabilized.	Contaminated Foundation	Liquid	5000 - 300000 dpm beta/gamma and 3000 - 7000 alpha surveyed on December 5, 1997.	None
200-W-86	Inactive	Unplanned Release	200-W-86, Contamination Area Around Light Pole	T Plant Area	The site was originally a small, graveled Soil CA around an active (in use) light pole, near the intersection of the U plant railroad spur and Bridgeport Ave. The Dyncorp ISVAC group submitted this site to WIDS as a Discovery Site in 2000. No radiological survey could be found to determine when the power pole was posted, the radiological conditions inside the posting, or the source of the contamination.	Outlying Area	N	Y	1-2	100	10	10	Unk.	0-1	In 12/01, the utility pole was removed and the area was covered with clean backfill. The area was downposted to URM.	Unk.	Solid, Liquid	Unk.	None

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Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
200-E-103	Inactive	Unplanned Release	200-E-103, Radiologically Controlled Area - South Side of PUREX, PUREX Stabilized Area, 202-A	PUREX Area	The waste site area is covered with gravel and currently posted with URM signs. The site is an area contaminated by many unplanned releases that occurred over time during facility operation. Interim stabilization of the area began on January 4, 1999, and was completed on February 4, 1999. Interim stabilization objectives were to reduce risk to workers, simplify ongoing surveillance and maintenance at the site, and transform the site to a safer and more stable configuration while awaiting the identification and implementation.	Outlying Area	N	Y	1-2	1.9E+5	Irr.	Irr.	Unk.	0-1 (spotty)	Unspecified interim stabilization on 1/4-2/4/99. Crushed rock placed on 3.7 a; 0.6 a not stabilized. The waste site was covered with gravel.	Contaminated Effluent	Liquid	Unk.	Unk.
200-E-107	Inactive	Unplanned Release	200-E-107, Contamination Area East of PUREX, PUREX E Field	PUREX Area	The site was a large, irregularly shaped, and posted Contamination Area. The posted contamination east of the tunnels (218-E-14 and 218-E-15) extended into the double security fence. The area east of the Railroad Cut included the 216-A-32 Crib and the 2607-EE Sanitary Septic Tank and Tile Field, but ended at the inner security fence. In 5/00, a narrow corridor was considered an RBA and separated the northern portion of the CA from the southern portion. Both sections are considered to be one waste site. The entire area was stabilized and reposted as a URM Area in 2001. Residual surface contamination exists from years of PUREX facility operations.	Outlying area	N	Y	1-2	4.3E+4	376	114	Unk.	0-1	The site has been stabilized.	Ventilation Particulate/ Windblown Particulate	Solid	Alpha contamination detected on motion detectors and aboveground electrical boxes in 2001	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
200-E-115	Inactive	Unplanned Release	200-E-115; Contamination Area East of 241-C Tank Farm	WTP/A Farm Area	The site had been a posted CA surrounded with light posts and chains. Large weeds were growing inside the posted area and there are several radiation flags visible inside the posted area. In June 2004, the site was stabilized with a bio-barrier and gravel. The area was reposted as a URM area. The site was submitted to WIDS as a Discovery Site in October 2000. No radiological survey could be found to provide information about the radiological conditions inside the posted area. It was assumed and later confirmed, that the area had been posted by the East Tank Farm Radiological Control group. They stated that they do routine perimeter surveys of miscellaneous posted areas but do not go inside the areas. A review of underground pipeline locations does not indicate a pipeline at this location. In 1980, a larger area of posted contamination had been located in this same vicinity (see site code UPR-200-E-91). In 1981, the contaminated soil was removed and buried in a depression north of the 216-A-24 Crib. The area was released from radiological posting in 1981. Since so much time has passed, it is difficult to determine if the two areas are related. The Environmental Surveillance radiological control group identified contaminated vegetation inside the posted CA east of 241-C Tank Farm. In January 2001, the contaminated tumbleweeds were removed. A radiological survey done in September 2002 found additional, new growth contaminated tumbleweed reading 350 cpm and small dried tumbleweeds reading 200 cpm. It was recommended the site be surface stabilized, including a biobarrier.	Outlying Area	N	Y	1-2	1320	40	33	Unk.	0-1 (spotty)	A biobarrier exists. In 1981, contaminated soil was removed and buried in a depression north of the 216-A-24 Crib and the site was released from radiological posting. In 01/01 contaminated vegetation was removed.	Unk.	Solid	Contaminated tumbleweed reading 350 counts per minute and small dried tumbleweeds reading 200 counts per minute in January 2001.	None
200-E-123	Inactive	Unplanned Release	200-E-123, Contamination Area South of 216-B-2 Stabilized Ditches	Solid Waste Area	In 2001, the area was covered with clean backfill material and down posted to a URM Area. The site had been surrounded with light duty steel posts and chain and was originally posted as a SCA. No significant vegetation was observed on the site. The source of the contamination is unknown. ISVAC Group submitted the posted area to WIDS as a Discovery Site. No radiation surveys are available for this site since it was already posted before being reported by the ISVAC Group.	Outlying Area	N	Y	1-2	344	23	15	Unk.	0-3	In 2001, the area was covered with clean backfill material and down posted to a URM.	Unk.	Solid and Liquid	Unk.	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
200-E-125	Inactive	Unplanned Release	200-E-125, Contamination Area Northwest of 244-AR Building	PUREX Area	The site is posted as a CA with light duty posts and chain. The surface is very sandy soil. No vegetation was observed.	Outlying Area	N	N	None	326	22	15	Unk.	0-1	None	Unk.	Solid, Liquid	Unk.	None
200-E-129	Inactive	Unplanned Release	200-E-129, Stabilized Area on East Side of B Plant Railroad Cut	B Plant Area	The area has been covered with gravel and posted with URM signs. In February 2001, a random radiological survey was done to determine the radiological conditions around the B Plant Railroad cut. The survey was done by the ERC group. A small area of soil contamination was identified near the north end of the railroad cut, on the east side of the soil berm. The area was posted with Contamination Area signs. No determination of the contamination source was made. A small, 2.4 by 4.6 m (8 x 15 ft) CA was identified and posted adjacent to the URM in August 2002. In February 2001, a random radiological survey was done to determine the radiological conditions around the B Plant Railroad cut. The survey was done by the Eberline Radiological Control group. A small area of soil contamination was identified near the north end of the railroad cut, on the east side of the soil berm. The area was posted with CA signs. No determination of the contamination source was made. A small, 2.4 by 4.6 m (8 by 15 ft) CA was identified and posted adjacent to the URMA in August 2002.	Outlying Area	N	Y	1-2	240	20	12	Unk.	0-1	The site has been stabilized with gravel.	Unk.	Solid, Liquid	12,000 (max) dpm per 100 cm probe area convert to 2400 cpm (beta-gamma) in February 2001.	None
200-E-139	Inactive	Unplanned Release	200-E-139, Contamination Area North of C Farm	WTP/A Farm Area	A large posted URM area is located on the north side of 8th St. It contains growing vegetation (rabbit brush and tumbleweeds). A small posted URM area is located on the south side of 8th St. The area on the south side of 8th St has been covered with a biobarrier and gravel. The two areas have been radiologically posted for many years. The areas were surveyed with Global Positioning equipment and mapped in 12/97. No radiological survey can be found to provide any radiological condition information. As of 2/2002, it is not known which Hanford organization erected the posts and chain or when the areas were posted.	Outlying Area	N	Y	1-2	8.4E+4	853	98	Unk.	0-1 (spotty)	Contaminated tumbleweeds were removed in 2003; area on south side of 8th St. has been covered with a biobarrier and gravel.	Unk.	Solid	300-4100 CPM Beta-Gamma in 2004.	None

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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200-E-53	Inactive	Unplanned Release	200-E-53, Contaminated Zone Adjacent to 218-E-12B and 218-E-8, Over ground Storage Area, Above Ground Storage Area	Solid Waste Area	Rockwell document RHO-CD-1048 and photographic documentation from 1982 indicate this area was used to store contaminated equipment. This is an irregular, wedge-shaped site with a rope barrier and posted with Soil Contamination signs, first documented in 1987. Contamination readings ranged from 600 cpm to 30 mrem/h beta (1.5 mrem/h gamma). Contaminated rabbit feces found in 1991. In 10/93, the area was re-identified in conjunction with a routine survey of the 218-E-12B Burial Ground. A relatively small Surface CA had been previously established. Additional radiological surveying beyond the boundaries of the contamination zone found several more areas of contamination; the posted area was enlarged to include the majority of the newly identified contamination. In 1997, the rope was found on the ground; evidence of vehicle traffic driving through the area. No one claims responsibility for maintenance of the posted CA. On 10/22/97, a rope barrier was reestablished.	Outlying Area	N	N	None	1.1E+5	410	262	Unk.	0-1 (spotty)	Four small spots of contamination found fairly distant from the original contamination zone were decontaminated.	Biological Intrusion/Animal Feces	Solid	600 cpm - 30 mrem/h beta (1.5 mrem/h gamma) between January - September 1987; 75000 dpm found in October 1993.	None

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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200-W-106	Inactive	Unplanned Release	200-W-106, Soil Contamination Area Adjacent to 200-W-55	T Farm Area	Soil contamination was found and posted on 2/13/2003 (200-W-55 dump site). Soil had apparently been placed in the location of the contamination. The surrounding area contains large, growing rabbit- and sagebrush, indicating the vegetation was established many years ago. The area containing the soil contamination has little or no vegetation. On 2/13/2003, a Radiological Control Technician was passing the 200-W-55 dump site in his vehicle. Because he was unfamiliar with the dump site, he decided to do a cursory radiation survey. The technician found soil contamination on the top rim of the debris pit. Occurrence Report RL--PHMC-FSS-2003-0002 was issued describing the contamination found. Closer inspection of the area showed that soil had apparently been placed in the location of the contamination. The surrounding area contains large, growing rabbit and sage brush, indicating the vegetation was established many years ago. The area containing the soil contamination has little or no vegetation. The maximum surface contamination level was 3600 cpm. A least fifteen separate small contaminated areas were identified. Contamination levels became larger at depth. The 300 cpm surface reading rose to 7600 cpm at a depth of 7.6 cm (3 in.). Additional investigations were done to determine the depth of the contamination. The majority of the contamination was found to be within 15 cm (6 in.) of the surface. A maximum reading of 20,100 cpm was found at a depth of 10 cm (4 in.).	Outlying Area	N	N	None	3551	67	53	Unk.	0-1 (spotty)	None	Soil Contamination	Solid	3600 cpm. At least 15 separate, small contaminated areas were found; contamination levels larger at depth. 300 cpm surface reading rose to 7600 cpm at depth of 7.6 cm (3 in.). Additional investigations found majority of contamination to be within 15 cm (6 in.) of surface. Max reading 20,100 cpm found at 10 cm (4 in.) depth found on February 13, 2003.	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
200-W-53	Inactive	Unplanned Release	200-W-53, UPR-200-W-166, UN-216-W-31	T Farm Area	This site was an area of surface soil contamination located east of the 207-T Retention Basins. Identified in 1994 with result of approximately 155,706 ft ² (14,466 m ²) of land being marked/posted as a SCA. The contaminated soil was scraped and placed inside the 207-T Retention Basin. The Tank Waste Remediation Group used the waste site number UN-216-W-31 (alias UPR-200-W-166) to document their 1996 cleanup effort. However, this contaminated soil was not located at the same place as the original UN-216-W-31 that was consolidated/stabilized by RARA in 1992. The original UN-216-W-31 area of contamination was described as located north and east of 241-T Tank Farms. In 1996, the UN-216-W-31 number was used again for the contamination found further east. The second area of contamination was given a separate site code (200-W-53) to explain the two separate remediation activities. The Tank Waste Remediation Group used the waste site number UN-216-W-31 (alias UPR-200-W-166) to document their 1996 cleanup activity. However, this contaminated soil was not located at the same place as the original UN-216-W-31 that was consolidated and stabilized by the Radiation Area Remedial Action (RARA) in 1992. The original UN-216-W-31 area of contamination was described as being located north and east of 241-T Tank Farms. In 1996, the UN-216-W-31 number was used again for the contamination found further east, because the source of the contamination was assumed to be the same as the source for UN-216-W-31. Because of programmatic responsibility issues, it was necessary to give the second area of contamination a separate site code (200-W-53) to explain the two separate remediation activities.	Outlying Area	N	Y	Unk.	1.6E+5	394	394	Unk.	0-1 (spotty)	Soil contamination located east of the 207-T Basins was scraped up and placed inside the 207-T Retention Basin in 1996. Basins were completely backfilled and covered with clean dirt. The scraped area is currently posted as an URM.	Windblown Particulate	Solid	Unk.	None

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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200-W-54	Inactive	Unplanned Release	200-W-54, Contamination Migration from 241-SX Tank Farm	S/U Farm Area/ REDOX Area	This site is an expanding area of contamination migration. The original UPR was defined in 1997 as a large, irregular shaped SCA located on the east side of 241-S/SX Tank Farms. In 1997, it measured approximately 175 m (575 ft) by 100 m (330 ft). Another GPS was done in 1998 by Bruce Markes. The posted SCA had been extended approximately 50 m (165 ft) to the west (up to the tank farm fence) and approximately 200 m (660 ft) in the north-south direction. A site visit in 08/00 found multiple additional radiologically chained and posted areas in this vicinity. In 09/00, 10/00, and 11/00, the ISVAC group submitted several individual radiologically posted areas in the vicinity of the originally defined area to WIDS as Discovery sites. All the radiologically posted areas north and east of the tank farm fence are incorporated into the 200-W-54 waste site description. In September, October and November 2000, the Dyncorp ISVAC group submitted several individual radiologically posted areas in the vicinity of the originally defined area to WIDS as Discovery sites. All of the contamination in this area is assumed to be the result of tank farm activities or contamination migration from the adjacent posted contamination areas because they are the only apparent contamination sources. All the radiologically posted areas north and east of the tank farm fence are incorporated into the 200-W-54 waste site description. In 2002, 200-W-54 was consolidated with the 241-S, SX, SY Soil Site (200-W-96), but because of the increasing size of 200-W-54, it was unconsolidated from 200-W-96 in December 2004.	Outlying Area	N	N	None	1.9E+5	574	330	Unk.	0-1 (spotty)	None	Windblown Particulate	Solid	Contamination migration from S/SX Tank Farm; 650 - 20000 cpm survey in November 1998.	None
200-W-90	Inactive	Unplanned Release	200-W-90, Underground Radioactive Material Areas posted along 23rd Street in 200 West Area	T Farm Area	The site consists of three posted URM areas. Two are located on the south side of 23rd St, across from the 218-W-2A Burial Ground. One is located further east, on the south side of 23rd Street, across from the 241-T Tank Farm. The Dyncorp Integrated Soil, Vegetation and Animal Control group submitted these posted areas to WIDS as a Discovery Site in 2000. They are similar in size. No radiological survey could be found to describe the radiological conditions inside the posted areas or when they were posted. There is no underground pipeline in this area. There is no vegetation growing inside any of the three posted areas.	Outlying Area	N	N	None	200	20	10	Unk.	0-1	None	Unk.	Solid, Liquid	Unk.	None

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UPR-200-E-101	Inactive	Unplanned Release	UPR-200-E-101, UN-216-E-30, UN-216-E-101, UN-200-E-101, Radioactive Spill Near 242-B Evaporator	B Farm Area	The site, adjacent to the B Tank Farm perimeter fence, is currently a posted as a URM area. Surface contamination was identified between the 241-B Tank Farm fence and the 242-B Evaporator building. It was assigned the UPR Site Number UN-216-E-30 in August 1985. The area adjacent to the tank farm fence is prone to contamination migrating outside the tank farm. In the past, CA postings periodically extended beyond the chain link fence, but the postings were removed as the contamination was removed. In 2000 and 2001, a large zone extension covered the area previously stabilized. Windblown particulates from the tank farm or spills from the 242-B Evaporator may have been the cause of the contamination, but an exact cause for this area of contamination has not been determined. A routine radiological survey done in September 1986 found tumbleweeds growing at the site that were reading 1,000 cpm beta-gamma.	Outlying Area	N	Y	1-2	3360	84	40	Unk.	0-1	The site was stabilized in 1994.	Windblown Particulate/ Vegetation	Solid	Tumbleweeds reading 1,000 cpm beta-gamma in September 1986	None
UPR-200-E-143	Inactive	Unplanned Release	UPR-200-E-143, Contamination Adjacent to 244-A Lift Station, UN-216-E-43	PUREX Area	Various radiological postings exist in this vicinity that are associated with the 244-A Lift Station and 241-C Tank Farm contamination migration. A WIDS sign has been placed at the approximate location of the release. The same area is known to have been contaminated with animal feces in 1985 (see UPR-200-E-100). Additional radiological surveys and decontamination attempts changed the size and shape of the posted contaminated area several times. In October 1990, radiologically contaminated rabbit feces, with a maximum dose of 900 mrem/h, was found south of the 244-A Lift Station and west of the 216-A-40 Basin. An investigation was initiated to identify the contaminating source. The same area is known to have been contaminated with animal feces in 1985 (see UPR-200-E-100). Additional radiological surveys and decontamination attempts changed the size and shape of the posted contaminated area several times.	Outlying Area	N	N	None	5.0E+4	Unk.	Unk.	Unk.	0-1 (spotty)	In 1985 scraped/removed contaminated soil.	Windblown Particulate/ Biological Intrusion	Solid	Rad survey readings of 900 mR/h in October 1990. Analytical results detected Cs-137.	None

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UPR-200-E-28	Inactive	Unplanned Release	UPR-200-E-28, Contamination Release Inside the PUREX Exclusion Area, UN-200-E-28	PUREX Area	This release occurred in the eastern half of the PUREX exclusion area. The exclusion area is posted as a Contamination Area. The release cannot be individually distinguished within the zone. The November 30, 1961 release was reported in the Chemical Processing Department monthly report dated 12/21/61. Some documents have cited the report date instead of the release date. On November 30, 1961, a general spread of low-level contamination to the eastern half of the PUREX exclusion area occurred. Fission products escaped from a trap pit because of failures in a process vessel steam coil and in the trap pit piping.	Outlying Area	N	N	None	Unk.	Irr.	Irr.	Unk.	0-1 (spotty)	Control and cleanup was executed promptly.	Leak/ Spill	Solid, Liquid	Unk.	Unk.
UPR-200-E-37	Inactive	Unplanned Release	UPR-200-E-37, Contamination East of Hot Semi-Works, UN-200-E-37, UN-216-E-37	Semi-Works Area	There is currently no physical evidence of the unplanned release site. It is no longer marked or posted. This UPR was documented on an Occurrence Report in 1967. However, a documented remediation of a contaminated area east of Semi-Works was done 22 years later in 08/89 and 09/89. The size of the posted contaminated area described in 1989 is considerably larger than the area described in 1967. The southern boundary of the posted contaminated zone in 1989 began near the SE corner of the 209-E Facility fence and extended E approximately 500 m (1,640 ft), 200 m (660 ft) wide. The contaminated soil in the field E and S of Semi-Works was scraped up and placed in dump trucks. The soil was disposed of in the 216-C-9 Dry Waste Burial Trench. Following the removal of the contaminated soil, a radiological survey was done with the MSCM tractor. Ninety-six soil samples were collected and analyzed: concentrations of radionuclides in all the samples were below the values listed in Table K-2 of WHC-CM-7-5. No contamination was identified with the MSCM tractor; thus, radiological posting were removed from the area. On July 31, 1967, a release from the Strontium Semi-Works (SSW) facility was documented on a Radiation Occurrence Report. At the time of the occurrence, a fence surrounded the facility. The original occurrence description stated that the contamination was confined to the east side of the Strontium Semi-Works, extending a length of 183 m (200 yards) and also to a dirt road outside the facility fence. The area was roped off, roads were blocked and sprinklers were set up in the contaminated areas. The blacktop roads were cleaned.	Outlying Area	N	N	None	Unk.	600	Irr.	Unk.	0-1 (spotty)	A large contamination area located east and south of Semi-Works, was released in 1989. The contaminated soil was scraped off the surface and removed to the 218-C-9 burial trench. Ninety-six, 1.27 cm (1/2 in.) deep soil samples were collected from the area after it was scraped and transported to lab for analysis. Surface was surveyed with MSCM Tractor. (WIDS)	Windblown particulate	Solid	Unk.	None

