

**EXPLANATION OF SIGNIFICANT DIFFERENCES**

**FOR THE 100-FR-3 OPERABLE UNIT  
RECORD OF DECISION**

**Hanford Site  
Benton County, Washington**

**EPA ID: WA 1890090078**

**June 2019**

## SITE NAME AND LOCATION

U.S. Department of Energy  
100-FR-3 Groundwater Operable Unit  
Hanford Site – 100 Area  
Benton County, Washington

## INTRODUCTION TO THE SITE AND STATEMENT OF PURPOSE

This decision document presents an explanation of significant differences (ESD) for EPA and DOE, 2014, *Record of Decision Hanford 100 Area Superfund Site 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6 Operable Units* (hereinafter referred to as the 100-FR-3 Operable Unit [OU] Record of Decision [ROD]). The U.S. Department of Energy (DOE) 100 Area National Priorities List (40 CFR 300, “National Oil and Hazardous Substances Pollution Contingency Plan” [hereinafter referred to as the National Contingency Plan (NCP)], Appendix B, “National Priorities List”) site is located in Benton County, Washington.

The 100 Area of the Hanford Site, which encompasses approximately 68 km<sup>2</sup> (26 mi<sup>2</sup>) bordering the southern shore of the Columbia River, is the site of nine retired plutonium-production reactors. The groundwater impacted by operations associated with the nine reactor areas has been divided into five groundwater OUs. One of the five groundwater OUs is addressed in the 100-FR-3 OU ROD (EPA and DOE, 2014).

The 100-FR-3 Groundwater OU remedial action is being conducted under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA). The 100-FR-3 OU ROD (EPA and DOE, 2014) selected monitored natural attenuation (MNA) with institutional controls (ICs) as the remedy for contaminated groundwater. DOE is responsible for implementing, maintaining, reporting on, and enforcing the ICs required under the ROD.

The following conclusions form the bases for the decisions provided in this ESD:

- Implementation of the remedy includes routine maintenance and sampling activities for groundwater wells associated with characterization and monitoring purposes, well maintenance, well decommissioning, and water table level measurements. These activities generate small amounts of miscellaneous solid waste that are stored for eventual disposal.
- The miscellaneous solid waste generated in support of 100-FR-3 OU remedial actions is physically similar to miscellaneous solid waste generated from other Hanford Site groundwater OUs. A centralized location in the Central Plateau for storing and managing solid waste from these Hanford Site groundwater OUs has been proposed to facilitate safe and efficient storage of the solid waste prior to disposal. Solid waste from each groundwater OU will be segregated and not commingled.

DOE is the lead agency for the 100-FR-3 OU, the U.S. Environmental Protection Agency (EPA) is the lead regulatory agency for the OU, and the Washington State Department of Ecology (Ecology) is the support agency. These three agencies (hereinafter referred to as the Tri-Parties) are issuing this ESD to provide public notice regarding significant changes to the 100-FR-3 OU ROD (EPA and DOE, 2014).

## STATUTORY CITATION FOR AN EXPLANATION OF SIGNIFICANT DIFFERENCES

The Tri-Parties are issuing this ESD in accordance with CERCLA Section 117(c), “Public Participation,” and the NCP (40 CFR 300.435(c)(2)(i), “Remedial Design/Remedial Action, Operation and Maintenance”). The purpose of this ESD is to provide public notice regarding a change to the selected remedial action that will allow for more efficient and cost-effective management of miscellaneous solid waste generated during routine 100-FR-3 OU groundwater remedial activities using a centralized solid waste storage area in the Central Plateau. All waste management activities associated with centralized waste management storage will be completed pursuant to the requirements set forth in DOE/RL-2014-44, *Integrated Remedial Design Report/Remedial Action Work Plan for 100-F/1U*.

In accordance with the NCP (40 CFR 300.435(c)(2)(i)(A); 40 CFR 300.825(a)(2), “Record Requirements After the Decision Document Is Signed”), this ESD and its supporting documents will become part of the 100-FR-3 OU Administrative Record. The ESD and supporting information for the ESD are available at the DOE Tri-Party Agreement (Ecology et al., 1989a, *Hanford Federal Facility Agreement and Consent Order*) Administrative Record office and public information repositories available at <http://pdw.hanford.gov/arpir/> and the following locations:

### **U.S. Department of Energy, Richland Operations Office**

Administrative Record and Public Access Room

2440 Stevens Center, Room 1101

P.O. Box 950, Mail Stop H6-08

Richland, WA 99352

(509) 376-2530

Email: [Heather\\_M\\_Childers@rl.gov](mailto:Heather_M_Childers@rl.gov)

Hours of operation: Monday through Thursday, 6:00 a.m. to 4:30 p.m. (except 12:00 to 1:00 p.m.)

