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

MAY 0 4 2016

16-ESQ-0066

Ms. Alexandra K. Smith
Program Manager
Nuclear Waste Program
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Ms. Smith:

SUBMITTAL OF PERMIT MODIFICATION REQUEST AND CLOSURE PLAN FOR 276-BA ORGANIC STORAGE TANK

This letter transmits a permit modification request (Attachment 1), closure plan (Attachment 2), and the State Environmental Policy Act Checklist (Attachment 3) for closure of the 276-BA Organic Storage Tank. The closure plan has been shared with Stephanie Schleif of your staff and comments received have been incorporated into this draft. Since field actions to implement the closure plan for the 276-BA Organic Storage Tank are scheduled to occur in September 2016, the U.S. Department of Energy Richland Operations Office would appreciate cooperation from the Washington State Department of Ecology to promptly resolve any additional comments on the closure plan.

The 30-day advance notice of the upcoming public comment period for the permit modification was provided on March 8, 2016, to regional stakeholders as required by Section 10.5.3 of the Tri-Party Agreement Action Plan. Within 7 days of this letter, a notice of the permit modification request will be sent to newspapers and the mailing list announcing the date of the 60-day comment period and public meeting.

If you have any questions, please contact me, or you may contract Jeffrey A. Frey, Assistant Manager for Safety and Environment, on (509) 376-7727.

Sincerely,

Stacy Charboneau

Stacy Charboneau
Manager

ESQ:ACM

Attachments

cc: See page 2

MAY 0 4 2016

cc w/attachs:
Debra J. Alexander, Ecology
Gabriel Bohnee, NPT
Rex Buck, Wanapum
Suzanne L. Dahl-Crumpler, Ecology
Dennis A. Faulk, EPA
Steve Hudson, HAB
Russell Jim, YN
Nina M. Menard, Ecology
Ken Niles, ODOE
David Rowland, YN
Stephanie N. Schleif, Ecology
Deborah G. Singleton, Ecology
Rod Skeen, CTUIR
Jennie R. Stults, CHPRC
Administrative Record
Ecology NWP Library
Environmental Portal
HF Operating Record (J. K. Perry, MSA, A3-01)

cc w/o attachs:
Jane V. Borghese, CHPRC
Darin R. Corriell, CHPRC
Laura C. Cusack, CHPRC
Brian J. Dixon, CHPRC
Carolyn P. Noonan, MSA
Rob E. Piippo, MSA
Michael J. Turner, MSA

ATTACHMENT 1

SUBMITTAL OF PERMIT MODIFICATION REQUEST AND CLOSURE PLAN
FOR 276-BA ORGANIC STORAGE TANK

Consisting of 2 pages (including cover page.)

Hanford Facility RCRA Permit Modification Notification

Part V, Closure Unit 9

276-BA Organic Storage Facility

Submitted by Co-Operator: _____ 5/2/14 Date

Reviewed by RL Program Office: _____ 5/2/16 Date

Hanford Facility RCRA Permit Modification Notification Form	
Unit: 276-BA ORGANIC STORAGE FACILITY	Permit Part: **Part V, Closure Unit 24**

Description of Modification:

Incorporate 276-BA ORGANIC STORAGE FACILITY into Section V. of the Hanford Facility Dangerous Waste Permit. This action is not specifically identified in WAC 173-303-830 and is therefore being proposed as a Class 3 modification.

WAC 173-303-830 Modification Class	Class 1	Class 1	Class 2	Class 3
Please mark the Modification Class:				X

This permit modification request provides a closure plan for approval by Ecology and incorporation into the Hanford Facility Dangerous Waste Permit.

Modification Approved: ☐ Yes ☐ No (state reason for denial)

Reason for denial:

Reviewed by Ecology:

S. L. Dahl-Crumpler Date

ATTACHMENT 2

SUBMITTAL OF PERMIT MODIFICATION REQUEST AND CLOSURE PLAN
FOR 276-BA ORGANIC STORAGE TANK

Consisting of 33 pages
(including this cover page.)

DOE/RL-2015-70
Revision 0

Closure Plan for B Plant Organic Tank TK-ISO East

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

U.S. DEPARTMENT OF ENERGY | Richland Operations Office

P.O. Box 550
Richland, Washington 99352

DOE/RL-2015-70
Revision 0

Closure Plan for B Plant Organic Tank TK-ISO East

J. R. Stults
CH2M HILL Plateau Remediation Company

Date Published
March 2016

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

U.S. DEPARTMENT OF ENERGY Richland Operations Office
P.O. Box 550
Richland, Washington 99352

APPROVED
By Janis D. Aardal at 7:24 am, Apr 14, 2016

Release Approval Date

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Printed in the United States of America

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Terms

ASTM	American Society for Testing and Materials
CAS	Chemical Abstracts Service
CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
D2EHPA	di-(2-ethylhexyl)phosphoric acid
DOE	U.S. Department of Energy
DWMU	dangerous waste management unit
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
ERDF	Environmental Restoration Disposal Facility
GPS	global positioning system
HASQARD	*Hanford Analytical Services Quality Assurance Requirements Document* (DOE/RL-96-68)
HEIS	Hanford Environmental Information System
HHE	human health and the environment
IQRPE	independent qualified registered professional engineer
MTCA	"Model Toxics Control Act—Cleanup" (WAC 173-340)
NPH	normal paraffin hydrocarbons
OU	operable unit
PQL	practical quantitation limit
QA	quality assurance
QC	quality control
RCRA	*Resource Conservation and Recovery Act of 1976*
SAF	sampling authorization form
SAP	sampling and analysis plan
TBP	tributyl phosphate
Tri-Party Agreement	*Hanford Federal Facility Agreement and Consent Order* (Ecology et al. 1989a)
TSD	treatment, storage, and disposal
WESF	Waste Encapsulation Storage Facility

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1 Introduction

The purpose of this plan is to describe the *Resource Conservation and Recovery Act of 1976* (RCRA) closure process for the 276-BA Organic Storage Area dangerous waste management unit (DWMU), located in the northeast portion of the B Plant Complex in the 200 East Area of the Hanford Site. The 276-BA Organic Storage Area, which consists of a single storage tank (ISO East) and secondary containment, was used to temporarily store organic mixed waste during B Plant facility deactivation.

Organic mixed waste stored in the ISO East tank was removed in 1997 and transported offsite for disposal. At the present time, only the concrete secondary containment structure and a residual heel (less than 7.6 L [2 gal]) of organic mixed waste remain in the tank.

This closure plan documents the strategy, activities, and regulatory requirements for removal of the ISO East tank and secondary containment structure to demonstrate clean closure of the 276-BA Organic Storage Area.

1.1 Physical Description

The 276-BA Organic Storage Area is located in the 200 East Area, northeast of the 221-B Building (B Plant) within the B Plant Complex. The 276-BA Organic Storage Area is surrounded by a chain-link fence and is accessible through a locked gate. When it was constructed in 1996, the 276-BA Organic Storage Area consisted of a secondary containment structure and two identical aboveground stainless-steel storage tanks: ISO West and ISO East. The secondary containment structure provided individual containment for both tanks and was lined with compatible coating for organic mixed waste as a precaution for unplanned releases.

Each storage tank was a cylindrically shaped, 3 m (9.8 ft) diameter, 6.1 m (20 ft) long transport vessel with a capacity of 17,500 L (4,623 gal). There was no specific ancillary equipment associated with either tank. The unused ISO West tank was removed from the site in 1998. The remaining tank (ISO East) received organic waste from the B Plant Organic Mixed Waste Storage System.

At present, the 276-BA Organic Storage Area consists of one aboveground tank (ISO East) and the coated concrete secondary containment structure. No known spills occurred within the secondary containment; however, the condition of the containment coating has degraded over time.

Figure 1 shows the location of the 276-BA Organic Storage Area within the B Plant Complex area. Figure 2 provides a schematic of the ISO East tank and secondary containment structure associated with the 276-BA Organic Storage Area.

1.2 Process Information

The B Plant Organic Mixed Waste Storage System included 10 vessel systems, the 276-BA Organic Storage Area, and five process cells in B Plant. The organic tank system included tanks TK-26-1, TK-27-2, TK-27-3, TK-27-4, TK-28-3, TK-28-4, TK-29-4, and TK-30-3, and the 276-BA Organic Storage Area, which consisted of two external storage tanks (ISO West and ISO East). The Organic Mixed Waste Storage System was used for chemical processing and to store organic chemicals used in the recovery and purification of strontium. Strontium was purified through a series of solvent extraction columns, scrubbed, and concentrated for encapsulation as strontium fluoride at the Waste Encapsulation Storage Facility (WESF).