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UPR-200-E-50	Inactive	Unplanned Release	UPR-200-E-50, Soil Contamination at the Over ground Equipment Storage Yard, UN-200-E-50	WTP/A Farm Area	In 1974, an area of ground contamination was identified that measured from 15 to 30 m (50 to 100 ft) wide and 137 m (450 ft) long south southeast of the Over ground Storage Area. The release is not currently marked or posted. The location description in the original occurrence report is vague. A location sketch in RHO-CD-1048 shows an Aboveground Storage Area north of 241-C, west of the 200 East Burn Pit, southeast of 218-E-8. Photographs from 1982 show material being stored at this location. See site code 200-E-53. On 9/24/74, ground contamination was identified outside the radiation zone at the Over ground Radioactive Equipment Storage Yard, north of 241-C Tank Farm. A resulting swath of ground contamination was identified with particle contamination ranging from 3,000 - 100,000 cpm, decreasing in intensity and frequency with distance from the source. Follow-up surveys of the Over ground Storage Area identified a possible source to be a 6-m x 9-m (20-ft by 30-ft) area of contaminated soil inside the radiation zone. Highly contaminated pumps (250 Rad/h) had been stored in that area with readings of 300 mrem/h under the where pumps had been sitting. The pumps were moved to the burial ground on 4/26/74 but the soil beneath the pumps was not completely decontaminated. It was covered with plastic and secured with dirt. On 9/26/74, high winds blew the plastic cover loose, spreading contamination downwind of the Over ground Storage Yard. An additional survey in the Over ground Storage Yard identified two empty capsules with smearable contamination of 30,000 cpm and more soil contamination beneath the capsules reading 1.5 rad/h. The capsules were taken to the burial ground to avoid further contamination spreads.	Outlying Area	N	N	None	3.4E+4	450	75	Unk.	0-1 (spotty)	In 1974, some decontamination was done removing some radiological contamination specks and tumbleweeds. Some digging to remove contamination went to depth of 1 ft below surface. Equipment that became contaminated was kept in storage and monitored.	Windblown Particulate/Vegetation	Solid	Rad survey readings on pumps were 250 Rad/h with 300 mrem/h measured on soil under pumps. Particle contamination readings ranged from 3,000 - 100,000 cpm on September 24, 1974.	None

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UPR-200-E-52	Inactive	Unplanned Release	UPR-200-E-52, UN-200-E-52, Contamination Spread Outside the North Side of 221-B	B Plant Area	In 1998, a 3 m (10 ft) by 15.25 m (50 ft) area was posted with CA signs. On 8/1/75, soil contamination ranging to 20,000 cpm was detected under the drain of the steam pressure relief pipe discharge from the E-5-2 Strontium Concentrator, and an area about 0.91 m (3 ft) wide and 2.74 m (9 ft) high on the north side of the 221-B Building was contaminated to 100,000 cpm outdoors. Soil on the western berm adjacent to the railroad cut was also contaminated. The apparent cause was that contamination migrated from the leaking tube bundle of the recently replaced E-5-2 strontium concentrator to the pipe gallery piping. It was then forced outside by operation of the relief valve when the operating steam pressure was increased to 35 psi while the relief valve setting remained at 32 psi.	Outlying Area	N	N	None	100	25	4	Unk.	0-3	Precipitation infiltrating into the railroad berm continues to release radionuclides trapped within the soil. Relief valve and discharge line from relief valve to building's exterior were replaced. A total of 4 ft ³ of contaminated dirt was packaged and sent to burial ground. Exterior of building was cleaned, painted and remarked.	Pipeline Release	Liquid	Radiological survey readings of 20000 - 100000 cpm surveyed in August 1975	Unk.
UPR-200-E-55	Inactive	Unplanned Release	UPR-200-E-55, UN-200-E-55, Contamination Spread South of B Plant	B Plant Area	A single post with a sign that reads UPR-200-E-55 is currently located under an aboveground line. The area is not radiologically posted. It marks the approximate location of the release. Another note in Site Comments states that the contamination "spread south and west of 212-B." On 4/27/79, wind spread contamination from a plastic sheeting in a radiation zone near the 212-B Building to an adjacent area. The incident occurred after the K-3 east filter was changed out. During the changeout plastic was laid down for contamination control within a radiation zone. The wind whipped the contamination plastic as it was being packaged for burial. The general area was surveyed and spots of contamination ranging from 5,000 to 30,000 cpm were found outside the radiation zone.	Outlying Area	N	N	None	1.0E+4	100	100	Unk.	0-1 (spotty)	In 1979, the area was isolated as a temporary zone, cleaned up, and released.	Windblown particulate	Solid	Beta/gamma particles reading 5,000-30,000 cpm on April 27, 1979	None

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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UPR-200-E-62	Inactive	Unplanned Release	UPR-200-E-62, Transportation Spill near 200-E Burning Ground, UN-216-E-62, UN-200-E-62	Solid Waste Area	Radioactive liquid was spilled from a pressure test assembly on 3/19/82 while in transit. The release occupied an area approximately 5 cm (2 in.) wide and 30 m (100 ft) long on a hill near the 200 East Over ground Storage Area. The release was cleaned up within 3 days. The site is no longer marked or posted. The location of the 200 East Area Over ground Storage Area is unclear. It is assumed to be adjacent to the 200 East Burn Pit, currently known as site code 200-E-53. Although this site was Proposed to be Rejected in 2001, an Ecology review in 2004 determined more information is required to disposition this site. Additional radiation surveys and possible sampling were recommended. The site status was changed to Accepted, pending the results of the investigation. No definite time has been determined for when the information might be collected.	Outlying Area	N	N	None	Unk.	Irr.	Irr.	Unk.	0-1	The ground contamination was picked up, placed in barrels, and removed to the burial ground. The release was cleaned up to background levels and was released from area posting on 3/22/82.	Leak/ Spill	Liquid	350 mrad/h beta/gamma in 1982	None
UPR-200-E-98	Inactive	Unplanned Release	UPR-200-E-98, UN-216-E-26, Ground Contamination East of C Plant (Hot Semi Works), UN-200-E-98	Semi-Works Area	UPR-200-E-98 was established as a site in September 1980. The actual date of occurrence is unknown. The location of this site is currently within a large surface stabilized area known as 200-E-41. Much of the contamination was removed and placed into the 218-C-9 Burial Pit in 1992. The area has been surface stabilized with powerhouse ash. The covered area has "Underground Radioactive Material" warning signs posted. Radioactive particulate matter from the "Hot Semiworks" operations (1955 to 1965) was inadvertently spread to the ground surface. It contaminated the ground near the base of the 291-C Stack and around the 216-C-2 Reverse Well.	Outlying Area	N	Y	1-2	Unk.	Irr.	Irr.	Unk.	0-1 (spotty)	The 2910C Stack was demolished and currently lies in a burial trench adjacent to where it stood. Site is within a large surface stabilized site known as 200-E-41.	Windblown particulate	Solid	Sr-90	None

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UPR-200-W-101	Inactive	Unplanned Release	UPR-200-W-101, UN-216-W-9, 221-U Acid Spill R-1 through R-9, UN-200-W-101	U Plant Area	UPR-200-W-101 occurred in March 1957, when reclaimed acid was spilled onto the ground at the northeast end of the 221-U Building. Approximately 1 Ci of fission products was released. An area 19.8 m (65 ft) by 27.5 m (90 ft) was covered with 3 in. of sand and gravel after the occurrence. In 1967, a Radiation Monitoring Management Report stated that approximately 1900 m ² (20,000 ft ²) of ground surface at the rear of the 221-U Building was resealed. The original tar surface over an old radioactive spill area had decomposed and allowed weeds to grow and bring contamination to the surface. The release site was posted with "Surface Contamination" warning signs. The contaminated ground was covered with sand and gravel. A larger contaminated area on the east side of 221-U was surface stabilized in 1998 (UPR-200-W-162). This unplanned release area was located within the UPR-200-W-162 posted area. After being covered with clean material, the posting was changed to URM. UPR-200-W-101 is not separately marked or posted within the area.	Outlying Area	N	Y	1-2	5851	90	65	3	0-3	The original tar surface over an old radioactive spill area had decomposed and allowed weeds to grow and bring contamination to the surface. The resealed area extended from section R-1 through section R-9 and out to the road east of the building. Weeds were removed, soil sterilizing agent was sprayed over the ground, and a hot tar base was applied and capped with fine mesh chipped gravel.	Leak/ Spill	Liquid	1 Ci of fission products was released; acid contained 1 Ci of Sr-90. 300 cpm detected in September 1976	Acid
UPR-200-W-116	Inactive	Unplanned Release	UPR-200-W-116, UN-216-W-26, Ground Contamination North of 202-S, UN-200-W-116	REDOX Area	The site has a light chain barricade and is posted with URM signs. It is possible that UPR-200-W-69 (a 1973 contamination spread from a contaminated drain pit) also contributed to the contamination at this location. The area designated as UPR-200-W-116 in 1980 was contaminated with particulates spreading by wind from the 204-S Waste Storage Tank exhaust and the related Railroad Tanker Waste Unloading Station. Radioactive particulates traveled eastward and affected an area approximately 0.8 ha (2 a) in size. In 1974, ground contamination, with radioactive levels up to 20,000 cpm, was identified.	Outlying Area	N	Y	1-2	8.4E+4	364	230	Unk.	0-1 (spotty)	In 1974, bladed area into windrows; 1993 interim stabilized; consolidated contaminated soil next to REDOX railroad cut soil berm. Interim stabilized a portion of chemical spur RR tracks and a section along west perimeter of posted area with 46-61 cm (18-24 in.) of uncontaminated soil.	Windblown particulate	Solid	Ground contamination levels up to 20,000 cpm in 1974; beta/gamma ranging from 200 - 3000 cpm in 1981.	None

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Waste Site Attributes. (99 Pages)

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UPR-200-W-165	Inactive	Unplanned Release	UPR-200-W-165, Contamination Area East of 241-S, UN-216-W-30	S/U Farm Area	The originally posted area was scraped and the contaminated soil combined with other waste sites. The site had been a large area of posted Surface Contamination, located east of the 241-S Tank Farm, north of the steam line. The 216-S-23 and 216-S-9 cribs and the 216-S-18 excavation were inside the Surface Contamination Area posting. Some of the contaminated soil was placed on top of the 216-S-9 crib. Some was used to backfill the 216-S-18 depression. After collecting soil samples of the scraped area, the site was removed from radiological control. Radioactive surface contamination migrated from the 241-S, 241-SX, and 241-SY Tank Farms, eventually contaminating an area of approximately 4.7 ha (11.5 a).	Outlying Area	N	N	None	1.4E+5	377	377	Unk.	0-1 (spotty)	The stabilization effort divided the contaminated area into two parts. The north part (north of the northern-most steam line) was done first and was completed in July 1992. The southern portion (the area between the two steam lines) became larger during the stabilization effort as more and deeper contamination was identified during the initial scraping. Some of the contamination was placed on 216-S-9 Crib. The 216-S-9 Crib and the contaminated soil were covered with clean dirt and reposted URM in July 1992. Approximately 460 m ² (5,000 ft ²) was scraped down to 46 cm (18 in.) below the original surface and released from radiological controls. Soil samples were collected and radiological surveys were done prior to releasing areas from radiological control. Because of accessibility problems near the steam line, the remaining contamination was consolidated and posted as an SCA and left to be addressed at a later date.	Windblown particulate	Solid	200 cpm to 45 mrad/h (original speck contamination) in 1995	None

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															This area was completed in 1997 when the inactive steam line was removed. The remaining contamination was pushed into the 216-S-18 Trench and surface stabilized. A total of 45 sample points were randomly selected from the northern portion and 23 sample points were randomly selected from the southern portion of the area. After collecting soil samples of the scraped area, the site was removed from radiological control.				
UPR-200-W-23	Inactive	Unplanned Release	UPR-200-W-23, Waste Box Fire at 234-5Z, UN-200-W-23	PFP Area	A 1999 facility walkdown could not locate this unplanned release site. The approximate area is marked with a WIDS sign painted on the asphalt. In June 1953, a fire in a waste box resulted in approximately 28 m ² (300 ft ²) of ground contamination. The fire caused a spread of plutonium contamination with readings up to 10,000 dpm.	Outlying Area	N	Y	1-2	302	17	17	Unk.	0-1	Following the release in 1953, the contaminated area was covered with blacktop and posted with "DANGER - DO NOT EXCAVATE IN THIS AREA WITHOUT SWP PERMISSION" signs.	Fire	Solid	Plutonium	Unk.

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UPR-600-21	Inactive	Unplanned Release	UPR-600-21, Contamination found Northeast of 200 East Area, UN-216-E-31	200 E Ponds Area	Contamination specks and tumbleweed fragments were originally identified near the railroad track northeast of 200 East Area. The site had been a large radiologically posted area. Additional radiation surveys enlarged the area of contamination to include a large area (approximately 30 a) extending north of the railroad track to Route 11A and southward to the 216-E-28 Contingency Pond area, near B Pond. The area is no longer marked or posted but was originally posted with Radiological Controlled Area warning signs. In 1990, the Health Physics group changed the posting to Surface Contamination. In 1991, all radiological postings were removed. In 2004, Ecology determined more information is required to disposition and reclassify the site. No definitive time has been determined for when to collect information. The release was a result of contaminated tumble weeds that migrated and decomposed in the area and possibly specks from the PUREX stack or a nearby burial ground.	Outlying Area	N	N	None	Unk.	Irr.	Irr.	Unk.	0-1 (spotty)	Majority removed over the years by buckets and shovels; some decay below detection levels.	Vegetation (tumbleweeds)	Solid	Unk.	None

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UPR-200-E-89	Inactive	Unplanned Release	UPR-200-E-89, UN-216-E-17, UN-200-E-89, Contamination Migration to the North, East & West of BX-BY Tank Farms	B Farm Area	The site is located north of the 241-BY Tank Farm. It is believed the contamination occurred over time due to operations in the BY Tank Farm. The exact date of the release is unknown. The contaminated area east of the BY Tank Farm was identified in 1978. It was given an unplanned release number September of 1980. Over time, additional contamination was found north of BY Tank Farm. The size of the contaminated area increased due to windblown particulate contamination migration from the tank farms and contaminated tumbleweeds. Airborne particulate matter contaminated the area bounding the north and northeast sides of the 241-BY Tank Farm. The airborne particulate matter was re-suspended by wind from activities during the time of 241-BY Tank Farm operations. Airborne particulate matter from the 241-BX Tank Farm spread onto Baltimore Avenue roadway. Ground contamination was discovered at the 241-BX Tank Farm. The contamination was probably due to tank leakage. In 1991, the contaminated soil area was scraped from the site and consolidated on top of the 216-B-43 through 216-B-50 Cribs and covered the cribs with a layer of clean dirt. Following the scraping 83 soil samples were collected and analyzed for total alpha and total beta. All of the samples were below release limits. The UPR-200-E-89 area was surface stabilized and zoned off against casual entry and marked with "Underground Radioactive Material" signs. The site also includes an irregularly shaped drill pad area and a contaminated concrete pad that were also covered with clean dirt.	Outlying Area/Other (concrete pad)	N	Y	1-2	1.3E+5	Irr.	Irr.	Unk.	0-1 (spotty)	In 1991, the contaminated area was scraped; removed soil was placed on top of the 216-B-43 through 216-B-50 Cribs and was surface stabilized with a cover of clean soil. In the scraped area, 83 soil samples were collected and screened for total alpha and total beta; all samples were below release limits.	Windblown Particulate/Vegetation	Solid	Beta and gamma contamination 500-2,000 cpm were detected at the site. Beta/gamma contamination was detected on the sides of the Baltimore Ave. roadway in 1978.	Unk.

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200-E-2	Inactive	Unplanned Release	200-E-2, Soil Stains at the 2101-M SW Parking Lot, MO-234 parking Lot	200 E Admin Area	Originally described as gravel covered parking lot that contained discolored soil. Two large dark circular stains visible in front of the access ramp at the south end of MO-234. In 10/06 soil sample was taken from the darkest stained area. On 08/12/99 the discolored soil was observed to be primarily concentrated at the north end of the parking lot. Large areas of discolored soil were found just south of MO234 and E of MO413 and stains extended for most of the length of these two MOs. Smaller stains were found throughout the currently in use lot. The parking lot was fairly level, but was lower than either Baltimore (to the east) or 2nd St (to the south). The site was covered with gravel w/ no visible debris or vegetation. Two storm drains were visible in the lot, both slightly depressed relative to the surrounding area. The north end drain was surrounded by the large stained areas; second drain near south end of the lot, E of MO021, but away from the highly stained portion of the lot. The parking lot is actively being used for vehicle parking. Personnel that may have knowledge of past disposal in this unit were interviewed. Based on these interviews, the unit was used as a parking lot for the Telephone and Utilities Department. Used oil has been used for dust abatement; no other dumping is known to have occurred. In 10/06 during a site walkdown sampling was done (B1KHYO). The soil was taken from the darkest stained area in the parking lot. Previously during a site visit on 8/12/99, it was observed that the discolored soil was primarily concentrated at the north end of the parking lot. Large areas of discolored soil were found just south of MO234 and east of MO413. The stains extended for most of the length of these two mobile offices. Smaller stains were found throughout the lot, which was currently in use. The parking lot was fairly level, but was lower than either Baltimore (to the east) or 2nd Street (to the south). The site was covered with gravel and no debris or vegetation was visible. Two storm drains were visible in the lot (miscellaneous streams 709 and 710). The drain at the north end of the lot is slightly depressed relative to the surrounding area and was surrounded by the large stained areas. The second storm drain was near the south end of the lot, east of MO021.	Parking Lot	N	N	None	1.0E+4	100	100	Unk.	0-6	Site soil was taken and tested.	Oil for dust abatement	Liquid	None	PCBs, used oil for dust abatement, heavy metals.

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					It was also slightly depressed relative to the surrounding area, but was away from the highly stained portion of the lot. The unit waste includes used oil for dust abatement. BHI Regulatory Support (B. Vedder) had two concerns about the site. Polychlorinated biphenyls (PCBs) were the biggest concern and heavy metals of lesser concern. PCBs were common in high heat grade hydraulic fluids.														
UPR-200-E-35	Inactive	Unplanned Release	UPR-200-E-35, Buried Contaminated Pipe, UN-218-E-1, 218-E-13	PUREX Area	The site is the location of a contaminated concrete pipe repair completed in August 1966. The site is no longer marked or posted. It is inside the PUREX exclusion fence. In 1980 a surface radiological survey did not detect any contamination so the posting was changed from Surface Contamination to URM. However, a site visit in 1991 could not identify any posting or markings for this site. This site received broken pieces of contaminated concrete from the pipe trench, which were left in the excavation hole and buried following repair to the piping at that location. The site contains less than 1 Ci fission products. It was estimated to be located 107 m (350 ft) west of the PUREX badge house.	Pipeline	Y	N	None	1840	46	40	Unk.	8-10	The pieces of concrete were left in the excavation hole and buried.	Pipeline Release	Solid	Less than 1 Ci fission products reported in August 1966	Unk.

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UPR-200-E-64	Inactive	Unplanned Release	UPR-200-E-64, Radioactive Soil and Ant Hills, UN-200-E-64, UN-216-E-36	B Plant Area	The site is a large area posted with chain and URM Area signs. The size and shape of the posted area has changed periodically as a result of annual radiological surveys and clean up efforts. Drawing H-2-44502, sheet 22 indicates the 270-E Building was removed and the tank was capped and abandoned in the early 1960's. SK-2-56961, drawn in 1972, shows the 1 m (40 in.) riser was cut below the ground surface and covered with earth. In 1984, a small diameter pipe (approximately 2 in. diameter) was visible on the west side of the 216-B-64 Basin, near where the 270-E-1 is located. In 1985, the pipe had a dose rate of 30 mR/h. The pipe is most likely a "Swab Riser" associated with an underground pipeline. This pipe is the apparent source of contamination and not the riser from the 270-E-1 Tank. The contamination had been transported to the surface by ants and spread with the wind. The size of the area in 1995 was approximately 8100 m ² (2 a). The shape of the posted zone has been periodically redefined. Additional contaminated soil and ant hills were identified both north and south of 7th Street and around the 241-ER-151 Diversion Box in 9/98. The original unplanned release documentation states ants burrowed into contaminated soil that was caused by leakage from the 270-E-1 Tank and brought the contamination to the surface. Later documentation suggests the contamination source was the small diameter vertical pipe (swab riser) located west of 216-B-64 Basin. The release consists of migrating radioactive speck contamination that was identified in 1984. The source was originally assumed to be the vent riser for the buried 270-E-1 Neutralization Tank.	Pipeline	N	Y	2	8.7E+4	Irr.	Irr.	0	0-1 (spotty)	Some attempts were made to clean up area but were discontinued. In March, 2003 the contaminated area was surface stabilized with clean backfill material.	Pipeline Release/ Windblown Particulate/ Biological Intrusion	Liquid	Sr-90, Cs-137; 60,000 cpm on soil and ant hills in May 1987; 30 mrad/h found on a pipe in 1985.	None
UPR-200-W-61	Inactive	Unplanned Release	UPR-200-W-61, REDOX Ground Contamination, UN-200-W-61	REDOX Area	The area is not currently marked or posted. On 4/24/66, a fire hose ruptured while flushing the H-10 to 241-SX transfer line. Back flow from the transfer line contaminated an outside ground area. Readings were from 4,000 to 100,000 cpm over an area of about 19 m ² (200 ft ²).	Pipeline/ Outlying Area	N	N	None	199	14	14	Unk.	0-15	In 1966, the area was barricaded and contaminated walkways were washed down and released from radiation zone status; top 6 in. (15.24 cm) of contaminated soil was removed.	Leak/ Spill	Liquid	Unk.	Unk.

