



**Department of Energy**  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

11-AMCP-0166

**AUG 15 2011**

Mr. D. A. Faulk, Program Manager  
Office of Environmental Cleanup  
Hanford Project Office  
U.S. Environmental Protection Agency  
309 Bradley Boulevard, Suite 115  
Richland, Washington 99352

Dear Mr. Faulk:

WASTE SITE RECLASSIFICATION FORMS (CONTROL NUMBERS 2009-044 AND 2009-045), AND RESPONSE ACTION REPORT FOR 200-MG-1 OPERABLE UNIT WASTE SITES 200-E-110 AND UPR-600-21, DOE/RL-2009-123, REVISION 0

This letter transmits signed copies of Waste Site Reclassification Forms (Control Numbers 2009-044 and 2009-045), and the approved Response Action Report for 200-MG-1 Operable Unit Waste Sites 200-E-110 and UPR-600-21, DOE/RL-2009-123, Revision 0.

If you have any questions, please contact me, or your staff may contact, Al Farabee, of my staff, on (509) 376-8089.

Sincerely,

A handwritten signature in black ink that reads "Jonathan A. Dowell". The signature is written in a cursive style with a large initial "J".

Jonathan A. Dowell, Assistant Manager  
for the Central Plateau

AMCP:FMR

Attachments

cc: See Page 2

AUG 15 2011

Mr. D. A. Faulk  
11-AMCP-0166

-2-

cc w/attachs:

G. Bohnee, NPT  
L. Buck, Wanapum  
L. C. Buelow, EPA  
S. Harris, CTUIR  
J. A. Hedges, Ecology  
R. Jim, YN  
S. L. Leckband, HAB  
N. M. Menard, Ecology  
K. Niles, ODOE  
D. Rowland, YN (4) plus 2 CDs  
Administrative Record  
Environmental Portal

cc w/o attachs:

D. G. Black, CHPRC  
R. E. Piippo, MSA  
J. G. Vance, MSA

WASTE SITE RECLASSIFICATION FORM

Date Submitted: <u>06/09/2010</u>	Operable Unit(s): <u>200-MG-1</u>	Control Number: <u>2009-044</u>
Originator: <u>K. Whitley</u>	Waste Site Code: <u>200-E-110</u>	
Phone: <u>373-4929</u>	Type of Reclassification Action: Closed Out <input type="checkbox"/> Interim Closed Out <input checked="" type="checkbox"/> No Action <input type="checkbox"/> RCRA Postclosure <input type="checkbox"/> Rejected <input type="checkbox"/> Consolidated <input type="checkbox"/>	

This form documents agreement among parties listed authorizing classification of the subject unit as Closed Out, Interim Closed Out, No Action, RCRA Postclosure, Rejected, or Consolidated. This form also authorizes backfill of the waste management unit, if appropriate, for Closed Out and Interim Closed out units. Final removal from the NPL of No Action and Closed Out waste management units will occur at a future date.

Description of current waste site condition:  
(Summarize status of investigation/remediation of the waste sites.)

The 200-E-110 waste site is located outside the northeastern corner of the 200 East Area just outside Gate 810 covering 480 m<sup>2</sup> (5046 ft<sup>2</sup>). The waste site has little growing vegetation with sandy soil, rocks and concrete rubble. The contamination originated from contaminated tumbleweeds that were subsequently removed. The site was later radiologically down-posted in 2003. The results of the confirmatory sampling performed in accordance with DOE/RL-2009-60, *Sampling and Analysis Plan for Selected 200-MG-1 Operable Unit Waste Sites*, identified no contaminants above the Remedial Action Levels (RALs) thus the site achieved compliance with the Removal Action Objectives (RAOs).

The results of confirmatory sampling actions justify application of the 'no further action' remedy described in the *Action Memorandum for Non-Time-Critical Removal Action for 11 Waste Sites in the 200-MG-1 Operable Unit* (DOE/RL-2009-48) and thus supports a reclassification of this site to interim closed out. The current site conditions achieve the RALs and the corresponding RAOs established in the *Removal Action Work Plan for 11 Waste Sites in the 200-MG-1 Operable Unit* (DOE/RL-2009-53). The results of waste site sampling are used to make reclassification decisions for the 200-E-110 waste site in accordance with the TPA-MP-14 (DOE-RL 2007) process.

Basis for reclassification:  
(For closeout, reference supporting documentation, as listed in Table 3.)

The current site conditions meet RALs and the corresponding RAOs specified in the Action Memorandum. The results show that the residual soil concentrations support reasonably anticipated future land use recognized in DOE/RL-2008-44, *Engineering Evaluation/Cost Analysis for the 200-MG-1 Operable Unit Waste Sites* and Action Memorandum. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil [i.e., surface to 4.6 meters (15 feet)] and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. There is no deep zone for the 200-E-110 waste site therefore no institutional controls are required. The basis for reclassification to interim closed out is described in detail in the *Response Action Report for 200-MG-1 Operable Unit Waste Sites 200-E-110 and UPR-600-21* (DOE/RL-2009-123), U.S. Department of Energy, Richland Operation Office, Richland, Washington.

Waste Site Controls:  
 Engineered Controls: Yes  No  Institutional Controls: Yes  No  O&M requirements: Yes  No   
 If any of the Waste Site Controls are checked Yes specify control requirements including reference to the Record of Decision, TSD Closure Letter, or other relevant documents.

<u>D. A. Farabee</u> DOE Federal Project Director (printed)	<u>[Signature]</u> Signature	<u>2/24/11</u> Date
<u>Laura C Bvelow</u> EPA Project Manager (printed)	<u>[Signature]</u> Signature	<u>2/25/11</u> Date

WASTE SITE RECLASSIFICATION FORM

Date Submitted: <u>06/09/2010</u>	Operable Unit(s): <u>200-MG-1</u>	Control Number: <u>2009-045</u>
Originator: <u>K. Whitley</u>	Waste Site Code: <u>UPR-600-21</u>	
Phone: <u>373-4929</u>	Type of Reclassification Action:	
	Closed Out <input type="checkbox"/> Interim Closed Out <input checked="" type="checkbox"/> No Action <input type="checkbox"/>	
	RCRA Postclosure <input type="checkbox"/> Rejected <input type="checkbox"/> Consolidated <input type="checkbox"/>	

This form documents agreement among parties listed authorizing classification of the subject unit as Closed Out, Interim Closed Out, No Action, RCRA Postclosure, Rejected, or Consolidated. This form also authorizes backfill of the waste management unit, if appropriate, for Closed Out and Interim Closed out units. Final removal from the NPL of No Action and Closed Out waste management units will occur at a future date.

Description of current waste site condition:

(Summarize status of investigation/remediation of the waste sites.)

The UPR-600-21 waste site is located northeast of the 200 East Area, south of the railroad track, encompassing approximately 30 acres. Radiological contamination was identified near the railroad track originating from contaminated tumbleweeds that migrated and decomposed in the area. After initial removal efforts the site was down-posted in 1991. The results of the confirmatory sampling performed in accordance with DOE/RL-2009-60, *Sampling and Analysis Plan for Selected 200-MG-1 Operable Unit Waste Sites*, identified no contaminants above the Remedial Action Levels (RALs) thus the site achieved compliance with the Removal Action Objectives (RAOs).

The results of confirmatory sampling actions justify application of the 'no further action' remedy described in the *Action Memorandum for Non-Time-Critical Action for 11 Waste Sites in the 200-MG-1 Operable Unit* (DOE/RL-2009-48) and thus supports a reclassification of this site to interim closed out. The current site conditions achieve the RALs and the corresponding RAOs established in the *Removal Action Work Plan for 11 Waste Sites in the 200-MG-1 Operable Unit* (DOE/RL-2009-53). The results of waste site sampling are used to make reclassification decisions for the UPR-600-21 waste site in accordance with the TPA-MP-14 (DOE-RL 2007) process.

Basis for reclassification:

(For closeout, reference supporting documentation, as listed in Table 3.)

The current site conditions meet RALs and the corresponding RAOs specified in the Action Memorandum. The results show that the residual soil concentrations support reasonably anticipated future land use recognized in DOE/RL-2008-44, *Engineering Evaluation/Cost Analysis for the 200-MG-1 Operable Unit Waste Sites* and Action Memorandum. The results also demonstrate that residual contaminant concentrations support unrestricted future use of shallow zone soil [i.e., surface to 4.6 meters (15 feet)] and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. There is no deep zone for the UPR-600-21 waste site therefore no institutional controls are required. The basis for reclassification to interim closed out is described in detail in the *Response Action Report for 200-MG-1 Operable Unit Waste Sites 200-E-110 and UPR-600-21* (DOE/RL-2009-123), U.S. Department of Energy, Richland Operation Office, Richland, Washington.