### **Gonzaga University**

Foley Center Library

East 502 Boone Avenue

Spokane, WA 99258

(509) 313-6110

Email: [spenceratkins@gonzaga.edu](mailto:spenceratkins@gonzaga.edu)

## SITE HISTORY, CONTAMINATION, AND SELECTED REMEDY

The 100-FR-3 OU ROD (DOE and EPA, 2014) identifies the remedy for groundwater contamination under the 100-F Reactor Area. The 100-F Reactor Area, comprised of the 100-FR-1 and 100-FR-2 Source OUs and the 100-FR-3 Groundwater OU, is located in the northeastern portion of the Hanford Site, adjacent to the Columbia River, and is the site of the F Reactor. The primary mission for the reactor was plutonium production, which began in February 1945 and continued until deactivation in 1965.

During the years of reactor operation, liquid waste containing significant quantities of contamination from reactor operations was discharged to the soil column at cribs, trenches, and french drains. Groundwater contaminated with strontium-90, hexavalent chromium, trichloroethene, and nitrates is present beneath the 100-F Reactor Area.

The remedy combines MNA and ICs to prevent human and ecological exposure to groundwater contaminants. MNA relies on natural attenuation processes (including a variety of physical, chemical, or biological processes), which act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater. These in situ processes include biodegradation, dispersion, dilution, sorption, volatilization, radioactive decay, chemical or biological stabilization, transformation, or destruction of contaminants. ICs are used to protect the integrity of a response action and/or minimize exposure to groundwater contamination until the contamination is at levels allowing for unlimited use and unrestricted exposure.

Nine storage areas are currently being used for miscellaneous soil waste management pertaining to Hanford Site groundwater OU remedial actions. One of the storage areas is being used to support 100-FR-3 OU remedial action activities.

Small amounts of miscellaneous solid waste consisting primarily of paper wipes, latex gloves, plastic sheeting/bags/sleeving, filter media, plastic tubing, and absorbent material are generated as a result of remedial action activities, as well as excess soil and purge water. The individual OU waste container storage locations are commonly not located near the points of sample collection/maintenance activities, and a considerable amount of time is spent traveling to and from these storage locations throughout the day. The solid waste generated by these activities is physically similar, regardless of the location from which it was obtained.

## **DESCRIPTION OF SIGNIFICANT DIFFERENCE**

This ESD allows for miscellaneous solid waste to be collected when generated from the 100-FR-3 OU, transported, and stored at a central location in the Central Plateau. This approach includes the following benefits:

- Provides easier management and regulation by combining many individual waste storage areas into one
- Improves workability
  - Samplers begin and end the day at the same facility
  - Well maintenance personnel end the day at one facility
  - Waste management personnel have one area to inspect
- Removes waste storage areas from along the Columbia River
- Results in safer and more green remediation, with fewer miles required for waste management
- Provides cost savings

The changes made by this ESD do not fundamentally alter the remedy described in the 100-FR-3 OU ROD (EPA and DOE, 2014). The significant difference is that routinely generated miscellaneous solid waste can be collected, transported, and stored at a centralized location. Collection, transport, and storage of solid waste will be conducted in accordance with the applicable or relevant and appropriate and requirements identified in DOE/RL-2014-44.

Costs associated with managing miscellaneous solid waste at a centralized storage location are within the estimates of the remedy provided in the 100-FR-3 OU ROD (EPA and DOE, 2014).

## SUPPORT AGENCY COMMENTS

EPA and Ecology, as the lead regulatory agency and support agency, respectively, for the 100-FR-3 OU, concur with this ESD to the 100-FR-3 OU ROD (EPA and DOE, 2014).

## AFFIRMATION OF STATUTORY DETERMINATIONS

The remedy, as revised by this ESD, continues to satisfy the requirements of CERCLA Section 121, “Cleanup Standards.” The revised remedy is protective of human health and the environment, will comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost effective.