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200-E-124	Inactive	Unplanned Release	200-E-124, URM on East Side of 275-EA	PUREX Area	The site is posted as a URM Area with steel posts. The site has been stabilized with approximately 0.3 m of clean soil. A few tumbleweeds were observed growing on the site. Railroad tracks run through the site and are buried under the stabilization soil. The contamination area is where railroad cars were parked and offloaded into the 275-EA Building. The ISVAC Group submitted the posted area to WIDS as a Discovery Site. No survey reports are available for this site since it was found already posted by the ISVAC Group.	Railroad	N	Y	1	3169	210	15	Unk.	0-2	The site was stabilized with 0.3 m clean soil.	Leak/ Spill	Solid and Liquid	Unk.	None
200-E-130	Inactive	Unplanned Release	200-E-130, Stabilized Area on West Side of B Plant Chemical Spur	B Plant Area	The site is covered with fine gravel and posted with URM signs. The site was submitted to WIDS in March 2001 as a Discovery site by the ISVAC group. The site was already posted with URM signs. No radiological survey or other reports could be found to determine when the area was posted or what the radiological conditions were at the time it was posted. However, additional radiation surveys done in August 2002 found contamination levels of 20,000 disintegrations per minute per 100 centimeter square on the edge of the previously posted area.	Railroad	N	Y	1-2	650	65	10	Unk.	0-2	The site has been stabilized.	Unk.	Solid, Liquid	20,000 dpm per 100 sq cm in August 2002.	None
200-W-81	Inactive	Unplanned Release	200-W-81; Contaminated Tumbleweed Fragments Along Railroad Track East of 218-W-3AE	WM Area	The site is three posted Contamination Areas on the railroad track east of the burial ground, south of the 610 Gate of the 200 West Area fence. ISVAC submitted the 3 posted areas to WIDS as a Discovery Site. ISVAC states the CAs contain blown in tumbleweeds and tumbleweed fragments. An 8/15/97 Off Normal Occurrence Report (references Survey Report SW-242127) states that Solid Waste Management technicians were performing a routine radiation survey inside the burial ground and identified contaminated vegetation with contamination levels of 7,000 dpm. After removing the contaminated vegetation, a recheck of the dirt found beta/gamma readings of 70,000 dpm. The burial ground operators sprayed the area with soil cement and posted it as a CA. The Dyncorp ISVAC group submitted the three posted areas to WIDS as a Discovery Site. They state the CAs contain blown in tumbleweeds and tumbleweed fragments. An Occurrence Report references Survey Report SW-242127. The windblown contaminated tumbleweeds are likely coming from the south end of 218-W-3AE.	Railroad	N	N	None	4000	100	40	Unk.	0-2 (spotty)	Removal of tumbleweeds in 1997; sprayed area with soil cement and posted CA.	Vegetation (tumbleweeds)	Solid	70,000 dpm beta/gamma on August 15, 1997	None

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Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
UPR-200-E-10	Inactive	Unplanned Release	UPR-200-E-10, Contaminated PUREX Railroad Spur, UN-200-E-10	PUREX Area	A contamination spread occurred along the railroad tracks while transporting tube bundles from PUREX to the burial ground. The release is not separately marked or posted. The railroad cut was decontaminated by excavation and flushing. All smearable contamination was removed from the railroad tunnel and fixed contamination was reduced to a maximum of 25 mR/h; the major portion of the affected tunnel was repainted. The canyon was restored to its former status. The craneway was restored to its former status with the exception of spotty contamination of 1.6 rad/h in the extreme east end of the craneway. The bulk of high-level contamination was removed from the crane. Most of the railroad right-of-way was decontaminated by flushing with water using a specially equipped tank car. In September 1957, contamination ranging from 5 to 20 rad/h was spread in the craneway, canyon, railroad tunnel, and on the remote crane and railroad right-of-way during transport of two failed waste concentrator tube bundles. An unplanned release occurred while transporting tube bundles. Contamination was spread in the craneway, canyon, railroad tunnel, and on the remote crane.	Railroad	N	N	None	Unk.	Irr.	Irr.	Unk.	0-2	Railroad cut decontaminated by excavation and flushing. Reduced contamination to max of 25 mR/h. Most of craneway, crane and railroad right-of-way was decontaminated.	Leak/ Spill	Liquid	Contamination ranging from 5 to 20 rad/h in September 1957	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
UPR-200-E-11	Inactive	Unplanned Release	UPR-200-E-11, Railroad Track Contamination Spread, UN-200-E-11	Solid Waste Area/ B Plant Area/ 200 E Admin Area/ Semi-Works Area/ PUREX Area	This unplanned release is no longer marked or posted. Portions of the TC-4 Spur (a.k.a. UPR-200-E-88) and a section of track south of the 218-E-5 Burial Ground (UPR-200-E-95) have been covered with dirt and posted with URM signs. There have been contaminated spots found on the railroad track extending from PUREX to the 218-E-5 Burial Ground at various times when the tracks were actively being used to transport material into and out of the PUREX facility. The track extending from the PUREX tunnel entrance to the western PUREX exclusion area fence has been given a separate WIDS site code (200-E-44). The railcar storage area at the north end of the "TC" spur is WIDS site code 200-E-43. This 1957 unplanned release affected the entire length of the railroad track. No exact date is recorded, however UPR-200-E-12 is documented as occurring on November 15, 1957. The events are very similar and could be a duplicated of this event. In 1957, fission product contamination spots dripped along the railroad track extending from PUREX to the 218-E-5 Burial Ground. Contaminated tracks sections included the track from the PUREX tunnel entrance to the west exclusion area fence, the spur into the 218-E-5 Burial Ground, and the "TC" spur. Specific release details are unknown. Some burial casks were shielded with water that was removed before placing the material into the burial ground. Sometimes railcars were washed down to remove loose contamination before transporting the load to the solid waste burial ground.	Railroad	N	Y	1-2	1.2E+5	Irr.	Irr.	Unk.	0-2 (spotty)	In 1957 most of contamination was removed.	Leak/ Spill	Liquid	Fission product contamination spots	None
UPR-200-E-112	Inactive	Unplanned Release	UPR-200-E-112, UN-200-E-112, Contaminated Railroad Track from B Plant to the Burial Ground	B Plant Area	UPR-200-E-112 occurred on February 12, 1979. The contaminated section of track and the Atlantic Avenue crossing were cleaned by noon, February 12, 1979. During a canyon equipment burial transfer, some contaminated liquid spilled out of a cesium ion exchange column that was being loaded into a burial box atop a railcar. The liquid spilled onto the tracks inside the B Plant railroad tunnel and was carried outside by one wheels of the railroad car, contaminating the track from B Plant to the east boundary of the burial ground. Contamination levels ranged from 40,000 cpm to 80,000 cpm. Approximately 15 m (50 ft) of track that crossed Atlanta Ave. was decontaminated immediately. Occurrence Report 79-24 also recommends an effort to continue to clean the contaminated track.	Railroad	N	N	None	6.8E+4	50	Irr.	Unk.	0-2 (spotty)	Cleanup occurred in 1979 with recommendation to continue to clean contaminated track.	Leak/ Spill	Liquid	40,000-80,000 cpm detected in 1979	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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UPR-200-E-12	Inactive	Unplanned Release	UPR-200-E-12, Contaminated PUREX Railroad Spur, UN-200-E-12	PUREX Area	This unplanned release is no longer marked or posted. Portions of the TC-4 Spur (a.k.a. UPR-200-E-88) and a section of track south of the 218-E-5 Burial Ground (UPR-200-E-95) have been covered with dirt and posted with URM signs. Contamination occurred on the PUREX railroad bed and right-of-way to the Burial Ground, both inside and outside the PUREX exclusion fence. The contamination inside the PUREX fence is considered part of the PUREX Railroad Cut, site code 200-E-44. No exact date is recorded for UPR-200-E-11 that also occurred in 1957. The release descriptions are very similar and could be a duplicate of the same event. On 11/15/57, a burial box containing failed process jumpers dripped contaminated liquid while in transit to the burial ground. This resulted in spotty contamination of 40 to 1,700 mR/h to the railroad roadbed. Contamination also spread to the canyon deck, tunnel, and tunnel cut. Some burial casks were shielded with water that was removed before placing the material into the burial ground. Sometimes railcars were washed down to remove loose contamination before transporting the load to the burial ground.	Railroad	N	Y	1-2	Unk.	Irr.	Irr.	Unk.	0-2 (spotty)	The site has been surface stabilized.	Leak/ Spill	Liquid	40-1700 mR/h; dose rate on burial box equal to 450 mR/h at 150 ft in November 15, 1957	None
UPR-200-E-20	Inactive	Unplanned Release	UPR-200-E-20, Contaminated PUREX Railroad Spur, UN-200-E-20	PUREX Area	The site is located at the PUREX railroad right-of-way. The release is not separately marked or posted. On November 20, 1959, PUREX tube bundles in transit for burial provided some spotty ground contamination.	Railroad	N	N	None	Unk.	Irr.	Irr.	Unk.	0-2 (spotty)	None	Leak/ Spill	Liquid	Unk.	None
UPR-200-E-33	Inactive	Unplanned Release	UPR-200-E-33, Contaminated PUREX Railroad tracks, UN-200-E-33	PUREX Area	A contamination spread occurred on the PUREX railroad bed and right-of-way to the burial ground. The contamination was located both inside and outside the PUREX exclusion fence. The contamination inside the fence is considered part of the PUREX Railroad Cut (Waste Information Data System [WIDS] site code 200-E-44). On March 20, 1964, a leaking tube bundle burial box in transit to the burial ground contaminated a portion of the railroad right-of-way and area adjacent to the 216-A-9 Crib. The contamination spread occurred in February 1964. The February Monthly Report for 1964 (HW-81078) was issued on 3-20-64. This report states that decontamination was successful, but does not give any details of the decontamination activity.	Railroad	N	N	None	Unk.	Irr.	Irr.	Unk.	0-2 (spotty)	The February Monthly Report for 1964 (HW-81078) was issued on 3-20-64. This report states that decontamination was successful, but does not give any details of the decontamination activity. The 216-A-9 Crib was surface stabilized in 1993.	Leak/ Spill	Liquid	Unk.	Unk.

Table B-1. 200-MG-1 Operable Unit Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
UPR-200-E-69	Inactive	Unplanned Release	UPR-200-E-69, UN-216-E-69, Railroad Car Flush Water Radioactive Spill, UN-200-E-69	B Plant Area	The railroad tunnel area has a 1.2 m (4 ft) high fence along the side of the tracks. The area was posted with Radiologically Controlled Area signs. In 1998, the track from the tunnel door to Atlanta Ave. was covered with gravel and reposted as URM. On 6/19/84, a concrete burial box (K-3 filter type) was removed from the 221-B railroad tunnel containing waste drums from 225-B and 221-B canyon waste. After loading, the burial string was bumped by the locomotive several times to remove the flush water from the lid of the burial box. No water was seen on the lid of the box or the deck of the flat car when the car left the tunnel. When the train stopped with the burial box about 180 m (600 ft) from the tunnel door, contamination was noted on and near the west rail of the track. Contamination levels were 20,000 cpm with 4000 cpm smearable on the track. The water was not noted before the box was moved because high dose rates coming from the burial box (400 mrem/h at a distance of 100 ft) prevented personnel from getting close enough to identify any liquid. After the contamination was identified, the train could not move back into the tunnel without contaminating the locomotive.	Railroad	N	Y	1-2	1.1E+5	Irr.	Irr.	Unk.	0-2 (spotty)	In 1998, the track from the tunnel door to Atlanta Ave. was covered with gravel and reposted as URM.	Leak/ Spill	Liquid	20,000 cpm w/ 4000 cpm beta/gamma smearable on the track. 400 mrem/h at a distance of 100 ft on burial box in 1991.	None

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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UPR-200-E-88	Inactive	Unplanned Release	UPR-200-E-88, TC-4 Spur Contaminated Railroad Track, UN-216-E-88, UN-216-E-16, UN-200-E-88. Ground Contamination Around the Western PUREX Railroad Spur	200 E Admin Area	The site is located northwest of the 202-A Building at the TC-4 Railroad Spur. The unfenced portion of the spur was posted as a "Contamination Area." Additional posting on portions of the spur included "Soil Contamination Area" and "Buffer Area." The spur is tracked with the property number "F187418". The site was interim stabilized in December 1998. The stabilized area was posted as a URM area. A chain link fenced storage area is located on the north end of the spur (see site code 200-E-43). The UPR was originally considered to be the fenced railcar storage area. Later, the contamination outside the fenced area became the focus of the contamination problem. In 1981, 2 ha (5 a) surrounding the spur was surveyed and released after tumbleweed cleanup activities were completed. A total of 0.4 ha (1 a) (approximately 6 m [20 ft] wide on both sides of the spur) remained posted as a "Surface Contamination Area." 1984 and 1986 radiation surveys show contamination south of the chain link fenced area (date this condition first existed is unknown). The railroad spur was intended to be used for the short-term parking of railroad cars transporting radioactive material. An Environmental Surveillance Compliance Report was issued in 1989 (8901EP200-001) identifying the spur as a surface contamination problem. The compliance report issue was closed in September 1996. A 1997 site inspection reports that the spur is posted as a "Contamination Area", with portions being posted as "Soil Contamination" and "Buffer Area." Radioactive particulates spread from contaminated railcars using the tracks. Surface radiological surveys performed in 1991 identified contamination of 20,000 to 60,000 dpm on the railroad track near where the tank cars were being staged. South of the tank cars, along the railway, contaminated areas of 2,000 to 20,000 dpm were also identified. In 1981, Harold Maxfield stated that the large radiation zone associated with the TC-4 railroad spur has been incorrectly designated as an unplanned release site. The original perimeter of the zone was posted where the gamma dose rates from radioactive tank cars parked on the railroad spur would be less than 1 mrad/h. The site in question was properly known as a Regulated Equipment Storage Area.	Railroad	N	Y	1-2	3.5E+4	Irr.	Irr.	Unk.	0-2 (spotty)	Contamination inside fenced area was stabilized. Contaminated railroad spur was included in cleanup plan.	Leak/ Spill/ Windblown Particulate/ Vegetation	Liquid	Gamma dose rates are less than 1 mrad/h in 1981; identified contamination of 20,000 to 60,000 dpm on the railroad track near where the tank cars were being staged. South of the tank cars, along the railway, contaminated areas of 2,000 to 20,000 dpm were also identified in 1991.	None

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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UPR-200-E-95	Inactive	Unplanned Release	UPR-200-E-95, UN-216-E-23, UN-200-E-95, Ground Contamination Around RR Spur Between 218-E-2A and 218-E-2	Solid Waste Area	The site is a railroad spur located south of the 218-E-2 and 218-E-5 Burial Grounds and north of the 218-E-2A Burial Ground. It had been barricaded with steel chain and posted as a Contamination Area. In 1998, the track was covered with gravel and reposted as a URM area. The contaminated area was established as an unplanned release site in September of 1980. In 1996, no railcars were observed on the spur. There are no known plans to store more railcars on the spur in the future. In March 2001, a single post was found in the gravel road north of the railroad track with a URM sign. It was determined that a small amount of contamination had migrated out of the posted area onto the road. The single post will be incorporated into the larger posted area. The railroad spur was used as an aboveground storage zone for low level contaminated equipment. Equipment from the B Plant and PUREX Plant operations were stored, for the most part, on the beds of railroad flat cars. UPR-200-E-95 is associated with this storage area. The contamination is possibly the result of the accumulation of many small releases over time. It became contaminated over time as a result of contaminated equipment on railroad flat cars being stored on the spur. The material stored on the rail cars contained unknown beta and gamma contamination with a maximum reading of 100,000 cpm. The contamination on the rail bed is the result of contaminated equipment being stored on the tracks over an extended amount of time.	Railroad	N	Y	1-2	1.3E+4	820	16	Unk.	0-2 (spotty)	In 1998, tracks were covered with gravel and posted as URM.	Contaminated Equipment Storage	Solid	September 20, 1991 inside contaminated area average reading of 2,000 counts per minute (beta) and a general rail reading of 3,000 - 6,000 cpm (beta) with a maximum of 350,000 dpm (beta) at one spot. Material on railcars had 100,000 beta and gamma contamination. 1996 perimeter survey found all levels to less than detectable.	Unk.
UPR-200-W-3	Inactive	Unplanned Release	UPR-200-W-3, Railroad Contamination, UN-200-W-3	T Plant Area	The T-Plant Railroad Cut is a posted Contamination Area from the tunnel door westward to a chain link gate. In May 2000, a 1.8 m by 1.8 m (6 ft by 6 ft) posted Contamination Area was reported to the WIDS database as a Discovery Site by the ISVAC team. It is located approximately 6 m (20 ft) west of the T-Plant chain link fence that crosses the railroad cut track and encloses the T-Plant facility. No radiological survey could be found to define the radiological conditions inside the posted area. It is not known which radiological control team erected the posting. Coordinates indicate that UPR-200-W-4 occurred near UPR-200-W-3 although no markers or signs of stabilization are apparent. On several occasions in 1949, contaminated equipment being hauled to the 200 West Burial Ground from T Plant contaminated ground near the railroad.	Railroad	N	Y	1-2	35	6	6	Unk.	0-2 (spotty)	In Spring 1950 railroad track contamination was covered with ~ 25 cm (10 in.) of clean gravel.	Unk.	Solid, Liquid	Unk.	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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UPR-200-W-4	Inactive	Unplanned Release	UPR-200-W-4, Railroad Contamination, UN-200-W-4	T Plant Area	The release is not physically marked or posted. The 218-W-1A Burial Ground is known to contain large pieces of contaminated equipment and is likely to be the Heavy Equipment Burial Ground mentioned in HW-13190. In 1949, contamination spread from a burial box that had been transported from the 221-T Canyon Building to the Heavy Equipment Burial Ground. After the box was buried, the bulldozer used to cover the trench was found to be contaminated with dust which had readings up to 10,000 cpm. A complete survey was made from the Canyon Building to the Heavy Equipment Burial Ground, which revealed a spread of contaminated particles. The most contamination was found in the vicinity northeast of the burial ground.	Railroad	N	N	None	Unk.	Irr.	Irr.	Unk.	0-2	Decontamination of the area was initiated in 1949.	Leak/ Spill/ Windblown Particulates	Solid and Liquid	Average readings on the track were 7 mrem/h. Dust reading of up to 10,000 cpm in 1949.	Unk.
UPR-200-W-41	Inactive	Unplanned Release	UPR-200-W-41, Railroad Contamination, UN-200-W-41, REDOX Railroad Cut Contamination	REDOX Area	Radiologically contaminated fuel rods were transported to the REDOX facility for processing by railcar. Contaminated material and equipment were transported to the burial grounds on the same railroad track. Over time the railroad track became contaminated. The railroad track from the 202-S Tunnel to the first gravel road intersection has been covered with clean backfill material. The berms on the sides of railroad cut have been pushed in and posted as an "Underground Radioactive Material" area. On 7/7/56, during the transit of a box containing the J-5 Filter and miscellaneous equipment from the 202-S Building Canyon, spotty contamination up to 1,000 mrad/h at surface was spread along the right-of-way from the 202-S Building railroad cut to the burial ground presumably from liquid contained in the burial box. Six spots of 1,000 mrad/h were found on the east side of the track on the blacktop at the 16th Avenue crossing. The area was immediately roped off and was eventually decontaminated to less than 1,000 cpm. Initial surveys indicated spotty contamination from 100 to 500 mrad/h along the east side of the right-of-way diminishing in frequency from 19th Avenue to the burial ground. A check of the flat car used for the burial revealed low level contamination on all horizontal surfaces of 10,000 to 20,000 cpm and several areas on the paper in the southeast corner of the flat car to 3,000 mrad/h at surface. Special fiberglass deposition filters placed along the tracks did not indicate a general contamination spread.	Railroad	N	Y	1-2	2.4E+5	Irr.	Irr.	Unk.	0-2 (spotty)	In 1956, area decontaminated to less than 1000 cpm. Mid-1980s, the section of RR track from 202-S Tunnel to REDOX facility fence was backfilled/stabilized. In 1997, [workers] backfilled section of RR track (NW from facility boundary fence to intersection of track & first gravel road) with 0.6 m (2 ft) clean soil. 2000, pushed in berms on sides of RR cut; stabilized remainder of cut.	Leak/ Spill	Liquid	Waste was contaminated with beta/gamma 1000 mrad/h; 100 to 500 mrad/h along east side of right-of-way. Flat car: 10,000-20,000 cpm; paper in flat car had 3,000 mrad/h. All in 1956.	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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UPR-200-W-44	Inactive	Unplanned Release	UPR-200-W-44, Railroad Track Contamination, UN-200-W-44	T Plant Area	In 1957, a burial box in transit to a decontamination facility fell to the ground while the train was in motion and lodged against a steam line support. The exact location is unknown. On October 24, 1957, a burial box, used to transport failed equipment from REDOX to the T Plant Canyon, was inadvertently pulled from the railcar when one of the box sling cables caught on a railroad tie, or possibly a switch frog. The area was contaminated up to 2 rad/h. In May 2004, a radiation survey of the 200 West Area railroad tracks was from REDOX to T Plant, to try to verify the location of the release. A sodium iodide detector was used. No contamination above background was noted.	Railroad	N	N	None	500	25	20	Unk.	0-2 (spotty)	Area decontaminated to a maximum of 20,000 cpm. An unidentified amount of dirt was removed.	Leak/ Spill	Solid and Liquid	2 rad/h beta/gamma on October 24, 1957.	Unk.
UPR-200-W-46	Inactive	Unplanned Release	UPR-200-W-46, Contaminated Railroad Track, H-2 Centrifuge Burial, UN-200-W-46	REDOX Area	The railroad track from the 202-S Tunnel to the first gravel road intersection has been covered with clean backfill material. The railroad cut located inside the facility fence is posted as a "Contamination Area." The section of covered track from the fence to the first gravel road intersection is posted as an "Underground Radioactive Material" area. Shortly after the H-2 Centrifuge was placed in a burial box in the REDOX RR Tunnel on 12/30/57, fumes were observed coming from the centrifuge. After about 4 hours, fumes escaped the tunnel and began circulating throughout the REDOX Bldg via the ventilation system requiring respiratory protection for all personnel entering the N side of REDOX or the 233-S Building (and extended to the south operating areas of REDOX). Considerable surface contamination was deposited in/around REDOX, including construction work areas outside the building. The centrifuge was transported by train to the burial ground; no contamination was observed along the railroad right-of-way. It was buried at about 10:00 A.M. on 12/31/57. Dose rates related to the burial were 185 mrad/h at 177 m (580 ft); about 2 mrad/h at 0.8 km (0.5 mi). Radiation fields averaging 1 Rad/h during backfilling prevented the box from being completely buried in 1 day; 2 employees received face/nosril contamination; 2 days later, radiation surveys revealed a general low level smearable contamination along the railroad right-of-way.	Railroad	N	Y	1-2	Unk.	Irr.	Irr.	Unk.	0-2	Mid 1980s, backfilled and stabilized section of RR track from 202-S Tunnel to REDOX facility fence; 1997, backfilled with 0.6 m (2 ft) clean soil the section of RR track.	Leak/ Spill	Solid	185 mrad/h at 177 m (580 ft) on December 30, 1957	Unk.

