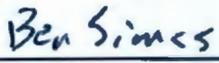
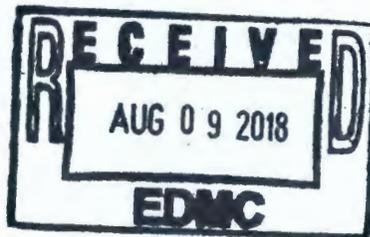


9238484

TRI-PARTY AGREEMENT		
Change Notice Number TPA-CN- 0813	TPA CHANGE NOTICE FORM	Date: 6/7/18
Document Number, Title, and Revision: DOE/RL-2014-13-ADD1, Rev. 1, Remedial Design Report/Remedial Action Work Plan for 300-FF-2 Soils		Date Document Last Issued: May 2016
Approved Change Notices Against this Document: TPA-CN-0727		
Originator: Bob Cathel		Phone: 376-1513
Description of Change: Changes are made to the document to (1) update Appendix D - Air Monitoring Plan for the 300 Area Waste Sites Remedial Action, specifically Table D-2 and references, and (2) affect minor editorial changes in the main document.		
<p>Mark S. French and Benjamin Simes agree that the proposed change modifies an approved workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan. Section 9.0. Documentation and Records, and not Chapter 12.0. Changes to the Agreement.</p> <p>Added text is denoted by <u>double underline</u>. Deleted text is denoted by strike through.</p>		
<p>Note: Include affected page number(s) – Pages 2-8, 2-11, 3-2, 3-3, 4-3, 4-4, 4-10, 5-4, 5-5, 6-4, D-2, D-4, and D-6.</p>		
<p>Justification and Impacts of Change: Considering the June 2017 rebaselined life-cycle schedule for the 324 facility deactivation, decommissioning, decontamination, and demolition (D4) and partial remediation of the 300-296 waste site, the resultant total effective dose equivalent (TEDE) to the maximally exposed individual (MEI) has been recalculated. The information from this calculation, ECF-324 BLDG-17-0086 Total Effective Dose Equivalent Calculation for 324 Facility D4 and 300-296 Waste Site Remediation, Rev. 0, has been used to update Appendix D of this Remedial Design Report/Remedial Action Work Plan, especially TEDE information for 300-296 waste site in Table D-2.</p> <p>While this document was being updated with the above information editorial changes were made, including, but not limited to, TPA Milestone completions and updated document references.</p>		
Approvals:		
 DOE Project Manager	6/8/18 Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
 EPA Project Manager	6/12/18 Date	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
N/A		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
Ecology Project Manager	Date	



Activities associated with the remedial action for the source area waste sites covered under the ROD are expected to occur on site, as that term is defined under the NCP. As a result, the remedial actions described in this document must meet the substantive, but not administrative, requirements of the ARARs established in the RODs. In the event that any portion of the remediation work occurs at an offsite location (e.g., waste treatment at an offsite facility), the work is required to comply with all applicable requirements. The sites addressed by the 300 Area ROD and ERDF are reasonably close to one another, and the wastes meeting the ERDF waste acceptance criteria (~~WCH-191~~ERDF-00011) are compatible for the selected disposal approach. Therefore, the waste sites and ERDF are considered to be a single site for response purposes.

If any requirement that might be an ARAR for the remedial action is promulgated subsequent to issuance of the 300 Area ROD, the DOE and EPA will review the requirement and determine if compliance with the new requirement is necessary to ensure that the remedy is protective of human health and the environment, in accordance with 40 CFR 300.430(f). If necessary to ensure protection of human health and the environment, the selected remedy will be revised to incorporate the newly promulgated ARAR.

2.4.1 Chemical-Specific ARARs

Chemical-specific ARARs are typically health- or risk-based regulatory values or methodologies that are applied to site-specific media and used to establish cleanup criteria. Chemical-specific ARARs for source waste site remedial action selected in the ROD are as follows:

- **WAC 173-340-740, “Unrestricted Land Use Soil Cleanup Standards”:** Establishes methodology for calculating soil cleanup levels based on unrestricted land use (WAC 173-340-740(3)); adjustments to calculated cleanup levels to take into account cumulative effects of multiple contaminants and exposure pathways, adjustments based on state and federal law, and adjustments in consideration of natural background levels and practical quantitation limits (WAC 173-340-740(5)); points of compliance where cleanup levels must be attained (WAC 173-340-740(6)); and monitoring protocols for sampling, analysis, and statistical methods used to determine compliance (WAC 173-340-740(7)). Soil cleanup levels for residential land use have been selected in the ROD. Sampling and analysis requirements and locations will be addressed in accordance with a sampling and analysis plan (SAP) for each waste site undergoing remediation; considerations for cumulative effects of multiple contaminants will be documented in closeout documentation as described in Appendix B.
- **WAC 173-340-745, “Soil Cleanup Standards for Industrial Properties”:** Establishes methodology for calculating soil cleanup levels where industrial land use represents the reasonable maximum exposure (WAC 173-340-745(5)), and adjustments to cleanup levels to take into account cumulative effects of multiple contaminants and exposure pathways, adjustments based on state and federal laws, and adjustments in consideration of natural background levels and practical quantitation limits (WAC 173-340-745(6)). Soil cleanup levels for industrial land use have been selected in the ROD. Sampling and analysis requirements and locations will be addressed in accordance with a SAP for each waste site undergoing remediation; considerations for cumulative effects of multiple contaminants will be documented in closeout documentation as described in Appendix B.
- **WAC 173-340-747, “Deriving Soil Concentrations for Groundwater Protection”:** Establishes methodology for determining soil concentrations that will not cause contamination of groundwater at levels that exceed groundwater cleanup levels. Soil cleanup levels to ensure protection of groundwater have been selected in the ROD, using alternative fate and transport modeling as allowed in WAC 173-340-747(8).

- **40 CFR 61 Subpart M, “National Emission Standard for Asbestos”:** 40 CFR 61.140 and 40 CFR 61.145 define regulated asbestos-containing material (ACM) and regulated removal and handling requirements, and specify sampling, inspection, handling, and disposal requirements for regulated sources having the potential to emit asbestos. No visible emissions are allowed during handling, packaging, and transport of ACM. 40 CFR 61.150 identifies requirements for the removal and disposal of asbestos from demolition and renovation activities, and also specifies no visible emissions. Buried ACM may be encountered during excavation of source waste sites and on pipelines or other structures excavated as part of remedial action. Asbestos-containing material associated with remedial actions will be handled consistent with the applicable or relevant requirements of 40 CFR 61.140, 40 CFR 61.145, and 40 CFR 61.150.
- **40 CFR 761, “Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions”:** 40 CFR 761.50(b)1, 2, 3, 4, and 7 and (c) establish general requirements for the storage and disposal of polychlorinated biphenyl (PCB) wastes including liquid PCB wastes, PCB items, PCB remediation waste, PCB bulk product wastes, and PCB/radioactive wastes at concentrations exceeding 50 ppm PCBs. Specific handling and disposal requirements are established for PCB liquids, articles, and PCB containers in 40 CFR 761.60(a), (b), and (c), respectively. PCB remediation waste requirements are established in 40 CFR 761.61. Substantive requirements of these provisions would generally be applicable to PCB wastes encountered during remedial action for source waste sites. Remedial action will comply with these requirements through adherence to waste management procedures (see Chapter 5) and receiving facility waste acceptance criteria (e.g., ~~WCH-191~~ERDF-00011, *Environmental Restoration Disposal Facility Waste Acceptance Criteria, formerly WCH-191*.)
- **WAC 173-303, “Dangerous Waste Regulations”:** WAC 173-303 establishes a variety of substantive requirements applicable to generation, storage, treatment, and disposal of materials designated as dangerous waste. Dangerous waste will comply with the identified requirements through adherence to waste management procedures (see Chapter 5) and, for disposal, the receiving facility’s waste acceptance criteria (e.g., ~~WCH-191~~ERDF-00011, *Environmental Restoration Disposal Facility Waste Acceptance Criteria, formerly WCH-191*)-. Specific provisions of WAC 173-303 identified in the ROD as ARARs are as follows:
 - **WAC 173-303-016, “Identifying Solid Waste,” and WAC 173-303-017, “Recycling Processes Involving Solid Waste”:** These sections establish criteria for identifying materials that are and are not solid wastes, including materials that are or are not solid wastes when recycled in certain ways.
 - **WAC 173-303-070, “Designation of Dangerous Waste”:** Establishes the method for determining if a solid waste is regulated as a dangerous waste.
 - **WAC 173-303-073, “Conditional Exclusion of Special Wastes”:** Excludes certain relatively low-hazard wastes from many of the requirements of WAC 173-303 and establishes alternative management provisions for such wastes.
 - **WAC 173-303-077, “Requirements for Universal Waste”:** This section exempts universal waste (i.e., certain batteries, mercury-containing equipment, and lamps) from most of the requirements of WAC 173-303 in lieu of alternative, less stringent management requirements.