Waste Site Controls:

Engineered Controls: Yes  No  Institutional Controls: Yes  No  O&M requirements: Yes  No   
If any of the Waste Site Controls are checked Yes specify control requirements including reference to the Record of Decision, TSD Closure Letter, or other relevant documents.

<u>O.A. Farabee</u>	<u>[Signature]</u>	<u>2/24/11</u>
DOE Federal Project Director (printed)	Signature	Date
<u>Laura C. Bvelow</u>	<u>[Signature]</u>	<u>2/25/11</u>
EPA Project Manager (printed)	Signature	Date

# **Response Action Report for 200-MG-1 Operable Unit Waste Sites 200-E-110 and UPR-600-21 Justification for Waste Site Reclassification Forms 2009-044 and 2009-045**

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



U.S. DEPARTMENT OF  
**ENERGY**

Richland Operations  
Office

P.O. Box 550  
Richland, Washington 99352

**Approved for Public Release;**  
Further Dissemination Unlimited

# Response Action Report for 200-MG- 1 Operable Unit Waste Sites 200-E-110 and UPR-600-21

Justification for Waste Site Reclassification Forms  
2009-044 and 2009-045

Date Published  
February 2010

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



U.S. DEPARTMENT OF  
**ENERGY**

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*J. D. Cardal*  
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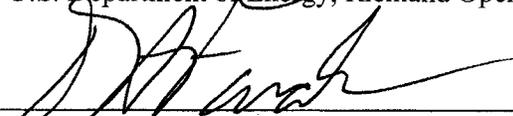
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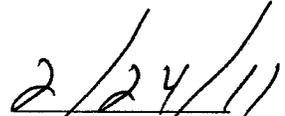
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## Approval Page

**Title:** *Response Action Report for 200-MG-1 Operable Unit Waste Sites 200-E-110  
and UPR-600-21*

O. A. Farabee  
U.S. Department of Energy, Richland Operations Office

  
\_\_\_\_\_  
Signature

  
\_\_\_\_\_  
Date

## Executive Summary

This Response Action Report (RAR) summarizes the characterization data collected for the 200-E-110 and UPR-600-21 waste sites, shows the comparison of data against applicable cleanup goals and objectives, provides justification for the selected alternative, and provides the basis for reclassification of the waste sites status.

In July and August 2009, the 200-E-110 and UPR-600-21 waste sites were investigated through field observation and radiological surveys for the purpose of determining if radiological contaminants were present above the removal action levels (RALs). This investigative activity was performed in accordance with DOE/RL-2009-60, Revision 0, *Sampling and Analysis Plan for Selected 200-MG-1 Operable Unit Waste Sites* and DOE/RL-2009-53, Revision 0, *Removal Action Work Plan for 11 Waste Sites in the 200-MG-1 Operable Unit* (RAWP). The survey results indicate that the waste site achieved compliance with the removal action levels (RALs) and thus met the removal action objectives (RAOs).

This report documents the successful completion of the response actions demonstrating that the 200-E-110 and UPR-600-21 waste sites meet the objectives for the 'no further action' component of the confirmatory sampling/no further action (CS/NFA) alternative described in DOE/RL-2009-48, *Action Memorandum for Non-Time-Critical Removal Action for 11 Waste Sites in 200-MG-1 Operable Unit* (AM) and the RAWP. The results show that the residual soil concentration of contaminants of potential concern (COPCs) support reasonably anticipated future land use recognized in DOE/RL-2008-44, *Engineering Evaluation/Cost Analysis for the 200-MG-1 Operable Unit Waste Sites*, and AM (for the purposes of this interim action, RAOs were selected that would support unrestricted land use). These results support reclassification to "Interim Closed Out" status in accordance with the process described in DOE-RL 2007, *Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Handbook, RL-TPA-90-0001, Guideline Number TPA-MP-14, "Maintenance of the Waste Information Data System (WIDS)." No institutional controls are required because no deep zone is associated with the 200-E-110 and UPR-600-21 waste sites.*

These wastes sites and the data obtained from the subject sampling evolution will be included in the risk assessment and remedial investigation and feasibility study for final closure of this area.

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## Terms

AM	Action Memorandum
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COPC	contaminants of potential concern
CS/NFA	confirmatory sampling/no further action
DOE	U.S. Department of Energy
EE/CA	engineering evaluation/cost analysis
EPA	U.S. Environmental Protection Agency
ERDF	Environmental Restoration Disposal Facility
GM	Geiger-Mueller
MG	model group
NaI	sodium iodide
NCP	National Contingency Plan
NPL	National Priorities List
O&M	operations and maintenance
OU	operable unit
PAM	portable alpha meter
QA/QC	quality assurance/quality control
RAR	Response Action Report
RAL	removal action level
RAO	response action objective
RAWP	removal action work plan
RCA	radiologically controlled area
SAP	sampling and analysis plan
SARA	Superfund Amendments and Reauthorization Act of 1986
Tri Party Agreement	Tri-Party Agreement (Hanford Federal Facility Agreement and Consent Order)
UPR	unplanned release site
WIDS	Waste Information Data System

## 1 Introduction

This report demonstrates that the 200-E-110 waste site and unplanned release site UPR-600-21 meet the objective for the confirmatory sampling/no further action (CS/NFA) alternative described in DOE/RL-2009-53, Revision 0, *Removal Action Work Plan for 11 Waste Sites in the 200-MG-1 Operable Unit* (RAWP). This report also documents that the response actions for these waste sites meet the removal action objectives (RAOs) provided in DOE/RL-2009-48, *Action Memorandum for Non-Time-Critical Removal Action for 11 Waste Sites in 200-MG-1 Operable Unit* (AM). The documentation process is consistent with the U.S. Department of Energy's (DOE) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Action Site Closure Guidance. This report provides a summary of the actions taken and resulting data to support a determination that the 'no further action' remedy has been achieved.

Statutory authority for the action taken is in accordance with CERCLA, Executive Order 12580, the Tri-Party Agreement (Ecology et al., 1989, *Hanford Federal Facility Agreement and Consent Order*), and the "National Oil and Hazardous Substances Pollution Contingency Plan" (40 Code of Federal Regulations [CFR] 300) (National Contingency Plan [NCP]).

### 1.1 Site Background Information

#### 1.1.1 Hanford General Site Information

The Hanford Site encompasses approximately 1,517 km<sup>2</sup> (586 mi<sup>2</sup>) in the Columbia River Basin of south-central Washington State. In 1989, the U.S. Environmental Protection Agency (EPA) placed the 100, 200, 300, and 1100 Areas of the Hanford Site on the "National Priorities List" (NPL) (40 CFR 300, Appendix B, "National Priorities List"). The 200 Area NPL site contains the 200 East and 200 West Areas (including waste management facilities and inactive irradiated fuel reprocessing facilities) and the 200 North Area (formerly used for interim storage and staging of irradiated fuel). The 200 Area NPL also includes the 200-MG-1 Operable Unit (OU) and its assigned waste sites.

#### 1.1.2 Operable Unit 200-MG-1

The Tri-Parties created the 200-MG-1 OU through Tri-Party Agreement Milestone M-015-06-02 and Tri-Party Agreement Change Request C-06-02. 200-MG-1 OU is made up of waste sites in the 200 and 600 Areas of the Hanford Site and includes French drains, trenches, cribs, ditches, and retention basins with shallow contamination (generally less than 4.6 m [15-ft] deep). This OU also includes waste sites where chemical and radioactive contaminants were released during material transfers (i.e., unplanned release sites). Additionally, some 200-MG-1 OU waste sites were produced by airborne dissemination of radioactive particles, or dispersal through plants, e.g. tumbleweeds, or through animal fecal matter. For those sites containing radionuclides, the radionuclide inventory for this conceptual model group does not include transuranic isotopes at or above 100 nCi/g.

All the waste sites contained in the 200-MG-1 OU, are located within the Central Plateau, as recognized in DOE/RL-2008-44, *Engineering Evaluation/Cost Analysis for the 200-MG-1 Operable Unit Waste Sites* (EE/CA) and AM. As shown in Figure 1-1, the 200-E-110 and UPR-600-21 waste sites are located northeast of the 200 East Area.