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Waste Site Attributes. (99 Pages)

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UPR-200-W-58	Inactive	Unplanned Release	UPR-200-W-58, Railroad Track Contamination, UN-200-W-58	T Plant Area	The Unplanned Release is not separately marked or posted from other postings on the railroad track. A site visit in October 1991 found no site identification markers or signs of stabilization along the railroad track. In 1991, a portion of the track leading into T-Plant was marked with a surface contamination barricade. On 4/26/65, a beta-gamma contamination spread occurred during the process of transporting 221-T Plant canyon cell blocks from the 221-T canyon and burying them in the 200 West Burial Ground. Two small spots approximately 15 cm (6 in.) in diameter with reading of 5 Rad/h were found on one end of the deck of flat car #19382. Railroad bed surfaces in the 221-T cut were found to have spotty contamination to a maximum of 100,000 cpm. The undercarriage of the locomotive used was contaminated generally to 20,000 cpm. A rigger and a train crew brakeman received contamination on their shoes and socks. The contamination spread from the underside of an improperly prepared cell block to the deck of the flat car. Further spread occurred when the radiation monitor failed to capture the train following detection of loss of radiological control in the 221-T cut.	Railroad	N	N	None	7.3E+4	Irr.	Irr.	Unk.	0-2 (spotty)	After release was identified (1965), the contaminated equipment was isolated and decontamination initiated. Some contaminated dirt was removed from the RR bed in 1965.	Leak/ Spill	Solid and Liquid	Beta/gamma, 5 Rad/h (end of flat car); 100,000 cpm (RR bed surface); 20,000 cpm (underside of railcar) on April 26, 1965.	Unk.
UPR-200-W-65	Inactive	Unplanned Release	UPR-200-W-65, Contamination in the T-Plant Railroad Cut, UN-200-W-65	T Plant Area	The railroad cut is currently posted as a Contamination Area, extending from the tunnel door westward to a chain link gate and fence. On 10/27/69, contamination was found during a routine survey of the 221-T Plant railroad cut. Spots of contamination from 5,000 cpm to 150 mrad/h were found between the rails of the spur line and adjacent to the spur line. One area, about 45.72 m (50 yd) from the tunnel door, was generally contaminated over an area measuring 0.9 m (3 ft) by 3 m (10 ft). From this area west, the contamination spots were spaced a few inches to a few feet until approximately 114.3 m (125 yd) from the tunnel door, where the contamination was non-detectable. The exact source of the contamination is unknown, but the location limits the cause to a railcar carrying radioactive material which was not effectively contained.	Railroad	N	N	None	1227	374	3	Unk.	0-2	In 1969, areas described in the occurrence report were decontaminated.	Leak/ Spill	Liquid	5000 cpm to 150 mrad/h on October 27, 1969	Unk.

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Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
UPR-200-W-73	Inactive	Unplanned Release	UPR-200-W-73, Contaminated Railroad Track at 221-T, UN-200-W-73	T Plant Area	The railroad cut adjacent to the 221-T tunnel is currently posted as a Contamination Area. The rail spur leading into the 2706-T facility is currently not posted. The Unplanned Release area is not specifically marked or posted. On 10/16/74, a contamination spread from a leaking multi-purpose transfer box was discovered. During a routine survey in the 221-T Building Tunnel, on 10/14/74, contamination levels up to 3,800 mrad/h were detected on the bed of the multi-purpose transfer box railroad car. During the decontamination effort (10/15/74), a hair-line crack was observed in a weld of the outer shell of the transfer box. Radiation readings on the transfer box were reduced to 350 mrad/h and 600 cpm smearable on 10/16/74. The railcar was moved to the 2706-T Building so repairs could be made. A follow-up survey of the railcar at 2706-T indicated that additional contamination had seeped out; radiation readings on the railcar had increased to 50,000 cpm smearable. A survey of approximately 365.76 m (400 yd) of railroad track between 221-T Building Tunnel and the 2706-T Building revealed spots of contamination up to 40 mrad/h. The cause of the leakage was migration of decontamination solution to the hair-line crack area and subsequent leaking due to rail movement of the transfer box.	Railroad	N	N	None	2.4E+4	1200	20	Unk.	0-2 (spotty)	The weld crack was decontaminated and repaired. The occurrence report did not mention of any cleanup of the ground or railroad tracks.	Leak/ Spill	Liquid	3800 mrad/h on bed of RR car; 40 mrad/h on RR track beta/gamma in 1974	Unk.
200-W-83	Inactive	Unplanned Release	200-W-83, Contamination Area North of 2727W	T Plant Area	The site had been a posted CA extending across the railroad track north of the 2727-W Sodium Storage building. In April 2007, the contamination was backfilled with clean dirt and the area posting was changed to URM. The railroad tracks are no longer used.	Railroad/ Building	Y	N	Unk.	1500	60	25	Unk.	0-2	In April 2007, the contamination was backfilled with clean dirt.	Unk.	None	Unk.	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)
UPR-200-E-66	Inactive	Unplanned Release	UPR-200-E-66, 216-A-42 Basin Contamination Release, UN-216-E-66, UN-200-E-66	PUREX Area	The release is not separately marked or posted. The 216-A-42 Basin had been surrounded by a wire fence and posted with Soil Contamination signs. In 2001, the fence was removed and the area was surface stabilized. It was covered with clean backfill and downposted to URM. The release site is located within the URM area. At the time the contamination release was identified, a project to construct a cover over the basin was in progress. A 11/7/84 radiation survey identified contamination both inside and outside of the area posted as a radiation zone around the perimeter of the 216-A-42 Basin. Contaminated liquid in the basin had evaporated allowing dried contamination specks to be spread by wind. At the time of this release, contamination levels were 40,000 cpm on the ground within the retention basin fence. Smears of the walls and bottom of the basin ranged from 200-100,000 cpm. The area outside the retention basin fence revealed specks with a maximum level of 3,000 cpm located between the road and fence. A radiation survey of the 216-A-42 Basin perimeter fence done on 12-8-98 did not identify any contamination.	Retention Basin	Y	Y	1-2	4.4E+4	Irr.	Irr.	Unk.	0-1	The 216-A-42 basin was surface stabilized in July 2001 and the contaminated area backfilled with clean dirt from adjacent soil berm.	Windblown particulate	Solid	40,000 cpm on ground within retention basin fence. Smears on the walls and bottom of the basin were 200-100,000 cpm. Beta/gamma particulates w/ readings inside the basin of 40,000 cpm and outside the basin at 3,000 cpm in November 7, 1984.	None
200-E-128	Inactive	Unplanned Release	200-E-128, Radioactive Contamination "Hot Spot" Under Gravel Road	Solid Waste Area	The area where the contamination is located is marked with two URM signs, on steel posts. The posts are located on the north and south sides of the road. The contamination is located between the signs, under the surface of the gravel road. The road monitor routinely alarms when driven over this area. In 1995, the Environmental Radiological Surveillance group placed two steel posts with URM signs, one on each side of the road, to mark the location of the contamination "Hot Spot". They also evaluated the contamination by removing a layer of soil. This soil contained no detectable contamination, but the readings on the area in the road increased as more soil was removed. The surface of the gravel road initially read 1000 cpm. The readings with 15 cm (6 in.) of soil removed increased to 100,000 cpm. They replaced the soil and posted the road. The nearest known underground radioactive pipeline is located approximately 30 m (100 ft) west of this hot spot. The roads inside 200 East and West Areas are routinely surveyed by a truck mounted with radiation detectors. The detectors are equipped with an alarm that makes an audible sound to alert the driver if radiation above a predetermined limit is detected.	Roadway	N	N	None	Unk.	Irr.	Irr.	Unk.	0-6	None	Unk.	Solid, Liquid	The surface of the gravel road initially read 1000 cpm. The readings with 15 cm (6 in.) of soil removed increased to 100,000 cpm. Beta/gamma in 1995.	None

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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200-W-67	Inactive	Unplanned Release	200-W-67, Contaminated Soil at the Corner of Cooper and 16th Street	S/U Farm Area	The site is currently posted as a URM area. A 4/98 radiological survey identified contamination specks and a contaminated ant hill near the intersection of 16th St. and Cooper Ave. with a maximum reading on the specks of 11 mR/h. Another speck was found that read 6 mR/h. Other contamination levels ranged from 500 cpm to 70,000 cpm. The ant hill read 3000 cpm. Some of the contamination was removed as it was found. The rest of the area was posted as a CA in 04/98. The Soil CA was posted in 1998. Even though some Radiation Surveys and Stabilization Reports identified the area surveyed and stabilized as UPR-200-W-24, the contaminated area south of 16th St has been given a new WIDS number (200-W-67).	Roadway	N	Y	1-2	1.9E+4	328	59	Unk.	0-1	Surface stabilized on 9/10/98. The posted Contamination Area (CA) was covered with clean backfill material and reposted as URM.	Biological Intrusion/ Animal Feces; Windblown Particulates	Solid	Contamination specks and a contaminated ant hill near the intersection of 16th St. and Cooper Ave with a maximum reading on the specks of 11 mr/h; another speck was found that read 6 mr/h; other contamination levels ranged from 500 cpm to 70,000 cpm; the ant hill read 3000 cpm, all in April 1998.	None
UPR-200-E-39	Inactive	Unplanned Release	UPR-200-E-39, Release from 216-A-36B Crib Sampler (295-A), UN-200-E-39	PUREX Area	The release site is not separately marked or posted. It is located inside a large surface-stabilized area known as 200-E-103 that is posted as a URM area. On 2/6/68, pressurized ammonia scrubber liquid was found to be spewing from the vent filter at the 216-A-36B Crib Sampling Shack (295-A). The contaminated ammonia scrubber water erupted through the vent and filter and onto the ground around the outside of the sample shack. Approximately 60.4 m ² (650 ft ²) of ground and blacktop was affected. Contamination levels ranged from 20 to 450 mrad/h. The reported cause indicated that the export pressure was too high, resulting in back-pressure through the vent.	Roadway	N	Y	1-2	676	26	26	3	0-3	Blacktop and ground surface was hosed down with water. In January 1999, the surface contaminated areas south of PUREX were covered with clean gravel.	Leak/ Spill	Liquid	20-450 mrad/h on February 6, 1968.	Unk.
UPR-200-E-43	Inactive	Unplanned Release	UPR-200-E-43, Road Contamination near 241-BY Tank Farm, UN-200-E-43	B Farm Area	The location of this release is not marked or posted. On 1/10/72, while in transit for burial, the 102-BY Pump contaminated a section of the road from the 241-BY Tank Farm to the burial ground. Contamination readings ranged from 1,000 to 100,000 cpm.	Roadway	N	N	None	Unk.	Irr.	Irr.	Unk.	0-3 (spotty)	Decontamination began immediately after release; but no record of effectiveness of decontamination.	Leak/ Spill	Liquid	Contamination readings were from 1,000-100,000 cpm	None

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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UPR-200-W-56	Inactive	Unplanned Release	UPR-200-W-56, Contamination at the REDOX Column Carrier Trench, UN-200-W-56	REDOX Area	The site is located inside the REDOX facility fence. It is not separately marked or posted. On 2/6/61, a sudden heavy rainstorm washed contamination from a papered area of an outside radiation zone into a ground recess adjacent to the zone. A grossly contaminated steel cable was being decontaminated and contamination was spread out of the radiation zone across the sloping terrain. Contamination to 30,000 cpm was detected over about 19 m ² (200 ft ²) of the graveled surface and 4.7 m ² (50 ft ²) of blacktop directly beneath the paper. The blacktop was contaminated to 80,000 cpm by the rainwater soaking through the seams of the paper. The contaminated area was immediately roped off from traffic.	Roadway	N	N	None	Unk.	Irr.	Irr.	Unk.	0-6	None	Storm water Runoff	Liquid	Beta/gamma contamination 30,000 cpm on gravel and 80,000 dpm on blacktop on February 6, 1961	Unk.
UPR-200-W-71	Inactive	Unplanned Release	UPR-200-W-71, UN-200-W-71, Contamination Spread along 16th Street	WM Area/PFP Area/200 W Ponds Area/S/U Area	Contamination was spread onto the road along the route from the 241-U Tank Farm to the 200 West Burial Ground, affecting 16th Street and Dayton Ave. The site is no longer marked or posted. The information does not include the burial ground site number. Since there are several burial grounds on Dayton Ave., it is not possible to determine the length of the contamination spread. On 1/24/74, contamination spread occurred along the roadways in 200 West Area. ARHCO personnel removed a heel-jet from the 241-U-102 Tank in the 241-U Farm. The jet was taken to the burial ground by truck. After the jet was removed from the truck and placed in the burial trench, the truck was found to be contaminated. A follow-up survey revealed contamination along the route of the truck. At the exit of the 241-U Farm, on 16th Street, spots to 600 mrad/h were found. Numerous contaminated spots from 20,000 to 100,000 cpm were found along 16th Street to the intersection of 16th St and Dayton Ave, and on Dayton Ave. to the burial ground. The cause of the contamination spread included inadequate packaging of the failed equipment, inadequate surveillance of the load during transit, and transporting the equipment while it was raining, which made surveillance difficult.	Roadway	N	N	None	8.4E+4	Irr.	Irr.	Unk.	0-1 (spotty)	In 1974, the roadway was cleaned and released after extensive effort. The truck was decontaminated.	Contaminated Equipment	Liquid	20,000 to 100,000 cpm; Beta-gamma contamination up to 600 mrad/h on January 24, 1974.	Unk.

Table B-1. 200-MG-1 Operable Unit
Waste Site Attributes. (99 Pages)

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UPR-600-12	Inactive	Unplanned Release	UPR-600-12, UN-600-12, UNH Spill to Route 4S	NRDWL/BC Controlled Area	A small radiologically posted area (URM area) is located on the south shoulder of Route 4S, near the top of the hill, southeast of 200 East Area. After the accident, most of the contamination was removed from the road surface. The remaining contamination was washed off the road and covered with dirt. A portion of Route 4S was resurfaced in 1954 and the spill area was marked with an Underground Contamination sign. Although previous documentation indicated the area had been excavated and released, the presence of uranium in the 1998 soil sample indicates the presently posted area is the same site as the spill incident. On 12/30/54 a tractor-trailer overturned on the 200 East Hill, spilling 6,060 L (1,600 gal) of uranium nitrate hexahydrate solution onto the road and shoulder. General contamination levels of 60 mrad/h were found on the road and the shoulder. Part of the contamination was removed and the balance was washed off the road. A thin layer of blacktop was added to the road to cover the spill area. The shoulder contamination was covered with dirt. The contamination levels were reduced to a maximum of 20,000 cpm.	Roadway	N	Y	1-2	175	21	8	Unk.	0-6	In 1971, contamination was dug up and removed to a 200 West Burial Ground; 1998, contamination on south shoulder of Route 4S near top of hill discovered and 1999, backfilled with clean material. In 1/06, contaminated (beta/gamma) soil was removed and gravel added to site.	Leak/ Spill	Liquid	Uranium, uranium nitrate hexahydrate solution	Unk.

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200-E-109	Inactive	Unplanned Release	200-E-109, Contaminated Tumbleweed Accumulation, Contamination Spread in Northeast Corner of 200 East Area	Solid Waste Area	The site originally consisted of numerous radiologically posted areas along 12th St. and Canton Ave. inside the 200 East Area as well as inside and around the LERF, east of 200 East Area. Some areas were posted CA with a RBA and others were posted High CA with a RBA. The posted areas size and shape varied with additional radiological surveys. By 2004, all the contamination and the individual radiological postings had been removed except one. One area, located on the west side of Canton Ave., was covered with soil and posted as a URM Area. The contamination was reported on occurrence Report RL-PHMC-Solidwaste-2004-0002. When possible, the contaminated vegetation is removed; otherwise, the contamination is surrounded with a radiation barrier. In 01/00, 02/00, and 03/00, numerous contaminated tumbleweed fragments were identified inside the LERF fence, resulting in the posting of a large CA. Although most of the contaminated fragments and some contaminated soil were picked up and removed from the area, the radiological posted area remains. Contaminated vegetation appears to be coming out of the 218-E-12B Burial Ground or may be contaminated growth on underground radioactive pipelines.	Roadway/Outlying area	N	Y	1-2	1.5E+4	249	62	Unk.	0-1 (spotty)	Contaminated vegetation is removed sometimes; tumbleweeds keep accumulating; if not possible to remove, contamination is surrounded with a radiation barrier. Some contaminated fragments and soils were picked up but reports indicate it keeps accumulating. A single area (75.9 x 18.9 m) was covered with soil.	Vegetation (tumbleweeds)	Solid	Inside East Area perimeter fence: 20,000 - > 100,000 dpm; Outside 200 East Area perimeter fence and around LERF: 2,000-800,000 dpm beta/gamma over the years of 1998-2000.	None

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200-E-121	Inactive	Unplanned Release	200-E-121, Soil Contamination Area East and West of Baltimore Avenue	B Farm Area	The site is a long, narrow area along the east side of Baltimore Avenue marked with metal posts and chain with SCA signs and two smaller areas on the west side of Baltimore Ave., also posted with Soil Contamination Area signs. The power poles inside the posted area are marked with yellow Fixed Contamination signs. The contamination event occurred in 1996 or 1997. Contamination was identified outside the 241-BX/BY fence extending eastward, down the gravel covered hill and across Baltimore Ave. into the field on the east side of Baltimore Ave. A contamination spread had occurred inside the tank farm, through the top of a containment tent. Two or three areas on the west side of Baltimore Ave. and one large area in the east side of Baltimore Ave. remained posted as CAs. In the 1980s, approximately 6 ha (15 a) of property, located east of Baltimore Avenue (north of 241-B Tank Farm), was posted as a large SCA and known as UPR-200-E-144 (alias UN-216-E-44). The posted area included part of this strip of land that is currently posted with SCA signs. However, in 1992, the entire 6 hectare area (including this strip of contaminated soil) was released from radiological control. This was accomplished by scraping the contaminated soil into a pile and placing it on top of the 216-B-7 A&B and 216-B-11 A&B Cribs. The pile of soil and the cribs were covered with clean dirt and reposted with URM signs. The scraped area was released from radiological control by collecting soil samples and radiologically surveying the area. When the project was completed, no radiological posting existed north of the 216-B-7 A&B and 216-B-11 A&B Cribs. In 2003, a small area of growing contaminated tumbleweeds was found on the east side of the posted area. An additional area measuring approximately 3 x 3 m (10 ft x by 10 ft) was posted SCA.	Roadway/Outlying area	N	Y	Unk.	5.2E+4	656	80	Unk.	0-1 (spotty)	A portion of Baltimore Ave. was covered with new pavement. Some soil was consolidated and placed on top of 216-B-7 A&B and 216-B-11 A&B Cribs; soil and cribs covered with dirt; UPR-200-E-89 also had soil scraped, consolidated, and covered with clean backfill.	Windblown Particulate	Solid	Contaminated Vegetation	None
UPR-200-W-63	Inactive	Unplanned Release	UPR-200-W-63, Road Contamination along the South Shoulder of 23rd Street, UN-200-W-63	T Farm Area	The release site is not currently marked. On 9/21/66, Strontium-90 in the form of particulate matter spread from a used diversion box jumper as it was being transported from the 200 West Dry Waste Burial Ground to the 221-T Canyon. The jumper had just previously been removed from the 241-TX-153 Diversion Box. Spotty contamination on 23rd Street was found along the road and shoulder. Speck contamination approximated one per square yard of ground surface along the shoulder of 23rd St.	Roadway/Outlying Area	N	Y	0.5	1.2E+4	500	Irr.	Unk.	0-1 (spotty)	In 1966, spotty contamination on road was removed; road shoulder and borrow pit was covered with 15.24 cm (6 in.) soil. Removed from radiation zone status in November 1972.	Windblown particulate	Solid	Sr-90 activity of 1 Ci. Spots of contamination 500 mrad/h on road in 1966.	None

