SGW-72207
Revision 0

Work Instruction for Installation of Three Resource Conservation and Recovery Act Wells in Fiscal Year 2026 and 2027

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

Contractor for the U.S. Department of Energy
under Contract 89303320DEM000030

P.O. Box 1464
Richland, Washington 99352

Approved for Public Release;
Further Dissemination Unlimited

SGW-72207
Revision 0

Work Instruction for Installation of Three Resource Conservation and Recovery Act Wells in Fiscal Year 2026 and 2027

Date Published
August 2025

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

Contractor for the U.S. Department of Energy
under Contract 89303320DEM000030

CPCCo
Central Plateau
Cleanup Company
P.O. Box 1464
Richland, Washington 99352

APPROVED
By Dorcas Kosgei at 10:26 am, Sep 11, 2025

Release Approval | Date

Approved for Public Release;
Further Dissemination Unlimited

TRADEMARK DISCLAIMER

Reference herein to any specific commercial product, process, or service by tradename, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.

This report has been reproduced from the best available copy.

Printed in the United States of America

Signature Page

Title: ***Work Instruction for Installation of Three Resource Conservation and Recovery Act Wells in Fiscal Year 2026 and 2027***

NAOMI JASCHKE Digitally signed by NAOMI JASCHKE
Date: 2025.09.17 09:04:48 -07'00'

Print Name U.S. Department of Energy, Hanford Field Office	Signature	Date

This page intentionally left blank.

Contents

1 Introduction 1
2 Facility Description and Operational History 4
2.1 Waste Management Area A-AX Description and History 4
2.2 216-B-3 Pond Description and History 4
2.3 216-B-63 Trench Description and History 5
3 Well Construction and Development 5
3.1 Geology 5
3.2 Well Construction 7
3.3 Geologic Soil Logging 10
3.4 Field Screening 10
3.5 Geophysical Logging 10
3.6 Corrective Actions and Deviations 10
3.7 Well Development 11
3.8 Baseline Groundwater Sampling and Monitoring 11
4 Waste Management 11
5 Quality Assurance 12
6 Health and Safety Plan 12
7 Reporting 12
8 References 13

Figures

Figure 1. Location Map of the Hanford Site, Including the Central Plateau and the 200 East Area 2
Figure 2. Location Map of Planned Groundwater Monitoring Wells 3
Figure 3. Generic Design of RCRA Wells 8
Figure 4. Generic Design of RCRA Wells Extending to Top of Basalt 9

Tables

Table 1. Geologic Formations, Units, and Descriptions 5
Table 2. Estimated Upper Geologic Contacts and Depth-to-Water at RCRA Wells 6
Table 3. Estimated Depth-to-Water at RCRA Wells and Well Construction Details 7

This page intentionally left blank.

Acronyms

DOE	U.S. Department of Energy
OU	operable unit
PUREX	Plutonium Uranium Extraction
QA	quality assurance
RCRA	Resource Conservation and Recovery Act of 1976
SST	single-shell tanks
Tri Party Agreement	*Hanford Federal Facility Agreement and Consent Order*
WMA	Waste Management Area

This page intentionally left blank.

1 Introduction

Installation of *Resource Conservation and Recovery Act of 1976* (RCRA) groundwater monitoring wells at the Hanford Site, located in southeastern Washington State, is negotiated annually by the Washington State Department of Ecology, the U.S. Environmental Protection Agency, and the U.S. Department of Energy (DOE). This activity is pursuant to the *Hanford Federal Facility Agreement and Consent Order* (hereinafter called the Tri-Party Agreement [Ecology et al., 1989]). The Tri-Party Agreement is a comprehensive cleanup and compliance agreement applicable to both *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* remedial action and RCRA treatment, storage, and disposal units on the Hanford Site.

This document describes the installation of three replacement groundwater monitoring wells at three inactive interim status RCRA treatment, storage, and disposal units. The wells are to support RCRA groundwater monitoring requirements at Waste Management Area (WMA) A-AX, 216-B-3 Pond, and 216-B-63 Trench.

Well 299-E25-256 (D0234) will be installed as a replacement for well 299-E25-41 (A4790) at WMA A-AX. A replacement is required because well 299-E25-41 (A4790) is going sample dry. The monitoring requirements at WMA A-AX are described in SGW-60586, *Engineering Evaluation Report for Single-Shell Tank Waste Management Area A-AX Groundwater Monitoring.* RCRA monitoring at WMA A-AX is conducted in accordance with DOE/RL-2023-36, *Interim Status Groundwater Monitoring Plan for the Single-Shell Tank Waste Management Area A-AX* as modified by RCRA-CN-01_DOE/RL-2023-36_R0, *Interim Status Change Number 1: Interim Status Alternate Groundwater Monitoring Plan for the Single-Shell Tank Waste Management Area A-AX.*

Well 699-43-45B (D0689) will be installed as a replacement for well 699-43-45 (A5180) at the 216-B-3 Pond. A replacement is required because well 699-43-45 (A5180) is going sample dry. The monitoring requirements at 216-B-3 Pond are as described in SGW-60591, *Engineering Evaluation Report for the 216-B-3 Main Pond Groundwater Monitoring*. RCRA monitoring at the 216-B-3 Pond is conducted in accordance with DOE/RL-2021-24, *Interim Status Groundwater Quality Assessment Plan for the 216-B-3 Pond*.

Well 299-E34-17 (D0232) will be installed as a replacement for well 299-E34-12 (A5433) at the 216-B-63 Trench. A replacement is required because well 299-E34-12 (A5433) is going sample dry. The monitoring requirements at the 216-B-63 Trench are described in SGW-60594, *Engineering Evaluation Report for the 216-B-63 Trench Groundwater Monitoring*. RCRA monitoring at the 216-B-63 Trench is conducted in accordance with DOE/RL-2008-60, *Interim Status Groundwater Monitoring Plan for the 216-B-63 Trench.*

Activities described in this work instruction include well construction, geologic logging, geophysical logging, and well development. After well installation and acceptance, baseline groundwater samples will be collected in accordance with the respective RCRA groundwater monitoring plan.

