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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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March 11, 2019

19-NWP-035

Mr. Brian T. Vance, Acting Manager
Richland Operations Office
United States Department of Energy
PO Box 550, MSIN: H5-20
Richland, Washington 99352

Ty Blackford, President and CEO
CH2M HILL Plateau Remediation Company
PO BOX 1600, MSIN: A7-01
Richland, Washington 99352

Re: Proposed Class 3 Permit Modification 8C.2018.8D of the *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, Part V, Closure Unit Group 32, 276-BA Organic Storage Area, WA7890008967*

Reference: See page 3

Dear Brian T. Vance and Ty Blackford:

This letter transmits the Department of Ecology's (Ecology) proposed permit modification 8C.2018.8D to the Part V, Closure Unit Group 32, 276-BA Organic Storage Area of the *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C (Permit), for the Treatment, Storage, and Disposal of Dangerous Waste*.

The Permittees are the United States Department of Energy – Richland Operations Office (USDOE-RL) as owner/operator, and CH2M HILL Plateau Remediation Company as co-operator.

Ecology conducted the completeness determination as the first step in evaluating the Class 3 permit modification submittal. The purpose of this step according to Washington Administrative Code (WAC) 173-303-840(1)(b) is to ensure that all major components of the submittal have been addressed sufficiently to allow for a technical evaluation. If the permit modification is found complete, a review for technical adequacy follows. If the modification is found incomplete, Ecology issues a Letter of Incompleteness.

Ecology issued a Letter of Incompleteness and Notice of Deficiency (Reference 1) to USDOE-RL on August 11, 2016, regarding the permit modification request (Reference 2). During our initial review, Ecology found areas in the proposed 276-BA Organic Storage Area permit modification where information was either missing or lacked critical elements. Ecology worked with USDOE-RL and its contractors to resolve deficiencies documented as part of Ecology's technical reviews. The revised permit modification for the 276-BA Organic Storage Area was received by Ecology on September 4, 2018 (Reference 3).



Ecology completed a completeness determination and a technical review of the revised permit modification. Ecology has determined that the certified permit modification (Reference 3) is complete in accordance with WAC 173-303-830(4)(c)(vi) and WAC 173-303-840(1)(b).

The Permittee's public comment period began April 25, 2016, through August 6, 2016, and a public meeting was held on May 17, 2016, at the Richland Public Library. Two members of the public submitted comments during the Permittee's public comment period. Ecology's *Response to Comments* document (Ecology Publication 19-05-004) from this public comment period is enclosed. The Response to Comments document is also available on Ecology's website at:
<https://fortress.wa.gov/ecy/publications/SummaryPages/1905004.html>.

The proposed Class 3 Permit Modification will add the 276-BA Organic Storage Area to the Permit, located in Part V, Closure Unit Group 32. The 276-BA Organic Storage Area was previously identified as Closure Unit Group 24. The 276-BA Organic Storage Area Closure Plan describes clean closure activities that will be completed within 180 days of the start date. Clean closure will eliminate the need for future post-closure inspections, monitoring, and maintenance.

Ecology will hold a second public comment period from March 11, 2019, through April 26, 2019. This comment period initiates the second part of the Class 3 Modification. WAC 173-303-840(3)(d) requires at least a 45-day public comment period for a draft permit modification. A public hearing is not scheduled, but Ecology will consider holding one if there is enough interest.

Before making any final permitting decisions, Ecology will consider all comments received during the public comment period for the draft permit modification.

The proposed draft permit modification is on the enclosed DVD and is also available on Ecology's website at: <https://ecology.wa.gov/Waste-Toxics/Nuclear-waste/Public-comment-periods>.

Copies of the DVD are also available at the Hanford Public Information Repositories in Richland, Spokane, and Seattle, Washington, as well as Portland, Oregon.