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Waste Site Attributes. (99 Pages)

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UPR-200-E-2	Inactive	Unplanned Release	UPR-200-E-2, UN-200-E-2, Spotty Contamination Around the B and T Plant Stacks	B Plant Area	This unplanned release is not physically posted or marked. This documented contamination spread was noted in the ARH-780 and given an UPR number. ARH-780 discusses "process ventilation particulate and gaseous emissions." It mentions five Hanford Works documents written in 1947 and 1948 that discuss the identification of contaminated particles around the B Plant and T Plant exhaust stacks (HW-7997 dated 11-18-1947). It discusses contamination in both 200 East and 200 West; document UN-200-E-2 emphasized the B Plant location. The ARHCO document summaries describe the investigation into the contamination source. Currently, the area around the B Plant stack and filtration systems is delimited with a light-weight chain barricade and surface contamination signs. HW-8267 states that in addition to providing a filtration system, sections of the stacks were to be removed and inspected. If the ductwork was determined to be the source of the contamination, steps should be taken to replace the existing ductwork. HW-8438 states that the contamination source was found to be the exhaust fans. A change of equipment was made to one stack. Plant operation forces were to eliminate the conditions within 60 days (document written 1/21/48). Proposed filter work was suspended in favor of replacing the electrical fans with stainless steel inlet and outlet ducts. HW-8931 (2/20/48) states that a marked decrease in particulate discharge was observed. HW-9595 (4/26/48) states that the large particle discharge has been eliminated, but smaller, mist-like particle contamination is still a problem. Smaller particles were identified over a wider area. Cell ventilation ducts are to be equipped with filters and scrubbers are to be installed in the dissolver off gas lines. A document written on 11/18/1947 states radioactive particulate matter was found within a 305 m (1,000 ft) radius around the B Plant and T Plant stacks. A study of the ground contamination found that mist-like particles were released over a larger area and that the particulate matter had magnetic properties.	Stack	N	N	None	Unk.	Irr.	2000	Unk.	0-1	Appropriate steps were taken over the years to eliminate stack contamination releases. Most stack releases consisted of ruthenium. Contamination from the stack releases has decayed to levels below detection.	Ventilation Particulate	Solid	Unk.	None

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200-E-26	Inactive	Unplanned Release	200-E-26, Heavy Equipment Storage Area, Diesel Fuel Contaminated Soil	B Plant Area	The site is an area that was used as an equipment staging area for trucks, backhoes, compressors, and other heavy equipment. As of October 2001, the site no longer shows visual evidence of oil contaminating the soil. In 1996, the soil had an odor like diesel fuel, but this was not reported in 2001. The contamination noted in 1996 appeared to be spotty. An electrical receptacle marks each end of the site.	Storage Yard	N	Y	1-2	3600	120	30	Unk.	0-15 (spotty)	A gravel/cobble overburden was placed.	Leak/ Spill	Liquid	None	Hydrocarbons
UPR-200-W-67	Inactive	Unplanned Release	UPR-200-W-67, Contamination near 2706-T, UN-200-W-67	T Plant Area	On 8/5/70, a contaminated electric lift was parked outside a radiation zone on the north side of the 2706-T building. Contamination from the vehicle affected the ground beneath the vehicle; an area of approximately 0.91 m (3 ft) by 7.32 m (24 ft). The ground was contaminated with a maximum of 20,000 cpm. The lift had been positioned outside of the radiation zone awaiting a radiological release survey. The electric lift was from 221-B Plant, but had not been properly surveyed before being moved to 2706-T. A site visit in October 1991 found a fence surrounding the 2706-T Building on the south, west, and north sides extending about 30.48 m (100 ft) from the building. The north side of the building is paved with gravel and is used for equipment storage. There were no radiation hazard postings. The unplanned release site is no longer marked or posted.	Storage Yard	N	N	None	72	24	3	Unk.	0-1	None	Contaminated Vehicle	Solid	20,000 cpm beta/gamma on the ground; 500 mrad/h on the electric lift both on August 5, 1970.	None

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200-W-22	Inactive	Unplanned Release	200-W-22, 203-S/204-S/205-S Stabilized Area	REDOX Area	Waste processed and stored in this area included contaminated UNH from REDOX and PUREX, Thorium Nitrate from PUREX, 100-N Reactor decontamination waste and 300 Area Laboratory waste. Radiological contaminants may be present in and around the remaining contaminated structures (cement basins and piping) that were not removed in the 1983 stabilization efforts. All aboveground surface features have been removed. The site is currently posted as an URM. There are also two small, posted URMA's located under the abandoned steam line, on the south end of this site. The 203, and 205-S Facilities were constructed in the early 1950's to process and decontaminate the uranyl nitrate hexahydrate (UNH) produced by REDOX operations. The primary process unit consisted of a column filled with silica gel that removed traces of fission products from the UNH. The silica gel column (SG-1) was located in the underground 205-S Vault. The vault also contained a waste neutralization tank. Operations in the vault were accomplished remotely. The 205-S Facility was a two story, aboveground, chemical make-up building. It contained two chemical make-up tanks, a UNH sample room and extensive piping connected to the REDOX facility and the underground vault. The 203-S Facility was an aboveground UNH storage facility that consisted of two 19,000 L (5,000-gal) stainless steel tanks that were set in an open concrete basin. There was also a 204-S Tank Farm, that consisted of four 190,000 L (50,000 gal) aboveground tanks set in two open concrete basins. A UNH Unloading Facility was located at the adjacent railroad siding. An aboveground UNH pipeline connected the 203-S, 204-S, 205-S Area to the 224-U Facility. During the REDOX Plant operation, the UNH solution was pumped from REDOX to the 205-S silica gel column for purification. The purified UNH was stored in the 203 and 204 tanks and the routed to 224-U, via an above ground line, for final processing. The fission products left in the silica gel column were stripped out with nitric acid. The acid was neutralized and sent to the cribs. UNH from the PUREX Plant were transported by truck to the unloading station and placed in the 204-S tanks. The PUREX solutions were then processed through the silica gel column.	Unloading station/ Tanks	N	Y	2	6.2E+4	276	223	10	0-15 (spotty)	In 1983 aboveground features were removed; bulk of radioactive structures/equipment removed to level equal to 0.6 m below railroad grade level. Deep structures remain. The area was graded and leveled with clean backfill.	Leak/ Spill	Liquid	Uranium isotopes and unknown others. A maximum of 10,000 counts per minute at 25 cm (1 in.) was found in this area in 1952.	Uranium metal and unknown others

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Waste Site Attributes. (99 Pages)

Waste Site Code	Current Status	Waste Site Type	Waste Site Name	Facility Area	Waste Site Description	Physical Setting	Back-fill (Y/N)	Surface Cover Present (Y/N)	Surface Cover Thickness (ft)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Potential Cont. Interval (ft)	Prior Cleanup Activities	Release Mechanism	Release Type (Solid and/or Liquid)	Potential Const. (Rad)	Potential Const. (Non-Rad)		
					After REDOX shut down (1965), the 203-S and 205-S were placed on standby. The Unloading Station was converted to a railcar unloading station. The 204-S tanks continued to store material from the Unloading Station. Shipments included thorium nitrate from PUREX, 100-N Reactor decontamination solutions and 300 Area Laboratory wastes. The thorium nitrate was stored in tanks 204-S-1, 204-2 and 204-3. After an extended storage time, the thorium nitrate was shipped to Fernald, Ohio. The 203-1, 203-2 and 203-3 tanks were flushed. Tank 204-S-4 tank was used to hold the 100-N Reactor and 300 Area wastes. Tank 4 was connected to the 240-S-151 Diversion Box so that waste could be transferred to tank farms. Substantial dose rates were associated with these shipments. Several feet of sludge built up in the bottom of tank 4 and increased the dose rate problem. Increasing dose rate issues and contamination spreads lead to the construction of an enclosed unloading facility in 200 East Area (204-AR) that opened in 1981 and replaced this outdoor unloading station at REDOX.																
209-E-WS-3	Inactive	Valve Pit	209-E-WS-3, Critical Mass Laboratory Valve Pit and Hold Up Tank (209-E-TK-111), IMUST, Inactive Miscellaneous Underground Storage Tank (see Subsites)	Semi-Works Area	The Valve Pit has a steel lid and is posted (as of March 2001) with Radioactive Material, Internally Contaminated Systems Located Within, and Confined Space, Dome Loading, Ignition Control and IMUST warning signs. A 189 liter (50 gallon) holding tank (209-E-TK-111) is located under the valve pit. The tank was used as a drain tank. The tank held the condensate prior to being released to the cribs. The tank was routinely sampled for plutonium content to determine that the contents were below crib discharge levels. Present contents of the tank are estimated to consist of residual water from condensate collection, containing only low levels of plutonium. After sampling, the content was discharged to the 216-C-7 crib. The 216-C-7 crib was placed on standby in 1983.	Valve Pit	N	N	None	35	11	5	9	0-9	None	Contaminated Condensate	Liquid	Plutonium	None		

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
200-E-6	200-E-6, Septic Tank, Sanitary Sewer Repair and Replacement 2607-E4	B Plant Area	The septic tank is surrounded by chain with four steel posts painted yellow. The tank is posted with a septic tank sign. The tank has two 10-cm (4- in.) PVC pipes which protrude vertically from the ground. The sanitary tile field is surrounded with a steel post and chain barricade and is posted with Caution Underground Radioactive Material signs. The septic system received waste from the 221-B Building. This septic system was installed to replace 2607-E4 septic system. The system was abandoned in 1998.	None	None	Inactive	Septic Tank	Yes	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	1000	This 1,000 gal. "Lendborg" fiberglass septic tank (ST) is a replacement of the original 2607-E4 ST (see 2607-E4 info.). Inlet vertical elev. at 695.0 ft bgs. ST details not given on H-2-92553 other than volume, inlet invert elev., and material.	Unk.	Unk.
							Septic Tile Field	n/a	1400	70	20	Unk.	Unk.	Unk.	None	Rectangular drain field (DF) consisting of three parallel lines of same length. No information on depth of DF in H-2-92553. Possibly the same DF as that for the 2607-E4 ST since the 200-E-6 ST was a replacement for the 2607-E4 ST.	Unk.	Unk.
200-E-7	200-E-7, 2607-EO Septic Tank & Tile Field	200 E Admin Area	The tank is part of the 2607-EP System. Current and proposed additions to this system bring its design daily flow to 20,440 L (5400 gal). The tank was pre-fabricated with a 1500 gallon first chamber and a 1000 gal second chamber. The associated septic field has been abandoned.	Active system supports 2711E (automotive shop). Installed in 1994.	None	Active	Septic Tank	No	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	No useful information found on this ST.	Unk.	Unk.
							Septic Tile Field	n/a	3250	65	50	3	None	0-4	None	Based on drawing H-2-93802.	Unk.	Unk.
200-W-51	200-W-51, Septic Tank (Abandoned)	S/U Farm Area	The site is an abandoned septic tank that has been filled and covered. The septic tank was discovered during excavations (for exhauster upgrades) outside 241-SY Tank Farm. The tank is not marked or posted. The Engineering Change Notice (ECN-637974) referenced below identifies the location of an abandoned septic tank found during the construction activities associated with the new SY Exhauster. Work package 2W-94-1004 WCN #4 (listed in references) describes the activities associated with filling and covering the abandoned tank. The tank is not shown on any known drawings. The Engineering Change Notice requested drawing H-2-44511, sheets 46 and 54 be updated to show the presence of this abandoned septic tank. A released copy of the ECN will be coming to the WIDS Team. The site should then be closed.	None	The system was abandoned in 1994 in accordance with Washington Administrative Code 246-272-18501. The tank was exposed at the top, stabilized, the tank walls were collapsed, and the site was backfilled and compacted with clean backfill.	Inactive	Septic Tank	Yes	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	No useful information found on this ST.	Unk.	Unk.
							Septic Tile Field	n/a	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	None	No useful information found on this DF.	Unk.	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)		
2607-E1	The 2607-E1 Septic Tank is associated with the 2607-E1 Tile Field, the 200 East shops and 282-E.	200 E Admin Area	This septic tank is constructed of reinforced concrete with walls and floors. The associated drain field is 778 square m ² (8,376 ft ²). The 2607-E1 Septic Tank and associated drain field were designed to accept and treat sanitary sewer effluent from facilities in central 200 East Area. According to WHC-SD-LL-SP-001 (1996), the 2607-E1 Septic Tank had been considered failed for last two years and was exhibiting evidence of stress. The system was replaced with a new regional system.	None	The system was abandoned in 1997 in accordance with Washington Administrative Code 246-272-18501. This system was tied into 2607-E1-A.	Active	Septic Tank	No	325	26	13	14	None	0-15	None	Based on Drawings H-2-1196 & W-171192	Unk.	Unk.		
							Septic Tile Field	n/a	18300	305	60	7	None	0-7.5	None				Unk.	Unk.
							Septic Tile Field	n/a	6175	95	65	7	None	0-7.5	None				Unk.	Unk.
2607-E12	2607-E12, 2607-E12 Septic System	200 E Ponds Area	The septic system consists of the old 5,000 gal (18,927 L) tank (the old drain field was plugged off) that was converted to a dosing chamber when the new 10,000 gal (37,854 L) septic tank was installed approximately 45 ft (13.7 m) to the south. The trench-like drain field for this system is located approximately 400 ft (122 m) east of the tanks. The settling chamber (the larger southern most tank) receives the effluent first. The effluent then goes to the dosing chamber (smaller northern tank) which is connected by underground pipeline to the trench-like drain field.	None	None	Active	Septic Tank	No	204	20	10	15	None	0-16	10000	Septic tank (fiberglass), pump station (old septic tank), checkvalve manhole, Valve box, pipelines & two drain fields (new & old). Based on Drawings H-2-82091, H-2-82092, H-2-82093 & H-2-90438.	Unk.	Unk.		
							Septic Tank	No	64	8	8	7	None	0-8	None				Unk.	Unk.
							Septic Tile Field	n/a	5400	90	60	7	None	0-7.5	None				Unk.	Unk.
							Septic Tile Field	n/a	33000	275	120	5	None	0-5.5	None				Unk.	Unk.
2607-E3	2607-E3, 2607-E3 Septic Tank and Drainfield, 2607-E3 Septic System, TFS of 218-E-4, Tile Field South of 218-E-4	B Plant Area	The site is a septic tank and drain field. It is surrounded with a chain and marked with a sign that reads Sanitary Sewer/Drain Field. The septic tank is constructed of reinforced concrete. The tank is 8.7 m (28 ft 8 in.) long, 2.7 m (9 ft) wide, and 3.8 m (12 ft 6 in.) deep (interior dimensions). The tank had a design capacity of 38,680 L (10,220 gal) based on a user capacity of 292 persons, a flow of 132 L (35 gal) of sewage per capita per day, and an average detention time of 1 day. The top of the tank is at the ground surface. The tank was accessed through three 0.9 m (3 ft) manholes. The drain field is comprised of at least 712 m (2,336 ft) of vitrified clay pipe or drain tile (at least 2.4 m [8 ft] per capita). The laterals are open jointed and are spaced 2.4 m (8 ft) apart.	The 2607-E3 Septic System was associated with B Plant facilities.	The septic tank was abandoned in 1997. The tank was pumped, filled with soil, and the covers were removed.	Inactive	Septic Tank	Yes	324	30	11	14	13	0-14	Unk.	Generally, a rectangular cube-shaped concrete ST (W-71192).	Unk.	Unk.		
							Septic Tile Field	n/a	Irr.	260 to 318	215 to 250	5.8 to 8.0	None	0-9	None				Very irr. trapezoidal DF consisting of 23 parallel lines of decreasing lengths (H-2-1237).	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
2607-E4	2607-E4, 2607-E4 Septic Tank and Tile Field	B Plant Area	The septic tank and tile field are marked with a Sanitary Sewer/Drain Field sign and lie with a posted Underground Radioactive Material area. The 2607-E4 Septic Tank is constructed of reinforced concrete that drains to an adjacent tile field. DOE/RL-92-05 states that this system is not known to contain radionuclide or hazardous chemicals. However, the site is posted with Underground Radioactive Material signs. No information has been located to explain the radiological posting.	The 2607-E4 Septic Tank is associated with the 2607-E4 Tile Field and B Plant Facilities.	The site was abandoned 1998 in accordance with WAC 246-272-18501. Samples were taken in May 1998.	Inactive	Septic Tank	Yes	17	5	3	9	9	0-10	Unk.	Generally, a rectangular cube-shaped concrete ST (W-71192).	Unk.	Unk.
							Septic Tile Field	n/a	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	None	No information on this DF. Possibly the same DF as that summarized for the 200-E-6 ST/DF since the 200-E-6 ST was a replacement for the 2607-E4 ST.	Unk.	Unk.
2607-E5	2607-E5	Semi-Works Area	This septic system receives sanitary wastewater and sewage. This system includes a single compartment tank with a dosing system and a leaching trench. An abandoned tile field which was replaced by the sanitary leaching trench is also included with this site. The construction details for the sanitary leach trench are contained in Hanford Drawing H-2-4602. The trench is 22.9 m (75 ft) long, 1.5 m (5 ft) wide at the bottom, and approximately 3.1 m (10 ft) deep. The excavation had a 1.5:1 side slope. Three rows of 20 x 20 x 41 cm (8 x 8 x 16 in.) bond beam concrete blocks that run the entire length of the trench site on top of 0.6 m (2 ft) of cobble fill. The trench was then covered with 0.3 m (1 ft) of gravel, a polyethylene cover and backfilled with the centerline of the trench filled to 0.3 m (1 ft) above the original grade. At the eastern end of the trench is a distribution box the received waste from the up gradient septic tanks and distributed it into the concrete block channels. The following information was obtained from HW-22955, Hot Semiworks Manual Part 1: All wastes from the 2704-C (Office and Gate House) and 2707-C (Change House) were considered sanitary waste and were disposed of separately from the chemical, or production waste. A 10.2 cm (4 in.) tile sewer ran from these buildings to a septic tank and tile	The 2607-E5 Septic Tank is associated with the 209-E, the 2704-C and the 2718-E Buildings. Original construction of the tank was for buildings 2704-C and 2707-C. Later modifications added two additional septic tanks, 2607-E7 (WIDS 2607-E7A), 2607-E (WIDS 2607-E7B), and the leaching trench. During the history of this system, mobile offices have been connected to the system.	None	Inactive	Septic Tank	Yes	124	17	7	6	~5.5	0-7	Unk.	Generally, a rectangular cube-shaped concrete ST (W-71192 and H-2-4067). Associated with the newer 2607-E7 STs (A and B). Dimensions given in W-71192 do not agree with the dimensions given in H-2-4067. Since the H-2-4067 design has a "Checked for As-Built" revision noted on it and since the drawing shows a newer date (1950 compared to the 1944 date shown on W-71192), the ST information presented here is taken from H-2-4067.	Not dangerous/nonradioactive sewer effluent	Unk.
							Septic Tile Field	n/a	2500	~50	~50	Unk.	None	Unk.	None	H-2-4033 shows the original, abandoned DF (1) as a rhombus shaped area (with an ~45 deg. acute angled leading corner) consisting of six parallel 50 ft lines (totaling 300 ft). Newer DF (2) is a long rectangular shaped trench, and was added replacing the original DF (1) when the newer STs 2607-E7A and 2607-E7B were added in line with the older 2607-E5 ST. Associated with the original 2607-E5 ST system.	Unk.	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
			field outside the Hot Semiworks exclusion area. The sewer ran parallel to and 20.7 m (68 ft) south of the exclusion area north fence. The septic tank is 19.2 m (63 ft) west of the exclusion area west fence. The septic tank is a buried concrete settling tank 3.65 m (12 ft) long by 1.8 m (6 ft) long by 1.5 m (5 ft) deep (inside dimensions). The bottom and walls are 20.3 cm (8 in.) thick. The top is 15.2 cm (6 in.) thick and has two 0.61 m (24 in.) diameter manholes. The overflow is 1.18 m (46.5 in.) from the bottom resulting in a hold-up of 7948.5 L (2100 gal). The overflow from the septic tank drained to a tile field. This field consists of 6 runs of 10.2 cm (4 in.) tile each 15.2 m (50 ft) long. The tile was laid with open joints in a 45.7 cm (18 in.) gravel bed 0.61 to 0.91 m (2 to 3 ft) below grade. Currently, the 2607-E5 Septic Tank and associated leaching trench accept and treat sanitary sewer effluent from the 209-E, the 2704-C, and the 2718-E Buildings. WHC-SD-LL-WP-001 indicates that 276-C (Solvent Handling Facility) was also serviced by this septic system. The referenced drawing M-2904-E, Sheet 27 does not show enough detail to make that determination. H-2-4033 shows that 276-C had no sanitary waste management. All liquid waste from this facility went to the 216-C-3 crib. Revision 7 of H-2-4033 (1963) revised the drawing to include the abandoned tile field and the two small inline septic tanks (2607-E7 and 2607-E). (The WIDS numbers for these two tanks are 2607-E7A and 2607-E7B.) The two smaller tanks were probably added when 209-E (Critical Mass Laboratory) was tied into the system.	Two examples were the addition of MO-337 and MO-543. These mobile offices have since been moved.			Septic Tile Field	n/a	1350	~90	~15	~11	None	0-12	None	H-2-4033 shows the original, abandoned DF (1) as a rhombus shaped area (with an ~45 deg. acute angled leading corner) consisting of six parallel 50 ft lines (totaling 300 ft). Newer DF (2) is a long rectangular shaped trench, and was added replacing the original DF (1) when the newer STs 2607-E7A and 2607-E7B were added in line with the older 2607-E5 ST. Associated with the original 2607-E5 ST system.	Unk.	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
2607-E6	2607-E6, Septic Tank and Tile Field	200 E Admin Area	The site is a septic tank and drain field. The drain field is surrounded by a wooden fence. The surface is vegetated with brush. The unit received sanitary waste from MO405 and the PUREX facility.	None	The system was abandoned in 1997 in accordance with WAC 246-272-18501, including pumping the tank contents, filling the tank with soil, and removing the covers. No sample data has been found.	Inactive	Septic Tank	Yes	275	28	10	14	14	0-14.8	Unk.	Generally, a rectangular cube-shaped concrete ST (H-2-55538).	Unk.	Unk.
							Septic Tile Field	n/a	~28,750	~115 (each)	~125 (each)	~3.3 (min)	None	0-4.3	None	H-2-44501 (sht. 59) shows two separate feather-shaped DFs downstream of a DB and ST. H-2-55537 shows additional dimensional info. for the two DFs.	Unk.	Unk.
2607-E7A	2607-E7A, 2607-E7	Semi-Works Area	This septic tank receives sanitary wastewater and sewage. This tank is a 1.7 m (66 in.) by 2.7 m (105 in.) precast concrete septic tank with a single 61 cm (24 in.) diameter cover. The tank is in line with the 2607-E5 septic tank and the 2607-E (WIDS 2607-E7B). The septic tank drains to the sanitary leaching trench. The 2607-E7A Septic System and the associated leaching trench are designed to accept and treat sanitary sewer effluent from the 209-E, 2704-C, 2718-C, MO-337 (moved to another location), and MO-543 (moved to another location). The original tile field associated with 2607-E5 was abandoned at the time 2607-E7A and 2607-E7B were added. At the time of the addition of the two smaller septic tanks, a leaching trench was also added to the system. The 2607-E7A Septic System lies in a radiation zone. In 1995, Project W-364 provided a design to replace septic tanks 2607-E7A, 2607-E7B, and 2607-E5. The design was completed, approved, and a construction contract was awarded. Before any on-site construction activity, the project was canceled.	The 2607-E7A Septic System is associated with the 209-E, 2704-C, 2718-E, MO-337 (moved) and the MO-543 (moved) Buildings. This system is in series with the 2607-E5, 2607-E7B septic tanks and a leaching trench.	None	Inactive	Septic Tank	No	46	9	5	6	~11	0-6.5	Unk.	Associated with the original 2607-E5 ST system. According to WIDS, 2607-E7A and 2607-E7B are both also known as 2607-E7. Based on W-71192, 2607-E7 is generally a rectangular cube-shaped concrete ST. Based on H-2-4602, 2607-E7A and 2607-E7B are both somewhat rectangular cube shaped tanks with half-cylinder shaped (rounded) ends (with each cylindrical axis along the vertical). W-71192 and H-2-4602 are in disagreement. Since the H-2-4602 design has a "Checked for As-Built" revision noted on it and since the drawing shows a newer date (1963 compared to the 1944 date shown on W-71192), the ST information presented here is taken from H-2-4602.	Not dangerous/nonradioactive	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
							Septic Tile Field	n/a	2500	~50	~50	Unk.	None	Unk.	None	H-2-4033 shows the original, abandoned DF (1) as a rhombus shaped area (with an ~45 deg. acute angled leading corner) consisting of six parallel 50 ft lines (totaling 300 ft). Newer DF (2) is a long rectangular shaped trench, and was added replacing the original DF (1) when the newer STs 2607-E7A and 2607-E7B were added in line with the older 2607-E5 ST. Associated with the original 2607-E5 ST system.	Unk.	Unk.
							Septic Tile Field	n/a	1350	~90	~15	~11	None	0-12	None	H-2-4033 shows the original, abandoned DF (1) as a rhombus shaped area (with an ~45 deg. acute angled leading corner) consisting of six parallel 50 ft lines (totaling 300 ft). Newer DF (2) is a long rectangular shaped trench, and was added replacing the original DF (1) when the newer STs 2607-E7A and 2607-E7B were added in line with the older 2607-E5 ST. Associated with the original 2607-E5 ST system.	Unk.	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
2607-E7B	2607-E7B, 2607-E7B Septic System, 2607-E7	Semi-Works Area	This septic tank receives sanitary wastewater and sewage. This tank is a 1.7 m (66 in.) by 2.7 m (105 in.) precast concrete septic tank with a single 61 cm (24 in.) diameter cover. The tank is in line with the 2607-E5 septic tank and the 2607-E7 (WIDS 2607-E7A). The septic tank drains to the sanitary leaching trench. The 2607-E7B Septic System and the associated leaching trench are designed to accept and treat sanitary sewer effluent from the 209-E, 2704-C, 2718-C, MO-337 (moved to another location), and MO-543 (moved to another location). The original tile field associated with 2607-E5 was abandoned when 2607-E7A and 2607-E7B were added. At the time of the addition of the two smaller septic tanks, a leaching trench was also added to the system. The 2607-E7B Septic System lies in a radiation zone. In 1995, Project W-364 provided a design to replace septic tanks 2607-E7A, 2607-E7B, and 2607-E5. The design was completed, approved, and a construction contract was awarded. Prior to any on-site construction activity, the project was canceled.	The 2607-E7B Septic System is associated with the 209-E, 2704-C, 2718-E, MO-337 (moved) and the MO-543 (moved) Buildings. This system is in series with the 2607-E5, 2607-E7A septic tanks and a leaching trench.	None	Active	Septic Tank	No	46	9	5	6	~11	0-6.5	Unk.	Associated with the original 2607-E5 ST system. According to WIDS, 2607-E7A and 2607-E7B are both also known as 2607-E7. Based on W-71192, 2607-E7 is generally a rectangular cube-shaped concrete ST. Based on H-2-4602, 2607-E7A and 2607-E7B are both somewhat rectangular cube shaped tanks with half-cylinder shaped (rounded) ends (with each cylindrical axis along the vertical). W-71192 and H-2-4602 are in disagreement. Since the H-2-4602 design has a "Checked for As-Built" revision noted on it and since the drawing shows a newer date (1963 compared to the 1944 date shown on W-71192), the ST information presented here is taken from H-2-4602.	Not dangerous/non-radioactive	Unk.
							Septic Tile Field	n/a	2500	~50	~50	Unk.	None	Unk.	None	H-2-4033 shows the original, abandoned DF (1) as a rhombus shaped area (with an ~45 deg. acute angled leading corner) consisting of six parallel 50 ft lines (totaling 300 ft). Newer DF (2) is a long rectangular shaped trench, and was added replacing the original DF (1) when the newer STs 2607-E7A and 2607-E7B were added in line with the older 2607-E5 ST. Associated with the original 2607-E5 ST system.	Unk.	Unk.
							Septic Tile Field	n/a	1350	~90	~15	~11	None	0-12	None		Unk.	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)	
2607-E9	2607-E9, 242B/BL Septic Tank and Drain Field, 2607-E9 Septic System	B Farm Area	This 1,900-liter (500-gal) septic tank received sanitary wastewater and sewage from the 242-B and the 242-BL Buildings. This system has an associated drain field. It was abandoned and the tank filled with sand. The site is in a contamination area. A brief visit was made to the site in February 2000 to find the drain field and to try to improve the mapping of the site. A "Drainfield" sign was found on the ground on the eastern side of the contamination area that surrounds the site. The former extent of the drain field can be approximated using fence posts inside the contamination area (some of which still have chain attached), fallen chain on the ground plus the fence posts making up the eastern boundary of the contamination area. No access ports, lids or risers associated with the septic tank were visible. Evidence of the septic tank may have been obscured by tumbleweeds growing in the center of the contamination area near the drain field. The 2607-E9 Septic Tank and associated drain field were designed to accept sanitary sewer effluent from the 242-B and the 242-BL Buildings. The area of the 242-B Building, where the 2607-E9 Septic Tank and associated drain field are located, is light chain barricaded with "Contamination Area" signs. Contaminated particulate releases from the B Tank Farm are the most likely source for the contamination.	The 2607-E9 Septic Tank is associated with a drain field and the 242-B and the 242-BL Buildings.	Tank was abandoned in accordance with WAC 246-272-18501. Samples were taken and no contamination was found.	Inactive	Septic Tank	Yes	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	500	Only information found for this ST is contained on H-2-2023 that lists the ST "to be" a 500 gal. "National" (or other approved tank) maybe of rust-resistant alloy steel. ST is located at the very start (upstream) of the general DF area. Appears vertically cylindrical according to H-2-2023. No other information shown on this drawing.	Unk.	Unk.
							Septic Tile Field	n/a	1600-2400	~40 to 60	~40	~3.5 (max)	None	0-4.5	None	H-2-2023 shows a feather-shaped DF consisting of 5 parallel secondary lines staggered 8 ft apart on each side (10 total) of the primary line running in the center. Irr. geometry overall, but estimated dimensions given assume a "pentagon" shape with two sides running parallel with the main center line. ST is located at the very start (upstream) of the general DF area.	Unk.	Unk.	
2607-EA	2607-EA, 2607-EA Septic Tank and Drywell	PUREX Area	The 2607-EA Septic System is a small septic tank and an associated drywell (cesspool). The system became inactive when the water lines to the 244-AR Vault ruptured and were not repaired. When the facility was isolated, lines feeding the building were blanked off to eliminate the potential source of water if the ruptured lines were repaired.	244-AR Vault	None	Active	Septic Tank	No	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	1000	Based on H-2-61979, the ST is a somewhat rectangular cube shaped tank with half-cylinder shaped (rounded) ends (with each cylindrical axis along the vertical). Specifications given in HWS-7539 state the ST is 1,000 gal. Capacity and could be made of either pre-fab coated steel or pre-cast concrete. Exact dimensions not given.	Unk.	Unk.	