The location of the Hanford Site, including the Central Plateau and 200 East Area, are shown in Figure 1. The locations of the proposed replacement wells 299-E25-256 (D0234), 699-43-45B (D0689), and 299-E34-17 (D0232) are shown in Figure 2.

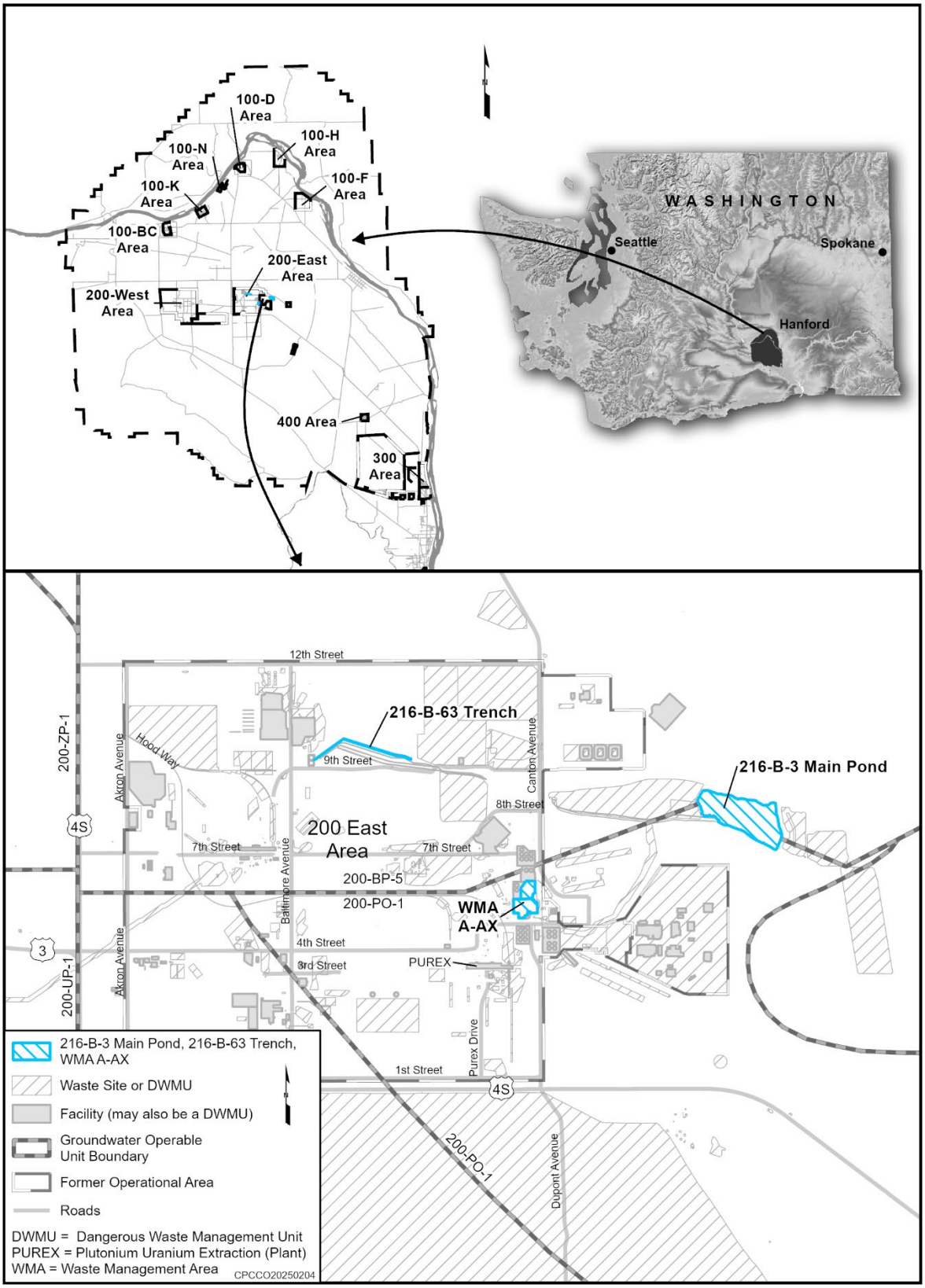

Figure 1. Location Map of the Hanford Site, Including the Central Plateau and the 200 East Area