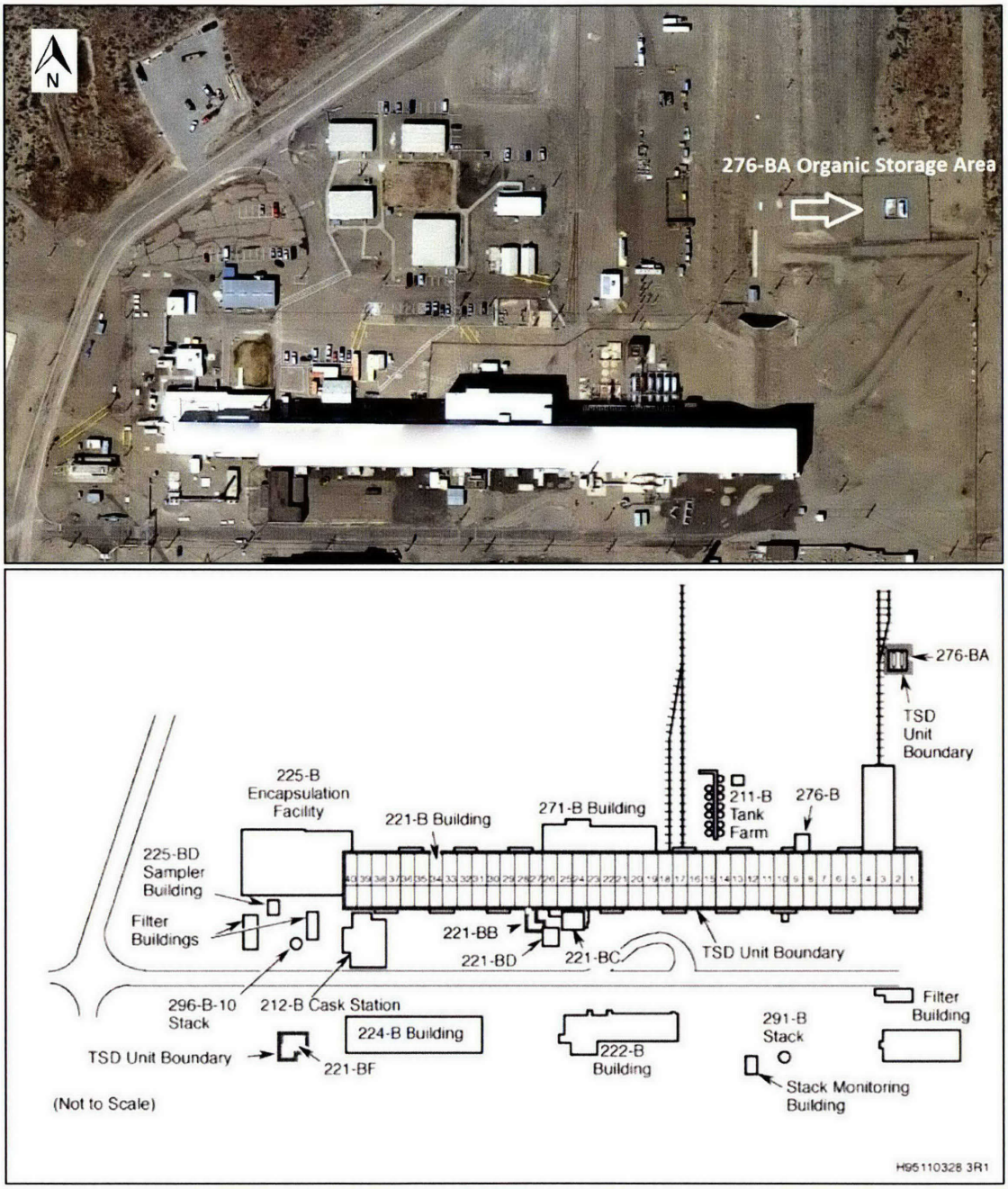

Figure 1. Aerial Photograph and Schematic of B Plant Complex with 276-BA Organic Storage Area

Deactivation activities were implemented between 1995 and 1997 in accordance with regulations and requirements to place the B Plant Complex in a safe configuration with respect to human health and the environment (HHE). To prepare for the removal and disposal of organic mixed wastes, radionuclide concentrations in the organic mixed waste were reduced through chemical washing and filtering. The organic and aqueous phases were separated and stored separately. Rare earth elements and calcium impurities were stripped from the organic stream and routed to the double-shelled tank system. The organic solvents remained in the B Plant Organic Mixed Waste Storage System.

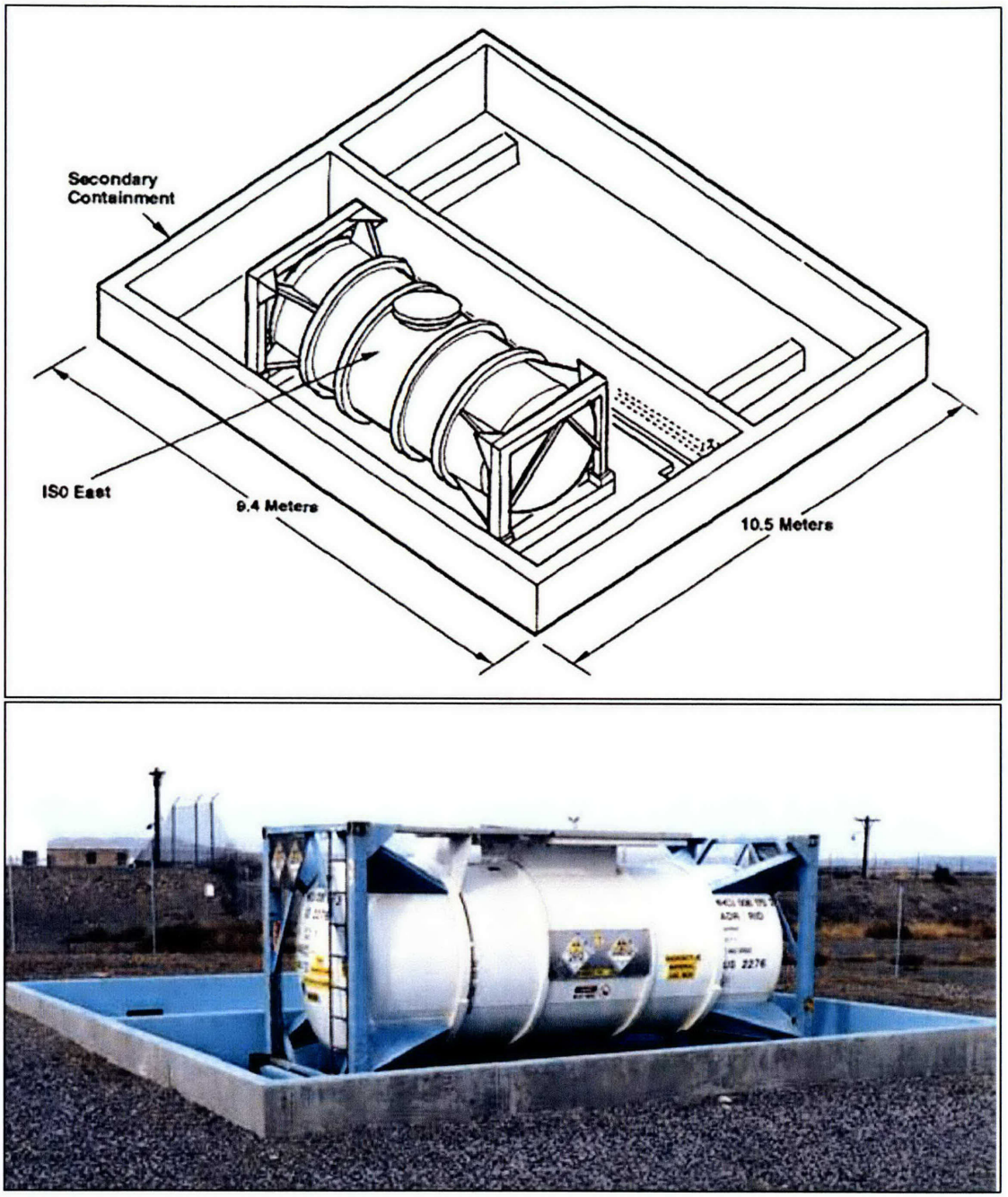

Figure 2. 276-BA Organic Storage Area Schematic and Photograph

The successful completion of the treatment reduced the radionuclide concentrations to allow for transfer of the majority of the organic waste for storage or disposal. In March 1997, the organic mixed waste was pumped via temporary transfer line from the B Plant Organic Mixed Waste Storage System to the ISO East tank, staged on a flatbed hauler. Approximately 10,900 L (2,880 gal) of organic mixed waste were transferred to the ISO East tank, and the tank was subsequently moved to the secondary containment at the 276-BA Organic Storage Area. There are no permanent connections between the ISO East tank and the B Plant process cells.

The ISO West tank was placed as an emergency receiving tank in the 276-BA Organic Storage Area but was never used.[1] The ISO West tank was administratively closed and repurposed to manage low-level radioactive waste at WESF in 1998.

Process information for the organic liquid material indicated the presence of normal paraffin hydrocarbons (NPH), di-(2-ethylhexyl)phosphoric acid (D2EHPA), tributyl phosphate (TBP), and small amounts of strontium-89/90 and cesium-137. The organic solvent was managed as mixed waste based on historical processing data for the B Plant Complex. In November 1997, contents of the ISO East tank were pumped to a minimum heel and were transferred to a tanker truck for disposal.

1.3 Waste Inventory and Characteristics

The ISO East tank received organic mixed waste from the B Plant Organic Mixed Waste Storage System in 1997. Because of the derived-from and mixture rules that applied to liquid mixed waste from the B Plant Complex, all of the treatment and storage vessel systems that handled liquid mixed waste were managed as listed waste upon disposal. The organic solvent stored by the ISO East tank was managed as mixed waste and was assigned the following waste codes based on historical processing of single-shell and double-shell tank waste: D004 through D011 (RCRA metals), D002 (corrosive), F001 through F005 (spent solvents), and WT02 (persistent dangerous wastes, halogenated organic compounds).

The total quantity of organic mixed waste received by the ISO East tank was approximately 10,900 L (2,880 gal). The residual content of the ISO East tank was estimated to be less than 7.6 L (2 gal) of material, including NPH, D2EHPA, and TBP. For closure planning and investigation purposes, it was conservatively assumed that B Plant Complex dangerous or mixed wastes listed on the RCRA Part A Form for B Plant Complex could be present. DOE/RL-98-12, *B Plant Preclosure Work Plan*, describes the logic regarding how the tanks were managed as dangerous waste or mixed waste. Chapter 6 of this closure plan describes the target analytes associated with each of the waste codes documented in Revision 11 of the RCRA Part A Form for B Plant (*Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste*).

1.4 Security Information

The 276-BA Organic Storage Area is located in the 200 East Area; therefore, security information pertaining to the 200 Areas applies to this treatment, storage, and disposal (TSD) DWMU. A chain-link cyclone fence with a locked gate surrounds the 276-BA Organic Storage Area tank and secondary containment structure. Security measures that limit entry to authorized personnel and that preclude unknowing access by unauthorized individuals will remain in place until closure of the DWMU.

2 Groundwater Monitoring

The final closure activities for the B Plant TSD unit and the decontamination and decommissioning activities performed will need to determine if any contamination occurred from a RCRA or *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) past-practice-related hazardous material released to the soil or groundwater surrounding or underlying the B Plant Complex. The 200-BP-5 Groundwater Operable Unit (OU) was established primarily to address

[1] In 1998, the ISO West tank was administratively closed (98-EAP-136, "Certified ISO West Interim Organic Storage Tank (ISO West Tank) Administrative Closure Technical Data Synopsis (TSD: TS-2-3)").

groundwater contamination associated with historical operations of the B Plant Complex and other associated Central Plateau facilities within the northern portion of the 200 East Area.