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
							Septic Tile Field	n/a	32	-N/A- (round)	~6.4 (outer diam.)	~7	None	0-8	None	Based on H-2-61979, the DF is a vertically cylindrical shaped dry well constructed with 8"x8"x16" cement blocks (w/out mortar).	Unk.	Unk.
2607-EE	2607-EE, 2607-EE Septic System	PUREX Area	The site is a septic tank with a drain field extending northeast of the septic tank. The area is surrounded with light duty posts and chain. One riser pipe is visible. The line to the toilet and sink feeding the septic system was blanked and taken out of service in 1993.	The site is associated with the 202-A facility and the 200-E-107 stabilized area.	The septic system is located within a larger radiologically posted area known as 200-E-107. The 200-E-107 Contamination Area was surface stabilized in the summer of 2001 and downposted to URM.	Inactive	Septic Tank	Yes	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	Kaustine "Standard" Series Vert. Tank No. 65 or design equal (H-2-57110). Other than this, no details given on any of the drawings.	Unk., received waste from PUREX so there is potential contamination	Unk.
							Septic Tile Field	n/a	3335	59	57	~2.5 to 3	None	0-4	None	H-2-57110 shows a feather-shaped DF consisting of 6 27-ft long parallel secondary lines 7 ft apart on each side (12 total) of the primary line running in the center. Dimension given are those formed by the square that captures the entire footprint of the DF.	Unk.	Unk.
2607-W1	2607-W1	T Plant Area	The 2607-W1 Septic Tank is constructed of reinforced concrete and receives sanitary wastewater and sewage. There is a drain field associated with the system. This system was reconstructed in 1994. The 2607-W1 Septic Tank and associated drain field are designed to accept sanitary sewer effluent from connected facilities. Parts of the previous system were reused (for example, the septic tank) during the 1994 upgrade, and an additional tank was added to the old tank. The two tanks were tied together in series, and are located on the east side of Bridgeport Avenue. The new drain field runs north-south.	The 2607-W1 Septic Tank is associated with the 2607-W1 drain field, 2707-W, 2713-W, 283-W, 277-W, 275-W, 274-W, 284-W, 2723-W, 2704-W, 2719-WB, 272-W, MO-278, MO-279, MO-235, MO-406, MO-412, MO-215, MO-056, MO-204, MO-240, and MO-287.	None	Active	Septic Tank	No	90	10	9	10	None	0-11	None	Based on Drawings H-2-817619 through H-2-817622m W-71192, H-2-2589, H-2-44511 sht 101, 108, 109.	Unk.	Unk.
							Septic Tank	No	153	17	9	12	None	0-13	None		Unk.	Unk.
							Septic Tile Field	n/a	73158	534	137	7	None	0-8	None		Unk.	Unk.
							Septic Tile Field	n/a	19800	165	120	5	None	0-6	None		Unk.	Unk.
							Septic Tile Field	n/a	45500	350	130	6	None	0-7	None		Unk.	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
2607-W3	2607-W3	T Plant Area	The 2607-W3 Septic Tank has been pumped, sampled, filled with sand and abandoned in place. The 2607-W3 Septic Tank was constructed of reinforced concrete. At one time, the eastern access was posted with a Radioactive Material warning sign. This system includes a drain field that was expanded in the 1950's. The 2607-W3 Septic Tank and associated drain field were designed to accept sanitary sewer effluent from the 221-T, the 222-T, the 224-T, and the 271-T Buildings. The 2607-W3 effluent was redirected to the 2607-W1 system. The tie-line is expected to remain operational throughout the remaining Hanford Site mission. A contaminated process sewer line runs parallel to the sanitary sewer line in this area.	The 2607-W3 Septic Tank as associated with the 221-T, the 222-T, the 224-T, and the 271-T Buildings.	The 2607-W3 Septic Tank has been pumped, sampled, filled with sand and abandoned in place.	Inactive	Septic Tank	Yes	324	30	11	14	13	0-15	Unk.	Generally, a rectangular cube-shaped concrete ST (W-71192).	Unk.	Unk.
Septic Tile Field	n/a	27840-40832					~240 to ~352	~116	~2.5 to ~7.5	None	0-8.5	None	Irr. two-part DF with: 1) a newer, northern trapezoidal section (> one-half the overall area) consisting of 15 parallel lines of decreasing lengths; all DF dimensions are estimated.	Unk.	Unk.			
Septic Tile Field	n/a	16632-23352					~198 to ~278	~84	~2.5 to ~7.5	None	0-8.5	None	An original, southern trapezoidal section (< one-half the overall area) consisting of 11 parallel lines of decreasing lengths (based on H-2-1139 and H-2-1865). All DF dimensions are estimated.	Unk.	Unk.			

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
2607-W4	2607-W4, T Plant Septic Tank and Drain Field	T Plant Area	The 2607-W4 Septic Tank is a single compartment tank constructed of reinforced concrete. The drain field measures 3.1 by 9.2 m (10 ft by 30 ft). The site is surrounded by a light chain barricade. At one time the area was marked with surface contamination warning signs. A site visit in October of 1998 indicates the area is no longer a Radiation Area. This system includes a drain field and receives sanitary wastewater and sewage from the 221-T Canyon Building. The 2607-W4 Septic Tank and associated drain field are designed to accept sanitary sewer effluent from the 221-T Canyon Building. In 1991, the 2607-W4 septic system was within a radiological zone. In 1998, the area had been downposted.	The 2607-W4 Septic Tank is associated with the 221-T Canyon Building.	The septic tank was abandoned in June 1998, per Washington Administrative Code 246-272-18501 requirements. The lid was left on but the inlet and outlet piping were grouted. The septic tank was filled with sand. The drain field remains in place. The inlet and outlet tank piping on the septic tank was grouted. Before filling with sand, the septic tank was sampled and pumped empty. Water and sludge samples were obtained from the tank. The drain field was not sampled.	Inactive	Septic Tank	Yes	17	5	3	9	9	0-10	Unk.	Generally, a rectangular cube-shaped concrete ST (W-71192).	Unk.	Unk.
							Septic Tile Field	n/a	300	30	10	Unk.	None	Unk.	None	No useful information found on this DF. DF not shown at all on M-2904-W (sht. 11), only ST shown.	Unk.	Unk.
2607-W6	2607-W6	200 W Ponds Area	The 2607-W6 system was reconstructed in 1995. The unit has a sign correctly labeling it. A concrete structure with three metal manhole covers lies on the surface. The 2607-W6 Septic Tank is constructed of reinforced concrete and receives sanitary wastewater and sewage. The 2607-W6 Septic Tank and associated drain field are designed to accept sanitary sewer effluent from the connected facilities. The dimensions	The 2607-W6 Septic Tank is associated with the 202-S, the 222-S, and the 2704-S Buildings and MO-037, MO-039, MO-028,	None	Active	Septic Tank	No	293	23	13	15	None	0-16	None	Septic tank, 2 shallow manholes, diversion box, & drain field. Based on Drawings H-2-5153, H-2-5154, & H-2-44511	Unk.	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
			are for the original septic system. No dimensions for the expanded septic tank were available. An upgrade or replacement of the existing larger on site system will be required in the year 2025, as the existing system will be beyond its useful life. Some components of this system may be reused (septic tank, etc.).	MO-924, and MO-936.			Septic Tile Field	n/a	76800	320	240	7	None	0-7.5	None		Unk.	Unk.
2607-W8	2607-W8	PPF Area	This system is located adjacent to posted radiation zone containing the 216-Z-5 and 216-Z-4 cribs. The 2607-W8 Septic Tank is constructed of reinforced concrete and has three manhole covers visible on the surface. It is a single compartment tank with an attached dosing siphon. This unit includes a tile field. The site is marked with a sign that read "Septic Tank - 2607-W8". The 2607-W8 Septic Tank and associated tile field were designed to accept sanitary sewer effluent from the 231-Z Building. The 231-Z Building was associated with the plutonium product finishing process. The tank capacity and dimensions include the settling tank and dosing siphon chamber.	The 2607-W8 Septic Tank is associated with a sanitary tile field and the 231-Z Building.	The system was abandoned 1998 according to Washington Administrative Code 246-272-18501 requirements. No record of samples could be found.	Active	Septic Tank	No	149	19	8	13	12	0-14	Unk.	Generally, a rectangular cube-shaped concrete ST (W-71192).	Unk.	Unk.
							Septic Tile Field	n/a	Unk.	Unk.	Unk.	Unk.	None	Unk.	None	No useful information found on this DF as H-2-26566 only shows the general location and rectangular shape of what appears to be the 2607-Z ST and DF (they are in no way labeled on the drawing). More information needed.	Unk.	Unk.
2607-W9	2607-W9, 2707-SX Septic Tank	S/U Farm Area	A gravel surface covers the 2607-W9 Septic Tank and Tile Field. Two posts with a sun bleached sign mark the location of the tile field.	The 2607-W9 Septic Tank is associated with the 2707-SX Change House.	The septic system was abandoned in 1999 per the requirements of WAC 246-272-1851.	Inactive	Septic Tank	Yes	117	20	6	12	Unk.	0-13	Unk.	No useful information found on this ST.	No radionuclides are known to have been disposed to the septic system, the change trailer drains emptied into it.	Unk.
							Septic Tile Field	n/a	Unk.	Unk.	Unk.	Unk.	None	Unk.	None	No useful information found on this DF.	Unk.	Unk.
2607-WC	2607-WC, 2607-WC Septic System	200 W Ponds Area	The 2607-WC Septic System consists of two tanks and a trench type drain field. This system is scheduled to be abandoned in 1998. In 1994, a soil investigation was performed to determine the soil type. Based on the soil type, there may not be enough non-contaminated land in close proximity for a new system. This system has	The 2607-WC septic system is associated with the 272-S Building, the 242-S Building and MO-027.	None	Active	Septic Tank	No	136	17	8	9	None	0-10	None		Unk.	Unk.
							Septic Tank	Yes	96	12	8	5	None	0-6	None		Unk.	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
			been pumped twice a week for the past three years. An upgrade or replacement of the existing on site system is needed as the existing system is well beyond its useful life. Some components of the existing system may be reutilized (septic tank, etc.). This system may also pick up the sanitary wastewater flows from the 2607-W9 system.				Septic Tile Field	n/a	2565	57	45	2	None	0-3	None		Unk.	Unk.
2607-WL	Active system supports 272WA (tank farm support facility)	WM Area	The 2607-WL Septic System is constructed of reinforced concrete. The septic system includes a trench-type drain field. The septic tank and drain field are surrounded by a chain barricade with a sign stating "Septic Tank" posted. The 2607-WL Septic Tank was designed to accept and treat sanitary sewer effluent from the associated facility, and discharge the effluent to the 2607-WL Drain Field. This drain field in turn, discharges the effluent into the ground.	The 2607-WL Septic Tank is associated with a drain field and the 272-WA Building.	The septic system was abandoned in 1999 per the requirements of Washington Administrative Code 246-272-1851. All septage inside the tank was removed and the empty tank was filled to eliminate void spaces. There are no records of sampling during abandonment activities. Per an agreement with the Washington Department of Health, the septic system lids were left in place.	Inactive	Septic Tank	Yes	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	4000		Unk.	Unk.
							Septic Tile Field	n/a	2400	60	40	Unk.	Unk.	Unk.	Unk.		Unk.	Unk.
2607-WZ	2607-WZ	S/U Farm Area	The 2607-WZ Septic System includes a drain field. A WIDS site code sign on a post marks the assumed location. The 2607-WZ Septic System is listed in WHC-EP-0216. However, the septic tank is not visible on Hanford Site drawing, H-2-44511, sheets 22, 23 or 30. Because of the limited reference material, a field investigation is necessary to verify the existence of this system. Ground Penetrating Radar Scans of the area were done in April 2004 and July 2005. A potential location was noted on the 2005 scan.	The 2607-WZ Septic Tank is associated with the 241-SX Tank Farm.	None	Active	Septic Tank	No	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	Unk.	No useful information found on this ST.	Unk.	Unk.
							Septic Tile Field	n/a	Unk.	Unk.	Unk.	Unk.	None	Unk.	None	No useful information found on this DF.	Unk.	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/ No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
2607-Z	2607-Z	PFP Area	The 2607-Z Septic Tank and drain field lie in a fenced area. The septic tank is constructed of concrete and is a two chamber tank. Three manholes are provided for personnel entry. The drain field measures approximately 86 m (282 ft) in length and 47 m (154 ft) in width. The tile field is located inside a fenced area.	The 2607-Z Septic Tank is associated with the 234-5Z, 2704-Z, 270-Z, 236-Z, 292-Z, 2701-Z, 2701-ZA, and the 2701-ZB Buildings.	The septic system was abandoned per the requirements of WAC 246-272-18501 in 1999.	Inactive	Septic Tank	Yes	522	39	14	19	18	0-20	Unk.	Generally, a rectangular cube-shaped concrete ST (H-2-16457 and H-2-16018 [filed with the 2607-W3 drawings]).	Unk.	Unk.
							Septic Tile Field	n/a	42000	150	280	~ 3.5 to ~15	None	0-16	None	Most detailed information on DF found on H-2-14035 and H-2-16421. Also need H-2-16457 for more possible information (including more specific depth info). H-2-26566 (filed with the 2607-W8 drawings) shows the approx. ground-surface elevations and the general locations and rectangular shapes of what appear to be the 2607-Z ST and DF (they are in no way labeled on the drawing). Depths currently give are highly estimated. Design depth was at a minimum of 3.5 ft bgs, but some topo information shows much deeper potentials.	Unk.	Unk.