Table 3-1. Summary of Tri-Party Agreement Milestones for 300-FF-2 Waste Site Remediation^a

Milestone	Description	Due Date/ Complete Date
M-016-69	<p>Complete all interim 300 Area remedial actions to include confirmatory sampling of all candidate sites listed in the 300-FF-2 ROD (except for 618-10 and 618-11 Burial Grounds). Completion of interim remedial actions for waste sites associated with the retained 300 Area facilities and utility corridors is subject to approved RDR/RAWPs.</p> <p>Completion of all interim remedial actions is defined as the completion of the ROD requirements in accordance with an approved RDR/RAWP and obtaining EPA approval of the appropriate project closeout documents. Completion of confirmatory sampling is defined as the completion of the sampling necessary to determine whether or not the waste site meets criteria for cleanup or can be closed out from the Waste Information Data System as defined in the RDR/RAWP. The disposition of impeding surplus facilities will be performed in accordance with Milestone M-094-00.</p>	<p>September 30, 2015</p> <p><u>(Milestone completed September 2015)</u></p>
M-016-00B	<p>Complete all interim 300 Area remedial actions including the 618-10 <u>burial ground</u>, and 618-11 Burial Grounds but not including the <u>618-11 burial ground, 300-296, and</u> sites associated with retained 300 Area facilities and the utility corridors. <u>Completion of interim-all remedial actions is defined as the completion of the ROD requirements in accordance with an approved RD/RA work plan for all waste sites except 618-10, 316-4 and 60-63 which will be completed through backfill for waste sites associated with the retained 300 Area facilities and their utilities is subject to approved RDR/RAWPs.</u></p> <p>Completion of all interim remedial actions is defined as the completion of the interim ROD requirements in accordance with an approved RDR/RAWP and obtaining EPA approval of the appropriate project closeout documents. The disposition of impeding surplus facilities will be performed in accordance with Milestone M-094-00.</p>	<p>September 30, 2018</p>
M-016-00	<p>Complete remedial actions for all nontank farm and noncanyon operable units <u>in accordance with schedules established in approved RD/RA work plans.</u></p> <p>Note: See operable unit lead regulatory agency designation listing in Appendix C of the Tri-Party Agreement Action Plan. It is assumed that the ROD will be signed 6 months after the public comment period closes on the proposed plan. Per the Action Plan of the Tri-Party Agreement, Section 11.6, a day-for-day slip in the RDR/RAWP due date will be given for each day the remedy decision is not issued past the 6-month date. The document review, comment, and approval process prescribed in the Action Plan of the Tri-Party Agreement, Section 9 will be followed. The schedule for completion of the construction of the remedy will reflect the scope and complexity of the selected remedial action. The schedule for remedial action implementation will be established upon regulatory agency approval of the RDR/RAWPs RD/RA Work Plans and is enforceable as a Tri-Party Agreement HFFAQ requirement.</p>	<p>September 30, <u>20242042</u></p>

Notes:

a The Tri-Party Agreement milestones presented in Table 3-1 address the selected remedy and schedule previously established in consideration of the interim action ROD for the 300 Area. These milestones will be renegotiated in accordance with the Tri-Party Agreement to align with the requirements of the 300 Area ROD.

EPA = U.S. Environmental Protection Agency

RDR/RAWP = remedial design report/remedial action work plan

ROD = Record of Decision

300-FF-2 Milestones	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year	Fiscal Year
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025-2041	2042	2043 -	
M-089-06-T1	▲	30% Design of Mixed Waste Units in 324, including schedule to complete design (9/30/14)													
M-094-10			▲ 300 Area facilities included in the RAWP excluding 324 (9/30/15)												
M-016-69			▲ Complete interim remedial actions except for 618-10/11 (9/30/15)												
M-089-06			▲ Request for Class 2 permit Mod for 324, including schedule of closure activities (6/30/16)												
M-089-00			▲ Complete closure of mixed waste units in 324 (TBE with M-89-06)												
M-016-00B				▲ Complete interim remedial actions including 618-10/11, excluding retained facilities (9/30/18)											
M-94-00				▲ Complete 300 Area facilities including 324 (9/30/18)											
M-016-00															▲ Complete remedial actions for non-tank farm and non-canyon OUs (9/30/42)