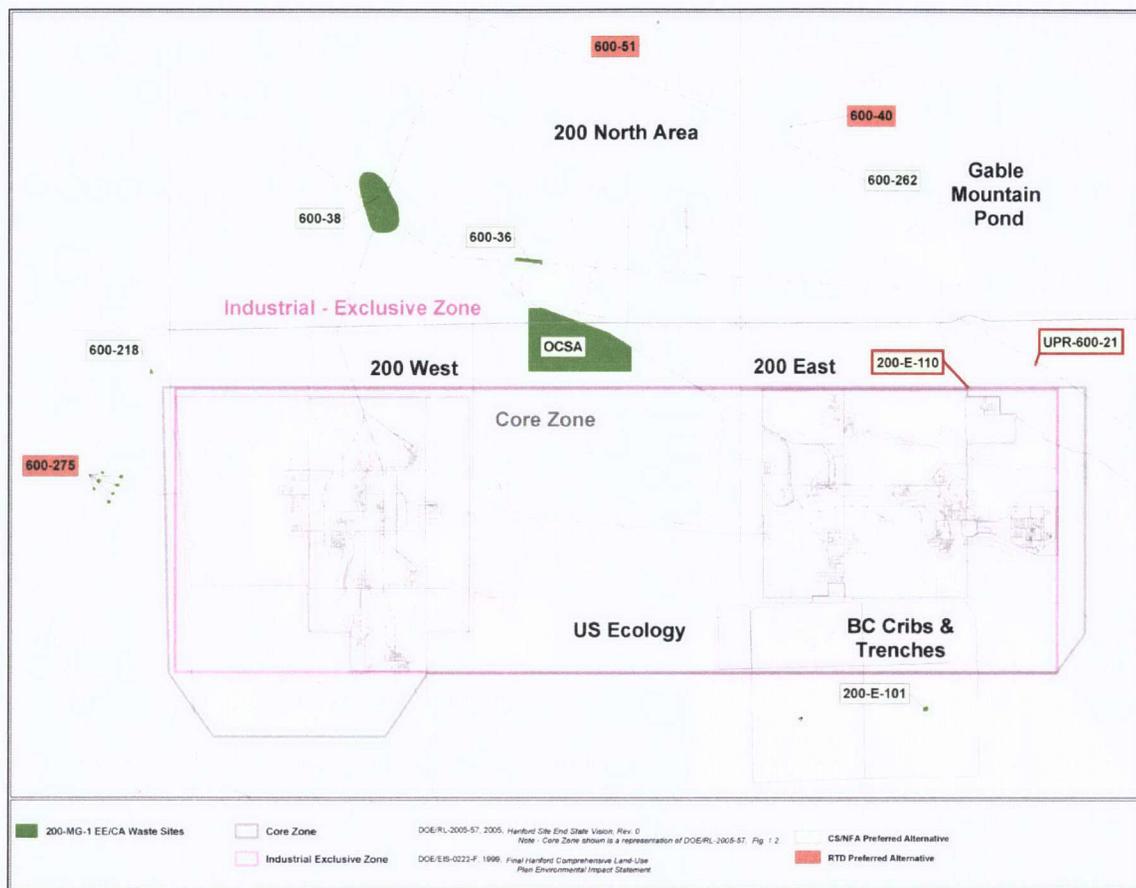


Figure 1-1. 200-MG-1 OU Waste Sites – 11 Waste Sites

## 1.2 Contaminants of Potential Concern

A contaminant of potential concern (COPC) is a constituent suspected of being associated with site-related activities that represents a potential threat to human health or the environment. The COPC list for 200-MG-1 OU waste sites is first identified in the EE/CA, and is carried through the remainder of the regulatory documents including the DOE/RL-2009-60, Revision 0, *Sampling and Analysis Plan for Selected 200-MG-1 Operable Unit Waste Sites* (SAP) for the 11 selected sites, including the 200-E-110 and UPR-600-21 waste sites. The COPC list includes metals, radionuclides, polynuclear aromatic hydrocarbons, polychlorinated biphenyls, total petroleum hydrocarbons, and a volatile organic analyte. (see Table 1-2 in the SAP for an itemized list of COPCs).

In accordance with the sampling design and methodology established in the RAWP and SAP, the COPCs for the 200-E-110 and UPR-600-21 waste sites were identified based on existing waste-site-specific historical information and process knowledge. The COPCs for the 200-E-110 and UPR-600-21 waste sites are limited to radionuclide constituents. Due to the nature of the contamination (dispersion of contaminated vegetation at the ground surface) and the sampling design and methodology (see Section 3 of this report), speciation of the radionuclide contaminants through analytical means is not necessary.

## 1.3 Subsequent Modifications (If Any)

No amendments to the EE/CA or AM, or technical impracticability waivers were prepared for the 200-E-110 or UPR-600-21 waste sites.

## **1.4 Conclusions from Previous RARs**

No previous response action completion reports are associated with these sites.

## 2 Response Action Objectives and Cleanup Standards

### 2.1 Response Action Objectives

The removal alternatives for the 200-MG-1 OU waste sites were evaluated for the disposition of contaminated soil and other materials against their performance to mitigate potential threats to human and ecological receptors. The removal action selected alternatives must meet the following objectives:

- RAO 1: Prevent unacceptable risk to human health and ecological receptors from exposure to soils and/or debris contaminated with nonradiological constituents to 4.6 m (15 ft) below ground surface (bgs) at concentrations above the appropriate removal action levels (RALs).
- RAO 2: Prevent unacceptable risk to human health and ecological receptors from exposure to soils and/or debris contaminated with radiological constituents to 4.6 m (15 ft) bgs at concentrations above the appropriate RALs.
- RAO 3: Control the sources of groundwater contamination to minimize impacts to groundwater resources, protect the Columbia River from adverse impacts, and reduce the degree of groundwater cleanup that may be required under future action.
- RAO 4: Prevent adverse impacts to cultural resources and threatened or endangered species, and minimize wildlife habitat disruption.

### 2.2 Cleanup Standards Specified in the Decision Document

The RALs for the waste sites listed in the AM are based on CERCLA risk ranges for carcinogenicity and toxicity and protection of ecology. The numerical RALs applicable to the subject waste sites are listed in Table 2-1. Under the CS/NFA alternative for waste sites contaminated with only radionuclides, direct radiological surveys confirm that soil is at or below RALs (or the measured waste site background activity level) and that no further action is required.

RALs are numerical values established to demonstrate the achievement of RAOs and thus represent attainment of acceptable levels of human health, ecological risk, and protection of groundwater, but are not lower than background levels or detection limits for waste sites. The RALs for waste sites 200-E-110 and UPR-600-21, are based on reasonably anticipated future land use recognized in the EE/CA and AM (for the purposes of this interim action, RAOs were selected that would support unrestricted land use). Attainment of RALs is intended to meet the first three RAOs and is expected to satisfy the remedial action objectives for the final record of decision for the outer area.

If the results of the confirmatory sampling indicate that the CS/NFA is inappropriate (i.e., soil concentrations greater than RALs), then the RTD action will be implemented or the waste site removed from the action memorandum authority and will be evaluated as part of the final remedy for the area.