The 200-BP-5 OU is monitored under CERCLA (e.g., DOE/RL-2001-49, *Groundwater Sampling and Analysis Plan for the 200-BP-5 Operable Unit*, and Appendix B supplement), with specific monitoring requirements for individual RCRA TSDs described in DOE/RL-2015-07, *Hanford Site Groundwater Monitoring Report for 2014*. Additional information, including well and constituent lists and statistical tables for the 200-BP-5 OU, is provided in DOE/RL-2009-127, *Remedial Investigation Report for the 200-BP-5 Groundwater Operable Unit*. Although the 200-BP-5 OU underlies a large area of present and historical nuclear industrial operations and cleanup, the 200-BP-5 OU is strictly a groundwater OU and does not address any of the overlying contaminant source sites or the underlying residual vadose zone contamination. Therefore, groundwater investigation and remediation are not addressed as part of this closure plan.

3 Closure Performance Standards

The standards for closure of the 276-BA Organic Storage Area are in accordance with the requirements in Section 5.3 of the Tri-Party Agreement Action Plan (Ecology et al., 1989b, *Hanford Federal Facility Agreement and Consent Order Action Plan*), which directs that Hanford Site interim status TSD unit closures meet the cleanup requirements established in WAC 173-303-610, "Dangerous Waste Regulations," "Closure and Post-Closure." As required by Section 6.3.1 of the Tri-Party Agreement Action Plan, clean closure must demonstrate that TSD unit operations did not adversely affect the soil. The closure performance standards of WAC 173-303-610(2)(a)(i) through (iii) require the owner or operator of a TSD facility to close the facility in a manner that will accomplish the following objectives:

- Minimize the need for further maintenance.
- Control, minimize, or eliminate post-closure escape of dangerous waste, dangerous waste constituents, leachate, contaminated runoff, or dangerous waste decomposition products to the ground, surface water, or atmosphere to the extent necessary to protect HHE.
- Return the land to the appearance and use of surrounding land areas.

The 276-BA Organic Storage Area will be clean closed. The soil will be sampled and must meet clean closure levels. In accordance with WAC 173-303-610(2)(b)(i), clean closure levels for soil are the numeric cleanup levels calculated using unrestricted use exposure assumptions according to WAC 173-340, "Model Toxics Control Act—Cleanup," hereinafter called MTCA, regulations (WAC 173-340-700, "Overview of Cleanup Standards," through WAC 173-340-760, "Sediment Cleanup Standards," excluding WAC 173-340-745, "Soil Cleanup Standards for Industrial Properties"). These numeric cleanup levels have been calculated, according to WAC 173-303-610(2)(b)(i), as of the effective date of the permit modification. These cleanup levels consider carcinogens, noncarcinogens, groundwater protection, and ecological indicator values.

Clean closure will eliminate the need for future post-closure inspections, monitoring, and maintenance resulting from contamination from the TSD unit constituents. After clean closure, appearance of the land will be consistent with future land-use determinations for adjacent portions of the 200 Areas as an industrial-exclusive portion of the Hanford Site. This land use is consistent with the formal determination made for this portion of the 200 Areas, as described in 64 FR 61615, "Record of Decision: Hanford Comprehensive Land-Use Plan Environmental Impact Statement (HCP EIS)."

4 Closure Strategy

The proposed closure strategy is based primarily on review of the operational history, operational records, waste management records, and a visual inspection of the 276-BA Organic Storage Area. Waste was removed from the ISO East tank in 1997, and routine surveillance and maintenance inspections have been performed since that time. Windblown debris is removed on a periodic basis from the secondary containment structure. Rainfall and snowmelt accumulate on the floor of the containment structure and evaporate naturally. Inspections performed in the late 1990s indicated some loss of adhesion and rippling of the surface coating that was applied to the secondary containment concrete at installation. However, no evidence of spills or leaks from the ISO East tank have been documented (DOE/RL-98-12).

Based on these reviews, the 276-BA Organic Storage Area is a candidate for clean closure under WAC 173-303, and verification sampling will be performed. Sampling and analysis activities were developed using the results of record reviews and visual inspection (EPA/240/R-02/005, *Guidance on Choosing a Sampling Design for Environmental Data Collection* [EPA QA/G-SS]; Ecology Publication 94-111, *Guidance for Clean Closure of Dangerous Waste Units and Facilities*) and will be conducted via a sampling and analysis plan (SAP) (see Section 6.1 of this closure plan). The objective of sampling described in this closure plan is to determine if MTCA (WAC 173-340) unrestricted use standards for soil will be met for the target analytes identified in Table 3 after removal of the 276-BA Organic Storage Area, demonstrating clean closure of the soil underneath the secondary containment enclosure.

4.1 Previous Closure Activities

The stored organic mixed waste was transferred out of the ISO East tank for offsite disposal in November 1997. The ISO West tank, which was originally part of the 276-BA Organic Storage Area, did not receive waste; the tank underwent administrative closure in 1998 and was removed from the site (98-EAP-136, "Certified ISO West Interim Organic Storage Tank (ISO West Tank) Administrative Closure Technical Data Synopsis (TSD: TS-2-3)").

4.2 Clean Closure Strategy

The 276-BA Organic Storage Area will be clean closed by removing the ISO East storage tank and secondary containment structure, including up to 1 m (3 ft) of soil beneath the structure, which will meet the requirements of WAC 173-303-610(2)(b)(ii). In accordance with WAC 173-303-610(2)(b)(i), the clean closure levels for soil will be the numeric cleanup levels calculated using unrestricted use exposure assumptions in accordance with MTCA (WAC 173-340) (see Chapter 6 of this closure plan).

Sampling and analysis will be performed to verify clean closure for the soil (described in Chapter 6 of this closure plan). Due to the relatively small size of the site, a focused sampling strategy will be used. Focused sampling involves the selective sampling of areas where potential or suspected soil contamination would be expected if the release of a hazardous substance had occurred. Focused sampling of the 276-BA Organic Storage Area will involve siting sampling locations where concrete joints are located and where cracks in the secondary containment structure coating warrant sampling. Focused soil samples will be collected beneath the footprint of the secondary containment at a predetermined depth. The locations proposed for focused sampling are shown in Figure 3. Should sampling and analysis of soils underlying the 276-BA Organic Storage Area secondary containment structure indicate contamination above the MTCA (WAC 173-340) Method B unrestricted use standards, additional soil will be removed and the unit will be resampled, or a post-closure plan will be submitted, as required by Hanford RCRA Permit guidelines and conditions.

5 Closure Activities

Clean closure of the 276-BA Organic Storage Area will include the following activities:

- Removal and demolition of the structures associated with the 276-BA Organic Storage Area (including the ISO East tank and secondary containment structure) (Section 5.1)
- Waste management (Section 5.2)
- Air emission controls (Section 5.3)
- Health and safety (Section 5.4)
- Cultural and ecological resource protection (Section 5.5)
- Verification sampling and analysis of soil (Chapter 6)

Verification sampling will be used to confirm that dangerous waste concentrations are below cleanup performance standards.

5.1 Facility Demolition and Disposal

Demolition of the 276-BA Organic Storage Area will include removal of the ISO East tank and secondary containment structure. The ISO East tank is itself a transport vessel and will be removed intact using a flatbed hauler. Any residual heel remaining in the ISO East tank will stabilized for disposal. The tank, its contents, and any waste generated from stabilization and demolition activities will be disposed in accordance with WAC 173-303-610(5) and applicable regulations.

Demolition of the secondary containment structure will require the use of heavy equipment (e.g., excavator with various attachments). Other standard industry or conventional demolition practices also may be used (e.g., hydraulic shears with steel shear jaws, concrete pulverizer jaws, or breaker jaws). The selection of demolition methods will be based on the structural elements to be demolished, remaining contamination, location, and integrity of the structure. Water may be used to control dust generated from demolition activities. The amount of water used will be minimized to prevent ponding and runoff. While unlikely, other controls such as portable ventilation filter units, high-efficiency particulate air filter vacuum cleaners, greenhouses, and/or fogging agents may be used. Additional stormwater runon/runoff controls may be implemented, as needed. The demolition activities presume that the waste will be treated, if applicable, to meet all applicable requirements of WAC 173-303-140, "Land Disposal Restrictions," and (by reference) 40 CFR 268, "Land Disposal Restrictions," prior to disposal in the Hanford Site Environmental Restoration Disposal Facility (ERDF), as discussed in Section 5.2 of this closure plan. If for some reason the waste is not disposed at ERDF, then the waste will be disposed at a permitted RCRA TSD unit authorized for disposal.

5.1.1 Mobilization and Site Preparation

Demolition mobilization and site preparation include the activities necessary for field setup and closure action implementation. This includes obtaining field crew resources, equipment, and materials; and performing field job site activities (e.g., site assessments and map development, worker support infrastructure, waste management areas, and other site preparation, as required). Global positioning system (GPS) coordinates will be taken after removal of the secondary containment to ensure that focused sampling locations will be laid out (see Chapter 6 of this closure plan). Other pre-work tasks may include installing barriers and postings, performing site walkdowns, completing pre-demolition reviews, and testing equipment.

5.1.2 Tank Removal

Absorbent material will be added to the ISO East tank to stabilize any remaining liquid content. The tank will be lifted and placed on a flatbed hauler for intact disposal at ERDF.

5.1.3 Secondary Containment Structure Demolition

The secondary containment structure walls and floor will be demolished and removed. Soil below the containment structure will be excavated to a depth of up to 3 ft (1 m), loaded into roll-on/roll-off containers for treatment (if required), and then disposed at ERDF. Based on the secondary containment structure footprint of 9.4 m (30.8 ft) long by 10.5 m (34.4 ft) wide by 0.6 m (2 ft) tall/deep, the excavation will be approximately 12.4 m (40.8 ft) long by 13.5 m (44.4 ft) wide.

5.1.3.1 Soil

Additional soil removal may be performed if deemed necessary to meet clean closure standards.

5.1.4 Decontamination

Decontamination of the ISO East tank and the secondary containment structure are not planned for this closure action. The storage tank will be removed intact, and the secondary containment structure will be demolished and placed in roll-on/roll-off disposal containers for transport to ERDF.