Figure 3-1. Tri-Party Agreement Milestones for 300 Area CERCLA Cleanup

- **0.3-m (1-ft) Diagonal (Sloping) Lifts.** The exposed surface of each lift will be visually observed as it is raked down the face of an excavation slope using heavy equipment. Material will be radiologically surveyed at the bottom of the slope, sorted as necessary, and stockpiled. Material will also be observed as it is being stockpiled for any additional sorting that is appropriate.
- **Bulk Excavate and Spread.** Material will be bulk excavated using heavy equipment, and then spread onto the ground in approximately 0.3-m (1-ft) layers. The shallow layer of material will then be radiologically screened and sorted.
- **Direct-Load Lifts.** The surface of each lift will be visually observed, radiologically screened, sorted (if necessary), and then excavated and loaded into containers using heavy equipment. This technique is best suited for areas with little visible debris.

In excavation areas where there are large quantities of observed lead-containing materials (e.g., lead bricks, lead slag) intermixed with the soil, a variation of these excavation/sorting methods may be used. Observation, sorting, and radiological surveys for removal of the large materials and nonlead anomalous materials will be performed using one or more of the above-described methods. The remaining materials may then be identified as meeting the RCRA definition of "soil" per 40 CFR 268.2 and considered hazardous/dangerous due to lead contamination. In such cases, the soil will be sampled in accordance with the 300 Area SAP and transported to the ERDF or other approved facility for treatment (stabilization) and subsequent disposal. Treatment of debris may be conducted on site on a case-by-case basis in accordance with WCH-539, *Treatment Plan for Macroencapsulation of 300-FF-2 Debris*.

Additional excavation/waste retrieval methods in support of remediation of the 618-10 and 618-11 Burial Grounds may be used and are discussed in WCH-127, *600 Area Remediation Design Solution Technology Assessment and Deselection Report*. These methods include technologies such as overcasing, in situ vitrification, and manually or remote-operated excavation.

Sluicing (use of water) is not an acceptable excavation method. Selection of the excavation/sorting method will be made by remedial action project management, and the method may be changed to another approved method based on the type of material being excavated. Alternate excavation/sorting methods (e.g., vacuum systems, metal detectors) may be proposed by the project on a case-by-case basis and implemented with concurrence from the DOE and EPA project representatives. During the excavation process, care will be taken to prevent the breakage or puncture of unopened or sealed cans, jars, and containers.

Material from waste sites that are not burial grounds (e.g., acid neutralization pit) or the periphery of burial grounds (e.g., plumes) where anomalous material is not encountered does not require mechanical sorting. This material may be directly loaded into containers after enough information is gathered to characterize the waste. Material that has been excavated using one of the approved sorting techniques will be directed in one of the following ways.

- Material that is above cleanup levels and within the ERDF waste acceptance criteria (~~WCH-194~~ERDF-00011) will be loaded into plastic-lined roll-off containers on project haul trucks at the excavation site. The loaded containers will be covered (i.e., by folding and securing the liner over the load) and surveyed prior to being transported to a container transfer area (CTA) using the project haul trucks. If contamination is found on a container exterior, the container will be decontaminated using standard equipment and techniques. In the unlikely event that a container cannot be decontaminated using standard methods, advanced techniques, such as those described in Section 4.3.2.6, will be implemented as necessary. Released containers will be offloaded and staged in the CTA until applicable shipping papers (e.g., waste tracking form and/or land disposal restricted (LDR) shipment

notification) are completed. When the shipping papers have been completed, ERDF transport vehicles will enter the CTA, pick up the full containers, and haul them to the ERDF.