Table 2-1. Removal Action Levels <sup>a</sup>

Contaminant of Potential Concern	Background Concentration <sup>b</sup> (pCi/g)	Direct Exposure <sup>c</sup> (pCi/g)	Groundwater Protection <sup>d</sup> (pCi/g)	Required Detection Limit (pCi/g)	Removal Action Levels (pCi/g)
Americium-241	NA	31.1	NA <sup>e</sup>	1.0	31.1
Cesium-137	1.1	6.2	1465	0.1	6.2
Europium-152	NA	3.3	NA <sup>e</sup>	0.1	3.3
Europium-154	0.033	3.0	NA <sup>e</sup>	0.1	3.0
Europium-155	0.054	125	NA <sup>e</sup>	0.1	125
Plutonium-238	0.004	38.8	NA <sup>e</sup>	1.0	38.8
Plutonium-239/240	0.025	33.9	NA <sup>e</sup>	1.0	33.9
Strontium-90	0.18	4.5	27.6	1.0	4.5
Uranium-233/234	1.1	1.1	1.1	1.0	1.1
Uranium-235	0.11	.61	0.5	0.5	0.5
Uranium-238	1.1	1.1	1.1	1.0	1.1

## Notes:

- RALs are based on RAOs and thus represent attainment of acceptable levels of human health, ecological risk, and protection of groundwater, but not lower than background levels or detection limits for waste sites (DOE/RL-2009-48, Section 5).
- If Hanford Site-specific background data are not available, values are then taken from Ecology Publication No. 94-115, *Natural Background Soil Metals Concentrations in Washington State*. Hanford Site background values are available from nonradiological background data in DOE/RL-92-24, *Hanford Site Soil Background*, Table D9-2; radiological background data are from DOE/RL-96-12, *Hanford Site Background: Part 2, Soil Background for Radionuclides*, Table 5-1.
- Radionuclide concentrations for beta/gamma in water correspond to a 4 mrem/yr dose from EPA/540-R-00-007, *Soil Screening Guidance for Radionuclides: User's Guide*. Calculations are based on either RESRAD or WDOH/320-01 5, *Hanford Guidance for Radiological Cleanup*.
- Soil concentration for groundwater protection were calculated using RESRAD with the maximum contaminant levels calculated from National Bureau of Standards (NBS Handbook 69, *Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air or Water for Occupational Exposure*) maximum permissible concentration as cited in EPA/540-R-00-007 or from 40 CFR 141.66, "Maximum Contaminant Levels for Radionuclides."
- RESRAD predicts constituent will not reach groundwater within 1,000 years based on 100 Area generic site model using soil column layers and depths.

Abbreviations: NA = not available  
RESRAD = RESidual RADioactivity (dose model)  
pCi/g = average picocuries per gram

### 3 Response Action Summary

As stated in the EE/CA and AM, the selected alternative for the 200-E-110 and UPR-600-21 waste sites was sampling and analysis to confirm that soil contaminant concentrations are at or below the RALs and that no further action is required. The COPCs were not expected to exceed RALs. The general removal design/criteria is provided below followed by a summary of waste site history, specific sampling design and methodology, and results for 200-E-110 and UPR-600-21 waste sites.

#### 3.1 Removal Design/Criteria

The CS/NFA alternative was selected for the subject waste sites. Under this alternative, sampling and analysis is conducted to determine if concentrations are at or below established RALs and that no further action is required. As the sites have COPCs based on radiological contamination, radiological surveys are used to confirm that soil contaminant levels are at or below RALs and that no further action is needed. The sampling process as described in the SAP is based on the use of the observational approach and includes visual inspections and field screening. Key features of sampling design and rationale are:

- Direct visual inspection of the surface soils of the entire site guided by existing data and information for any indication of staining, discoloration, and other anomalies.
- Surface radiological survey may be performed to document existing surface contamination and to support health and safety aspects of the response action work activities.
- Direct radiological field screening of soils for Cs-137 may be performed as a radiological indicator parameter for other radionuclides. Radiological field screening locations are selected based on historical information, data, and visual inspection.

If radiological field screening of soils indicate the presence of COPCs above the measured background at the waste site, further investigation is required. If no contamination is found, the site will satisfy the "no further action" criteria.

Site-specific design considerations are addressed below with the background and response action summary for each waste site.

#### 3.2 200-E-110 Removal Activities

##### 3.2.1 Background Information

The 200-E-110 Contaminated Tumbleweed Dump Site is located outside the northeastern corner of the 200 East Area and just outside Gate 810 (Figure 1-1). The waste site was established in 1998 when a "large pile" of discarded tumble weeds was discovered there. The pile of tumbleweeds had the appearance of being compacted as with a garbage truck and with a volume estimated to be greater than one garbage truck load. Following a radiological survey, the area was posted and controlled as a High Contamination Area. In 1999, the contaminated tumbleweeds were removed and disposed per applicable procedures and the area postings were reduced to a Contamination Area due to the presence of contaminated tumbleweed fragments. The origin of the pile of tumbleweeds was not determined.

In October 2003, the area was radiologically surveyed and, in the absence of detectable contamination, the radiological postings and controls were reduced to a radiologically controlled area.

The waste site area is recorded as 480 m<sup>2</sup> (5,046 ft<sup>2</sup>) with a shape depicted in Figure 3-1.

### 3.2.2 Sampling Objectives and Site Specific Sampling Design

The confirmatory sampling objectives for the 200-E-110 waste site included visual inspection, direct radiological surveys, and direct radiological screening of the waste site soils as described in Section 3.1 of this report. Key features of the site-specific sampling methodology for 200-E-110 include:

- Determination through measurement the background dose rate in the waste site area.
- Gamma radiation survey of the entire waste site using a Geiger-Mueller (GM), portable alpha meter (PAM), and sodium iodide (NaI) detector and comparing against the local reference background measurement.
- Direct frisk measurements performed in accordance with standard procedures and evaluated for beta/gamma ( $\beta\gamma$ ) and alpha ( $\alpha$ ) contamination. Standard minimum count times apply.

In response to contamination or elevated dose rates identified during sampling, further investigation shall be performed and documented as applicable to determine appropriate follow-up actions.

In accordance with the RAWP (Section 2.2) the CS/NFA alternative for waste sites contaminated only with radionuclides is confirmed through the absence of detectable radiological contamination above RALs (above measured background).

### 3.2.3 Investigation

The physical characteristics of the 200-E-110 waste site as described historically and from a walk-down in July 2009 (waste site observation or visual inspection) are summarized in this subsection.

As shown in Figures 3-2 and 3-3, the waste site has little growing vegetation with sandy soil, rocks, and miscellaneous concrete rubble. The site is relatively flat and sparsely vegetated. The soil is compact and sandy with abundant gravel, rocks and other solid debris such as aged concrete rubble. The site boundaries are marked with Waste Information Data System (WIDS) signs only on the northeast and southwest corners of the site. The site currently serves as an informal vehicle turn around location and has been routinely treated with non-selective herbicides, with the most recent applications in January and August 2009, explaining the lack of vegetation at this location. No soil discoloration was observed.

The confirmatory sampling of site 200-E-110 was completed July 23, 2009. The radiological surveys were performed by personnel with current training and qualifications. Survey methods and practices were performed in accordance with established contractor procedures and protocols. The survey results are summarized using the graphic in Figure 3-1 and data in Table 3-1.

In support of performance of the radiological survey and screening of the waste site, coordinates were determined at four locations at or near the estimated boundary to guide the survey/screening activities. Surface surveys (with GM and PAM) and direct field screening (using NaI detector for Cs-137 indication) of the 200-E-110 waste site surface area were conducted for the confirmatory sampling. Contamination was detected in one location, as indicated in Figure 3-1, with the source identified as a contaminated tumbleweed fragment. This fragment was collected and dispositioned in accordance with applicable approved procedures. The soil beneath the fragment was further investigated by removal of the soil to a depth of 0.152 m (6 in.). The excavated soil and excavated pit were surveyed and found to be free of radiological contamination. Further details and explanation is provided by Figure 3-1 and in Table 3-1. The excavated soil was disposed to the CERCLA Environmental Restoration Disposal Facility (ERDF) located on site.

The survey results demonstrate no radiological contamination is present within 200-E-110 waste site above the waste site background. Therefore, the data demonstrates that RALs have been met.

The chronology of major events for the site is listed in Table 4-1.