5.1.5 Stabilization

Upon completion of closure activities at the 276-BA Organic Storage Area, the site will be stabilized in a manner that will mitigate potential industrial safety hazards and not unduly hinder future remediation in the immediate vicinity.

5.1.6 Completion Criteria

The demolition is considered complete after the tank and containment structure have been removed, all waste generated during demolition has been dispositioned, the bottom of the excavation has been sampled, and results have been documented. When the sample results verify that the soil meets the cleanup criteria, the excavation will be backfilled. The backfilled area will be revegetated or resurfaced as necessary.

5.2 Waste Management

A variety of waste streams may be generated under this closure action and will be in solid form. All of the waste will be treated as dangerous/mixed waste. For dangerous or mixed waste, the generator requirements of WAC 173-303-200, "Accumulating Dangerous Waste On-Site," will be followed as applicable.

Waste generated through implementation of this closure action will be treated, if required, and disposed of at ERDF or an approved RCRA TSD unit. ERDF is the preferred waste disposal facility. Waste is expected to meet the waste acceptance criteria of WCH-191, *Environmental Restoration Disposal Facility Waste Acceptance Criteria*, as is. Waste volume-reduction practices (e.g., minimizing cross-contamination during the remedial action or segregation of clean materials from contaminated materials) will be implemented where feasible. Waste management activities include waste characterization, designation, staging, packaging, handling, marking, labeling, segregation, storage, transportation, treatment, and disposal. These waste management activities are briefly described in the following subsections.

5.2.1 Projected Waste Streams

One or all of the following solid waste streams are anticipated to be generated during the closure action and may fall into any combination of these categories: nondangerous/nonradioactive, radioactive, mixed, hazardous, dangerous, suspect radioactive, suspect dangerous, and suspect mixed:

- Stainless-steel tank and residual heel contents
- Concrete and associated debris
- Soils
- Miscellaneous waste (e.g., rubber, glass, paper, personal protective equipment, cloth, plastic, and metal)
- Equipment and construction materials

5.2.1.1 Hazardous/Dangerous Waste, Low-Level Waste, and Mixed Waste Management

These wastes will be packaged, stored, and transported to prevent dispersion and public exposure. Waste-specific storage and packaging requirements will comply with WAC 173-303 requirements, as applicable.

5.2.1.2 Solid Waste Management

Solid waste (e.g., personal protection equipment) will be managed as appropriate for the nonradiological and radiological contaminants present or suspected to be present, if any. Miscellaneous solid waste that has contacted suspect dangerous or suspect mixed waste will be managed as such. Field screening will be used to segregate radioactive waste from nonradioactive waste. Container(s) will be properly marked and labeled. The containers will be segregated, as appropriate, and then staged at a designated waste container storage area. Miscellaneous solid waste will be dispositioned based on waste characterization information.

5.2.2 Waste Management and Characterization

Dangerous and mixed wastes will be packaged, stored, and transported to prevent dispersion and public exposure. Waste-specific storage and packaging requirements will comply with WAC 173-303 requirements, as applicable. Miscellaneous solid waste will be managed, as appropriate, for the nonradiological and radiological contaminants present or suspected to be present, if any.

Waste generated through implementation of this closure action will be characterized in accordance with the waste acceptance criteria of the receiving facility. Characterization is performed using a variety of information that includes, but is not limited to, process knowledge, historical analytical data, sampling and analysis, and radiological and chemical screening.

Demolition waste will be characterized and managed as dangerous/mixed waste based on the historical operations, the RCRA Part A Form, and previous characterization information.

5.2.3 Waste Handling, Storage, and Packaging

Marking, labeling, segregating, and staging of waste containers will be performed or directed by the waste specialist. If waste containers cannot be shipped directly to the disposal site, dangerous or mixed wastes may be stored at Hanford TSD units that are permitted to operate as container storage areas until the wastes can be disposed. Dangerous or mixed waste may also be accumulated in accordance with the generator requirements of WAC 173-303-200.

5.2.3.1 Management of Bulk Waste

Bulk waste will be placed in ERDF cans for eventual disposal at ERDF or other approved RCRA TSD units. These bulk containers will be stored/staged in a suitable area adjacent to 276-BA Organic Storage Area or may be staged for up to 90 days in another suitable Hanford Site location. Bulk containers will be covered when waste is not being added or removed. Lightweight material (e.g., plastic and paper) will be bagged, if appropriate, prior to placement in the bulk container to eliminate the potential for materials blowing out of the bulk container or truck. Applicable packaging and pre-transportation requirements for dangerous or mixed waste generated by the closure action will be identified and implemented before the waste container is moved. Additionally, a fixative will be applied as needed to the demolition site and any loose soil to help control dust and radiological and nonradiological contaminants.

5.2.3.2 Management of Waste Containers

Prior to disposal, dangerous waste containers will be managed in accordance with WAC 173-303-200, as applicable.

5.2.3.3 Waste Profile

Waste profiling for establishing values for the waste-tracking form may take place concurrently with closure action activities. Field-screening measurements may be used to obtain data to adjust the waste-tracking form. The waste profile may be adjusted (as necessary) through a combination of in-process field-screening methods and analytical laboratory analysis.

5.2.3.4 Final Waste Disposal

All demolition waste generated through implementation of the closure action will be treated as dangerous/mixed waste and will be managed according to the ERDF waste acceptance criteria. ERDF is the preferred disposal location for waste meeting the facility's waste acceptance criteria, as it is engineered to meet appropriate RCRA technological requirements for landfills as described in EPA et al., 1995, *Record of Decision, U.S. DOE Hanford Environmental Restoration Disposal Facility, Hanford Site, Benton County, Washington.*

5.2.3.5 Waste Disposal Records

Original sample reports and a copy of the shipping papers for each container will be retained and forwarded to the assigned waste specialist for inclusion in the project file following final waste disposition.

5.2.4 Waste Treatment

Based on available information, typical treatment of waste from demolition activities (e.g., grouting, macroencapsulation, solidification, separation, size reduction, and/or repackaging) may be needed. If treatment is deemed necessary to provide safe transport, meet waste disposal facility waste acceptance criteria, and/or address land disposal restriction requirements, such treatment may be conducted at the generating site. It is expected that the waste may need to be grouted or size reduced at ERDF. Residuals from treatment of waste originating from activities addressed in this closure plan can be disposed at ERDF if the treatment residuals meet ERDF waste acceptance criteria.

5.2.5 Waste Minimization and Recycling

Waste minimization practices will be followed to the extent technically and economically feasible during waste management. Introduction of clean materials into a contamination area, as well as contamination of

clean materials, will be minimized to the extent practicable. Emphasis will be placed on source reduction to eliminate or minimize the volume of waste generated.

5.3 Air Emissions

There is no expectation that substantial emissions of criteria and toxic air pollutants will result from demolition activities. Reasonable precautions will be taken to minimize visible dust emissions from active structural demolition with standard emission control techniques. Active excavations shall use water or crusting agents (e.g., Soil-Sement[2]) as approved for dust control. Water usage for dust control will be minimized to protect against contaminant migration. Crusting agents or fixatives will be applied to any disturbed portion of the contamination area that will be inactive for more than 24 hours. Material to be disposed at ERDF will also comply with the moisture content and other applicable requirements of the ERDF waste acceptance criteria (WCH-191). A dust fixative will be applied to the demolition and excavation site when potential concerns arise regarding health issues or the spread of contamination.

Airborne emissions associated with closure activities will be minimized by the use of appropriate work controls. Potential radiological air emissions will be evaluated and licensed as a separate action from RCRA closure requirements under the *Clean Air Act of 1977*, which is achieved by following the requirements of WAC 246-247, "Radiation Protection–Air Emissions." Airborne releases of contaminants during closure activities will be controlled in accordance with U.S. Department of Energy (DOE) radiation control and substantive air pollution control standards in order to maintain emissions of air pollutants at the Hanford Site to as low as reasonably achievable levels. Minimal operations associated with deactivation methods (e.g., welding or laser cutting) reaching temperatures of greater than 100°C (212°F) are be expected.

The applicability of WAC 173-400-110, "General Regulations for Air Pollution Sources," "New Source Review (NSR) for Sources and Portable Sources;" and WAC 173-460, "Controls for New Sources of Toxic Air Pollutants," was evaluated. The scope of the proposed activity does not meet the definitions of a new source per WAC 173-400-030, "Definitions;" or a modification per WAC 173-400-030(44); or a new toxic air pollutant source per WAC 173-460. A review of the ISO East tank constituents was conducted, and none of the toxic air pollutants regulated under WAC 173-460-150, "Table of ASIL, SQER and de minimis Emission Values," were potentially present above de minimis concentrations.

5.4 Health and Safety Requirements

Closure will be performed in a manner to ensure the safety of HHE. Qualified personnel will perform any necessary closure activities in compliance with established safety and environmental procedures. Personnel will be equipped with appropriate personal protective equipment. Qualified personnel will be trained in applicable safety and environmental procedures and have received appropriate training and experience in sampling activities. Field operations will be performed in accordance with applicable health and safety requirements. If an emergency would occur, the on-call building emergency director will be notified, and the requirements associated with DOE/RL-94-02, *Hanford Emergency Response Plan*, will be implemented. The permittees have instituted training or qualification programs to meet training requirements imposed by regulations, DOE orders, and national standards (e.g., standards published by the American National Standards Institute/American Society of Mechanical Engineers). For example, the environmental, safety, and health training program provides workers with the knowledge and skills necessary to execute assigned duties safely. Field personnel typically will have completed the following training before starting work:

[2] Soil-Sement® is a registered trademark of Midwest Industrial Supply, Inc., Canton, Ohio.

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Worker Training
- 8 Hour Hazardous Waste Worker Refresher Training (as required)
- Hanford General Employee Training

Project-specific safety training will explicitly address the project and activities to be performed, including the following:

- Training will provide the knowledge and skills needed for sampling personnel to perform work safely and in accordance with quality assurance (QA) requirements.
- Samplers are required to be qualified in the type of sampling being performed in the field.

Pre-job briefings will be performed to evaluate activities and associated hazards by considering the following factors:

- Objective of the activities
- Individual tasks to be performed
- Hazards associated with the planned tasks
- Environment in which the job will be performed
- Facility where the job will be performed
- Equipment and material required
- Safety protocols applicable to the job
- Training requirements for individuals assigned to perform the work
- Level of management control
- Proximity of emergency contacts

Training records are maintained for each employee in an electronic training record database. The permittee training organization maintains the training records system.