A hard copy and DVD is also on file at the locations listed below:

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

United States Department of Energy
Administrative Record
2440 Stevens Center Place
Richland, Washington 99354

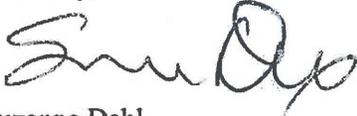
Individuals can request copies of the DVD by contacting Ecology's Resource Center at (509) 372-7950.

Brian T. Vance and Ty Blackford
March 11, 2019
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If there are any questions regarding this permit modification, please contact Brigitte Weese, Permit Lead, at brigitte.weese@ecy.wa.gov or (509) 372-7936 or Stephanie Schleif, Facility Transition Project Manager at stephanie.schleif@ecy.wa.gov or (509) 372-7929.

Sincerely,



Suzanne Dahl
Dangerous Waste Permit Manager
Nuclear Waste Program

bw/am
Enclosure

cc: See page 4

Reference:

1. Letter 16-NWP-137, dated August 11, 2016, "Letter of Incompleteness and Notice of Deficiency (NOD) for Class 3 Permit Modification Request, Closure Plan for 276-BA Organic Storage Tank, received June 7, 2016"
2. Letter 16-ESQ-0066 Reissue, dated May 4, 2016, "Reissue- Submittal of Permit Modification Request and Closure Plan for 276-BA Organic Storage Tank"
3. Letter 18-AMRP-0155, dated August 30, 2018, "Response to the Notice of Deficiency (NOD) and the Updated Closure Plan for 276-BA Organic Storage Area in Support of the Hanford Facility Dangerous Waste Class 3 Permit Modification Request Submitted May 4, 2016"

cc electronic w/o enc:

Dave B. Bartus, EPA
David R. Einan, EPA
Mary Beth Burandt, USDOE
Duane Carter, USDOE
Al Farabee, USDOE
Joe Franco, USDOE
Rob Hastings, USDOE
Lori Huffman, USDOE
Mostafa Kamal, USDOE
Christopher Kemp, USDOE
Tony McKarns, USDOE
Donna Yasek, BNI
Laura J. Cusack, CHPRC
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Mandy Jones, Ecology
Stephanie N. Schleif, Ecology
Alex Smith, Ecology
Brigitte Weese, Ecology

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Donald Redman, USACE
Trevor Fox, USFW
Mike Livingston, WDFW
John Martell, WDOH
John Wiesman, WDOH
Sonia Soelter, WSDA
Allyson Brooks, WSDAHP

Cindy Preston, WSDNR
BNI Correspondence Control
CHPRC Correspondence Control
Environmental Portal
Gonzaga University, Foley Center Library
Hanford Facility Operating Record
MSA Correspondence Control
PNNL Correspondence Control
Portland State University Library,
Government Information
University of Washington Suzzallo Library,
Government Publications
USDOE-ORP Correspondence Control
USDOE Public Reading Room, CIC
USDOE-RL Correspondence Control
USEPA Region 10 Hanford Field Office
Correspondence Control
WRPS Correspondence Control

cc w/enc, DVD and hard copy:

Hanford Administrative Record: Hanford Site-wide Permit
NWP Central File

cc w/enc, hard copy:

NWP Library: Hanford Site-wide Permit

276-BA Organic Storage Area Permit Modification



Public comment period

March 11 – April 26, 2019

Please submit comments

Electronically (preferred) via:

<http://wt.ecology.commentinput.com/?id=YPUpu>

By U.S. Mail, or hand-delivery:

Daina McFadden
3100 Port of Benton Blvd
Richland WA 99354

Public hearing

A public hearing is not scheduled, but if there is enough interest, we will consider holding one. To request a hearing or for more information, contact:

Daina McFadden
509-372-7950
Hanford@ecy.wa.gov

Special accommodations

To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 509-372-7950 or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

Public comment invited

The Washington State Department of Ecology (Ecology) is proposing a change to the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit, Revision 8c (Permit). This change incorporates into the Permit, the Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste for the 276-BA Organic Storage Area. The 276-BA Organic Storage Area is located in the northeast portion of the B Plant Complex in the 200 East Area of the Hanford Site. The proposed modification to the Permit will be located in Part V, Closure Unit Group 32.