- Anomalous waste (e.g., drums, intact containers, elemental lead, unknown materials) and/or above-cleanup-level material that is not within ERDF waste acceptance criteria (WCH-191) will be set aside within the area of contamination (AOC) or within designated staging piles for further characterization and final disposition. Waste that is subsequently identified for ERDF disposal or staging will be directed as described previously, with the exception that drummed waste may be transported in standard ERDF containers or by other means such as flatbed trailers or cargo vans. Concreted drums at the 618-10 and 618-11 Burial Grounds will be processed differently as described later in this section. Excavated material that must be sent to facilities other than ERDF for treatment and/or disposal will be stockpiled or drummed and staged within the AOC or within designated staging pile areas (SPAs) until loaded for offsite shipment. Identification of an appropriate treatment and/or disposal facility and arrangements for loading and transporting excavated material to facilities other than ERDF will be made on a case-by-case basis by the project in coordination with the River Corridor Closure (RCC) Project waste management representatives. Prior to shipment, an offsite acceptability determination in accordance with 40 CFR 300.440 must be obtained from the EPA for receipt, storage, treatment, and disposal of CERCLA waste at the identified treatment/disposal facility.
- LDR waste or containers of LDR waste that are not within the ERDF waste acceptance criteria may need repackaging or treatment to comply with the ERDF waste acceptance criteria (~~WCH-191~~ERDF-00011). Land disposal restricted waste that has been placed into a container will not be placed back into the AOC (i.e., on the land). Land disposal restricted waste may be removed from a container and placed directly into another container, even within the designated AOC boundary, as long as no land placement occurs. Containerized LDR waste that needs to be placed on the ground for treatment or repackaging will be done within a SPA.
- Material that is free of anomalous waste and below cleanup levels may be stockpiled on site for use as backfill material. In certain situations, soil may be placed over material excavated within a waste site or discovered within a staging pile as a temporary measure. Such action may be undertaken to minimize an imminent threat to the worker (e.g., a high-dose item is uncovered, and a temporary soil cover is appropriate to control worker exposure). Temporary covering with soil may also be undertaken to prevent windborne dispersal of excavated material or highly contaminated soil and to maintain segregation from other waste site materials. These temporary measures may be undertaken while plans are developed for safe re-excavation and removal of waste site materials. In these instances lead regulator notification will be made.
- Non-LDR material that has been packaged may be returned to an excavation area or SPA in situations where the dose rates, contamination levels, free liquids, or other abnormalities have subsequently been determined to exceed normal transport requirements. In these situations, when repackaging is necessary, the previously excavated material will be reloaded into the transportation container. Notification to the lead regulatory agency is generally not required for these actions. The exception is LDR waste, which shall be managed in accordance with the third bullet above.
- An approved LDR treatment method for radioactively contaminated cadmium-, silver-, and mercury-containing batteries allows for macroencapsulation prior to disposal. However, lead-acid batteries are not covered by this standard and require initial treatment (draining corrosive liquids, treating separately prior to disposal) (DOE-RL et al. 2005b).

Table 4-1. Waste Site Surface Barrier Locations and Construction

Waste Site	Surface Barrier Type	Location
300 RLWS	Asphalt	Primarily east to west under Spruce Street
300 RRLWS	Asphalt	Primarily east to west under Spruce Street
300-5	Asphalt	South side of the 300 Area Fire Station (3790A Building)
300-121	Concrete	Immediately southwest of the former 3621D Building
300-214	Asphalt	Primarily east west under Spruce Street
300-265 ^a	Asphalt and concrete	East to west under Spruce Street
331-LSLT1	Geomembrane	East side of the 331 Building
331-LSLT2	Geomembrane	East side of the 331 Building
400-37 ^b	Asphalt	Southeast side of the 4732B Building
400-38 ^b	Asphalt	East side of the 4722A Building foundation

Notes:

a Partial remediation and interim stabilization of the 300-265 site will be delayed until after demolition of the 324 Facility.

b Waste caps for the 400-37 and 400-38 sites will be delayed until mobilization to the 400 area.

Surface barriers will typically be constructed of asphalt, but similarly impermeable materials (e.g., concrete, water-resistant synthetic membranes) that decrease water infiltration into contaminated soils may also be used. Surface barriers also will be designed to direct surface runoff away from waste sites to the extent practical. Surface barriers are not required for waste sites with interim interferences (i.e., those associated with the 324 Building). Surface barriers are also not required for portions of waste sites abandoned-in-place in areas that have otherwise undergone remediation and revegetation. These portions typically consist of small process sewer segments that remain in place because of active utility interferences or remain in the ground within the operational boundary of an active facility. Surface barriers are also not required if the waste site lies beneath an active facility that already meets the intention of a surface barrier, as listed in Table 4-2. The surface barrier types and locations described in this section are approved by the EPA. Any exception to the installation and maintenance of surface barriers must be approved by the EPA.

Table 4-2. Waste Sites Considered as Interim Stabilized

Waste Site	Existing Barrier	Location
300-175	Grouted french drain	South-central 300 Area
300-269	331A Building foundation	Southeast 300 Area
UPR-300-10	325 Building	South-central 300 Area
UPR-300-12	325 Building	South-central 300 Area
UPR-300-48	325 Building	South-central 300 Area

SNF prior to shipment. Should the Canister Storage Building facilities not be available, other locations may be approved by the EPA on a case-by-case basis (DOE-RL et al. 2005b).