5.5 State Environmental Policy Act Requirements

RCW 43.21C, "State Environmental Policy" (also known as the State Environmental Policy Act) requires the environmental effects of a proposal to be described and evaluated before decisions are made by the Washington State Department of Ecology (Ecology). A State Environmental Policy Act checklist was prepared for this proposed closure action to provide information to help identify impacts for the action (i.e., closure of the 276-BA Organic Storage Area) and to reduce or avoid impacts from this action.

6 Soil Verification Sampling and Analysis

Sampling and analysis of soil will be conducted to confirm that clean closure levels in the soil have been achieved. The SAP summarizes the sampling design used and associated assumptions based on the operational history 276-BA Organic Storage Area. The sampling design includes input parameters used to determine the number and location of samples.

6.1 Closure Sampling and Analysis Plan

All sampling and analysis will be performed in accordance with the sampling and quality standards established in the closure SAP. This closure SAP provides details on the sampling and analysis procedures in accordance with SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update V*; the American Society for Testing and Materials (ASTM)

Annual Book of ASTM Standards; and applicable U.S. Environmental Protection Agency (EPA) guidance. Sampling and analysis activities will meet applicable requirements of SW-846, ASTM standards, EPA-approved methods, and DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Document* (HASQARD). This SAP was also developed using Section 7.0 in Ecology Publication 94-111 and EPA/240/R-02/005 (EPA QA/G-5S).

6.1.1 Target Analytes

The characteristics of B Plant Complex liquid mixed waste (DOE/RL-98-12) and the RCRA Part A Form for the 276-BA Organic Waste Storage Area were reviewed. The review identified the federal and state waste codes for the ISO East organic tank and the constituents of concern. The metal constituents of concern for the B Plant Complex are arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. The listed organics included acetone, *o*-cresol, *p*-cresol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, and 1,1,1-trichloroethane.

Table 1 provides the waste codes listed for 276-BA Organic Storage Area and the target analyte associated with each waste code based on facility process records. The soil will be sampled to demonstrate clean closure of the ISO East tank and secondary containment structure.

Table 1. Target Analyte List

Target Analyte (Waste Code)	CAS Number
Arsenic (D004)	7440-38-2
Barium (D005)	7440-39-3
Cadmium (D006)	7440-43-9
Chromium (D007)	7440-47-3
Lead (D008)	7439-92-1
Mercury (D009)	7439-97-6
Selenium (D010)	7782-49-2
Silver (D011)	7440-22-4
Methylene Chloride (F001, F002)	75-09-2
1,1,1-Trichloroethane (F001, F002)	71-55-6
Acetone (F003)	67-64-1
Methyl Isobutyl Ketone (F003)	108-10-1
o-cresol (F004)	95-48-7
p-cresol (F004)	106-44-5
Methyl Ethyl Ketone (F005)	71-36-3

CAS = Chemical Abstracts Service

6.1.2 Verification Sampling Schedule

Verification closure sampling and analysis will be performed in accordance with the closure plan schedule provided in Chapter 8.

6.1.3 Project Management

The permittee is responsible for planning, coordinating, sampling, preparing, packaging, and shipping samples to the laboratory.

6.2 Sampling Design

The objective of sampling the soil underneath the secondary containment structure is to obtain analytical data to confirm that the soil does not contain contaminants exceeding the MTCA (WAC 173-340) Method B clean closure performance standards for the target analytes listed in Table 1.

This SAP used the guidance provided in Ecology Publication 94-111, Section 7.0 to determine the type of sampling design to be used to demonstrate clean closure. Focused sampling (as identified in Section 7.2.2 of Ecology Publication 94-111) involves selective sampling of areas where contamination is expected or releases have been documented.

The 276-BA Organic Storage Area briefly stored organic mixed waste and shows no history of spills, leaks, or other monitoring concerns. Based on this information, a focused sampling approach was proposed to demonstrate clean closure for soils underlying the 276-BA Organic Storage Area.

The secondary containment is a single structure consisting of two basins that held the individual ISO East and ISO West tanks. The basin formerly housing the empty ISO West tank never received waste of any kind. The ISO East tank, which received waste directly from the B Plant Complex, was placed in the 276-BA Organic Storage Area secondary containment structure, sealed and intact. Stored wastes were then removed from the ISO East tank via pumper truck for offsite disposal. Any potential releases from the ISO East tank would likely be encountered along seams or cracks within the ISO East portion of the secondary containment structure. These areas have been identified for soil sampling to demonstrate clean closure.

For focused sampling beneath the concrete secondary containment structure, professional judgment was used to determine the number of sample locations. The basin cell that housed the ISO West tank was administratively clean closed and will not be sampled. Five sampling locations beneath the ISO East secondary containment structure were determined to be sufficient to support the overall sampling approach (Figure 3). In addition, any discoloration or concrete staining will be examined to determine if additional focused sampling locations are warranted upon removal of the concrete structure. GPS coordinates will be obtained to determine the locations for the sample sites along concrete seams. After the secondary containment structure is removed, these locations will then be sampled.

6.2.1 Sampling Methods and Handling

A grab sample matrix normally consists of soil collected in pre-cleaned sample containers, taken at a depth of 0 to 15.24 cm (0 to 6 in.) below ground surface. No historical dangerous waste releases were identified; therefore, subsurface sampling is deemed unnecessary. For the purpose of this SAP, the "soil surface" is defined as the exposed surface layer once the secondary containment structure and up to one meter of soil has been removed. The exposed soil surface will be leveled prior to sample collection.

After the soil is sampled, the sampled media will be screened to remove material larger than approximately 2 mm (0.08 in.) in diameter, which will allow for a larger surface area to volume ratio and would be more likely to identify any potential contamination in the sample. Grab samples will be collected and placed into containers at the chosen node sample locations. To ensure sample and data usability, sampling will be performed in accordance with established sampling practices, procedures, and requirements pertaining to sample collection, collection equipment, and sample handling.

Sample container, preservation, and holding time requirements are specified in Table 2 for soil samples. These requirements are in accordance with the specified analytical methods. The final container type and volumes will be identified on the sampling authorization form (SAF) and the chain-of-custody form.

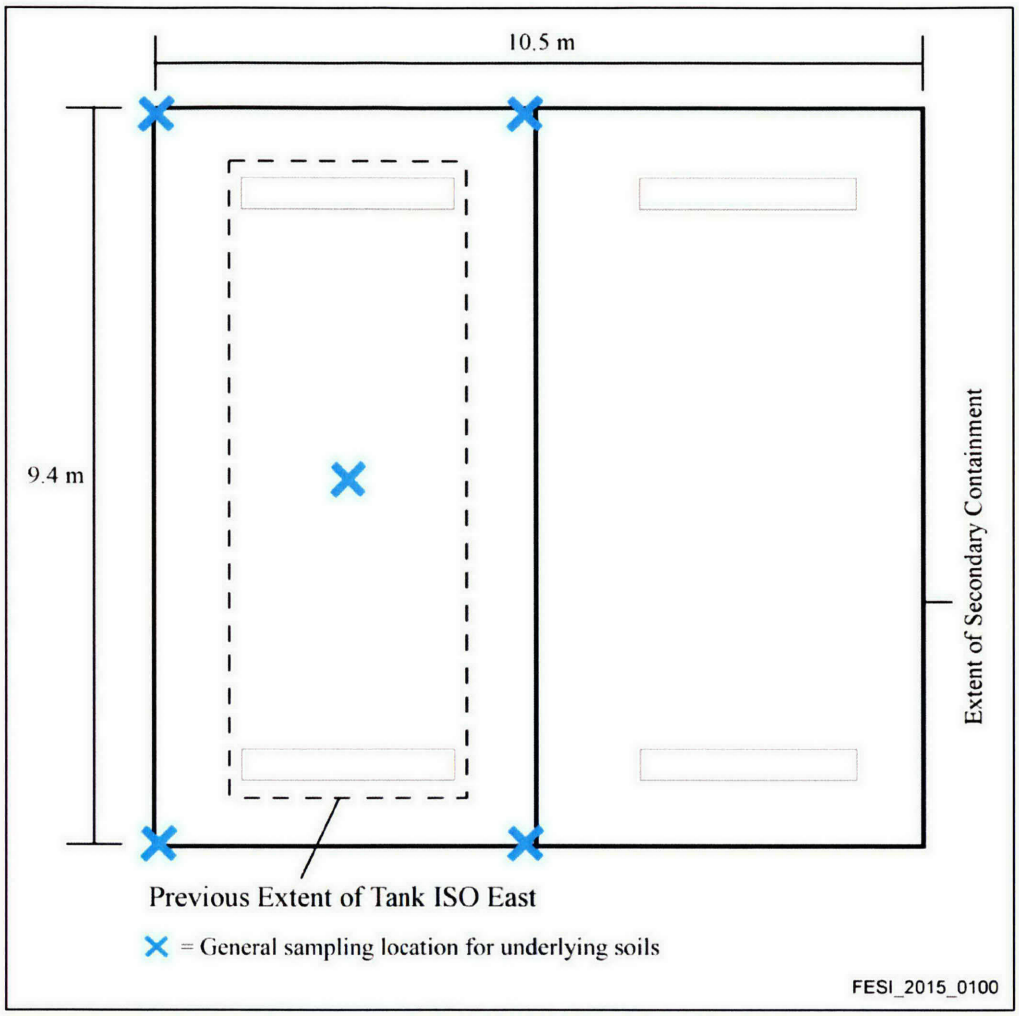

Figure 3. Proposed Focused Sampling Locations for the 276-BA Organic Storage Area

To prevent potential contamination of the samples, care will be taken to use decontaminated equipment for each sampling activity.