The permittees are:

U.S. Department of Energy Richland Operations (USDOE)
P.O. Box 550
Richland, Washington 99352

CH2M Hill Plateau Remediation Company
P.O. Box 1600
Richland, Washington 99354

Ecology invites you to review and comment on this proposed permit modification. The comment period begins March 11, 2019, and ends April 26, 2019.

The class 3 permit modification will include the following:

- Permit Conditions
- Addendum H, Closure Plan which proposes clean closure activities that will be completed within 180 days of the start date. The diagram on page 3 provides a schematic of the ISO-East Container. USDOE initiated a Class 3 permit modification to add the 276-BA Organic Storage Area to the Permit on May 4, 2016. The 60 day public comment period as required by Washington Administrative Code (WAC) 173-303-830(4)(c) began on April 25, 2016, and ended on August 6, 2016.

Ecology issued a Letter of Incompleteness and Notice of Deficiency for the Class 3 Permit Modification Request on August 11, 2016. We resolved the deficiencies with the permittees and the permit modification was determined to be complete. Ecology responded to one public comment submitted during that comment period. Changes to the closure plan include the following:

- The 276-BA container was previously classified as a tank in the B Plant Complex Part A Form concerning the B Plant Organic Mixed Waste Storage System. Upon further review, USDOE determined that 276-BA ISO East should be classified as a container because it meets the RCRA definition of a container in WAC-173-303-040. 276-BA ISO East will be closed under the container standards in WAC 173-303-630(10).
- In addition, the components of the United States Environmental Protection Agency 7 Step Data Quality Objectives were evaluated and identified in the Closure Plan for 276-BA Organic Storage Area.

Background

The 276-BA Organic Storage Area is located in a secure fenced area in the northeast portion of the B Plant Complex in the 200 East Area of the Hanford Site.



Historically, the 276-BA Organic Storage Area was part of the Organic Mixed Waste Storage System, which was used for chemical processing and to store organic chemicals used in the recovery and purification of strontium.

The 276-BA Organic Storage Area consists of a single storage container (ISO East) and secondary containment structure. The secondary containment structure has two separate compartments. The west compartment is empty and was never used for dangerous waste storage or treatment.

The east compartment contains the ISO East Container. This container, which received waste directly from the B Plant Complex, was placed in the 276-BA Organic Storage Area secondary containment structure, sealed and intact. The stored wastes were then removed from the ISO East container to a tanker truck for offsite disposal in 1997. Any potential releases from the ISO East container would likely be found in the location of the sump or trench within the ISO East portion of the secondary containment structure. These areas have been identified for soil sampling to demonstrate clean closure.

The ISO-East container currently contains less than two gallons of washed organic residues consisting of normal paraffin hydrocarbons (NPH), di-(2-ethylhexyl) phosphoric acid (D2EHPA), tributyl phosphate (TBP), and small amounts of strontium-89/90 and cesium-137.

Why cleanup matters

Ecology would like your comments on the proposed draft language that describes clean closure in the closure plan. Clean closure will eliminate the need for future post-closure inspections, monitoring, and maintenance, and will include the following:

- Adding absorbent to stabilize the remaining liquid waste in the container (if found).
- Removing the container, intact, and transporting it to the Environmental Restoration Disposal Facility (ERDF).
- Flood grouting the interior of the container at ERDF prior to final disposal.
- Demolishing, containerizing, and disposing of the secondary containment structure at ERDF.
- Excavating soil beneath the structure up to 3 feet, containerizing, and disposing at ERDF.
- Focused sampling of the site is proposed due to the relatively small size of the secondary containment structure.
- Sampling will be at locations where concrete joints, the trench, and the sump are located.