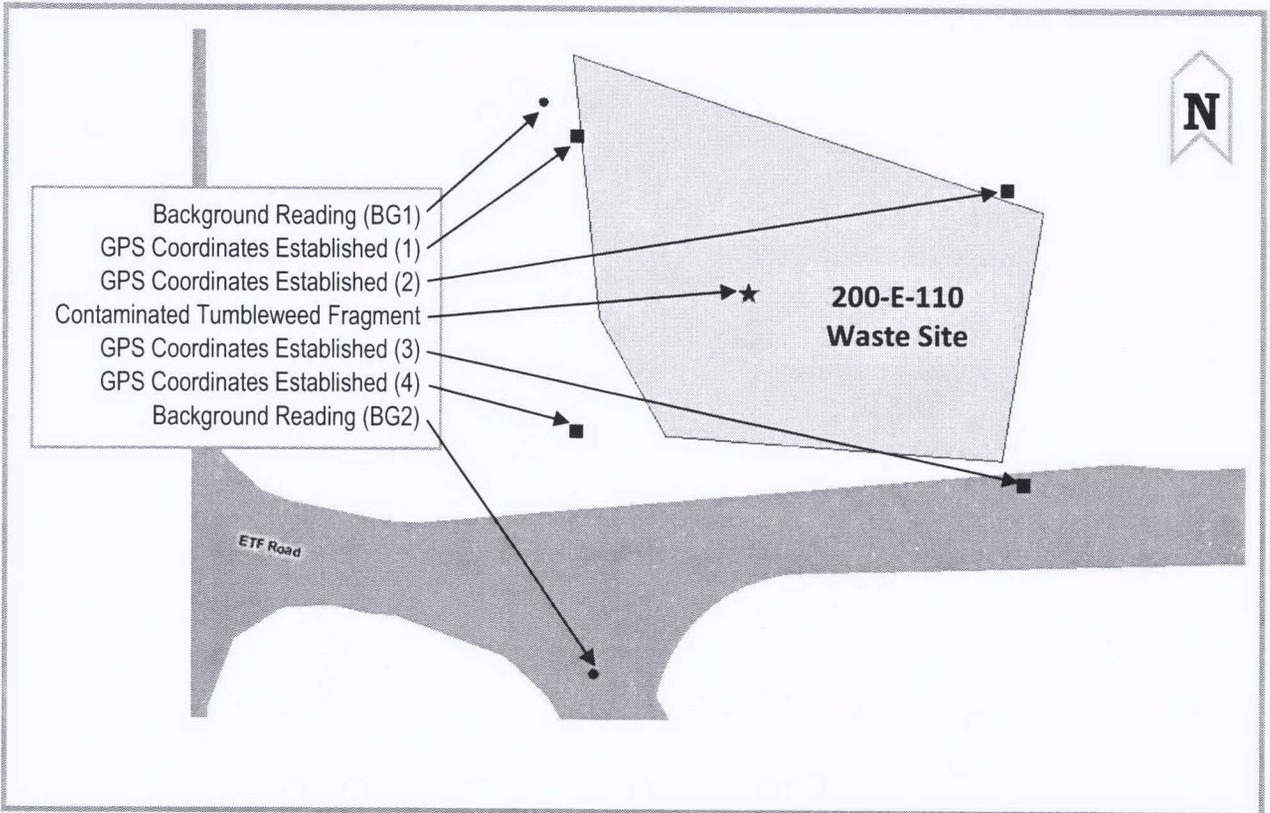


Figure 3-1. 200-E-110 Waste Site Response Actions

**Table 3-1. Summary of 200-E-110 Field Investigation**

<b>Location Description</b>	<b>Coordinates</b>	<b>Results / Explanation</b>
Background 1	N 137820.6 E 575445.1	1924 cpm (Nal reading)
Background 2	N 137788.6 E 575489.0	1450 cpm (Nal reading)
GPS Coordinates Location (1)	N 137819.4 E 575497.1	Coordinates established to aid in performance of radiological surveys
GPS Coordinates Location (2)	N 137816.8 E 575523.8	Coordinates established to aid in performance of radiological surveys
GPS Coordinates Location (3)	N 137799.4 E 575523.8	Coordinates established to aid in performance of radiological surveys
GPS Coordinates Location (4)	N 137802.2 E 575497.6	Coordinates established to aid in performance of radiological surveys
Contaminated Tumbleweed Fragment	N 137810.5 E 575507.8	Contaminated tumble weed fragment discovered (07/23/09) Contamination readings: 20,000 dpm/100 cm <sup>2</sup> βγ no α contaminated detected Fragment collected and dispositioned per procedures.
Soil at Location of Contaminated Tumbleweed Fragment	N 137810.5 E 575507.8	Soil beneath discovered contaminated tumbleweed fragment removed to depth of 6 inches. Removed soil surveyed with GM/PAM and Nal: Activity levels below area background levels; no contamination detected Excavated depression surveyed with GM/PAM and Nal: Activity levels below area background levels; no contamination detected
200-E-110 Waste Site Surface Survey	N/A	GM/PAM survey: activity levels below detection level for instrument. Nal survey: overall surface ranged from 1450 cpm to 1944 cpm. All readings evaluated and found to be within range of background of the general waste site. Further investigation into highest reading (1944 cpm) revealed no discrete source; reading was determined to be elevated in a localized area due to waste site topography. Two areas of elevated readings found as described above: contaminated tumble weed fragment and soil at location of contaminated tumbleweed fragment.

GPS = Global Positioning System

GM = Geiger-Mueller

PAM = portable alpha meter

Nal = sodium iodide

cpm = counts per minute



Figure 3-2. 200-E-110 Waste Site



Figure 3-3. 200-E-110 Radiological Surveying

### 3.2.4 Backfill and Revegetation

As described in Section 2.1 of the RAWP, backfill and/or contouring may take place at 200-MG-1 waste sites upon concurrence by the signing parties that the RAOs have been attained. The 200-E-110 Waste Site achieved the established RAOs without implementation of the RTD alternative; therefore, backfill and/or contouring activities are not required at this waste site.

In accordance with the ecological compliance review conducted for the 200-E-110 Waste Site, this area does not meet the requirements of a Level III or Level IV designation as described in DOE/RL-96-32, *Hanford Site Biological Resources Management Plan*; therefore, revegetation at the 200-E-110 Waste Site is not required.

### 3.2.5 Statement of Protectiveness

Results from confirmatory sampling in the form of radiological surveys and field screening demonstrate the 200-E-110 waste site meets the objectives for no further action as established in the EE/CA (DOE/RL-2008-44) and AM (DOE/RL-2009-48). These results show that residual soil activity levels support reasonably anticipated future land use recognized in the EE/CA and AM.

## 3.3 UPR-600-21 Removal Activities

### 3.3.1 Background Information

UPR-600-21 is located northeast of the 200 East Area, south of the railroad track (Figure 3-4). The topography is somewhat hilly with a general slope to the north. The soil is sandy with abundant sagebrush and tumbleweeds. Radiological contamination was originally identified near the railroad track prior to 1990. Additional radiation surveys enlarged the area of contamination to include an area of approximately 12.15 hectares (30 acres) extending north of the railroad track to Route 11A and southward to the 216-E-28 Contingency Pond area, near the 216-B-3 Pond.

The contamination at this site was detected by personnel performing routine radiological surveys of the railroad track. The contamination has attributed primarily to contaminated tumbleweeds that had blown into the area and decomposed. Contaminated tumbleweeds were removed and disposed of in accordance with approved procedures. The area was originally posted and controlled as a radiologically controlled area or surface contamination area. Surveillance and tumbleweed removal continued and over several years, the majority of contamination was removed and area postings were removed in 1991.

There is no visual or documentary evidence of stabilizing material added to this site which would require a change in the confirmatory sampling methodology.

### 3.3.2 Sampling Objectives and Site Specific Sampling Design

Due to the nature of the contamination at the UPR-600-21 waste site (radiologically contaminated tumbleweeds) and because no stabilizing materials were added, contamination will be located in the surface soil matrix. The confirmatory sampling objectives for the UPR-600-21 waste site included visual inspection, direct radiological surveys, and direct radiological screening of the waste site soils as described in Section 3.1 of this report. Key features of the site-specific sampling methodology for UPR-600-21 include:

- Determination through measurement the background dose rate in the waste site area.
- Gamma radiation survey of the entire waste site using a Geiger-Mueller (GM), portable alpha meter (PAM), and sodium iodide (NaI) detector and comparing against the local reference background measurement.
- Direct frisk measurements performed in accordance with standard procedures and evaluated for beta/gamma ( $\beta\gamma$ ) and alpha ( $\alpha$ ) contamination. Standard minimum count times apply.

In response to contamination or elevated dose rates identified during sampling, further investigation shall be performed and documented as applicable to determine appropriate follow-up actions.

In accordance with the RAWP (Section 2.2) the CS/NFA alternative for waste sites contaminated only with radionuclides is confirmed through the absence of detectable radiological contamination above RALs (above measured background).

### 3.3.3 Investigation

The physical characteristics of the UPR-600-21 waste site as described historically and from a walk-down in July 2009 (waste site observation or visual inspection) are summarized in this subsection.

As depicted in Figure 3-6, the site is somewhat hilly, with abundant vegetation, and no fencing. The site boundaries are estimated from WIDS data and historical information because no site demarcations or postings are present. The area depicted in Figure 3-4 shows the size (estimated at 12.15 h [30 acres]), location, and orientation of waste site area per WIDS and historical information. An area 10 percent larger (13.36 h [33 acres]) was established for this response action to conservatively bound the extent of the waste site.