Table 2. Preservation, Container, and Holding Time Requirements for Soil Samples

Method	Analyte	Preservation Requirement	Holding Time	Bottle Type
EPA 8260	Volatile organic analytes	Cool ~4°C	14 days	Glass
EPA 8270	Semivolatile organic compound	Cool ~4°C	14/40 days	Amber glass
EPA 6010	Metals	Cool ~4°C	6 months	Amber glass
EPA 6020	Metals	Cool ~4°C	6 months	Amber glass

Table 2. Preservation, Container, and Holding Time Requirements for Soil Samples

Method	Analyte	Preservation Requirement	Holding Time	Bottle Type
EPA 7471	Mercury	None	28 days	Glass

Note: For the four-digit EPA methods, see SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update V.*

EPA = U.S. Environmental Protection Agency

EPA Level 1 precleaned sample containers will be used for samples collected for chemical analysis. Container sizes may vary depending upon laboratory-specific volumes/requirements for meeting analytical detection limits.

The sample location, depth, and corresponding record numbers from the Hanford Environmental Information System (HEIS) database will be documented in the sampler's field logbook. A custody seal (e.g., evidence tape) will be affixed to each sample container and/or sample collection package to provide evidence of potential tampering.

Each sample containers will be labeled with the following information on firmly affixed, water resistant labels:

- SAF and form number
- HEIS number
- Sample collection date and time
- Sampler identification
- Analysis required
- Preservation method (if applicable)

Sample records must include the following information:

- Analysis required
- Sample location
- Matrix (e.g., water or soil)

Sample custody will be maintained in accordance with existing Hanford Site protocols to ensure that sample integrity is maintained throughout the analytical process. Chain-of-custody protocols will be followed throughout sample collection, transfer, analysis, and disposal to ensure that sample integrity is maintained.

All waste (including unexpected waste) generated by sampling activities will be managed in accordance with applicable regulations.

6.2.2 Analytical Methods

All analyses and testing will be performed consistent with this closure plan, laboratory analytical procedures, and HASQARD (DOE/RL-96-68). The approved laboratory must achieve the lowest practical quantitation limits (PQLs) consistent with the selected analytical method to confirm clean closure levels. If a target analyte is detected at or above clean closure level but less than the PQL of the analytical method, Ecology will be notified, and alternatives will be discussed to demonstrate clean closure level.

If a target analyte is detected above the clean closure levels and the PQL, additions actions will be taken, as discussed in Section 7. Analytical methods and performance requirements associated with the target analytes are outlined in Table 3.

6.2.3 Quality Control

Quality control (QC) procedures must be followed in the field and laboratory to ensure that reliable data are obtained. Field QC samples will be collected to evaluate the potential for cross-contamination and to provide information pertinent to field sampling variability. Field QC will include collection of the following types of samples:

- Full trip blanks
- Field transfer blanks
- Equipment rinsate blanks
- Field duplicates
- Field split samples

Laboratory QC samples estimate the precision and bias of the analytical data. Field and laboratory QC samples and summarized in Table 4. Data verification and data validation will include both the primary samples and the QC samples.

6.2.4 Data Verification

Analytical results will be received from the laboratory, loaded into a database (e.g., HEIS), and verified. Verification includes, but is not limited to, the following items:

- Amount of data requested matches the amount of data received (number of samples for requested methods of analytes).
- Correct procedures and methods are used.
- Documentation/deliverables are complete.
- Hard copy and electronic versions of the data are identical.
- Data appear to be reasonable based on analytical methodologies.

6.2.5 Data Validation

Data validation is performed by a third party. The laboratory will use program-equivalent analytical data packages that are intended to support data validation by a third party. The laboratory submits data packages that are supported by QC test results and raw data.

Controls are in place to preserve the data sent for data validation in order to allow only additions to be made and not allowing changes to the raw data.

The format and requirements for data validation activities are based upon the most current version of EPA-540-R-014-002, *National Functional Guidelines for Superfund Organic Methods Data Review* (OSWER 9355.0-132), and EPA-540-R-013-001, *National Functional Guidelines for Inorganic Superfund Data Review* (OSWER 9355.0-131). As defined by the validation guidelines, 5 percent of the results will undergo Level C validation.

Table 3. Soil Analytical Performance Requirements

CAS Number	Analyte	Analytical Method	Closure Performance Standard[a] (mg/kg)		Practical Quantitation Limit[b] (mg/kg)	Accuracy Req't (Percent Recovery)[c]	Precision Req't (Relative Percent Difference)[c]
			Carcinogen	Noncarcinogen			
7440-38-2	Arsenic	SW-846 Method 6020	0.667	24	0.2	±30	≤30
7440-39-3	Barium	SW-846 Method 6010	—	16,000	2.0	±30	≤30
7440-43-9	Cadmium	SW-846 Method 6010	—	80	0.5	±30	≤30
7440-47-3	Chromium (Total)	SW-846 Method 6010	—	120,000	1.0	±30	≤30
18540-29-9	Chromium (Hexavalent)	SW-846 Method 7196	—	240	1.0	±30	≤30
7439-92-1	Lead	SW-846 Method 6010	—	250	5.0	±30	≤30
7439-97-6	Mercury	SW-846 Method 7471	—	24	0.002	±30	≤30
7782-49-2	Selenium	SW-846 Method 6010	—	400	0.75	±30	≤30
7440-22-4	Silver	SW-846 Method 6010	—	400	1.0	±30	≤30
71-55-6	1,1,1-Trichloroethane	SW-846 Method 8260	—	160,000	0.005	±30	≤30
67-64-1	Acetone	SW-846 Method 8260	—	72,000	0.02	±30	≤30
75-09-2	Methylene Chloride	SW-846 Method 8260	500	480	0.005	±30	≤30
71-36-3	Methyl Ethyl Ketone	SW-846 Method 8260	—	48,000	0.01	±30	≤30
108-10-1	Methyl Isobutyl Ketone	SW-846 Method 8260	—	6,400	0.01	±30	≤30
95-48-7	*o*-cresol	SW-846 Method 8270	—	4,000	0.33	±30	≤ 0
106-44-5	*p*-cresol	SW-846 Method 8270	—	8,000	0.33	±30	≤30

Source: SW-846, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, Third Edition; Final Update V.*

a. Closure performance standards are the numeric cleanup levels calculated according to WAC 173-340, "Model Toxics Control Act–Cleanup," Method B (unrestricted use standards). Where both carcinogen and noncarcinogen performance standards are available, the lowest value will be used as the performance standard.

b. For these analytical performance requirements, the required detection limit and practical quantitation limit are identical.

c. Accuracy criteria for associated batch matrix spike percent recoveries. Evaluation based on statistical control of laboratory control samples is also performed. Precision criteria for batch laboratory replicate matrix spike analyses or replicate sample analyses.

— = not applicable

CAS = Chemical Abstracts Service

Table 4. Project Quality Control Sampling Summary

QC Sample Type	Frequency	Characteristics Evaluated
Field QC		
Full trip blank	One per 20 samples per media sampled.	Contamination from containers or transportation
Equipment rinsate blank	As needed. If only disposable equipment is used, then an equipment blank is not required. Otherwise, one per 20 samples, per media[a].	Adequacy of sampling equipment decontamination and contamination from nondedicated equipment
Field duplicate	One per batch[b], 20 samples maximum of each media sampled (soil samples).[c]	Precision, including sampling and analytical variability
Field split sample	As needed. When needed, the minimum is one per analytical method, per media sampled, for analyses performed where detection limit and precision and accuracy criteria have been defined in Table 3.	Precision, including sampling, analytical, and interlaboratory
Laboratory QC[b]		
Method blanks	One per batch[b]	Laboratory contamination
Laboratory duplicates	[d]	Laboratory reproducibility and precision
Matrix spikes	[d]	Matrix effect/laboratory accuracy
Matrix spike duplicates	[d]	Laboratory reproducibility, accuracy, and precision
Surrogates	[d]	Recovery/yield
Tracers	[d]	Recovery/yield
Laboratory control samples	One per batch[b]	Evaluate laboratory accuracy
Performance evaluation parameters	Annual	Evaluate laboratory accuracy
Double-blind standards	Quarterly[e]	Evaluate laboratory accuracy
Audit/assessment	Annually[f] or every 3 years[g]	Evaluate overall laboratory performance and operations

a. Whenever a new type or nondedicated equipment is used, an equipment blank shall be collected every time sampling occurs until it can be shown that less frequent collection of equipment blanks is adequate to monitor the decontamination procedure or the nondedicated equipment.

b. Batching across projects is allowing for similar matrices.

c. Soil grab samples are exempted from duplicate sampling.

d. As defined in the laboratory contract or quality assurance plan and/or analysis procedures.

e. Soil matrix double-blind standards are submitted by request.

f. The U.S. Department of Energy quality systems for analytical services require annual audit for commercial laboratories.

g. DOE/RL-96-68, *Hanford Analytical Services Quality Assurance Requirements Document* (HASQARD) does not define a frequency for assessment or onsite laboratories. Three-year evaluated supplier list requirement is typically applied.

QC = quality control

6.2.6 Documents and Records

The project manager is responsible for ensuring that the current version of the SAP is being used and for providing any updates to field personnel. Version control is maintained by the administrative document control process. Changes to the SAP affecting data needs will be submitted as a RCRA permit modification in accordance with WAC 173-303-610(3)(b) to DOE and the lead regulatory agency (Ecology).

Logbooks are required for field activities. A logbook must be identified with a unique project name and number. The individual(s) responsible for logbooks will be identified in the front of the logbook and only authorized persons may make entries into the logbooks. Logbooks will be signed by the field manager, supervisor, cognizant scientist/engineer, or other responsible individual. Logbooks will be permanently bound, waterproof, and ruled with sequentially numbered pages. Pages will not be removed from logbooks for any reason. Entries will be made in indelible ink. Corrections will be made by marking through the erroneous data with a single line, entering the correct data, and initialing and dating the changes.

The project manager is responsible for ensuring that a project file is properly maintained. The project file will contain the records or references to their storage locations. The following items will be included in the project file, as appropriate:

- Field logbooks or operational records
- Data forms
- GPS data
- Chain-of-custody forms
- Sample receipt records
- Inspection or assessment reports and corrective action reports
- Interim progress reports
- Final reports
- Laboratory data packages
- Verification and validation reports

The laboratory is responsible for maintaining, and having available upon request, the following items:

- Analytical logbook
- Raw data and QC sample records
- Standard reference material and/or proficiency test sample data
- Instrument calibration information

Records may be stored in either electronic or hard copy format. Documentation and records, regardless of medium or format, are controlled in accordance with internal work requirements and processes to ensure the accuracy and retrievability of stored records. Records required by the Tri-Party Agreement (Ecology et al. 1989a, *Hanford Federal Facility Agreement and Consent Order*) will be managed in accordance with the requirements therein.