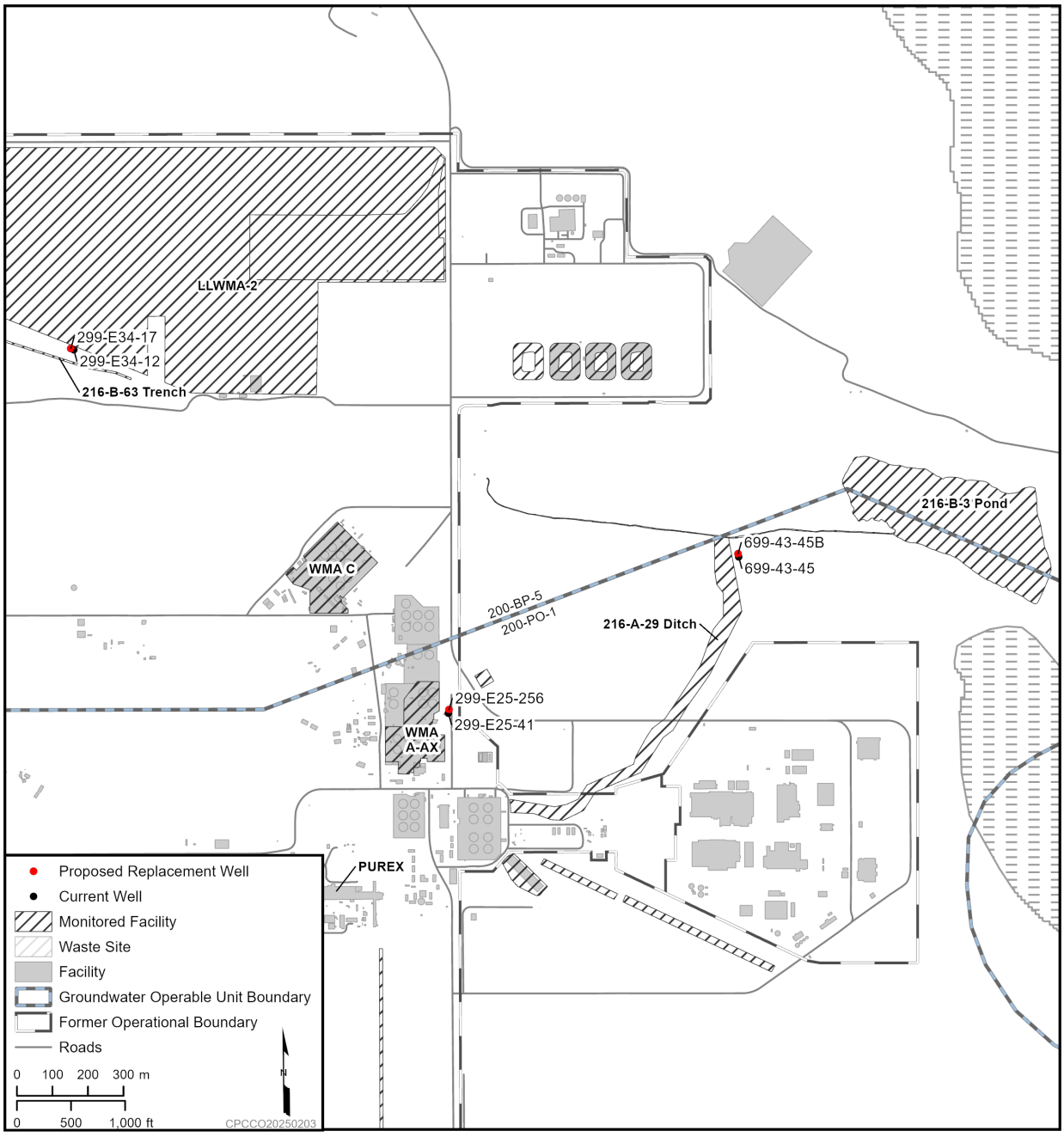

Figure 2. Location Map of Planned Groundwater Monitoring Wells

2 Facility Description and Operational History

The facility description and history of WMA A-AX, the 216-B-3 Pond, and the 216-B-63 Trench are described in this section. Geologic information relevant to drilling, well construction, and groundwater plumes near the planned wells are also discussed.

2.1 Waste Management Area A-AX Description and History

This section provides a description and history of WMA A-AX, which includes the single-shell tanks (SSTs) and ancillary equipment of the 241-A and 241-AX Tank Farms. The WMA A-AX is located in the east-central portion of the 200 East Area, near the Plutonium Uranium Extraction (PUREX) Plant and directly south of the 241-AN Tank Farm. SSTs in WMA A-AX were used for storage of neutralized acidic aging wastes from the PUREX and B Plants (PUREX and Operating Practices Sections in WHC-MR-0132, *A History of the 200 Area Tank Farms*).

The 241-A Tank Farm consists of six SSTs constructed from 1954 to 1955. The 241-AX Tank Farm contains four SSTs constructed from 1963 to 1964. The 10 tanks within WMA A-AX had an operating capacity of 3,785,000 L (1,000,000 gal), with dimensions of 23 m (75 ft) in diameter and 13 m (44 ft) tall. The SSTs were installed below ground, with the tops of the tanks at least 1.8 m (6 ft) belowgrade to provide radiation shielding and protection for operating personnel. Of the 10 tanks located within WMA A-AX, two are confirmed or assumed leakers: 241-A-104 and 241-A-105. Waste sent to the tanks in WMA A-AX came primarily from operations at the PUREX Plant and B Plant waste fractionation process. Starting in 1956 and continuing through 1972, the majority of the waste was neutralized acid waste from PUREX operations (pp. 35-69 and 83-97 in WHC-MR-0132).

WMA A-AX is within an inactive interim status treatment, storage, and disposal unit located in the 200 East Area of the Hanford Site overlying the 200-PO-1 Operable Unit (OU) that received dangerous and nondangerous waste. In accordance with Section I.A of WA7890008967, *Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit, Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste* (Hanford Facility RCRA Permit), WMA A-AX will continue under interim status until it is incorporated into Part III, V, or VI of the Hanford Facility RCRA Permit (or its successor) or until interim status is terminated. WMA A-AX is currently monitored under interim status groundwater quality assessment per DOE/RL-2023-36 as modified by RCRA-CN-01_DOE/RL-2023-36_R0. Well 299-E25-256 (D0234) will be installed as a replacement monitoring well because well 299-E25-41 (A4790) is going sample dry at WMA A-AX

2.2 216-B-3 Pond Description and History

The 216-B-3 Pond operated from 1945 to 1994 and received 1.0×10^{12} L (260 billion gal) of effluent (predominately water used for cooling that did not contact contamination). Located in a natural topographic depression, the approximately 14.2 ha (35 ac) pond had a maximum depth of approximately 6.1 m (20 ft) and was used for evaporation and percolation of effluent. Four ditches were used to convey effluent from production facilities in the 200 East Area to the pond. The 216-B-3-1 Ditch operated from 1945 to 1964, the 216-B-3-2 Ditch operated from 1964 to 1970, and the 216-B-3-3 Ditch operated from 1970 to 1994. The 216-B-3-3 Ditch also received effluent from the 216-A-29 Ditch that was directed to the pond. In 1994, B Pond was filled with clean soil during interim stabilization activities. All vegetation was removed from the perimeter and incorporated with the fill soil.

The 216-B-3 Pond is an inactive unit located in the 200 East Area of the Hanford Site overlying the 200-PO-1 OU that received dangerous and nondangerous waste. In accordance with Section I.A of the Hanford Facility RCRA Permit (WA7890008967), the 216-B-3 Pond will continue under interim status until it is incorporated into Part III, V, or VI of the Hanford Facility RCRA Permit (or its successor) or until interim status is terminated. The 216-B-3 Pond is currently monitored under interim status groundwater quality assessment per DOE/RL-2021-24. Well 699-43-45B (D0689) will be installed as a replacement monitoring well because well 699-43-45 (A5180) is going sample dry at the 216-B-3 Pond.