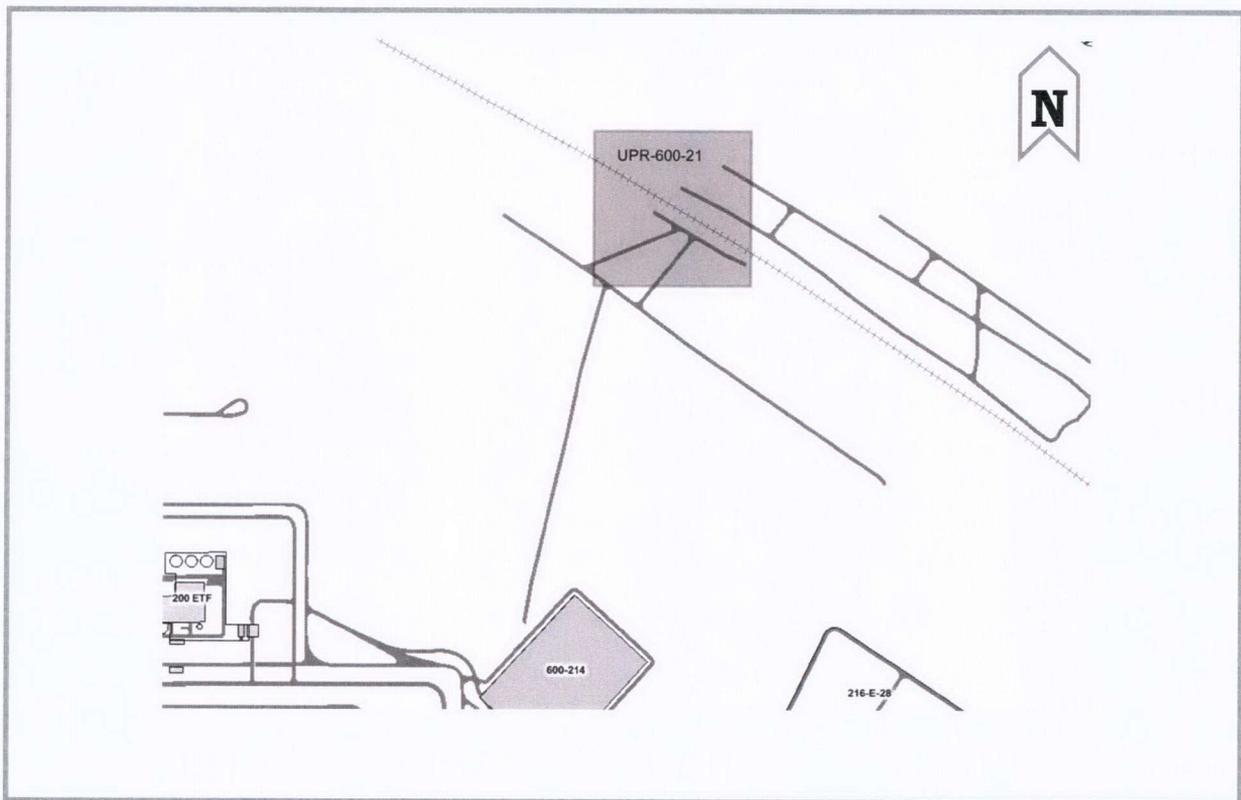


Figure 3-4. UPR-600-21 Waste Site

The overall waste site area was equally divided into nine units (see Figure 3-5). Beta/gamma surveys were performed across each of the nine units.

The confirmatory sampling of site UPR-600-21 was performed over a period of nine working days beginning August 12 and concluding August 24, 2009. Radiological survey results are summarized in Table 3-2 of this report. These results demonstrate no radiological contamination is present within UPR-600-21 waste site above the measured background. Therefore, the data supports the conclusion that RALs have been met.

The chronology of major events for the site is listed in Table 4-1.

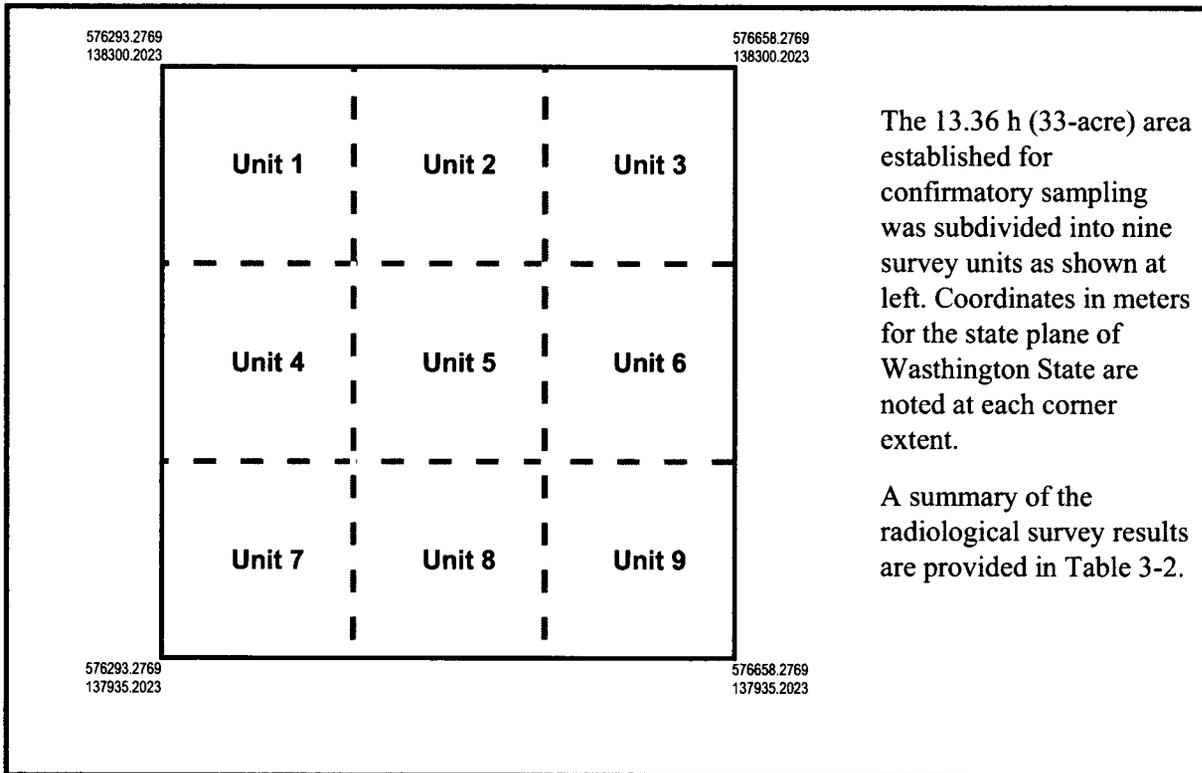


Figure 3-5. UPR-600-21 Survey Grid

**Table 3-2. Summary of UPR-600-21 Field Investigation**

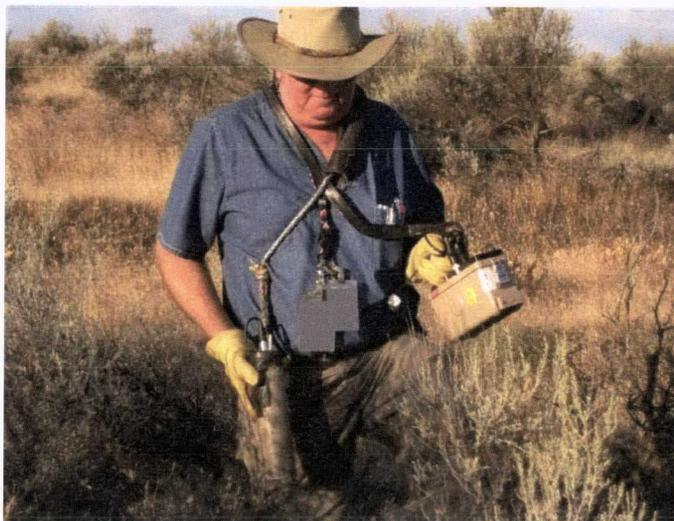
<b>Survey Unit</b>	<b>Background Range <sup>1</sup> (cpm)</b>	<b>Results / Explanation <sup>1</sup></b>
Unit 1	1100 – 1400	No readings found above background range. Focused investigation at 1400 cpm reading indicated no soil contamination.
Unit 2	1100 – 1500	No readings found above background range. Focused investigation at 1500 cpm reading indicated no soil contamination.
Unit 3	1100 – 1500	No readings found above background range. Focused investigation at 1500 cpm reading indicated no soil contamination.
Units 4 and 5 <sup>2</sup>	1100 – 1400	No readings found above background range. Focused investigation at 1400 cpm reading indicated no soil contamination.
Unit 6	1100 – 1500	No readings found above background range. Focused investigation at 1500 cpm reading indicated no soil contamination.
Unit 7	1100 – 1400	No readings found above background range. Focused investigation at 1400 cpm reading indicated no soil contamination.
Units 8 and 9 <sup>2</sup>	1100 – 1400	No readings found above background range. Focused investigation at 1400 cpm reading indicated no soil contamination.