6.2.7 Revisions to the Sampling and Analysis Plan and Constituents to be Analyzed

If changes to the SAP are necessary due to unexpected events during closure that will affect sampling, a revision to this SAP will be submitted no later than 30 days after the unexpected event as a RCRA

permit modification as required in WAC 173-303-610(3)(b)(iii) and WAC 173-303-830, "Permit Changes."

7 Contingent Closure Plan

A contingent closure plan is not required at this time since the expected outcome is clean closure. If analytical data indicate that soil contamination is above clean closure standards, the nature and extent of contamination will be evaluated. If further closure actions are needed but cannot be performed under this closure plan, a contingent post-closure plan will be developed and submitted to Ecology for inclusion in the permit.

8 Schedule for Closure

Table 5 describes the primary and secondary closure activities and the expected duration of activities. Tank removal, secondary containment demolition, verification sampling, and analysis activities will be completed within 180 days after approval of the permit modification incorporating this closure plan. Should unexpected circumstances arise and an extension to the 180-day closure activity expiration date be deemed necessary, a Class 1 Permit modification request will be submitted to Ecology for approval at least 30 days prior to the 180-day expiration date in accordance with WAC 173-303-610(4)(c) and WAC 173-303-830, Appendix I. The extension request would also demonstrate that all steps to prevent threats to HHE, including compliance with all applicable permit requirements and criteria in WAC 173-303-610(4)(b)(i) or (ii), have been and will be taken.

Table 5. Closure Activity Description

Primary Activity	Secondary Activity	Expected Duration
ISO East tank removal and disposal: • Stabilize liquid tank contents (if present) with absorbent material. • Remove stabilized tank from secondary containment structure. • Place tank on flatbed truck for transport for disposal. • Dispose tank in ERDF or other approved disposal facility.	Verify sampling and analysis of soils for clean closure levels: • Locate focused sampling nodes. • Collect soil samples. • Analyze samples. • Validate data. • Analyze data.	180 days
Secondary containment structure demolition and disposal: • Demolish concrete structure. • Load rubble/debris in ERDF cans. • Transport to ERDF. • Dispose at ERDF.		
Closure Activities Complete		
Prepare closure documentation and obtain independent qualified registered professional engineer certification.	Transmit closure certification to Ecology.	60 days

Ecology = Washington State Department of Ecology
ERDF = Environmental Restoration Disposal Facility

9 Certification of Closure

Within 60 days of completion of field activities for closure, Ecology will be notified that all closure plan activities required for this TSD DWMU have been met. In accordance with WAC 173-303-610(6), DOE will submit a certification of closure to the lead regulatory agency (Ecology). Both DOE and the co-operator identified on the current RCRA Part A Form will sign the certification of closure, and an independent qualified registered professional engineer (IQRPE) will certify that the unit has been closed in accordance with the approved closure plan.

An IQRPE will be retained to provide certification of the closure, as required by WAC 173-303-610(6). The IQRPE will be responsible for observing field activities and reviewing documents associated with closure of the 276-BA Organic Storage Area. At a minimum, field activities and documents reviewed include the following:

- Review of the 276-BA Organic Storage Area visual inspection (ISO East tank and containment)
- Review of sampling procedures and results
- Observation and/or review of sampling activities
- Observation and/or review of contaminated environmental debris removal, as applicable
- Verification that sample locations are correct, as specified in the SAP

The IQRPE will record the observations and reviews in a written report. The resulting report will be used to develop the clean closure verification, which will then be provided to Ecology. Documentation supporting certification by the IQRPE will be placed in the Administrative Record.

Additional documentation supporting closure certification will also be placed in the Administrative Record and will be provided to Ecology upon request. At a minimum, the following documentation and information supporting closure certification will be included:

- Field notes and photographs related to closure activities
- Description of minor deviations from approved closure plan and their justifications
- Documentation of removal and final disposition of all dangerous wastes and waste residues, including contaminated media, debris, and any treated residuals
- Documentation that decontamination procedures were followed and decontamination standards have been achieved
- All laboratory and/or field data, including sampling procedures and locations, QA/QC samples, chain-of-custody procedures, and required sample measurements
- Final summary report from the IQRPE, itemizing all data reviewed and including analytical results used to determine a final closure status

10 Post-Closure Plan

The closure strategy is to attain clean closure of the 276-BA Organic Storage Area. If the conditions for verification described in Chapter 6 meet the closure performance standards, then a post-closure plan will not be necessary. If clean closure is not achieved, then a post-closure plan will be provided, with a revised closure plan, within 180 days after the permittee and Ecology agree that the plan is needed.

11 Amendment of Closure Plan

As required by WAC 173-303-610(3)(b), the closure plan will be amended if changes to closure activities require modification of the approved closure plan.

12 References

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ATTACHMENT 3

SUBMITTAL OF PERMIT MODIFICATION REQUEST AND CLOSURE PLAN
FOR 276-BA ORGANIC STORAGE TANK
SEPA ENVIRONMENTAL CHECKLIST

Consisting of 13 pages (including cover page.)

SEPA Environmental Checklist

A. Background

1. Name of proposed project, if applicable:

This *State Environmental Policy Act of 1971* (SEPA) Environmental Checklist is being submitted for the closure of the 276-BA Organic Storage Area of the Hanford Site B Plant Complex.

The 276-BA Organic Storage Area was installed and is owned and operated by the U.S. Department of Energy, Richland Operations Office (DOE-RL) and co-operated by its contractors.

2. Name of applicant:

DOE-RL

3. Address and phone number of applicant and contact person:

U.S. Department of Energy
Richland Operations Office
P.O. Box 550
Richland, WA 99352

Contact:

Stacy L. Charboneau, Manager
Richland Operations Office
509-376-7395

4. Date checklist prepared:

September 2015

5. Agency requesting checklist:

Washington State Department of Ecology
Nuclear Waste Program
3100 Port of Benton Boulevard
Richland, WA 99354

6. Proposed timing or schedule (including phasing, if applicable):

The demolition and waste management activities pertaining to the 276-BA Organic Storage Area are planned to take place between 2015 and 2018.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

The *B Plant 276-BA Organic Storage Area SEPA Environmental Checklist*, Revision 0, is to be submitted with the permit request for the *B Plant 279-BA Organic Storage Area Closure Plan*, Rev 0, submitted in September 2015.

The following *National Environmental Policy Act of 1969* (NEPA) documentation provides descriptive environmental information relating to the 200 East Area of the Hanford Site, where the 276-BA Organic Storage Area is located.

- DOE/EIS-0 113, *Final Environmental Impact Statement; Disposal of Hanford Defense High-Level, Transuranic and Tank Wastes*, December 1987

- DOE/EIS-0 I 89F, *Final Environmental Impact Statement for the Tank Waste Remediation System, Richland, Washington*, August 1996

- DOE/EIS-039 1, *Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, WA*, December 2012

General information concerning the Hanford Facility environment can be found in the *Hanford Site National Environmental Policy Act (NEPA) Characterization*, PNNL-6415 (latest revision), DOE/RL-2013-47, *Hanford Site Environmental Report for Calendar Year 2014*, and DOE/EIS-0391, *Final TC & WMEIS for the Hanford Site, Richland, Washington* (December 2012). These documents provide current information concerning climate and meteorology, ecology, history and archeology, socioeconomic, land use and noise levels, and geology and hydrology. These provide baseline data for the Hanford Site and past activities, and are useful for evaluating proposed activities and their potential environmental impacts.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No applications are pending at this time.

10. List any government approvals or permits that will be needed for your proposal, if known.

Ecology is the lead agency authorized to approve the 276-BA Organic Storage Area SEPA checklist pursuant to the requirements of WAC 197-11-960.

Ecology is the lead agency authorized to approve the B Plant 276-BA Organic Storage Area closure plan.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The 276-BA Organic Storage Area was installed in 1996 as part of the B Plant organic mixed waste storage tank system, which was used to store organic solvent used in recovery and purification of strontium and cesium. The site consisted of two identical above-ground stainless steel tanks (17,500 gal capacity each) and a concrete secondary containment structure (measuring 9.4 meters long, 10.5 meters wide, and 0.6 meters deep). Organic mixed waste was transferred from the 221-Building for storage in one of the two tanks at the 276-BA Organic Storage Area in March 1997. The second tank did not receive waste and was removed for use elsewhere on site in 1997. Organic mixed wastes stored at the 276-BA Organic Storage area were transferred to an offsite TSD facility for disposal by incineration in late 1997. This system is inactive with no intention of resuming operation.

This project will involve removal of the decommissioned storage tank (ISO East), demolition of the secondary containment structure, sampling of the underlying soils, and backfill of the site.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The Hanford Site occupies approximately 375,040 acres in Washington State directly north of the city of Richland, Washington. The B Plant Complex is located in the 200 East Area of the Hanford Site, approximately 40 km (25 mi) northwest of Richland, WA. The 276-BA Organic Storage Area is located in the northeast portion of the B Plant Complex (DOE/RL-98-12, REV. 1) and consists of one remaining storage tank and the secondary containment structure.

B. Environmental Elements

1. Earth

a. General description of the site:

Flat.

b. What is the steepest slope on the site (approximate percent slope)?

The average slope in the B Plant Complex area is 0.0167 ft north northeast.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The B Plant Complex is located in an area of coarse sand and gravel. More detailed information concerning specific soil classifications can be found in *Hanford Site National Environmental Policy Act (NEPA) Characterization,* PNNL-6415. Farming and agricultural activities are not permitted in the 200 East Area of the Hanford Site.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. [help]

This project will include excavation, filling, and grading. The concrete slab at the base of the 276-BA Organic Storage Area will be excavated to three feet below the secondary containment structure. The area will be filled and graded using gravel from Hanford Site borrow pits.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

No.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Currently 100% of the project areas are covered with impervious surfaces. This project will result in the removal of all impervious surfaces and replacement to grade with gravel backfill.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

None.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Minor amounts of dust, vapors and vehicle exhaust may be generated by vehicles and equipment during demolition, cleanup and sampling activities. No emissions will result from this action following closure.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

Minor quantities of filtered radiological air emissions continue to be released from the B Plant Complex (the 296-B-1 Stack). The effective dose equivalent resulting from B Plant Complex emissions for calendar year 2009 was 3.1 x 10-8 mrem/year (DOE/RL-2010-17, Revision 0, Radionuclide Air Emissions Report for the Hanford Site, Calendar Year 2009).