2.3 216-B-63 Trench Description and History

The 216-B-63 Trench was originally constructed as an emergency percolation trench to receive radioactively contaminated cooling water from B Plant. During operation, the 216-B-63 Trench received effluent from 221-B (B Plant), 225-B (Waste Encapsulation and Storage Facility), and 271-B (B Plant office and service building).

The 216-B-63 Trench was an open, unlined, manmade excavation that was 427 m (1,400 ft) long and 1.2 m (4 ft) wide, with an average depth of 3 m (10 ft). The trench received effluent via a 38 cm (15 in.) diameter vitrified clay pipe (200-E-191-PL) that extended from the 207-B Retention Basin to the 216-B-63 Trench. This pipeline is within the unit boundary of the 216-B-63 Trench. The pipe fed into a 1.5 m (5 ft) long, 40.6 cm (16 in.) diameter carbon steel inlet pipe that branched off to a 1.8 by 2.1 m (6 by 7 ft) weir box before finally emptying into the 216-B-63 Trench (DOE/RL-2008-60). A bed of 5.1 cm (2 in.) rip-rap rock extended 3.1 m (10 ft) down the trench from the discharge pipe for splash control (DOE/RL-2008-60). Unlike the other B-series ditches/trenches, the 216-B-63 Trench was not connected to the 216-B-3 Pond System. This was an intentional design, as the 216-B-63 Trench received radioactively contaminated cooling water that was diverted to the trench to prevent it from reaching 216-B-3 Pond (DOE/RL-2008-60).

The 216-B-63 Trench is an inactive treatment, storage, and disposal unit located in the 200 East Area of the Hanford Site overlying the 200-BP-5 OU that received dangerous and nondangerous waste. In accordance with Section I.A of the Hanford Facility RCRA Permit (WA7890008967), the 216-B-63 Trench will continue under interim status until it is incorporated into Part III, V, or VI of the Hanford Facility RCRA Permit (or its successor) or until interim status is terminated. The 216-B-63 Trench is currently monitored under interim status requirements per DOE/RL-2008-60. Well 299-E34-17 (D0232) will be installed as a replacement monitoring well because well 299-E34-12 (A5433) is going sample dry at the 216-B-63 Trench.

3 Well Construction and Development

The purpose of this section is to describe the geology and specific activities associated with the construction and development of replacement monitoring wells 299-E25-256 (D0234), 699-43-45B (D0689), and 299-E34-17 (D0232).

3.1 Geology

The geology near the proposed well locations is differentiated into three depositional units, the Hanford formation, the Cold Creek unit, and the Ringold Formation; each stratigraphic unit is further refined and classified with subunits (Table 1).

Table 1. Geologic Formations, Units, and Descriptions

Geologic Formation / Unit	Geologic Formation / Unit Abbreviation	Geologic Description
Hanford formation – unit 1	Hf1	Gravel dominated
Hanford formation – unit 2	Hf2	Sand dominated
Hanford formation – unit 3	Hf3	Gravel dominated
Cold Creek unit	CCU	Silt dominated with some sand
Cold Creek unit - gravel	CCUg	Gravel dominated
Ringold Formation member of Wooded Island – unit A	Rwia	Gravel dominated
Ringold Formation member of Wooded Island – unit A, silt/mud dominated	Rwia-smd	Silt and mud dominated

Table 1. Geologic Formations, Units, and Descriptions

Geologic Formation / Unit	Geologic Formation / Unit Abbreviation	Geologic Description
Ringold Formation member of Wooded Island – unit A, lower gravel dominated	Rwia-lgd	Lower gravel / sand
Permeable basalt	--	Fractured basalt flow top
Basalt	--	Competent basalt

Note: Not all geologic formations / units may be present in a wellbore.

The depositional environment in the area surrounding the proposed wells was dynamic and as a result not all geologic units are present in all wells; a best interpretation has been provided in Table 2. The unconfined aquifer is primarily in the Cold Creek unit gravel and the Ringold Formation member of Wooded Island – unit A; the permeable basalt, where present, is also saturated.

Additional details of the geology of the area can be found in:

- CP-67635, *Development of Hanford South GeoFramework Model*
- ECF-HANFORD-18-0035, *Central Plateau Vadose Zone Geoframework*
- ECF-HANFORD-20-0008, *Development of Hanford Site Top of Basalt Elevation Grid*

Table 2. Estimated Upper Geologic Contacts and Depth-to-Water at RCRA Wells

Well Name	299-E25-256	699-43-45B	299-E34-17
Well ID	D0234	D0689	D0232
Fiscal year plan	2026	2027	2027
Ground surface elevation (m) (NAVD88)	204.344	181.269	194.620
Water table (ft bgs)	272	196	240
Hf1 (ft bgs)	0	5	4
Hf2 (ft bgs)	15	46	47
Hf3 (ft bgs)	202	144	193
CCU (ft bgs)	252	170	208
CCUg (ft bgs)	262	170	208
Rwia (ft bgs)	321	204	NP
Rwia-smd (ft bgs)	NP	NP	NP
Rwia-lgd (ft bgs)	347	238	NP
Basalt (ft bgs)	348	244	246
Closure zone	WMA A-AX	216-B-3 Pond	216-B-63 Trench

Reference: NAVD88, 1988, *North American Vertical Datum of 1988*.