5.2.5 Transuranic Waste

Appropriate characterization, packaging, and processing will be performed to meet the receiving facility waste acceptance criteria and DOT regulations regarding transportation of TRU-contaminated waste. This activity may take place at the Waste Receiving and Processing Facility for contact handled-TRU waste and at a planned future processing facility for remote handled-TRU waste.

5.2.6 Liquid

5.2.6.1 Liquids from Unplanned Releases

If a release occurs, the notification of contractor spill release support is required. The reporting requirements will be met as prescribed by DOE O 232.1A, *Occurrence Reporting and Processing Operations*. The contractor point of contact will determine the actions required to address the spill and determine if the lead regulatory agency needs to be notified.

Spills (unplanned releases) that occur in clean areas that are being used in support of a CERCLA remediation are appropriate for disposal at the ERDF, when the following conditions exist:

1. The spill occurred from equipment supporting the CERCLA activity.
2. The waste meets the ERDF waste acceptance criteria (~~WCH-194~~ERDF-00011).
3. The spill occurred within the CERCLA OU boundary or onsite area.

A "clean area" is defined as an area supporting a CERCLA remediation activity that is not contaminated with the contaminants of concern found in the active remediation areas (DOE-RL et al. 2007).

Liquid that is not treated to meet the ERDF acceptance criteria will be shipped to the 2025-E Effluent Treatment Facility (ETF) or an appropriate offsite facility. The ETF is an approved noncontiguous onsite facility pursuant to CERCLA Section 104(d)(4) to store and treat liquid waste generated from remedial actions, provided the waste acceptance criteria can be met.

5.2.6.2 Decontamination Fluids

Decontamination fluids (i.e., water and/or nonhazardous cleaning solutions) from cleaning equipment and tools used in the OU may be discharged to the ground in accordance with Section 4.3.2. If decontamination fluids are collected and they are above the collection criteria, they will be designated and transported to the ETF. Small volumes of nondangerous decontamination fluids may be stabilized to eliminate free liquids and then disposed to the ERDF if the waste acceptance criteria can be met.

5.2.6.3 Liquid Remaining in Pipes

Liquids that may remain in pipelines to be remediated will be collected to the extent reasonably practicable, designated, and transported to the ETF or other facility as authorized by the lead regulatory agency. If the liquid is water and contains contaminants in levels below those listed in WAC 173-200 or groundwater cleanup standards in WAC 173-340-720, it may be used as dust suppressant. Water above the WAC 173-200 or WAC 173-340-720 limits may be used as dust suppressant following approval by the lead regulatory agency.

Pipeline removal may be a planned remedial action or an activity made necessary by an unplanned discovery. Projects perform historical research to locate buried pipelines and learn as much as possible about their past functions and what liquids they may currently hold. Based upon that research, and

observations and data gathered during remedial action, a graded approach will be used for spill control practices implemented during pipeline removal. The most stringent efforts will be used for pipes containing or expected to contain dangerous waste liquids. To the extent practicable, those pipelines will be tapped and liquids drained, containerized, and properly disposed.

Mitigative measures required in most cases will lie somewhere below those extremes. Spill control practices (spill kits, absorbents, liners, catch basins, etc.) will be used to minimize the quantities of nondangerous waste liquids that may be released to the soil. Pipelines will not be deliberately breached unless their contents are known or measures are in place to positively contain any liquids that may be discharged. Proposed pipeline remediation will be discussed with the regulators so they understand the approach to be used, spill controls that will be employed, and uncertainties or risks of unknown liquids or inadvertent discharges.

5.2.7 Used Oil and Hydraulic Fluids

Used oil and hydraulic fluids generated during operation of machinery at the waste sites will be radiologically released and sent offsite for recycling or disposal, as appropriate, or may be stabilized in accordance with ERDF waste acceptance criteria (~~WCH-194~~ERDF-00011) and disposed to ERDF if the fluid contacted contaminated media associated with the waste site.

5.2.8 Returned Sample Waste

Screening and analysis of both solid and liquid samples may be conducted at the waste sites, offsite or onsite laboratories, and/or the Radiological Counting Facility. These samples may be returned to the OU. Unused samples and associated laboratory waste from offsite analyses will be managed by the applicable laboratory in accordance with contract specifications. Waste from field screening and onsite laboratories will be managed depending on whether it has been altered by analysis. Altered samples will be contained and disposed at the ETF, ERDF, or other appropriate facilities as authorized by the lead regulatory agency, depending on waste designation. Unaltered liquid waste generated during sample screening and analysis may be discharged to the ground near the point of generation, if it is below the collection criteria limits, or disposed at the ETF, ERDF, or other appropriate facilities if it is above the collection criteria. Some liquids may be neutralized and/or stabilized to meet the disposal facility's waste acceptance criteria. Pursuant to 40 CFR 300.440, DOE-RL approval is required before returning unused samples or waste from onsite or offsite laboratories. Approval of this RDR/RAWP constitutes DOE-RL remedial project manager approval for shipment of offsite and onsite laboratory sample waste back to the waste site of origin.