Table B-2. 200-MG-1 Operable Unit Waste Site Attributes – Septic Systems. (15 Pages)

Waste Site Code	Waste Site Name	Facility Area	Waste Site Description	Related Sites/ Structure (WIDS only)	Prior Cleanup Activities (Summary)	Current Status	Septic System Segments	Back-filled Septic Tank (Yes/No)	Site Area (ft ²)	Site Length (ft)	Site Width (ft)	Site Depth (ft)	Bottom (bgs in ft)	Potential Cont. Interval (ft)	Design Volume (gal)	Comments	Potential Const. (Rad)	Potential Const. (Non-Rad)
2607-Z1	2607-Z1, Septic Tank and Drain field	PFP Area	The system (septic tank and drain field) was constructed in 1958 and was pumped once a week. The drain field location has been used as a laydown area in the past and the underground laterals may have been damaged.	The site is associated with 234-5Z Building Annex and 2736-ZB.	The septic system was abandoned per the requirements of WAC 246-272-18501 in 1999.	Inactive	Septic Tank	Yes	38	9	5	6	~5.5	0-7	750	Generally, a rectangular cube-shaped concrete ST (H-2-20938).	No radionuclides or hazardous chemicals have been associated with this system; the facilities it serviced handled radioactive materials and may have contributed cont.	Unk.
							Septic Tile Field	n/a	1500	100	15	~3.5	None	0-4.5	None	Consists of a long rectangular shaped DF with 3 100-ft long parallel drain line separated by 7.5 ft (H-2-20938).	Unk.	Unk.

bgs = below ground surface.
 Const. = constituents.
 Cont. = contaminant.
 DF = drain field.
 ECN = Engineering Change Notice.
 Irr. = irregular.

n/a = not applicable.
 PFP = Plutonium Finishing Plant.
 PUREX = Plutonium Uranium Extraction Plant.
 PVC = polyvinyl chloride.
 Rad = radioactive.

ST = septic tank.
 TFS = Tile Field South.
 Unk. = unknown.
 URM = underground radioactive material.
 WIDS = Waste Information Data System database.

1

APPENDIX C

**POTENTIAL APPLICABLE OR RELEVANT
AND APPROPRIATE REQUIREMENTS**

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C1.0 IDENTIFICATION OF POTENTIAL APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS FOR THE 200-MG-1 OPERABLE UNITC-1

C1.1 COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTSC-1

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TABLES

Table C-1. Identification of Potential Federal Applicable or Relevant and Appropriate Requirements and To Be Considered for the Removal Action Sites. C-6

Table C-2. Identification of Potential State Applicable or Relevant and Appropriate Requirements and To Be Considered for the Removal Action Sites. C-7

1

TERMS

2	ALARA	as low as reasonably achievable
3	ARAR	applicable or relevant and appropriate requirement
4	CERCLA	<i>Comprehensive Environmental Response, Compensation, and</i>
5		<i>Liability Act of 1980</i>
6	CFR	<i>Code of Federal Regulations</i>
7	ERDF	Environmental Restoration Disposal Facility
8	OU	operable unit
9	PCB	polychlorinated biphenyl
10	RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
11	T-BACT	toxics – best available control technology
12	TBC	to be considered
13	TSCA	<i>Toxic Substances Control Act of 1976</i>
14	WAC	<i>Washington Administrative Code</i>
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APPENDIX C

POTENTIAL APPLICABLE OR RELEVANT
AND APPROPRIATE REQUIREMENTSC1.0 IDENTIFICATION OF POTENTIAL APPLICABLE OR
RELEVANT AND APPROPRIATE REQUIREMENTS FOR THE
200-MG-1 OPERABLE UNIT

This appendix identifies and evaluates the key potential applicable or relevant and appropriate requirements (ARAR) for the 200-MG-1 Operable Units (OU) removal action.

C1.1 COMPLIANCE WITH APPLICABLE OR
RELEVANT AND APPROPRIATE
REQUIREMENTS

For a site where material will remain on-site after completion of a *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) action, the level or standard of control that must be met for the hazardous substance, pollutant, or contaminant is at least that of any applicable or relevant and appropriate standard, requirement, criteria, or limitation under any Federal environmental law, or any more stringent standard, requirement, criteria, or limitation promulgated pursuant to a state environmental statute. An applicable requirement is one with which a private party would have to comply by law if the same action was being undertaken apart from CERCLA authority. All jurisdictional prerequisites of the requirement must be met in order for the requirement to be applicable. A requirement that is relevant and appropriate may "miss" on one or more jurisdictional prerequisites for applicability but still make sense at the site, given the circumstances of the site and release.

Response actions are required to comply with the substantive aspects of ARARs to the extent practicable, not with corresponding administrative requirements. That is, permit applications and other administrative procedures, such as administrative reviews, and reporting and recordkeeping requirements, are considered administrative for actions conducted entirely onsite (40 CFR 300.400(e), "Permit Requirements") and therefore not required.

For the removal action being considered in this document, implementation of any selected alternative will be designed to comply with the ARARs cited in this section to the extent practicable. ARARs are selected from promulgated environmental regulations that have been evaluated to determine whether they may be pertinent to the removal action. The purpose of this appendix is to identify the key ARARs for the proposed alternatives addressed in this engineering evaluation/cost analysis. ARARs, which will be complied with during implementation of the selected removal action, will be documented in the CERCLA Action Memorandum. To-be-considered information consists of nonpromulgated advisories or guidance issued by Federal or state governments that are not binding legally and do not have the status of potential ARARs. As appropriate, to-be-considered information should be considered while determining the removal action necessary for protection of human health and the environment.

1 In addition, potential ARARs were evaluated to determine if they fall into one of three
 2 categories: chemical-specific, location-specific, or action-specific. These categories are defined
 3 as follows.

- 4 • Chemical-specific requirements are usually health- or risk-based numerical values or
 5 methodologies that, when applied to site-specific conditions, result in the establishment
 6 of public- and worker-safety levels and site-cleanup levels.
- 7 • Location-specific requirements are restrictions placed on the concentration of dangerous
 8 substances or the conduct of activities solely because they occur in special geographic
 9 areas.
- 10 • Action-specific requirements are usually technology- or activity-based requirements or
 11 limitations triggered by the removal actions performed at the site.

12 Potential Federal and state ARARs are presented in Tables C-1 and C-2, respectively. The
 13 chemical-specific ARARs likely to be the most relevant removal action of the 200-MG-1 OU are
 14 elements of the Washington State regulations that implement WAC 173-340, "Model Toxics
 15 Control Act -- Cleanup," specifically associated with developing risk-based concentrations for
 16 cleanup (WAC 173-340-745, "Soil Cleanup Standards for Industrial Properties"). The
 17 requirements of WAC 173-340-745 help establish soil cleanup standards for nonradioactive
 18 contaminants at waste sites. The state air emission standards are likely to be important in
 19 identifying air emission limits and control requirements for any removal actions that produce air
 20 emissions. *Resource Conservation and Recovery Act of 1976* (RCRA) land-disposal restrictions
 21 will be important standards during the management of wastes generated during removal actions.

22 C1.2 WASTE MANAGEMENT STANDARDS

23 A variety of waste streams would be generated under the proposed removal action alternatives.
 24 It is anticipated that most of the waste will designate as low-level waste. However, quantities of
 25 dangerous or mixed waste, polychlorinated biphenyl (PCB)-contaminated waste, and asbestos
 26 and asbestos-containing material also could be generated. The great majority of the waste will
 27 be in a solid form. However, some aqueous solutions might be generated (e.g., liquid in
 28 railcars).

29 Radioactive waste is managed by U.S. Department of Energy under the authority of the *Atomic*
 30 *Energy Act of 1954*.

31 The identification, storage, treatment, and disposal of hazardous waste and the hazardous
 32 component of mixed waste are governed by RCRA. The State of Washington, which
 33 implements RCRA requirements under WAC 173-303, "Dangerous Waste Regulations," has
 34 been authorized to implement most elements of the RCRA program. The dangerous waste
 35 standards for generation and storage would apply to the management of any dangerous or mixed
 36 waste generated at the 200-MG-1 OU waste sites. Treatment standards for dangerous or mixed
 37 waste subject to RCRA land-disposal restrictions are specified in WAC 173-303-140, "Land
 38 Disposal Restrictions," which incorporates 40 CFR 268, "Land Disposal Restrictions," by
 39 reference.

40 The *Toxic Substances Control Act of 1976* (TSCA) and regulations at 40 CFR 761,
 41 "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and

- 1 Use Prohibitions,” govern the management and disposal of PCB wastes. The TSCA regulations
2 contain specific provisions for PCB waste, including PCB waste that contains a radioactive
3 component. PCBs also are considered underlying hazardous constituents under RCRA and thus
4 could be subject to WAC 173-303 and 40 CFR 268 requirements.
- 5 Removal and disposal of asbestos and asbestos-containing material are regulated under the *Clean*
6 *Air Act* and 40 CFR 61, “National Emission Standards for Hazardous Air Pollutants,” Subpart M,
7 “National Emission Standards for Asbestos.” These regulations provide for special precautions
8 to prevent environmental releases or exposure to personnel of airborne emissions of asbestos
9 fibers during removal actions.
- 10 Waste that is designated as low-level waste that meets Environmental Restoration Disposal
11 Facility (ERDF) acceptance criteria is assumed to be disposed at ERDF, which is engineered to
12 meet appropriate performance standards. Alternate potential disposal locations may be
13 considered when the removal action occurs if a suitable and cost-effective location is identified.
14 Any potential alternate disposal location will be evaluated for appropriate performance standards
15 to ensure that it is adequately protective of human health and the environment.
- 16 Waste designated as dangerous or mixed waste would be treated as appropriate to meet
17 land-disposal restrictions and ERDF acceptance criteria, and disposed at ERDF. ERDF is
18 engineered to meet minimum technical requirements for landfills under
19 WAC 173-303-665, “Landfills.” Applicable packaging and pre-transportation requirements for
20 dangerous or mixed waste generated at the 200-MG-1 OU waste sties would be identified and
21 implemented before movement of any waste.
- 22 Some of the aqueous waste designated as low-level waste, dangerous, or mixed waste would be
23 transported to the Effluent Treatment Facility for treatment and disposal. The Effluent
24 Treatment Facility is a RCRA-permitted facility authorized to treat aqueous waste streams
25 generated on the Hanford Site and dispose of these streams at a designated state-approved
26 land-disposal facility in accordance with applicable requirements.
- 27 Waste designated as PCB remediation waste likely would be disposed at ERDF, depending on
28 whether it meets the waste acceptance criteria. PCB waste that does not meet ERDF waste
29 acceptance criteria would be retained at a PCB storage area that meets the requirements for
30 TSCA storage and would be transported for future disposal at an appropriate disposal facility.
- 31 Asbestos and asbestos-containing material would be removed, packaged as appropriate, and
32 disposed in ERDF.
- 33 CERCLA Section 104(d)(4) states that where two or more noncontiguous facilities are
34 reasonably related on the basis of geography, or on the basis of the threat or potential threat to
35 the public health or welfare or the environment, the facilities can be treated as one for purposes
36 of CERCLA response actions. Consistent with this, the 200-MG-1 OU waste sties and ERDF
37 would be considered to be onsite for purposes of Section 104 of CERCLA, and waste may be
38 transferred between the facilities without requiring a permit.
- 39 All alternative actions can be performed in compliance with the waste management ARARs.
40 Waste streams will be evaluated, designated, and managed in compliance with the ARARs.
41 Before disposal, waste will be managed in a protective manner to prevent releases to the
42 environment or unnecessary exposure to personnel.

1 **C1.3 STANDARDS CONTROLLING EMISSIONS**
2 **TO THE ENVIRONMENT**

3 The proposed removal action alternatives have the potential to generate both radioactive and
4 toxic/criteria airborne emissions.

5 **C1.3.1 Radiological Air Emissions**

6 RCW 70.94, "Washington Clean Air Act," requires regulation of radioactive air pollutants. The
7 state implementing regulation WAC 173-480, "Ambient Air Quality Standards and Emission
8 Limits for Radionuclides," sets standards which are as stringent or more so than the Federal
9 standards under the Federal *Clean Air Act of 1990* and Amendments, and under the Federal
10 implementing regulation, 40 CFR 61, Subpart H, "National Emission Standards for Emissions of
11 Radionuclides Other than Radon from Department of Energy Facilities." The
12 U.S. Environmental Protection Agency's partial delegation of the 40 CFR 61 authority to the
13 State of Washington includes all substantive emissions monitoring, abatement, and reporting
14 aspects of the Federal regulation. The state standards protect the public by conservatively
15 establishing exposure standards applicable to the maximally exposed public individual. Under
16 WAC 246-247-030(15), "Definitions," the "maximally exposed individual" is any member of the
17 public (real or hypothetical) who abides or resides in an unrestricted area, and may receive the
18 highest total effective dose equivalent from the emission unit(s) under consideration, taking into
19 account all exposure pathways affected by the radioactive air emissions. All combined
20 radionuclide airborne emissions from the U.S. Department of Energy Hanford Site "facility" are
21 not to exceed amounts that would cause an exposure to any member of the public of greater than
22 10 mrem/yr effective dose equivalent. The state implementing regulation WAC 246-247,
23 "Radiation Protection – Air Emissions," which adopts the WAC 173-480 standards, and the
24 40 CFR 61, Subpart H standard, require verification of compliance with the 10 mrem/yr
25 standard, and potentially would be applicable to the removal action.

26 WAC 246-247 further addresses sources emitting radioactive airborne emissions by requiring
27 monitoring of such sources. Such monitoring requires physical measurement (i.e., sampling) of
28 the effluent or ambient air. The substantive provisions of WAC 246-247 that require monitoring
29 of radioactive airborne emissions potentially would be applicable to the removal action.

30 The above state implementing regulations further address control of radioactive airborne
31 emissions where economically and technologically feasible [WAC 246-247-040(3) and -040(4),
32 "General Standards," and associated definitions]. To address the substantive aspect of these
33 potential requirements, best or reasonably achieved control technology could be addressed by
34 ensuring that applicable emission control technologies (those successfully operated in similar
35 applications) would be used when economically and technologically feasible (i.e., based on
36 cost/benefit). If it is determined that there are substantive aspects of the requirement for control
37 of radioactive airborne emissions once ARARs are finalized, then controls will be administered
38 as appropriate using the best methods from among those that are reasonable and effective.

39 **C1.3.2 Criteria/Toxic Air Emissions**

40 Under WAC 173-400, "General Regulations for Air Pollution Sources," and WAC 173-460,
41 "Controls for New Sources of Toxic Air Pollutants," requirements are established for the

1 regulation of emissions of criteria/toxic air pollutants. The primary nonradioactive emissions
2 resulting from this removal action will be fugitive particulate matter. In accordance with
3 WAC 173-400-040, "General Standards for Maximum Emissions," reasonable precautions must
4 be taken to (1) prevent the release of air contaminants associated with fugitive emissions
5 resulting from excavation, materials handling, or other operations; and (2) prevent fugitive dust
6 from becoming airborne from fugitive sources of emissions. The use of treatment technologies
7 that would result in emissions of toxic air pollutants that would be subject to the substantive
8 applicable requirements of WAC 173-460 are not anticipated to be a part of this removal action.
9 Treatment of some waste encountered during the removal action may be required to meet ERDF
10 waste acceptance criteria. In most cases, the type of treatment anticipated would consist of
11 solidification/stabilization techniques such as macroencapsulation or grouting, and
12 WAC 173-460 would not be considered an ARAR. If more aggressive treatment is required that
13 would result in the emission of regulated air pollutants, the substantive requirements of
14 WAC 173-400-113(2), "Requirements for New Sources in Attainment or Unclassifiable Areas,"
15 and WAC 173-460-060, "Control Technology Requirements," would be evaluated to determine
16 applicability.

17 Emissions to the air will be minimized during implementation of the removal action through use
18 of standard industry practices such as the application of water sprays and fixatives. These
19 techniques are considered to be reasonable precautions to control fugitive emissions as required
20 by the regulatory standards.

21

Table C-1. Identification of Potential Federal Applicable or Relevant and Appropriate Requirements and To Be Considered for the Removal Action Sites.

	ARAR or TBC	Requirement	Rationale for Use
<i>Archaeological and Historic Preservation Act of 1976,</i> 16 USC 469aa-mm	ARAR	Requires that removal actions at the 200 North Area do not cause the loss of any archaeological or historic data. This act mandates preservation of the data and does not require protection of the actual site.	Archeological and historic sites have been identified within the 100 and 200 Areas; therefore, the substantive requirements of this act are potentially applicable to actions that might disturb these sites. This requirement is location-specific.
<i>National Historic Preservation Act of 1966,</i> 16 USC 470, Section 106	ARAR	Requires Federal agencies to consider the impacts of their undertaking on cultural properties through identification, evaluation and mitigation processes, and consultation with interested parties.	Cultural and historic sites have been identified within the 100 and 200 Areas; therefore, the substantive requirements of this act are potentially applicable to actions that might disturb these types of sites. This requirement is location-specific.
<i>Native American Graves Protection and Repatriation Act,</i> 25 USC 3001, et seq.	ARAR	Establishes Federal agency responsibility for discovery of human remains, associated and unassociated funerary objects, sacred objects, and items of cultural patrimony.	Substantive requirements of this act are potentially applicable if remains and sacred objects are found during removal action and will require Native American Tribal consultation in the event of discovery. This requirement is location-specific.
<i>Endangered Species Act of 1973,</i> 16 USC 1531 et seq, subsection 16 USC 1536(c)	ARAR	Prohibits actions by Federal agencies that are likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification or critical habitat. If the removal action is within critical habitat or buffer zones surrounding threatened or endangered species, mitigation measures must be taken to protect the resource.	Substantive requirements of this act are potentially applicable if threatened or endangered species are identified in areas where removal actions will occur. This requirement is location-specific.
"Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions," 40 CFR 761			
"Applicability," Specific Subsections: 40 CFR 761.50(b)(1) 40 CFR 761.50(b)(2) 40 CFR 761.50(b)(3) 40 CFR 761.50(b)(4) 40 CFR 761.50(b)(7) 40 CFR 761.50(c)	ARAR	These regulations establish standards for the storage and disposal of PCB wastes.	The substantive requirements of these regulations are applicable to the storage and disposal of PCB wastes (e.g., liquids, items, remediation waste, and bulk product waste) at ≥ 50 ppm. The specific subsections identified from 40 CFR 761.50(b) reference the specific sections for the management of PCB waste type. The disposal requirements for radioactive PCB waste are addressed in 40 CFR 761.50(b)(7). This is a chemical-specific requirement.

ARAR = applicable or relevant and appropriate requirement.

CFR = Code of Federal Regulations.

TBC = to-be-considered.