CCU: Cold Creek unit
CCUg: Cold Creek unit - gravel
ft bgs: feet below ground surface
Hf1: Hanford formation – unit 1

Table 2. Estimated Upper Geologic Contacts and Depth-to-Water at RCRA Wells

Well Name	299-E25-256	699-43-45B	299-E34-17
Well ID	D0234	D0689	D0232

Hf2: Hanford formation – unit 2
Hf3: Hanford formation – unit 3
ID: identification
Rwia: Ringold Formation member of Wooded Island – unit A
Rwia-lgd: Ringold Formation member of Wooded Island – unit A, lower gravel dominated
Rwia-smd: Ringold Formation member of Wooded Island – unit A, silt/mud dominated

3.2 Well Construction

Well drilling and construction of the RCRA replacement monitoring wells will be performed in accordance with WAC 173-160, “Minimum Standards for Construction and Maintenance of Wells.” Drilling methods that enable observation of stratigraphic structures in drill cuttings are preferred to facilitate identification of transitions between stratigraphic units.

The wells will be constructed as 10.2 cm (4 in.) diameter monitoring wells with stainless-steel casing and screens. The screened intervals will be no more than 7.6 m (25 ft) long and set no more than 1.5 m (5 ft) above the water table. Grab samples from drill cuttings will be collected at 1.5 m (5 ft) intervals (starting 1.5 m [5 ft] above the projected water table) across the proposed screened interval for sieve analysis, and adjacent grab samples with similar texture may be composited. The sieve analysis results will be used to select well screen slot size and filter pack material. The OU technical lead and RCRA groundwater scientist, buyer’s technical representative, field geologist or hydrogeologist, and the well design technical lead will determine the final well design details prior to construction based on the borehole log, the geophysical logs, and sieve analysis results. The preliminary design for the groundwater monitoring wells is outlined in Table 3 and shown in Figures 3 and 4.

Table 3. Estimated Depth-to-Water at RCRA Wells and Well Construction Details

Well Name	Well ID	Estimated Depth-to-Water Table	Estimated Well Screen Length	Estimated Sump Length	Estimated Depth to Basalt	Estimated Total Depth
		ft bgs				
299-E25-256	D0234	272	25	3	348	298
699-43-45B	D0689	196	25	3	244	222
299-E34-17	D0232	240	10	3	246	249