5.2.9 618-10 and 618-11 Concreted Drums

At the 618-10 and 618-11 Burial Grounds, some high-activity waste and possibly small amounts of plutonium-contaminated liquid waste were sealed in concreted 208-L (55-gal) drums. Some concreted drums also contained an additional 2.5 or 5 cm (1 or 2 in.) of lead shielding. One type of drum had a 20-cm (8-in.)-diameter galvanized metal culvert centered in the 208-L (55-gal) drum, surrounded by concrete on the bottom and sides. The culvert may also have lead wrapped around it, depending on shielding requirements. High-activity liquid or solid waste was placed in the culvert. The culvert was capped with a lead plate and concrete poured in to fill the void space. Another type of drum had the waste placed inside the container and then concrete poured around the containers to provide shielding and to prevent shifting of contents. Opening these concrete drums for examination and processing would present a very high risk due to the radiological contents. If the outer drum is intact and the concrete cap is seen to be intact, the concrete is reasonably expected to be intact. When the concrete in these drums is intact, it meets the macroencapsulation standard of 40 CFR 268.42 for radioactive lead solids. When the

EPA, 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, Region 10, Seattle, Washington.

ERDF-00011, 2017, *Environmental Restoration Disposal Facility Waste Acceptance Criteria, formerly WCH-191 Rev 4, Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington.*

Migratory Bird Treaty Act of 1918, 16 U.S.C. 703, et seq.

OSWER Directive 9285.7-55, 2003, *Guidance for Developing Ecological Soil Screening Levels*, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901, et seq.

WAC 173-160, "Minimum Standards for Construction and Maintenance of Wells," *Washington Administrative Code*, as amended.

WAC 173-200, "Water Quality Standards for Ground Waters of the State of Washington," *Washington Administrative Code*, as amended.

WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

WAC 173-340, "Model Toxics Control Act – Cleanup," *Washington Administrative Code*, 2007.

WAC 173-350, "Solid Waste Handling Standards," *Washington Administrative Code*, as amended.

WAC 173-400, "Regulations for Air Pollution Sources," *Washington Administrative Code*, as amended.

WAC 173-460, "Controls for New Sources of Toxic Air Pollutants," *Washington Administrative Code*, as amended.

WAC 173-480, "Ambient Air Quality Standards and Emission Limits for Radionuclides," *Washington Administrative Code*, as amended.

WAC 232-12-292, "Habitat Buffer Zone for Bald Eagles," *Washington Administrative Code*, as amended.

WAC 246-247, "Radiation Protection – Air Emissions," *Washington Administrative Code*, as amended.

WCH-126, 2007, *600 Area Remediation Design Solution Waste Packaging, Transportation, and Disposal Requirements*, Rev. 0, Washington Closure Hanford, Richland, Washington.

WCH-127, 2007, *600 Area Remediation Design Solution Technology Assessment and Deselection Report*, Rev. 0, Washington Closure Hanford, Richland, Washington.

~~WCH-191, 2014, *Environmental Restoration Disposal Facility Waste Acceptance Criteria, Rev. 3, Washington Closure Hanford, Richland, Washington.*~~

WCH-539, 2013, *Treatment Plan for Macroencapsulation of 300-FF-2 Operable Unit Debris*, Rev. 2, Washington Closure Hanford, Richland, Washington.