Figure 2 - 276-BA Organic Storage Area including the ISO-East container

View the full proposal

Ecology invites to you to review and comment on this proposed permit modification. This Focus Sheet is a summary of the proposed changes. See [page 1](#) for comment period dates and information on how to submit comments. Copies of the proposed modification are available at the Administrative Record and Information Repositories listed on [page 4](#). In addition, the proposed modification is online at <https://ecology.wa.gov/Waste-Toxics/Nuclear-waste/Public-comment-periods>.

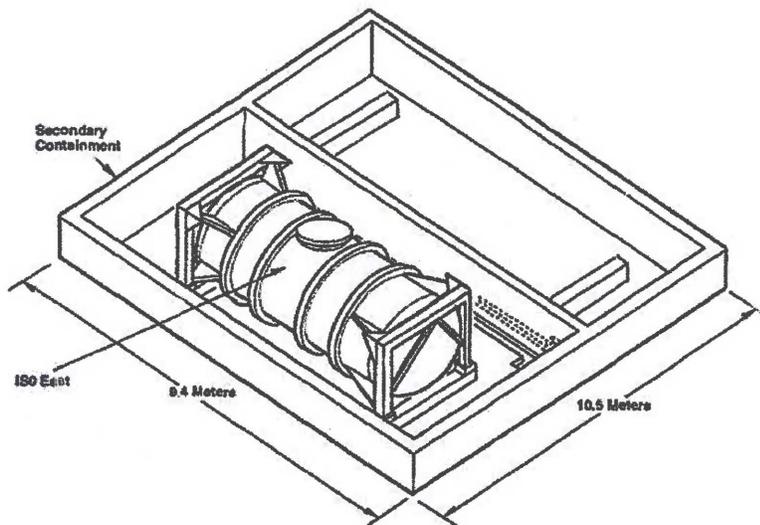


Figure 3 - A schematic of the ISO-East Container

Ecology will consider and respond to all comments received during the public comment period. We will make the final permitting decision after the close of the comment period. We will publish a Response to Comments document with the issuance of the final permit.



DEPARTMENT OF
ECOLOGY
State of Washington

Nuclear Waste Program
3100 Port of Benton Blvd
Richland, WA 99354

Hanford's Information Repositories and Document Review Locations

Washington

Richland

Ecology Nuclear Waste Program
Resource Center
3100 Port of Benton Blvd.
Richland, WA 99354
509-372-7950

U.S. Department of Energy
Administrative Record
2440 Stevens Drive, Room 1101
Richland, WA 99354
509-376-2530

Washington State University Tri-Cities
Department of Energy Reading Room
2770 Crimson Way, Room 101L
Richland, WA 99354
509-375-7443

Seattle

University of Washington Suzzallo Library
P.O. Box 352900
Seattle, WA 98195
206-543-5597

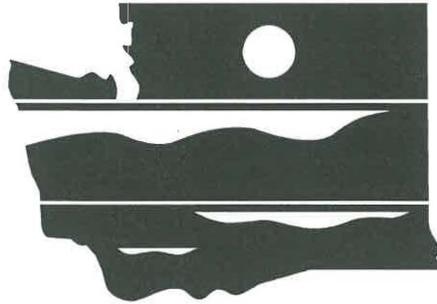
Spokane

Gonzaga University
Foley Center
502 E Boone Avenue
Spokane, WA 99258
509-313-6110

Oregon

Portland

Portland State University
Millar Library
1875 SW Park Avenue
Portland, OR 97207
503-725-4542



DEPARTMENT OF
ECOLOGY
State of Washington

FACT SHEET

Proposed Permit Modification to Part V of the *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, WA7890008967, to add Closure Unit Group 32, 276-BA Organic Storage Area*

March 2019

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FACT SHEET

Proposed Permit Modification to Part V of the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, WA7890008967, to add Closure Unit Group 32, 276-BA Organic Storage Area

PERMITTEES

The permit is to be issued to Hanford's owner and co-operators. The U.S. Department of Energy (USDOE), as the owner and operator of the facility, is a permittee (USDOE is a single Permittee, although we list below both of its Richland offices). As co-operators, Hanford contractors are also permittees.