**Notes:**

1. Due to the sensitivity of the sodium iodide (NaI) detector, background measurements in any given area vary measurably. The range found in a survey unit is presented in this table. Readings collected at the high end of the range were further investigated to determine if they were indicators of localized contamination. From that investigation, if no contamination was identified, the reading is reported as part of the background range; if contamination was indicated, the reading is reported as being above background and further evaluation and follow-up actions would be required.
2. Units 4 and 5 and Units 8 and 9, were reported in a combined reports. There were no deviations in the sampling methodology.

Abbreviations: cpm = counts per minute

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**Figure 3-6. UPR-600-21 Gamma Radiation Surveying**

### **3.3.4 Backfill and Revegetation**

As described in Section 2.1 of the RAWP, backfill and/or contouring may take place at 200-MG-1 waste sites upon concurrence by the signing parties that the RAOs have been attained. The UPR-600-21 Waste Site achieved the established RAOs without implementation of the RTD alternative; therefore, backfill and/or contouring activities are not required at this waste site.

In accordance with the ecological compliance review conducted for the UPR-600-21 Waste Site, this area does not meet the requirements of a Level III or Level IV designation as described in DOE/RL-96-32, *Hanford Site Biological Resources Management Plan*; therefore, revegetation at the UPR-600-21 Waste Site is not required.

### **3.3.5 Statement of Protectiveness**

Results from confirmatory sampling in the form of radiological surveys and field screening demonstrate that the UPR-600-21 waste site meets the objectives for no further action as established in the EE/CA and AM. These results show that residual soil activity levels support reasonably anticipated future land use as recognized in the EE/CA and AM.

## 4 Chronology of Events

A chronology of major events associated with sampling the subject waste sites is presented in Table 4-1. The chronology includes approval of the regulatory documents that form the basis of the response action and conclude with initiation of the reclassification form to change the status of the 200-E-110 and UPR-600-21 to "Interim Closed Out."

**Table 4-1. Response Action Chronology**

Date	Event
June 5, 2009	Engineering Evaluation/Cost Analysis for the 200-MG-1 Operable Unit Waste Sites, DOE/RL-2008-44, Approved
July 8, 2009	Draft RAWP completed and routed for Approval
July 17, 2009	Draft SAP completed and routed for Approval
July 23, 2009	Confirmatory sampling of 200-E-110 completed
July 31, 2009	Action Memorandum for Non-Time-Critical Removal Action for 11 Waste Sites in 200-MG-1 Operable Unit, DOE/RL-2009-48, Approved
August 12, 2009	Confirmatory sampling of UPR-600-21 commenced
August 24, 2009	Confirmatory sampling of UPR-600-21 concluded
September 1, 2009	Sampling and Analysis Plan for Selected Sites 200-MG-1 Operable Unit Waste Sites, DOE/RL-2009-60, Revision 0, Approved
November 25, 2009	Removal Action Work Plan for 11 Waste Sites in the 200-MG-1 Operable Unit, DOE/RL-2009-53, Revision 0, Approved

## 5 Demonstration of Completion

The Action Memorandum (Section 5) identifies RALs for the MG-1 sites based on attainment of acceptable levels of human health, ecological risk, and protection of groundwater. The attainment of the RALs for the CS/NFA remedy is based on sampling and analysis conducted to confirm that soil contaminant concentrations are at or below RALs and that no further action is required. This is achieved through implementation of the sampling and analysis plan that contains the necessary information to support the collection of data to determine whether RALs are met (Section 5.1 of the AM). Confirmatory sampling for the 200-E-110 and UPR-600-21 waste sites has shown the sites meet the RAOs identified in the EE/CA and AM, thereby confirming the application of the CS/NFA alternative. The following subsections provide further detail demonstrating completion of this removal action.

### 5.1 CERCLA Site Completion

200-E-110 and UPR-600-21 sites meet the RAOs that are identified in the AM. Sampling and analysis (or direct radiological surveys for waste sites contaminated only with radionuclides) confirm that soil is at or below RALs (in this case the measured background) and that no further action is required. RAO 1 and 2 are achieved by preventing unacceptable risk to human health and environment through direct exposure to soils/debris by reducing the soil concentration of contaminants to at or below RALs. RAO 3 is achieved by preventing migration and/or leaching of radiological/nonradiological contamination to groundwater by reducing the soil concentration of contaminants to at or below RALs. Demonstration that soil concentration of COPCs is at or below RALs (provided in Table 2-1) meets RAOs 1, 2 and 3. Per the methodology prescribed in the RAWP and SAP and further discussed in Section 3.1 of this report, confirmatory sampling of the 200-E-110 and UPR-600-21 waste sites consisted of visual inspection and radiological screening. Using instruments with sufficient sensitivity and capability to discriminate specific energy, radiological field screening is performed to indicate the presence of Cs-137. Screening for the beta-gamma emitter Cs-137 is the design element specified in the SAP to indicate the presence or absence of other radionuclide COPCs in the soil. The absence of detectable radiological contamination is confirmed using this radiological screening methodology.

In July and August 2009, confirmatory sampling as described in the text above and in Section 3 was performed in the 200-E-110 and UPR-600-21 waste sites. The results are presented in Tables 3-1 and 3-2 respectively and further discussed in Sections 3.2.4 and 3.3.4 respectively. In summary, no radiological contamination was found in the surface soil matrix above measured background levels. This data demonstrates the absence of radiological COPCs in the soil, concentrations below RALs, and thus meeting RAOs 1, 2 and 3.

RAO 4 is met through cultural/ecological evaluation and implementation of considerations and recommendations during work activities.

### 5.2 Waste Site Construction Completion

No construction components are associated with this response action.

### 5.3 Regulatory Oversight

This document provides a summary of the removal actions taken at the 200-E-110 and UPR-600-21 waste sites; it shows a comparison of the data collected to RALs authorized in the approved regulatory documents, as well as provides the basis to reclassify the waste sites' status (see Section 10). Though this report does not require approval by Ecology or the EPA, concurrence of those agencies is necessary, under CERCLA Section 120 and the Tri-Party Agreement, for determinations concerning follow-on

remedial actions. This report is therefore provided to the agency(ies) for review, in accordance with the approval process for waste site reclassification, as supporting documentation. Upon approval of the waste site reclassification, a copy of this report shall be maintained in the Administrative Record. No additional regulatory oversight was required for the confirmatory sampling of the 200-E-110 and UPR-600-21 waste sites.

## 6 Analysis of Protectiveness: Cleanup Verification/Data Evaluation Summary

This report demonstrates that the 200-E-110 and UPR-600-21 waste sites meet the objectives for the 'no further action' component of the CS/NFA alternative described in the AM and RAWP, as presented in Table 6-1. The results show that the residual soil concentrations support reasonably anticipated future land use recognized in the EE/CA and AM (for the purposes of this interim action, RAOs were selected that would support unrestricted land use). These results support the no further action determination and reclassification to "Interim Closed Out" status in accordance with the process described in TPA-MP-14, Maintenance of the WIDS. There is no deep zone for the 200-E-110 and UPR-600-21 waste sites; therefore, no institutional controls are required.