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Visible dust emissions from active structural demolition will be limited using standard emission control techniques. Active excavations shall use water or crusting agents (e.g., Soil Sement®) as approved for dust control. Water usage for dust control shall be minimized to protect against contaminant migration. Crusting agents or fixatives shall be applied to any disturbed portion of the excavation that will be inactive for more than 24 hours.

3. Water

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

No. The 276-BA Organic Storage Area is located approximately 11.3 km (7.0 mi) from the Columbia River.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

No.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

This project will not discharge liquid to ground surface or sewer systems.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The Hanford Site receives an average of 7.14 inches (18.1 centimeters) of precipitation annually (DOE/RL-2013-47, Rev 0, *Hanford Site Environmental Report for CY2013*). Rainfall or snowmelt are captured in the secondary containment of the 276-BA Organic Storage Area and evaporate naturally. Following removal of the containment structure, precipitation would undergo natural infiltration or evaporation at the ground surface. This precipitation does not reach the vicinity groundwater or surface waters.

2) Could waste materials enter ground or surface waters? If so, generally describe.

No waste materials will enter ground or surface waters.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The activities proposed herein will result in removal of impervious surfaces and installation of gravel, which will enhance drainage.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

The amount of water used for dust suppression will be limited to reduce the potential for runoff. When the excavation will be left open for greater than 24 hours, a crusting agent will be applied to control dust.

4. Plants

a. Check the types of vegetation found on the site:

The 276-BA Organic Storage Area is non-vegetated. The most common vegetation in the vicinity is sagebrush/cheatgrass or Sandberg's bluegrass. Vegetation in the 200 Areas is routinely managed to prevent contaminant migration.

b. What kind and amount of vegetation will be removed or altered?

Not applicable.

c. List threatened and endangered species known to be on or near the site.

None.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Not applicable.

e. List all noxious weeds and invasive species known to be on or near the site.

See response to B.4.a. All noxious weeds and invasive species are managed according to *Integrated Vegetation Management on the Hanford Site, Richland, Washington*, DOE/EA-1728-F, 2012.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

birds: ground nesters and songbirds

mammals: small rodent species, coyote, deer, elk, rabbits

This activity is expected to have no impact on wildlife. A site specific ecological and cultural resources review will be performed prior to demolition. Workers will be directed to avoid all wildlife that may be found in and around the project area.

DOE practices will be employed to ensure compliance with the *Migratory Bird Treaty Act of 1918* and in line with the guidance provided in the *Hanford Site Biological Resources Management Plan* DOE/RL 96-32, Rev. 1 and the Memorandum of Understanding between DOE and the U.S. Fish and Wildlife Service per Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*.

b. List any threatened and endangered species known to be on or near the site.

The bald eagle, which was removed from the federal threatened status list on July 9, 2007, will be protected under the *Bald and Golden Eagle Protection Act* and *Migratory Bird Treaty Act*. The greater sage grouse, which is currently a candidate for the Endangered Species Act, has been observed to be on the Hanford Site. The state listed white pelican, sandhill crane, and ferruginous hawk have been observed to be on or migrating through the Hanford Site. A complete list of federal or Washington State threatened and endangered species on the Hanford Site can be found in PNNL-6415 and DOE/EIS-039 1. No endangered species are known to be present at the 276-BA Organic Storage Area.

c. Is the site part of a migration route? If so, explain.

The Hanford Site is part of a broad Pacific Flyway; however the industrialized 200 Area does not provide suitable habitat for migratory birds.

d. Proposed measures to preserve or enhance wildlife, if any:

See response to 5a.

e. List any invasive animal species known to be on or near the site.

See response to 5a.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Fossil fuel will be used in vehicles to access the site, conduct the demolition, and remove waste material to ERDF.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

None.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

The 276-BA Organic Storage Area ISO East tank formerly stored organic mixed waste solvent resulting from the B Plant strontium recovery process. Wastes were removed from the tank and disposed offsite in 1997. Less than two gallons of liquid organic mixed waste remain in the tank and will be stabilized with absorbent prior to tank removal. There have been no reported leaks or spills at the site. Because the tank will be removed intact under the proposed action, no releases to the environment from past or present use/management are anticipated.

1) Describe any known or possible contamination at the site from present or past uses.

There is no known contamination at the site from present or past uses (see answer to 7.a above).

There have been no documented spills or leaks from this tank.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

Not applicable. No ancillary piping, machinery, or utilities are associated with the 276-BA Organic Storage Area.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Not applicable.

4) Describe special emergency services that might be required.

Not applicable.

5) Proposed measures to reduce or control environmental health hazards, if any:

Any fugitive dust from tank removal and excavation will be managed in accordance with requirements for environmental protection and worker protection.

All personnel are trained to follow proper procedure during demolition, excavation, and fill activities in order to reduce any hazards to as low as reasonably achievable.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Construction from the hours of 0700 to 1700.

3) Proposed measures to reduce or control noise impacts, if any:

None.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The site is currently not in use. This demolition project will not interfere with normal operations within the surrounding Hanford Facility, which is a single RCRA facility identified by the U.S. Environmental Protection Agency (EPA)/State Identification Number WA7890008967 that consists of over 70 TSD units conducting dangerous waste management activities. These TSD units are included in the Washington State Department of Ecology Dangerous Waste Permit Application Part A Form.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No portion of the 200 Areas has been used for agricultural purposes since 1943.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

Not applicable.

c. Describe any structures on the site.

See responses to A.11 and A.12.

d. Will any structures be demolished? If so, what?

The 276-BA Organic Storage Area secondary containment will be demolished.

e. What is the current zoning classification of the site?

Not applicable.

f. What is the current comprehensive plan designation of the site?

The "*Record of Decision: Hanford Comprehensive Land-Use Plan Environmental Impact Statement* (HCP EIS)" (64 FR 61615) states that the Central Plateau (200 Area) geographic area is designated Industrial-Exclusive.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

No.

i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Not applicable.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Not applicable (refer to Section B.8.f).

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

Not applicable.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Not applicable.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low income housing.

Not applicable.

c. Proposed measures to reduce or control housing impacts, if any:

Not applicable.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Not applicable; no new structures are being proposed.

b. What views in the immediate vicinity would be altered or obstructed?

None.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Not applicable.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None. All activities will occur in daylight.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

Not applicable.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

None.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Not applicable.

13. Historic and cultural preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

The 276-BA Organic Storage Area was constructed in 1996 and is not eligible for listing. The proposed action would not impact other buildings or structures near the site.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No. In 1990, a Cultural Resources Review was conducted for Hanford Site operations and cleanup activities within the 200 East and 200 West Areas. The Archaeological Survey of the 200 East and 200 West Areas, Hanford Site, Washington (HCRC#88-200-038) considered potential impacts from Hanford operations within the 200 Areas (Chatters, J.C., and N.A. Cadoret. 1990. *Archeological Survey of the 200-East and 200-West Areas*, Hanford Site, Washington. PNL-7264, Pacific Northwest Laboratory, Richland, Washington). The finding reached is that no historic properties would be impacted as a result of on-going operations and cleanup within the 200 East Area, and that no additional Section 106 reviews are necessary to maintain this finding (Chatters and Cadoret 1990). Because Section 106 requirements have been previously met, no additional review of the project is required.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

DOE/RL-96-77, *Programmatic Agreement Among the US. Department of Energy, Richland Operations Office, the Advisory Council on Historic Preservation, and the Washington State Historic Preservation Office for the Maintenance, Deactivation, Alteration, and Demolition of the Built Environment on the Hanford Site*, Washington (PA) addresses the built environment constructed during the Manhattan Project and Cold War Era periods of Hanford's operational history, encompassing the years 1943 through 1990. The PA directed that a Sitewide Treatment Plan be developed to identify, inventory, and evaluate all undertakings which may affect historic buildings and structures on the Hanford Site, and identifies those that require mitigation measures to preserve historic, architectural, and technological values. The Department of Energy, in consult with the Advisory Council on Historic Preservation and the State Historic Preservation Office (SHPO), developed DOE/RL-97-56, *Hanford Site Manhattan Project and Cold War Era Historic District Treatment Plan* (Sitewide Treatment Plan) to preserve the history of the site. The Sitewide Treatment Plan lists representative buildings and structures that require mitigation (identification, removal, preservation of historically significant artifacts). The 276-BA Organic Storage Area is not included in the Sitewide Treatment Plan as a candidate for mitigation. The PA stipulates, in Section IV.F.; "For those properties for which no mitigation is required under the Sitewide Treatment Plan, RL and SHPO agree that no further communication or notification is necessary."

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Prior to initiation of this project, all project staff will be trained, and the following language will be included in the project work package:

"If any cultural materials, including but not limited to stone tools, flakes, bones, shells, bottles, subsurface foundations, are discovered during the demolition of the 276-BA Organic Storage Area, work in the vicinity of the discovery shall cease until a cultural resource professional (e.g., archaeologist, historian), has been notified about the discovery, has assessed the significance of the find, and, if necessary, has arranged for the mitigation of the find."

Any required mitigation will take place in accordance with the Sitewide Treatment Plan and stipulation IV.D of the Programmatic Agreement identified in 13.c, above.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

None.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

The Hanford Site is not served by public transit. The nearest transit stop is located in the city of Richland, approximately 40 km (25 mi) from the project area.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

Not applicable.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

This completed project will generate no increase to current vehicular traffic.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

h. Proposed measures to reduce or control transportation impacts, if any:

Not applicable.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Not applicable.

16. Utilities

a. Circle utilities currently available at the site:

The 276-BA Organic Storage Area is not serviced by any utilities. However, electricity is currently available at the B Plant Complex.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Portable generators will transported to the project area to supply any power requirements during the demolition of 276-BA, and will be removed upon project completion.

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Stacy Charbonea

Name of signee Stacy Charbonea u

Position and Agency/Organization Manager, DOE RL

Date Submitted: 5/4/16