Table D-1. Summary of 300 Area Waste Sites Included

Waste Site	General Description
300-4	351 Substation Soil Contamination
300-7	Undocumented Solid Waste Burial Ground, North 300 Area
300-9	Early Solid Waste Burial Ground, North 300 Area
300-11	Gasoline release from 382 Underground Storage Tank
300-15	300 Area Process Sewer System
300-22	309 Building B-Cell Cleanout Leak
300-34	300 Area Process Sewer Leak
300-121	Contaminated French Drain
300-214	300 Area Retention Process Sewer
300-255	309 Tank Farm Contaminated Soil
300-263	324 Building Diversion Tank
300-265	Pipe Trench Between 324 and 325 Buildings
300-277	300 Area North Queue
300-280	Construction Debris, West of G-Way
300-284	Sand Blasting Site Near 3221
300-287	Transite Debris West of Route 4
300-288	Garnet Sands, Pit 6
300-289	Stained Soil North of 300 Area
300-290	Radiological Debris East of Horn Rapids Landfill
300-291	Garnet Sands West of 350A Paint Shop
300-294	Garnet Sands East of 350 Building
300-296	Soil Contamination Under 324 Building
300600 -386	Segment 5 Battery Remnant Area #1
300600 -393	Potential Battery Components Debris Area
300-RLWS	300 Area Radioactive Liquid Waste System
300-RRLWS	300 Area Retired Radioactive Liquid Waste System
340 Complex	340 Radioactive Liquid Waste Handling Facility
UPR-300-1	307-340 Waste Line Leak
UPR-300-2	Releases at the 340 Facility
UPR-300-5	Spill at 309 Storage Basin
UPR-300-11	Underground Radioactive Liquid Line Leak at 340

Table D-2. Summary of Total Effective Dose Equivalents for 300 Area Sites Included ^a

Waste Site	Unabated Total Effective Dose Equivalent to the Maximum Exposed Individual (mrem/yr)
300-277	1.38E-04
300-280	No radiological inventory
300-284	No radiological inventory
300-287	No radiological inventory
300-288	No radiological inventory
300-289	No radiological inventory
300-290	Very little to no radiological inventory, bounded by Calculation 0300X-CA-V0180
300-291	No radiological inventory.
300-294	No radiological inventory.
300-296	<u>To be determined prior to remediation. The TEDE for partial remediation of the 300-296 waste site (through the removal of the 324 facility) is bounded by calculation ECF-324 BLDG-17-0086 Total Effective Dose Equivalent Calculation for 324 Facility and 300-296 Waste Site Remediation. The TEDE for the remaining portion of this waste site will be determined after 324 facility removal actions but prior to waste site remediation.</u>
300 300-386	No radiological inventory
300 300-393	No radiological inventory
300-RLWS	2.75E-03
300-RRLWS	1.66E-03
340 Complex	1.44E-02
UPR-300-1	Included in 340 Complex TEDE
UPR-300-2	Included in 340 Complex TEDE
UPR-300-5	2.94E-05
UPR-300-11	Included in 340 Complex TEDE

Notes:

- a Table 2 includes nonradiological sites that are bounded by the air monitoring plan and Calculation 0300X-CA-V0180, *300 Area Remaining Sites Total Effective Dose Equivalent Calculation*.

TEDE = total effective dose equivalent

D2.1 Best Available Radionuclide Control Technology

The following is the BARCT to be implemented during the waste site remedial action. This describes the controls to be implemented during the excavation, sorting, size reduction, stockpiling, and bulk material loading:

Air monitors are run continuously and air monitor downtime will be minimized. If any one of the air monitor stations is out of operation for more than 48 hours during normal work operations (excluding weekends and holidays), the EPA will be notified. At least two air monitors must be operating for normal work operations, excavation, and loading activities to continue at the site.

Exhaust points from HEPA filters (and any ductwork, seams, or other potential release locations from enclosures) will be monitored on a routine basis for potential radionuclide releases and results recorded (e.g., post-survey results negative). Any positive survey results will require appropriate maintenance on the facility, exhauster, or vacuum to ensure that continued releases do not occur. Records of routine monitoring and necessary maintenance will be provided to EPA staff upon request.

There are other existing air monitors for other 300 area activities and thermoluminescent dosimeters (TLDs) in and near the perimeter of the 300 Area that provide information concerning air emissions and radiation fields. The location and data from these monitors and TLDs are reported each year in the Hanford Site Environmental Report and associated appendices.

D4. References

40 CFR 61, "National Emission Standards for Hazardous Air Pollutants," *Code of Federal Regulations*, as amended.

Calculation 0300X-CA-V0180, 2014, *300 Area Remaining Sites Total Effective Dose Equivalent Calculation*, Rev. 0, Washington Closure Hanford, Richland, Washington.

Clean Air Act of 1970, 42 U.S.C. 7401, et seq.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9601, et seq.

EPA, 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, Region 10, Seattle, Washington.

ECF-324 BLDG-17-0086, Total Effective Dose Equivalent Calculation for 324 Facility D4 and 300-296 Waste Site Remediation, Rev. 0, CH2M HILL Plateau Remediation Company, Richland, Washington.

WAC 246-247, "Radiation Protection – Air Emissions," *Washington Administrative Code*, as amended.