1

Table C-2. Identification of Potential State Applicable or Relevant and Appropriate Requirements and To Be Considered for the Removal Action Sites. (7 Pages)

ARAR Citation	ARAR or TBC	Requirement	Rationale for Use
Regulations Pursuant to the <i>Resource Conservation and Recovery Act of 1976</i> and Implemented Through WAC 173-303, "Dangerous Waste Regulations."			
"Identifying Solid Waste," WAC 173-303-016	ARAR	Identifies those materials that are and are not solid waste.	Substantive requirements of these regulations are potentially applicable because they define how to determine which materials are subject to the designation regulations. Specifically, materials that are generated for removal from the CERCLA site during the removal action potentially would be subject to the procedures for identifying solid waste to ensure proper management. This requirement is action-specific.
"Designation of Dangerous Waste," "Designation Procedures," WAC 173-303-070(3)	ARAR	Establishes the method for determining whether a solid waste is or is not a dangerous waste or an extremely hazardous waste.	Substantive requirements of these regulations are potentially applicable to materials encountered during the removal action. Specifically, solid waste generated for removal from the CERCLA site during this removal action potentially would be subject to the dangerous waste designation procedures to ensure proper management. This requirement is action-specific.
"Excluded Categories of Waste," WAC 173-303-071	ARAR	Describes those waste categories that are excluded from the requirements of WAC 173-303 (excluding WAC 173-303-050).	The conditions of this requirement are potentially applicable to this removal action if wastes identified in WAC 173-303-071 are encountered. This requirement is action-specific.
"Conditional Exclusion of Special Wastes," WAC 173-303-073	ARAR	Establishes the conditional exclusion and the management requirements of special wastes, as defined in WAC 173-303-040.	Substantive requirements of these regulations are potentially applicable to materials encountered during the removal action. Specifically, the substantive standards for management of special waste are potentially applicable to the interim management of certain waste that will be generated during the removal action. This requirement is action-specific.

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Table C-2. Identification of Potential State Applicable or Relevant and Appropriate Requirements and To Be Considered for the Removal Action Sites. (7 Pages)

ARAR Citation	ARAR or TBC	Requirement	Rationale for Use
"Requirements for Universal Waste," WAC 173-303-077	ARAR	Identifies waste exempted from regulation under WAC 173-303-140 and WAC 173-303-170 through 173-303-9907 (excluding WAC 173-303-960). This waste is subject to regulation under WAC 173-303-573.	Substantive requirements of these regulations are potentially applicable to materials encountered during the removal action. Specifically, the substantive standards for management of universal waste are potentially applicable to the interim management of certain waste that will be generated during the removal action. This requirement is action-specific.
"Land Disposal Restrictions and Prohibitions," WAC 173-303-140(4)	ARAR	This regulation establishes state standards for land disposal of dangerous waste and incorporates, by reference, the Federal land-disposal restrictions of 40 CFR 268 that are applicable to solid waste designated as dangerous or mixed waste in accordance with WAC 173-303-070(3).	The substantive requirements of this regulation are potentially applicable to materials encountered during the removal action. Specifically, dangerous and/or mixed waste that is generated and removed from the CERCLA site during the removal action for offsite (as defined by CERCLA) land disposal potentially would be subject to the identification of applicable land-disposal restrictions at the point of waste generation. The actual offsite treatment of such waste would not be an ARAR to this removal action, but potentially would be subject to all applicable laws and regulations. This requirement is action-specific.

Table C-2. Identification of Potential State Applicable or Relevant and Appropriate Requirements and To Be Considered for the Removal Action Sites. (7 Pages)

ARAR Citation	ARAR or TBC	Requirement	Rationale for Use
<p>“Requirements for Generators of Dangerous Waste,” WAC 173-303-170</p>	ARAR	<p>Establishes the requirements for dangerous waste generators.</p>	<p>Substantive requirements of these regulations are potentially applicable to materials encountered during the removal action. Specifically, the substantive standards for management of dangerous and/or mixed waste are potentially applicable to the interim management of certain waste that will be generated during the removal action. For purposes of this removal action, WAC 173-303-170(3) includes the substantive provisions of WAC 173-303-200 by reference. WAC 173-303-200 further includes certain substantive standards from WAC 173-303-630 and -640 by reference. This requirement is action-specific.</p>
<p>“Dangerous Waste Regulations” WAC 173-303 (as amended, February 2007)</p>			
<p>“Standard Method C Industrial Soil Cleanup Levels,” WAC 173-340-745(5)(b) “Terrestrial Ecological Evaluation Procedures,” WAC 173-340-7490 “Tables,” WAC 173-340-900, Table 749-3</p>	ARAR	<p>Establishes the process and methods used to evaluate risk and to develop cleanup standards for soil and other environmental media.</p>	<p>The substantive requirements of the specified subsections are relevant and appropriate to developing cleanup standards for the selected removal action for the 200-MG-1 Operable Unit. This is a chemical-specific requirement.</p>
<p>“General Regulations for Air Pollution Sources,” WAC 173-400 and WAC 173-460</p>			
<p>“Washington Clean Air Act,” RCW 70.94; State Government – Executive,” “Department of Ecology,” RCW 43.21A “General Regulations for Air Pollution – Sources,” WAC 173-400 Specific subsection: WAC 173-400-040</p>	ARAR	<p>Requires all sources of air contaminants to meet standards for visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, sulfur dioxide, concealment and masking, and fugitive dust. Requires use of reasonably available control technology.</p>	<p>Substantive requirements of the general standards for control of fugitive emissions are potentially applicable to removal actions at the site due to the generation of fugitive dust that occurs during excavation or other types of construction activities. These requirements are action-specific.</p>

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Table C-2. Identification of Potential State Applicable or Relevant and Appropriate Requirements and To Be Considered for the Removal Action Sites. (7 Pages)

ARAR Citation	ARAR or TBC	Requirement	Rationale for Use
Specific subsections: WAC 173-400-050, "Emission Standards for Combustion and Incineration Units" WAC 173-400-060, "Emission Standards for General Process Units" WAC 173-400-070, "Emission Standards for Certain Source Categories" WAC 173-400-075, "Emission Standards for Sources Emitting Hazardous Air Pollutants"	ARAR	Requires specifically identified types of emission sources to meet additional standards beyond the general emission standards imposed by WAC 173-400-040. Incorporates the applicable Federal requirements from 40 CFR 60 and 40 CFR 63. Requires use of either reasonably available control technology, best available control technology, or maximum achievable control technology, depending on the specific type of emission source.	The selected alternative may include or result in one or more defined types of emission sources that would need to be controlled in accordance with these requirements. These requirements are action-specific.
Specific subsection: WAC 173-400-113	ARAR	Incorporates by reference the applicable Federal requirements from 40 CFR 60 (new source performance standards), 40 CFR 61 (national emission standards for hazardous air pollutants), and 40 CFR 63 (minimum available control technology). Requires controls to minimize the release of air contaminants resulting from new or modified sources of regulated criteria and toxic air emissions. Emissions are to be minimized through application of best available control technology.	Substantive requirements of this regulation potentially would be applicable to removal actions performed at the site if a treatment technology that emits regulated air emissions were necessary during the implementation of the removal action. This requirement is action-specific.
"Controls for New Sources of Toxic Air Pollutants," WAC 173-460 Specific subsections: WAC 173-460-030 WAC 173-460-060 WAC 173-460-070 WAC 173-460-080 WAC 173-460-150 WAC 173-460-160	ARAR	Requires best available control technology for regulated emissions of toxic air pollutants (T-BACT) and demonstration that emissions of toxic air pollutants will not endanger human health or safety.	Substantive requirements of these regulations potentially would be applicable to removal actions performed at the site, if a treatment technology that emits toxic air emissions were necessary during the implementation of the removal action. These requirements are action-specific.

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Table C-2. Identification of Potential State Applicable or Relevant and Appropriate Requirements and To Be Considered for the Removal Action Sites. (7 Pages)

ARAR Citation	ARAR or TBC	Requirement	Rationale for Use
“Asbestos” Benton Clean Air Agency (BCAA), Regulation 1, Article 8			
Section 8.02 “CFR Adoption by Reference”; Section 8.03 “General Requirements”	ARAR	Incorporates the Federal requirements of 40 CFR 61, Subpart M. Requires established controls and work practices for managing and disposing regulated asbestos-containing material.	The removal action may include the removal or disturbance of regulated asbestos containing material that must be conducted in accordance with the applicable requirements and work practices. This requirement is action-specific.
“Radiation Protection – Air Emissions,” WAC 246-247			
“National Standards Adopted by Reference for Sources of Radionuclide Emissions,” WAC 246-247-035(1)(a)(ii)	ARAR	Establishes requirements equivalent to 40 CFR 61, Subpart H, by reference. Radionuclide airborne emissions from the waste site shall be controlled so as not to exceed amounts that would cause an exposure to any member of the public of greater than 10 mrem/yr effective dose equivalent.	Substantive requirements of this standard are potentially applicable because this removal action may include activities such as excavation, demolition, decontamination and stabilization of contaminated areas and equipment, each of which may provide airborne emissions of radioactive particulates to unrestricted areas. As a result, requirements limiting emissions potentially apply. This is a risk-based standard for the purposes of protecting human health and the environment. This requirement is action-specific.
“General Standards,” WAC 246-247-040(3) WAC 246-247-040(4)	ARAR	Emissions shall be controlled to ensure that emission standards are not exceeded. Actions creating new sources or significantly modified sources shall apply best available controls. All other actions shall apply reasonably achievable controls.	Substantive requirements of this standard are potentially applicable because fugitive, diffuse and point source emissions of radionuclides to the ambient air may result from activities, such as demolition and excavation of contaminated soils and operation of exhausters and vacuums, performed during the removal action. This standard exists to ensure compliance with emission standards. These requirements are action-specific.

Table C-2. Identification of Potential State Applicable or Relevant and Appropriate Requirements and To Be Considered for the Removal Action Sites. (7 Pages)

ARAR Citation	ARAR or TBC	Requirement	Rationale for Use
<p>“Monitoring, Testing, and Quality Assurance,” WAC 246-247-075(1) and –(2) and –(4)</p>	<p>ARAR</p>	<p>Establishes the monitoring, testing, and quality assurance requirements for radioactive air emissions from major sources. Effluent flow rate measurements shall be made and the effluent stream shall be directly monitored continuously with an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the sampling site following the specified guidance. The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with lead agency prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions. When it is impractical to measure the effluent flow rate at a source in accordance with the requirements or to monitor or sample an effluent stream at a source in accordance with the site selection and sample extraction requirements, the waste site owner or operator may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures as approved by the lead agency.</p> <p>Emissions from nonpoint and fugitive sources of airborne radioactive material shall be measured.</p> <p>Measurement techniques may include, but are not limited to, sampling, calculation, smears, or other reasonable method for identifying emissions as determined by the lead agency.</p>	<p>Substantive requirements of this standard are potentially applicable because fugitive and nonpoint source emissions of radionuclides to the ambient air may result from activities, such as demolition and excavation of contaminated soils and operation of exhausters and vacuums, performed during the removal action. This standard exists to ensure compliance with emission standards. These requirements are action-specific.</p>

Table C-2. Identification of Potential State Applicable or Relevant and Appropriate Requirements and To Be Considered for the Removal Action Sites. (7 Pages)

ARAR Citation	ARAR or TBC	Requirement	Rationale for Use
"Monitoring, Testing, and Quality Assurance," WAC 246-247-075(3)	ARAR	Methods to implement periodic confirmatory monitoring for minor sources may include estimating the emissions or other methods as approved by the lead agency.	Fugitive and diffuse emissions from the demolition and excavation and related activities potentially will require periodic confirmatory measurements to verify low emissions. This requirement is action-specific.
"Monitoring, Testing, and Quality Assurance," WAC 246-247-075(8)	ARAR	Site emissions resulting from nonpoint and fugitive sources of airborne radioactive material shall be measured. Measurement techniques may include ambient air measurements, or in-line radiation detector or withdrawal of representative samples from the effluent stream, or other methods as determined by the lead agency.	Fugitive and diffuse emissions of airborne radioactive material due to demolition and excavation and related activities potentially will require measurement. This requirement is action-specific.
"General Standards," WAC 246-247-040(4) and "General Standards for Maximum Permissible Emissions," WAC 173-480-050(1)	ARAR	At a minimum, all emission units shall make every reasonable effort to maintain radioactive materials in effluents to unrestricted areas, ALARA. Control equipment of sites operating under ALARA shall be defined as reasonably available control technology and as low as reasonably achievable control technology.	The potential for fugitive and diffuse emissions due to demolition and excavation and related activities potentially will require efforts to minimize those emissions. This requirement is action-specific.
"Emission Monitoring and Compliance Procedures," WAC 173-480-070-(2)	ARAR	Determine compliance with the public dose standard by calculating exposure at the point of maximum annual air concentration in an unrestricted area where any member of the public may be.	Fugitive and diffuse emissions resulting from demolition and excavation and related activities potentially will require assessment and reporting. This requirement is action-specific.
To-be-Considered Pursuant to Relevant Waste Acceptance Criteria			
<i>Environmental Restoration Disposal Facility Waste Acceptance Criteria, WCH-191</i>	TBC	Establishes waste acceptance criteria for the Environmental Restoration Disposal Facility.	Waste destined for management at The Environmental Restoration Disposal Facility must meet acceptance criteria to ensure proper disposal.

ALARA = as low as reasonably achievable.
 ARAR = applicable or relevant and appropriate requirement.
 CERCLA = *Comprehensive Environmental Response, Compensation, and Liability Act of 1980.*

CFR = *Code of Federal Regulations.*
 T-BACT = toxics – best available control technology.
 TBC = to be considered.
 WAC = *Washington Administrative Code.*

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C2.0 REFERENCES

- 40 CFR 60, "Standards of Performance for New Stationary Sources," Title 40, *Code of Federal Regulations*, Part 60.
- 40 CFR 61, "National Emission Standards for Hazardous Air Pollutants," Title 40, *Code of Federal Regulations*, Part 61.
- 40 CFR 61, Subpart H, "National Emission Standards for Emissions of Radionuclides Other than Radon from Department of Energy Facilities."
 - 40 CFR 61, Subpart M, "National Emission Standards for Asbestos."
- 40 CFR 63, "National Emission Standards for Hazardous Air Pollutants for Source Categories," Title 40, *Code of Federal Regulations*, Part 63.
- 40 CFR 268, "Land Disposal Restrictions," Title 40, *Code of Federal Regulations*, Part 268.
- 40 CFR 300.400(e), "Permit Requirements," Title 40, *Code of Federal Regulations*, Part 300.400(e).
- 40 CFR 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions," Title 40, *Code of Federal Regulations*, Part 761.
- 40 CFR 761.50(b), "Applicability," "PCB Waste."
 - 40 CFR 761.50(c), "Applicability," "Storage for Disposal."
- Archaeological and Historic Preservation Act of 1976*, 16 USC 469aa-mm, et seq.
- Atomic Energy Act of 1954*, 42 USC 2011, et seq.
- Benton Clean Air Authority*, 2005, Regulation 1, Article 8, Benton County, Washington.
- Clean Air Act of 1990*, 42 USC 7401, et seq., Pub. L. 101-549.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601, et seq.
- Endangered Species Act of 1973*, 16 USC 1531, et seq.
- National Historic Preservation Act of 1966*, 16 USC 470, et seq.
- Native American Graves Protection and Repatriation Act*, 25 USC 3001, et seq.
- RCW 43.21A, "State Government – Executive," "Department of Ecology," Title 43, Chapter 21A, *Revised Code of Washington*, as amended, Washington State, Olympia, Washington.
- RCW 70.94, "Public Health and Safety," "Washington Clean Air Act," Title 70, Chapter 94, *Revised Code of Washington*, as amended, Washington State, Olympia, Washington.
- Resource Conservation and Recovery Act of 1976*, 42 USC 6901, et seq.
- Toxic Substances Control Act of 1976*, 15 USC 2601, et seq.

- 1 WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended,
2 Washington State Department of Ecology, Olympia, Washington.
- 3 • 173-303-016, "Identifying Solid Waste."
 - 4 • 173-303-017, "Recycling Processes Involving Solid Waste."
 - 5 • 173-303-040, "Definitions."
 - 6 • 173-303-050, "Department of Ecology Cleanup Authority."
 - 7 • 173-303-070(3), "Designation of Dangerous Waste," "Designation Procedures."
 - 8 • 173-303-071, "Excluded Categories of Waste."
 - 9 • 173-303-073, "Conditional Exclusion of Special Wastes."
 - 10 • 173-303-077, "Requirements for Universal Waste."
 - 11 • 173-303-120, "Recycled, Reclaimed, and Recovered Wastes."
 - 12 • 173-303-140, "Land Disposal Restrictions."
 - 13 • 173-303-140(4), "Land Disposal Restrictions and Prohibitions."
 - 14 • 173-303-170, "Requirements for Generators of Dangerous Waste."
 - 15 • 173-303-200, "Accumulating Dangerous Waste On-Site."
 - 16 • 173-303-573, "Standards for Universal Waste Management."
 - 17 • 173-303-630, "Closure and Post-Closure," "Use and Management of Containers."
 - 18 • 173-303-640, "Tank Systems."
 - 19 • 173-303-665, "Landfills."
 - 20 • 173-303-960, "Special Powers and Authorities of the Department."
 - 21 • 173-303-9907, "Reserved."
- 22 WAC 173-340, "Model Toxics Control Act -- Cleanup," *Washington Administrative Code*,
23 as amended, Washington State Department of Ecology, Olympia, Washington.
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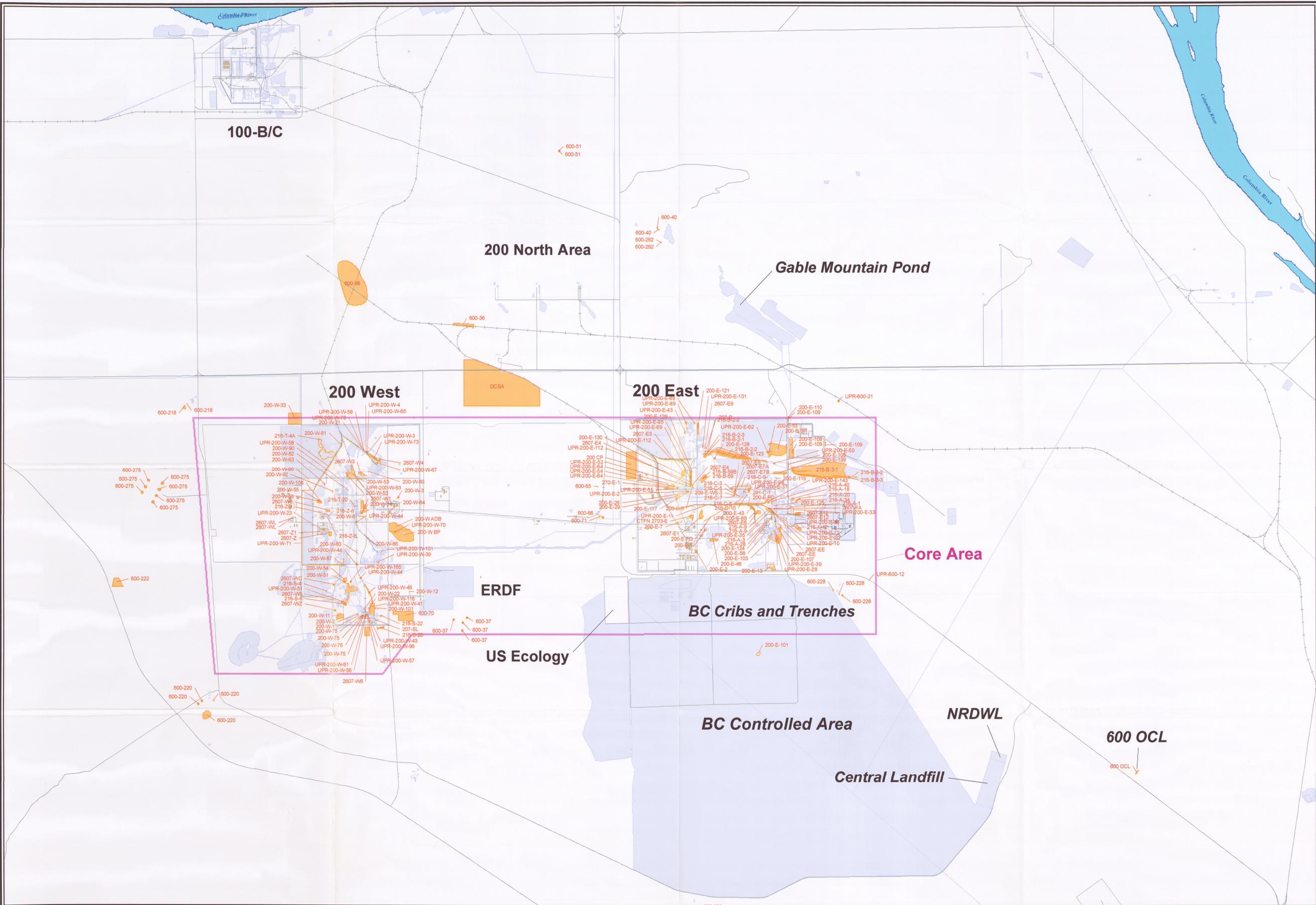
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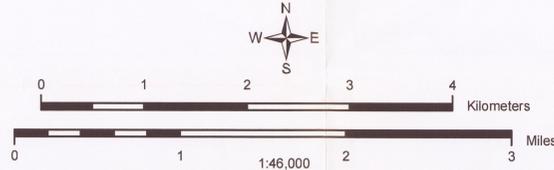
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200-MG-1 WIDS Sites

- 200-MG-1
- Central Plateau Risk Framework Core Zone
- Accepted Sites in Other Operable Units



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