EXPLANATION OF SIGNIFICANT DIFFERENCES FOR THE 300-FF-5 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
300-FF-5 Groundwater Operable Unit
Hanford Site – 300 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, 2013, *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1* (hereinafter referred to as the 300-FF-5 Operable Unit [OU] Record of Decision [ROD]). The U.S. Department of Energy (DOE) 300 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 300 Area covers 105 km^2 (40 mi^2) bordering the western shore of the Columbia River. In the 300 Area Industrial Complex, uranium fuel rods were produced and much of the research and development for the Hanford Site occurred. The groundwater impacted by operations associated with fuel rod fabrication and these research and development activities was addressed in the 300-FF-5 OU ROD (EPA and DOE, 2013).

The 300-FF-5 OU final remedial action is being conducted under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA). The 300-FF-5 OU ROD (EPA and DOE, 2013) selected the remedy of monitored natural attenuation (MNA), groundwater monitoring, enhanced attenuation of uranium at the top of the aquifer, and institutional controls (ICs) for uranium, gross alpha, tritium, nitrate, trichloroethene, and cis-1,2-dichloroethene.

MNA is a remedial strategy that monitors natural attenuation processes until cleanup levels are met, provided that the levels are met within a reasonable timeframe. Natural attenuation relies on natural processes within the aquifer to achieve reductions in the toxicity, mobility, volume, concentration, and/or bioavailability of contaminants. Groundwater monitoring (included as required as a component of MNA) will be integrated into groundwater sampling and analysis activities. Uranium attenuation at the top of the aquifer will be accomplished by injecting phosphate to sequester the uranium.

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 the MNA and enhanced attenuation remedies. These activities, including characterization and monitoring, well maintenance, well decommissioning, and water table level measurements, generate small amounts of miscellaneous solid waste that are stored for eventual disposal.

- The miscellaneous solid waste generated in support of 300-FF-5 OU final 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 the 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 300-FF-5 OU, the U.S. Environmental Protection Agency (EPA) is the lead regulatory agency, and 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 300-FF-5 OU ROD (EPA and DOE, 2013).

STATUTORY CITATION FOR AN EXPLANATION OF SIGNIFICANT DIFFERENCE

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 final remedial action that will allow for more efficient and cost-effective management of miscellaneous solid waste generated during routine 300-FF-5 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-2014-13-ADD2, *Remedial Design Report/Remedial Action Work Plan Addendum for the 300 Area Groundwater*.

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 300-FF-5 OU Final Action Administrative Record. The ESD and supporting information are available at the DOE Tri-Party Agreement (Ecology et al., 1989, *Hanford Federal Facility Agreement and Consent Order*) Administrative Record office and the 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
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

SITE HISTORY, CONTAMINATION, AND SELECTED REMEDY

The 300-FF-5 OU ROD (EPA and DOE, 2013) directed that the monitoring of uranium, gross alpha, tritium, nitrate, trichloroethene, and cis-1,2-dichloroethene from groundwater under the 300 Area will continue until cleanup levels are met. The 300 Area is located on a broad strip of land in the southeast portion of the Hanford Site, along the Columbia River.

The 300 Area Industrial Complex facilities began operating in 1943 and included fuel fabrication buildings, raw material storage, waste storage, finished product storage, technical support, service support, and research and development related to fuel fabrication and other Hanford Site processes. The complex includes the buildings, facilities, and process units where the majority of uranium fuel production and research and development activities took place. Some of the facilities are still used by Pacific Northwest National Laboratory, which will preclude access to some contamination areas until approximately 2027. The primary waste stream disposed to ponds and trenches in the 300 Area Industrial Complex was process waste from nuclear fuel fabrication; these sites also received radioactive liquid waste, sewage, laboratory waste, and coal power plant waste.

Solid waste was disposed in burial grounds and shallow landfills from 1943 through the 1950s. In later years, highly radioactive waste (including waste with transuranic contaminants) was disposed in the 600 Area burial grounds: 300-7, 300-9, 300-10, 618-1, 618-2, 618-3, 618-4, 618-5, 618-7, 618-8, 618-9, 618-10, 618-11, 618-12, and 618-13.

The selected remedy combines MNA, groundwater monitoring, enhanced attenuation of uranium at the top of the aquifer, and ICs to prevent human and ecological impacts within a reasonable time. Enhanced attenuation of uranium at the top of the aquifer consists of phosphate injected into the upper portion of the groundwater aquifer in an attempt to sequester potentially mobilized uranium by other remedial actions.

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 300-FF-5 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 DIFFERENCES

This ESD allows for miscellaneous solid waste to be collected when generated from 300-FF-5 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 selected remedy described in the 300-FF-5 OU ROD (EPA and DOE, 2013). 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 the solid waste will be conducted in accordance with the applicable or relevant and appropriate requirements identified in DOE/RL-2014-13-ADD2.

Costs associated with managing miscellaneous solid waste at a centralized storage location are within the estimates of the selected remedy identified in the 300-FF-5 OU ROD (EPA and DOE, 2013).