The preamble to the NCP (40 CFR 300) clarifies that when noncontiguous facilities are reasonably close to one another and wastes at these sites are compatible for a selected treatment or disposal approach, CERCLA Section 104(d)(4), “Response Authorities,” allows the lead agency to treat these related facilities as one site for response purposes and, therefore, allows the lead agency to manage waste transferred between such noncontiguous facilities without having to obtain a permit. The 100-FR-3 OU and the 200 Centralized Groundwater Waste Storage Area (6265A Building, located in the Central Plateau) are considered to be a single site for response purposes under the 100-FR-3 OU ROD (EPA and DOE, 2104), as amended and modified. Solid waste stored at the 6265A Building will be segregated by OU and will not be commingled. A list of the federal and state ARARs that are to be complied with by the Selected Remedy, as revised by this ESD, is provided in 100-FR-3 OU ROD and in Table 1. Attachment 1 provides a figure showing the location of the 6265A Building, and Attachment 2 provides photographs of the building.

**Table 1. Federal and Washington State ARARs for the Selected Remedy, as revised by this ESD**

Solid Wastes			
“Hazardous Waste Management” (RCW 70.105, as amended); “Dangerous Waste Regulations” (WAC 173-303)			
Regulatory Citation	Description of Regulatory Requirement	Rationale for Including	Application
“Closure” (WAC 173-303-610(2), (4) and (5))	Establishes requirements for dangerous waste facilities that store containers of dangerous waste.	Remedial actions may involve management of dangerous waste in containers that are subject to this standard.	Investigation and remedial actions that produce or manage containers of dangerous waste will be managed to meet standards.

## PUBLIC PARTICIPATION COMPLIANCE

The public participation requirements set forth in the NCP (40 CFR 300.435(c)(2)(i)) are met through the issuance of this ESD and associated informational sheet, and through public notification via a newspaper publication placed in the *Tri-City Herald*.

## REFERENCES

40 CFR 300, “National Oil and Hazardous Substances Pollution Contingency Plan,” *Code of Federal Regulations*. Available at: <http://www.gpo.gov/fdsys/pkg/CFR-2010-title40-vol27/xml/CFR-2010-title40-vol27-part300.xml>.

300.435, “Remedial Design/Remedial Action, Operation and Maintenance.”

300.825, “Record Requirements After the Decision Document Is Signed.”

Appendix B, “National Priorities List.”

*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601, et seq., Pub. L. 107-377, December 31, 2002. Available at:

<https://www.csu.edu/cerc/researchreports/documents/CERCLASummary1980.pdf>.

Section 104, “Response Authorities.”

Section 117, “Public Participation.”

Section 121, “Cleanup Standards.”