ft bgs: feet below ground surface
ID: identification

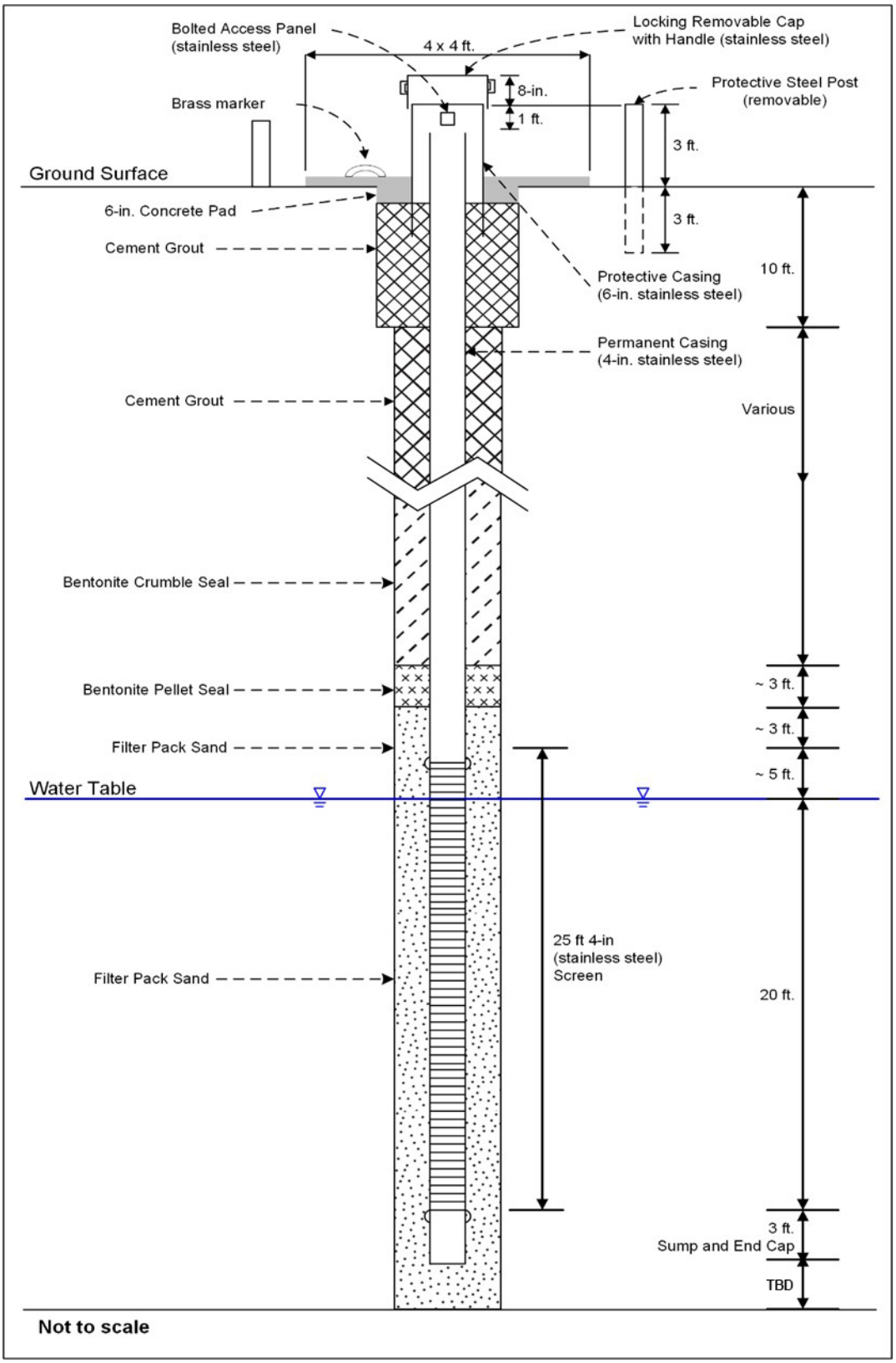

Figure 3. Generic Design of RCRA Wells

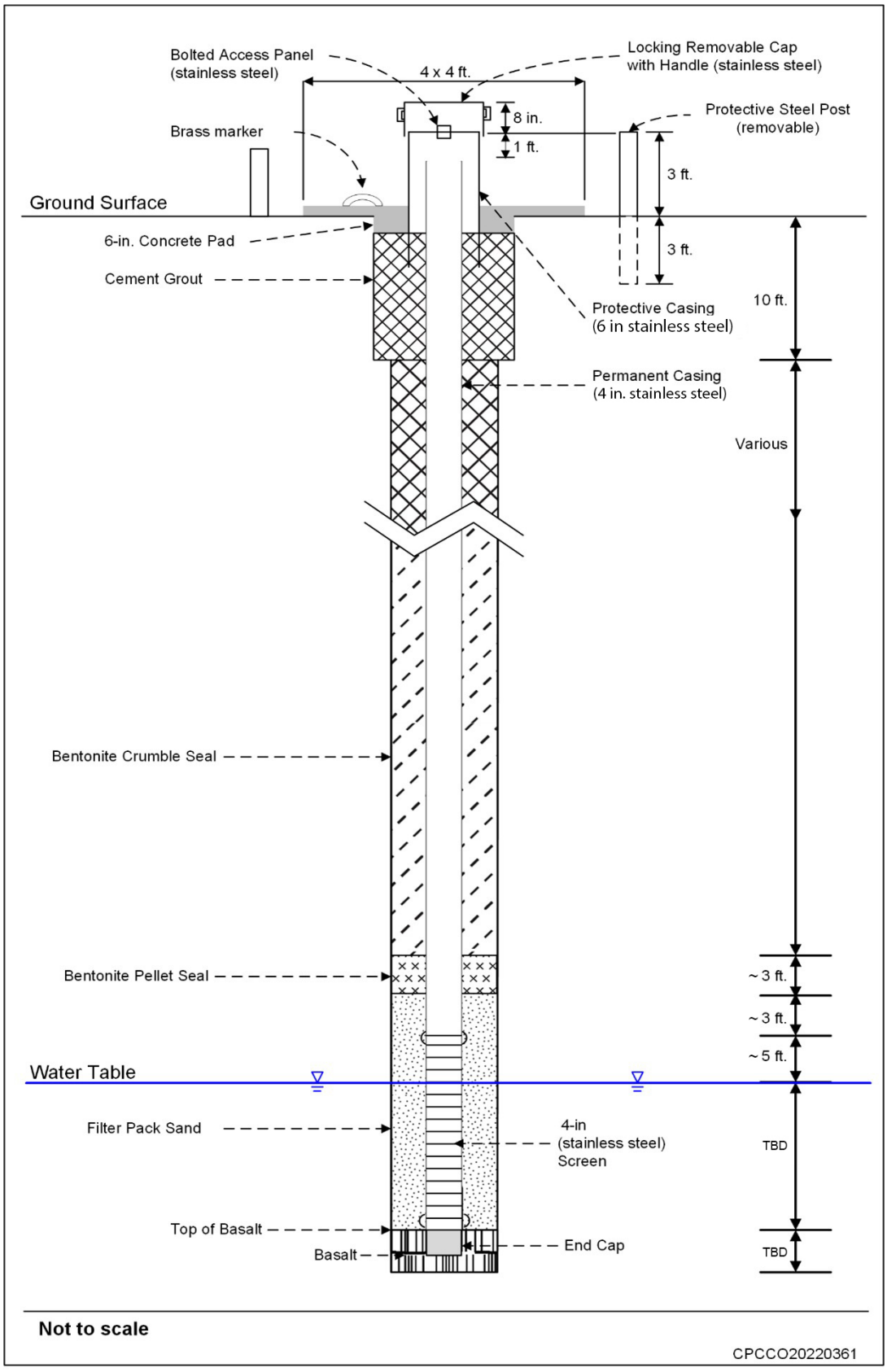

Figure 4. Generic Design of RCRA Wells Extending to Top of Basalt

3.3 Geologic Soil Logging

Soil samples will be logged throughout the boreholes by the field geologist according to contractor procedures. The field geologist will collect drill cuttings every 1.5 m (5 ft) and at changes in lithology from surface to total depth. Archive samples will be collected in pint-sized glass jars, and representative interval samples will be saved in chip trays. If representative samples cannot be collected, notes describing the condition of the samples will be entered into the borehole log. Archive samples will not be collected if contamination is encountered. Geologic samples will be transported to the geologic sample library and stored.

At the discretion of the OU technical lead and RCRA groundwater scientist, samples may be collected for possible laboratory analysis if contamination is indicated through radiological or industrial hygiene field screening, or other field observations. If samples are collected, the laboratory analyses performed will be determined based on the contractor's data quality objectives procedure, in consultation with Sample Management and Reporting.

3.4 Field Screening

Field screening (radiological and industrial hygiene) will be performed by the radiological control technician, industrial hygiene technician, and other qualified personnel in accordance with approved methods and contractor procedures. The radiological control technicians will record field measurements, noting the depth of the sample and the instrument reading on a radiological survey report. Elevated measurements will be communicated to the field geologist for inclusion in the field activity report. Coverage will be provided in accordance with contactor procedures and is typically provided twice a day in uncontaminated areas. More frequent coverage is provided in contaminated areas.

3.5 Geophysical Logging

The boreholes for all three monitoring wells in this work instruction will be logged with the high-resolution spectral gamma logging system and neutron moisture logging system to determine the vertical distribution and concentration of gamma-emitting radionuclides, soil moisture variations, and borehole lithology changes, which will be used along with sieve analysis results to inform the well design. Neutron data will be converted from counts to volumetric moisture to provide quantitative moisture data for the vadose zone. The boreholes will be logged before downsizing each temporary casing string or after the total drill depth is reached. Geophysical logging only will be performed in cased portions of the boreholes.

After well construction is complete, neutron moisture logging will be conducted for research purposes to potentially evaluate annular well seal integrity in the future. For this evaluation, only the vadose zone (surface to groundwater) section of the well will be logged after well completion.

3.6 Corrective Actions and Deviations

The OU technical lead and RCRA groundwater scientist must document deviations from contractor procedures or other issues related to execution of this work. As described below, DOE will be notified when deviations from this work instruction are identified.