SUPPORT AGENCY COMMENTS

Ecology, as the support agency for this OU, concurs with this ESD to the 300-FF-5 OU ROD (EPA and DOE, 2013).

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 the 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 300-FF-5 OU and 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 300-FF-5 OU ROD (EPA and DOE, 2013), 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 300-FF-5 OU ROD. Attachment 1 provides a figure showing the location of the 6265A Building, and Attachment 2 provides photographs of the building.

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."

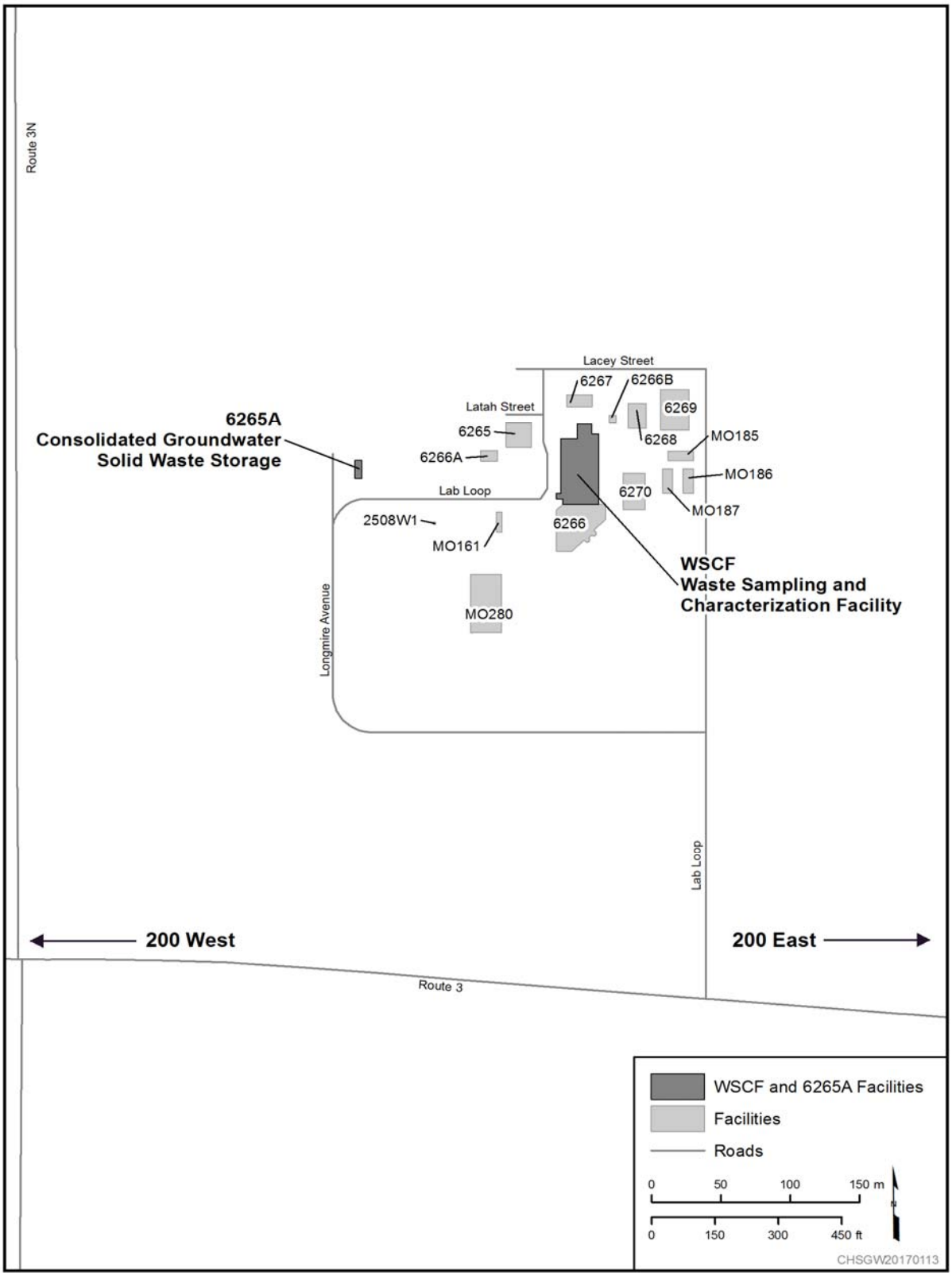
DOE/RL-2014-13-ADD2, 2015, *Remedial Design Report/Remedial Action Work Plan Addendum for the 300 Area Groundwater*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0081151H.

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, 2013, *Hanford Site 300 Area Record of Decision for 300-FF-2 and 300-FF-5, and Record of Decision Amendment for 300-FF-1*, U.S. Environmental Protection Agency and U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0087180.

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 300-FF-5 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.

U. S. Environmental Protection Agency

Date 7/10/19

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Signature sheet for the *Explanation of Significant Difference for the 300-FF-5 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.

U.S. Department of Energy,
Richland Operations Office

6/26/2019
Date

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Signature sheet for the *Explanation of Significant Difference for the 300-FF-5 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.

Washington State Department of Ecology

7/16/2019
Date

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