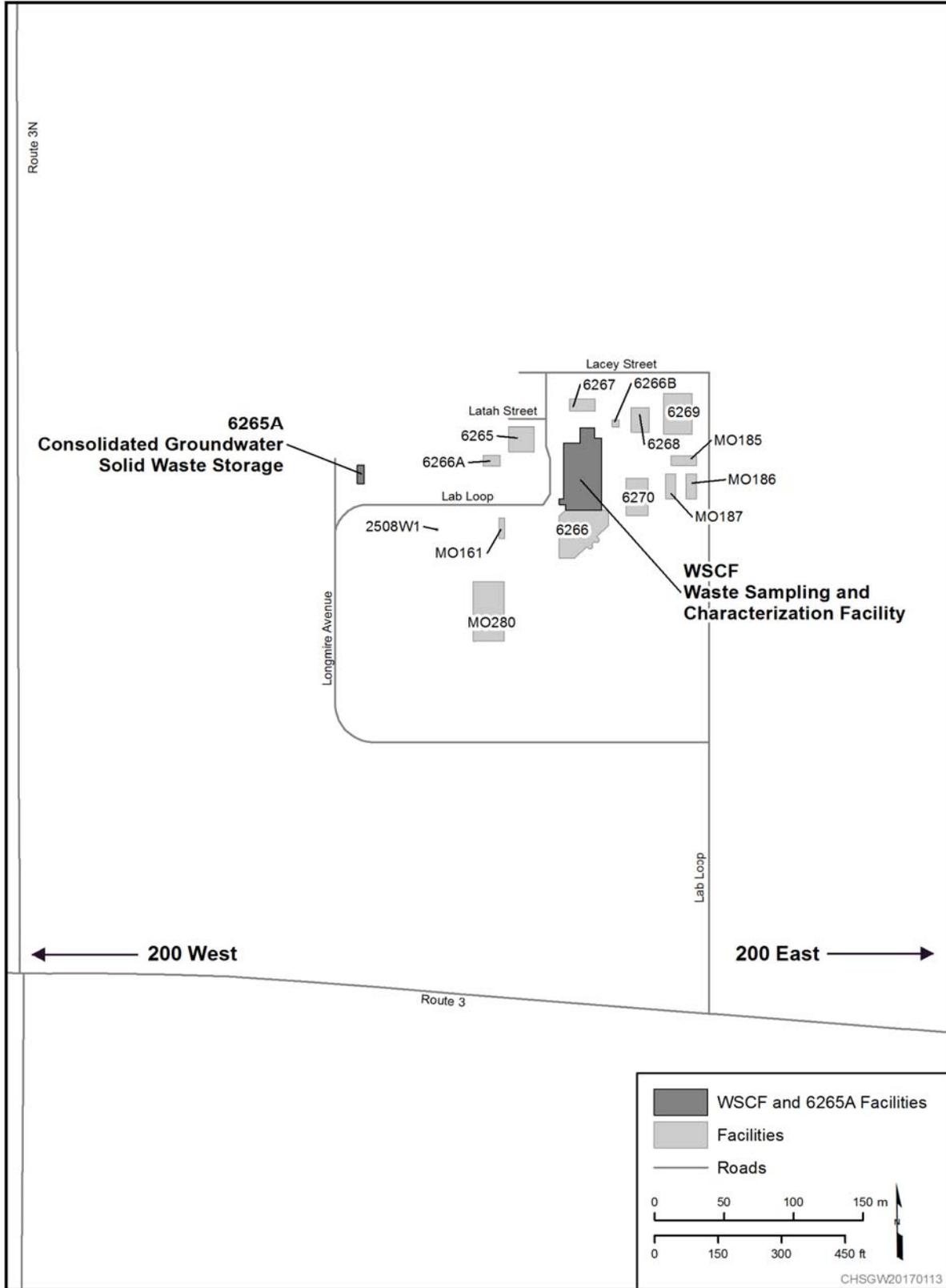
DOE/RL-2014-44, 2015, *Integrated Remedial Design Report/Remedial Action Work Plan for 100-F/IU*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0080174H>.

Ecology, EPA, and DOE, 1989, *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. Available at: <http://www.hanford.gov/?page=81>.

EPA and DOE, 2014, *Record of Decision Hanford 100 Area Superfund Site 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6 Operable Units*, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland, Washington, Richland, Washington. Available at: <http://pdw.hanford.gov/arpir/pdf.cfm?accession=0083577>.

WAC 173-303-200, “Dangerous Waste Regulations,” “Accumulating Dangerous Waste On-Site,” *Washington Administrative Code*, Olympia, Washington. Available at: <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-303-200>.

# Attachment 1. 6265A Building Location



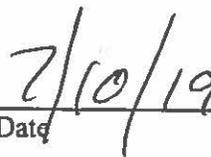
**Attachment 2. 6265A Building Photographs**



Signature sheet for the *Explanation of Significant Differences for the 100-FR-3 Operable Unit Interim Action Record of Decision*, between the U.S. Department of Energy and U.S. Environmental Protection Agency, with concurrence by the Washington State Department of Ecology.

A handwritten signature in black ink, appearing to be 'S. H. S.', written over a horizontal line.

U.S. Environmental Protection Agency

A handwritten date '7/10/19' written in black ink over a horizontal line.

Date

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Signature sheet for the *Explanation of Significant Differences for the 100-FR-3 Operable Unit Record of Decision*, between the U.S. Department of Energy and U.S. Environmental Protection Agency, with concurrence by the Washington State Department of Ecology.



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U. S. Department of Energy,  
Richland Operations Office

6/26/2019

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Date

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Signature sheet for the *Explanation of Significant Differences for the 100-FR-3 Operable Unit Record of Decision*, between the U.S. Department of Energy and U.S. Environmental Protection Agency, with concurrence by the Washington State Department of Ecology.



\_\_\_\_\_  
Washington State Department of Ecology

7/16/2019

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Date

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