As appropriate, such deviations or issues will be documented in accordance with contractor procedures. The project manager, field team lead, or designee will be responsible for communicating field corrective action requirements and ensuring that immediate corrective actions are applied to field activities.

The OU technical lead and RCRA groundwater scientist will inform the DOE-Hanford Field Office of deviations that affect the overall intent and schedule and may require revisions to this plan.

The OU project manager and RCRA groundwater scientist, or field work supervisor or designee, is responsible for communicating field corrective action requirements and ensuring that immediate corrective actions are applied to field activities. The OU project manager and RCRA groundwater manager are also responsible for ensuring project files are appropriately set up and maintained.

The project files will contain project records or references to their storage locations. Project files may include the following information:

- Operational records and logbooks
- Data forms
- Global positioning system data (a copy will be provided to the Sample Management and Reporting group)
- Inspection or assessment reports and corrective action reports
- Field summary reports
- Interim progress reports
- Final reports
- Photographs

3.7 Well Development

The objectives of well development are to settle the filter pack, prevent uncontrolled infiltration of fines, and improve communication of the well with the surrounding formation. Well development will be conducted during well construction and after well completion in accordance with Central Plateau Cleanup Company procedures.

3.8 Baseline Groundwater Sampling and Monitoring

After well installation and acceptance, wells will be monitored in accordance with the respective groundwater monitoring plans.

4 Waste Management

Waste materials are generated during drilling, well construction, well development, and testing. Waste will be managed in accordance with the applicable waste management plan for the 200-BP-5 and 200-PO-1 Operable Units (DOE/RL-2022-14, *Waste Management Plan/Waste Control Plan for the 200-BP-5 and 200-PO-1 Groundwater Operable Units).* Miscellaneous solid waste that has contacted suspect dangerous waste will be managed as dangerous waste.

Purgewater and decontamination fluids will be collected and managed in accordance with DOE/RL-2009-80, *Investigation Derived Waste Purgewater Management Work Plan* (modified by TPA-CN-0842, *Tri-Party Agreement Change Notice Form: DOE/RL-2009-80, Investigation-Derived Waste Purgewater Management Work Plan, Rev. 0*) and DOE/RL-2011-41, *Hanford Site Strategy for Management of Investigation Derived Waste*. Purgewater will be sent to the modular storage units. If purgewater cannot be sent to the modular storage units, it may be sent to the 200 West Pump and Treat system if acceptance criteria can be met. Waste sent to the Environmental Restoration Disposal Facility must meet the waste acceptance criteria and be land disposal restriction compliant. Waste containing residual liquids must be stabilized and solidified prior to disposal. If additional treatment for stabilization is necessary, treatment options will be evaluated based on characteristics of the waste. If treatment options are not available, the waste may be managed at an appropriate onsite facility (i.e., Solid Waste Operations Complex) until an appropriate offsite disposal facility is identified and approved.

Packaging and labeling during waste storage and transportation will meet the applicable substantive federal and state requirements. Waste materials requiring collection will be placed in containers appropriate for the material and the receiving facility in accordance with applicable waste management or waste control plan and applicable substantive federal and state requirements.

5 Quality Assurance

Contractor quality assurance (QA) requirements are conveyed in DOE O 414.1D Chg 2, *Quality Assurance*, and 10 CFR 830.121, “Nuclear Safety Management,” “Quality Assurance Program (QAP).” The Tri-Party Agreement (Ecology et al., 1989) and DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Document*, apply to contractor environmental QA program plans. All contractor employees and subcontractors performing environmental cleanup activities are responsible for performing work in accordance with contractor requirements.

All work performed under this document will be conducted in compliance with Project Hanford Management System overall QA program design. The Soil & Groundwater Operations group has a specific QA program plan for the scope as presented in Appendix B of CPCC-00172, *Central Plateau Cleanup Company Environmental Quality Assurance Program Plan*. CPCC-00172 is not a Tri-Party Agreement (Ecology et al., 1989) primary or secondary document and thus is not subject to lead regulatory agency review or approval.

All operations including drilling, sampling, well completion and decommissioning, testing, and associated documentation are subject to surveillance by the contractor or its authorizing agent or owner. This surveillance will in no way relieve the contractor of any contractual responsibilities. The term “surveillance” may include inspection, survey, and assessment.

The surface of the ground adjacent to the borehole will be used as the “ground surface” reference for depth measurements. The elevation of the brass marker on the concrete well pad and the top of the protective casing will be surveyed after the well has been completed. A correlation of the measurements made while drilling to the surveyed elevation will be included in the final report.

6 Health and Safety Plan

DOE established the hazardous waste operations safety and health program pursuant to the *Price-Anderson Amendments Act of 1988* to ensure the safety and health of workers involved in mixed-waste site activities. The program was developed to comply with the requirements of 10 CFR 830; 10 CFR 835, “Occupational Radiation Protection”; and 10 CFR 851, “Worker Safety and Health Program,” which incorporates the standards of 29 CFR 1910.120, “Occupational Safety and Health Standards,” “Hazardous Waste Operations and Emergency Response.”

The health and safety program defines the chemical, radiological, and physical hazards and specifies the controls and requirements for daily work activities on the Hanford Site. Personnel training; control of industrial safety and radiological hazards; personal protective equipment; site control and general emergency response to spills, fire, accidents, injury, and site visitors; and incident reporting are governed by the health and safety program. Site specific health and safety plans will be used to supplement the general health and safety program.

7 Reporting

A borehole summary report for each well will be prepared describing field activities. The report will describe drilling, well construction, geologic logging, geophysical logging, and well development. A field summary report will be prepared for each well to document major deviations from the work instruction and analytical results for any samples collected during drilling or well construction. Information and data in these reports will include but not be limited to the following:

- Well location maps
- Depths of the investigation
- Elevated field screening data (Radiological Control and Industrial Hygiene group)
- Depth-to-water measurements
- Borehole logs
- Borehole geophysical loggings

- Dates of drilling and well construction
- Water added to the borehole
- Well construction information (e.g., well summary sheets)
- Survey data (vertical and horizontal)

8 References

10 CFR 830.121, "Nuclear Safety Management," "Quality Assurance Program (QAP)," *Code of Federal Regulations*. Available at: https://www.ecfr.gov/current/title-10/chapter-III/part-830/subpart-A/section-830.121.