**Table 6-1. Summary of Cleanup Verification Results**

<b>Regulatory Requirement</b>	<b>Results</b>	<b>Remedial Action Objectives Attained?</b>
<b>Summary of Cleanup Verification Results for the 200-E-110</b>		
RAO 1: Direct Exposure (non-radiological)	Non-radiological COPCs are not present at this site thus all individual COPC concentrations are below the RALs	YES
RAO 2: Direct Exposure (radiological)	All individual COPC concentrations are below the RALs (waste site-specific background)	YES
RAO 3: Groundwater and River Protection	All individual COPC concentrations are below the RALs (waste site-specific background)	YES
RAO 4: Cultural and Ecological Resources	Cultural/ecological resource review was completed; considerations and recommendations from the evaluation were included in removal activities.	YES
<b>Summary of Cleanup Verification Results for the UPR-600-21</b>		
RAO 1: Direct Exposure (non-radiological)	Non-radiological COPCs are not present at this site thus all individual COPC concentrations are below the RALs	YES
RAO 2: Direct Exposure (radiological)	All individual COPC concentrations are below the RALs (waste site-specific background)	YES
RAO 3: Groundwater and River Protection	All individual COPC concentrations are below the RALs (waste site-specific background)	YES
RAO 4: Cultural and Ecological Resources	Cultural/ecological resource review was completed; considerations and recommendations from the evaluation were included in removal activities.	YES

COPC = Contaminant of Potential Concern

N/A = Not Applicable

## 6.1 Ecological Risk Evaluations

See the EE/CA for a more thorough discussion of the streamlined risk evaluation. In summary, the most plausible potential ecological exposure pathways for the 200-MG-1 OU waste sites stem from direct contact with shallow-zone soil that contains suitable habitat for terrestrial wildlife.

Ecological RALs that are protective of terrestrial ecological receptors were established and presented in the RAWP. Numerical RAL values developed for the 200-MG-1 OU waste sites will be used for sites where sampling/screening methods provide data that may be used in comparison to determine if RAOs are met.

### 6.1.1 Geophysical Attributes

The Hanford Site is located within the semiarid Pasco Basin in the northern portion of the Columbia Plateau. Normal annual precipitation is 17.7 cm (6.97 in.). Fayer and Walters (1995) estimated 2.6 to 17.3 mm/yr recharge in the 100 Area. Bedrock beneath the site is basalt of the Columbia River Basalt Group.

The Ringold Formation and the Hanford formation cover the basalt throughout the central plateau. These units are dominated by poorly consolidated, river-deposited, well-drained sands, gravels, cobbles, and boulders. The Ringold Formation is an interstratified sequence of unconsolidated clay, silt, sand, and gravel-to-cobble gravel deposited by the ancestral Columbia River. The Hanford formation (informal designation) consists of uncemented gravels, sands, and silts deposited by Pleistocene cataclysmic flood waters. Groundwater from the Hanford Site discharges to the Columbia River, the dominant surface-water body of the Hanford Site. The direction of groundwater flow beneath the central plateau is toward the east-northeast. The uses of the Columbia River include the production of hydroelectric power, irrigation, drinking water, recreation, and natural resources.

The average depth from ground surface to groundwater beneath the 200 Area ranges from 50 m (164 ft) to greater than 100 m (328 ft). Additional details on the geology and hydrology underlying the 200 Area and the 200-MG-1 OU are not provided in this report because the 200-MG-1 OU was created for shallow zone (less than 4.57 m (15 ft) in depth) contamination sites based on historical knowledge and as a result, waste sites are assumed not to be a threat to groundwater quality.

## 6.2 Fate and Transport Modeling

The average depth from ground surface to groundwater beneath the 200 Area ranges from 50 m (164 ft) to greater than 100 m (328 ft). Additional details on the geology and hydrogeology underlying the 200 Area and the 200-MG-1 OU are not provided in the base response action documents because the 200-MG-1 OU waste sites are assumed not to be a threat to groundwater quality. This assumption is based on the volume of liquid discharged, lack of mobility of contaminants, and shallow depth of the discharge. In addition, the geological and hydrological conditions that exist beneath the 200 Area are well known and are described in a number of technical documents including:

- *The Miocene to Pliocene Ringold Formation and Associated Deposits of the Ancestral Columbia River System, South-Central Washington and North-Central Oregon* (Lindsey, 1996)
- PNL-5506, *Hanford Site Water Table Changes 1950 Through 1980, Data Observations and Evaluation*
- PNNL-13116, *Hanford Site Groundwater Monitoring for Fiscal Year 1999*

- PNNL-13641, *Uncertainty Analysis Framework – Hanford Site-Wide Groundwater Flow and Transport Model*
- PNNL-14187, *Hanford Site Groundwater Monitoring for Fiscal Year 2002*
- WHC-SD-ER-TI-003, *Geology and Hydrology of the Hanford Site: A Standardized Text for use in WHC Documents and Reports*

If confirmation sampling indicates that COPCs from these 200-MG-1 OU waste sites have migrated to the deep vadose zone (greater than 4.57 m (15 ft) in depth), the site will be reevaluated.

### **6.3 Cleanup Verification QA/QC**

No field or laboratory QCs were required for these waste sites because no field samples were collected.

The radiological survey equipment (NaI detector and GM/PAM) were inspected before use, properly maintained, and calibrated in accordance with applicable programs and procedures. Field calibrations of radiological field instruments were performed by trained and qualified radiological control technicians in accordance with established program and procedural requirements.

## **7 Ongoing Activities**

### **7.1 Remedy-Related Operations and Maintenance and Monitoring**

The 200-E-110 and UPR-600-21 waste sites met the RALs and RAOs specified in the EE/CA and AM, justifying the application of the 'no further action' remedy. There are no operations and maintenance (O&M) or monitoring requirements for these sites.

### **7.2 Institutional Controls**

No institutional controls are required at the 200-E-110 or UPR-600-21 waste sites.

### **7.3 Five-Year Reviews**

Five-year reviews are required by CERCLA for post-record-of-decision remedial actions, but do not apply to the interim removal action conducted at the 200-E-110 and UPR-600-21 Waste Sites. These waste sites and their data will be addressed in the risk assessment and remedial investigation/feasibility study for final remedial action of the Outer Area.

## 8 Summary of Response Action Costs

For the purposes of reporting costs of removal action for the 200-E-110 or UPR-600-21 waste sites, costs are pro rated utilizing an activity/schedule-based methodology. This method is not considered to be audit quality data. Actual costs for waste site clean-up will continue to be collected for each operable unit or closure area in accordance with the current cost tracking methodology. These costs will then be included, in accordance with CERCLA requirements, in the response action report for the final remedial action of the operable unit or closure area.

**Table 8-1. CERCLA site Response Action Costs**

<b>200-E-110 CERCLA site Response Action Costs</b>		
<b>Cost Item</b>	<b>FY 09 (\$)</b>	<b>Total Cost (\$)</b>
RA Capital (Construction) Costs	0	0
RA Operating Costs	\$36,581	\$36,581
Total RA Cost	\$36,581	\$36,581
Post-RA Annual O&M Costs	0	0
<b>UPR-600-21 CERCLA site Response Action Costs</b>		
RA Capital (Construction) Costs	0	0
RA Operating Costs	\$67,720	\$67,720
Total RA Cost	\$67,720	\$67,720
Post-RA Annual O&M Costs	0	0

RA = Response Action  
 O&M = operation and maintenance  
 CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

## 9 Community Relations

The EE/CA was provided for public comment on June 17, 2009. In preparation for this public comment period, approximately 1,500 copies of a fact sheet describing the EE/CA were mailed or sent electronically. The Tri-Party Agreement agencies (U.S. Department of Energy, Washington State Department of Ecology, and U.S. Environmental Protection Agency) announced the issuance and public comment period of the EE/CA in the *Tri-Cities Herald*. The 30-day public comment period was held from June 17 to July 17, 2009, during which time the public had the opportunity for to read, review, and submit comments. The Parties received written comments from members of the public. These comments and the responses to them are provided in the AM. There were no requests for a public meeting and no public meeting was held.

Appendix A of the AM contains the responsiveness summary addressing comments received during the public comment period as well as comment responses. Public participation activities were conducted in accordance with the community relations plan approved by the Tri-Parties.

## 10 Waste Site Reclassification

Waste site reclassification forms for the subject waste sites are proposed and processed in accordance with the process described in DOE-RL 2007. Reclassification forms 2009-044 for 200-E-110 and 2009-045 for UPR-600-21 propose the status of these waste sites be changed to "Interim Closed Out." Per TPA-MP-14, 'Interim Closed Out' status indicates that a site meets the cleanup standards specified in the approved 200-MG-1 AM, an interim response action document. This site will be evaluated under the cleanup standards established for the final Record of Decision for this area.

## **11 Observations and Lessons Learned**

No observations or lessons learned are applicable for inclusion in this report.

## 12 Contact Information

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