10 CFR 835, "Occupational Radiation Protection," *Code of Federal Regulations*. Available at: https://ecfr.federalregister.gov/current/title-10/chapter-III/part-835.

10 CFR 851, "Worker Safety and Health Program," *Code of Federal Regulations*. Available at: https://www.ecfr.gov/current/title-10/chapter-III/part-851?toc=1.

29 CFR 1910.120, "Occupational Safety and Health Standards," "Hazardous Waste Operations and Emergency Response," *Code of Federal Regulations*. Available at: https://www.ecfr.gov/current/title-29/subtitle-B/chapter-XVII/part-1910/subpart-H/section-1910.120.

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.

CP-67635, 2022, *Development of Hanford South GeoFramework Model*, Rev. 0, Central Plateau Cleanup Company, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-21578.

CPCC-00172, 2022, *Central Plateau Cleanup Company Environmental Quality Assurance Program Plan*, Rev. 2, Central Plateau Cleanup Company, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-23996.

DOE O 414.1D Chg 2, 2020, *Quality Assurance*, U.S. Department of Energy, Washington, D.C. Available at: https://www.directives.doe.gov/directives-documents/400-series/0414.1-BOrder-d-chg2-ltdchg/@@images/file.

DOE/RL-96-68, 2022, *Hanford Analytical Services Quality Assurance Requirements Document,* Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-21345 https://pdw.hanford.gov/document/AR-21348 https://pdw.hanford.gov/document/AR-21349 https://pdw.hanford.gov/document/AR-21350

DOE/RL-2008-60, 2024, *Interim Status Groundwater Monitoring Plan for the 216-B-63 Trench,* Rev. 2, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-32151.

DOE/RL-2009-80, 2009, *Investigation Derived Waste Purgewater Management Work Plan*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: https://pdw.hanford.gov/document/0094946.

Modified by:

TPA-CN-0842, 2019, *Tri-Party Agreement Change Notice Form: DOE/RL-2009-80, Investigation-Derived Waste Purgewater Management Work Plan, Rev. 0*, dated August 2019, U.S. Department of Energy, Richland Operations Office, and U.S. Environmental Protection Agency, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-02805.

DOE/RL-2011-41, 2011, *Hanford Site Strategy for Management of Investigation Derived Waste*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: https://pdw.hanford.gov/document/0093937.

DOE/RL-2021-24, 2025, *Interim Status Groundwater Quality Assessment Plan for the 216-B-3 Pond*, Rev. 3, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-35075.

DOE/RL-2023-36, 2023, *Interim Status Groundwater Monitoring Plan for the Single-Shell Tank Waste Management Area A-AX,* Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-26928.

Modified by:

RCRA-CN-01_DOE/RL-2023-36_R0, *Interim Status Change Number 1: Interim Status Alternate Groundwater Monitoring Plan for the Single-Shell Tank Waste Management Area A-AX,* U.S. Department of Energy, Richland Operations Office. Available at: https://pdw.hanford.gov/document/AR-31542.

DOE/RL-2022-14, 2023, *Waste Management Plan/Waste Control Plan for the 200-BP-5 and 200-PO-1 Groundwater Operable Units*, U.S. Department of Energy, Richland Operations Office. Available at: https://pdw.hanford.gov/document/AR-25949.

ECF-HANFORD-18-0035, 2020, *Central Plateau Vadose Zone Geoframework,* Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-17436.

ECF-HANFORD-20-0008, 2021, *Development of Hanford Site Top of Basalt Elevation Grid*, Rev. 0, Central Plateau Cleanup Company, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-17448.

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: https://www.hanford.gov/page.cfm/TriParty/TheAgreement.

NAVD88, 1988, *North American Vertical Datum of 1988*, National Geodetic Survey, Federal Geodetic Control Committee, Silver Spring, Maryland. Available at: https://www.ngs.noaa.gov/datums/vertical/https://www.ngs.noaa.gov/datums/vertical/north-american-vertical-datum-1988.shtml.

Price-Anderson Amendments Act of 1988, Pub. L. 100-408, Aug. 20, 1988, 102 Stat. 1066. Available at: https://www.govinfo.gov/content/pkg/STATUTE-102/pdf/STATUTE-102-Pg1066.pdf.

Resource Conservation and Recovery Act of 1976, 42 USC 6901, et seq. Pub. L. 94-580, 90 Stat. 2795. Available at: https://www.gpo.gov/fdsys/pkg/STATUTE-90/pdf/STATUTE-90-Pg2795.pdf.

SGW-60586, 2019, *Engineering Evaluation Report for Single-Shell Tank Waste Management Area A-AX Groundwater Monitoring,* Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-03246.

SGW-60591, 2019, *Engineering Evaluation Report for the 216-B-3 Main Pond Groundwater Monitoring*, Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-02644.

SGW-60594, 2019, *Engineering Evaluation Report for the 216-B-63 Trench Groundwater Monitoring*, Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington. Available at: https://pdw.hanford.gov/document/AR-03266.

WA7890008967, *Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit, Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste*, Revision 8c, as amended, Washington State Department of Ecology, Richland, Washington. Available at: https://fortress.wa.gov/ecy/nwp/permitting/hdwp/rev/8c/index.html.

WAC 173-160, "Minimum Standards for Construction and Maintenance of Wells," *Washington Administrative Code*, Olympia, Washington. Available at: https://apps.leg.wa.gov/WAC/default.aspx?cite=173-160.

WHC-MR-0132, 1990, *A History of the 200 Area Tank Farms*, Rev. 0, Westinghouse Hanford Company, Richland, Washington. Available at:

https://pdw.hanford.gov/document/0081013H.
https://pdw.hanford.gov/document/0081012H.

This page intentionally left blank.