United States Department of Energy
Richland Operations Office
(Owner/Operator)
P.O. Box 550, MSIN A7-50
Richland, Washington 99352

CH2M HILL Plateau Remediation Company
(Co-Operator)
P.O. Box 1600, MSIN: H7-30
Richland, Washington 99352

Mission Support Alliance, LLC
(Co-Operator)
2490 Garlick, MSIN H1-30
Richland, Washington 99354

Bechtel National, Inc.
(Co-Operator)
2435 Stevens Center Place, MSIN: H4-02
Richland, Washington 99354

United States Department of Energy
Office of River Protection
(Owner/Operator)
P.O. Box 450, MSIN H6-60
Richland, Washington 99352

Washington River Protection Solutions, LLC
(Co-Operator)
P.O. Box 1500, MSIN: H6-63
Richland, Washington 99352

Pacific Northwest National Laboratory
(Co-Operator)
P.O. Box 999, MSIN: K1-46
Richland, Washington 99352

The Washington State Department of Ecology (Ecology) is proposing a draft permit modification to Part V of the *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste* (hereafter called the Hanford Site-wide Permit).

This proposed draft permit modification will add Closure Unit Group 32, 276-BA Organic Storage Area to Part V of the Hanford Site-wide Permit.

Ecology developed this Fact Sheet to fulfill the requirements of Washington Administrative Code (WAC) 173-303-840(2)(f).

This Fact Sheet is divided into six sections:

- 1.0 Hanford Site-Wide Permit Background
- 2.0 276-BA Organic Storage Area Dangerous Waste Management Unit Description
- 3.0 Class 3 Permit Modification Process for 276-BA Organic Storage Area
- 4.0 Proposed Modification to Part V of the Hanford Site-wide Permit
- 5.0 Procedures for Reaching a Final Decision on the Draft Permit Modification
- 6.0 State Environmental Policy Act

1.0 Hanford Site-wide Permit Background

Ecology's Nuclear Waste Program (NWP) manages dangerous waste within the State by writing permits to regulate its treatment, storage, and disposal.

Ecology has the authority to regulate dangerous waste and the dangerous waste components of mixed (radioactive and dangerous) waste, under 70.105 RCW and WAC 173-303. The Hanford Site-wide Permit has requirements for the treatment, storage, and disposal of dangerous and mixed waste at Hanford. Ecology does not regulate waste that is solely radioactive. USDOE has the exclusive authority to regulate radioactive materials and radioactive waste at Hanford.

Ecology first issued the Hanford Site-wide Permit in 1994. The facility has been operating under that initial permit since then. Since 1994, the permit has been modified many times to incorporate changes or updates and to incorporate and closeout several Dangerous Waste Management Units (DWMUs).

The Hanford Site-wide Permit provides standard and general facility conditions, as well as unit group conditions for the operation, closure, and post-closure care of DWMUs at Hanford. These DWMUs are administratively grouped into operating, closure, or post-closure unit groups in the Site-wide Permit. Each unit group may contain one or more DWMU.

The Hanford Site-wide Permit is organized as follows:

- Part I Standard Conditions.
- Part II General Facility Conditions.
- Part III Operating Units.
- Part IV Corrective Action for Past Practice Units.
- Part V Closure Units.
- Part VI Post-Closure Units.

In 2012, the NWP issued a permit renewal as Revision 9 of the Hanford Site-wide Permit with 37 unit groups and two Corrective Action units. The DWMUs within the unit groups are operating, in closure, or in post-closure. At this time, the NWP is reconciling over 5,000 public, U.S. Environmental Protection Agency, and permittee comments received on that Revision 9 draft renewal. Until a new revision of the Hanford Site-wide Permit is issued for public comment, the legal and enforceable revision of the Hanford Site-wide Permit is Revision 8C.

2.0 276-BA Organic Storage Area Dangerous Waste Management Unit Description

The 276-BA Organic Storage Area DWMU is located in the northeast portion of the B Plant Complex in the 200 East Area of Hanford. The 276-BA Organic Storage Area was part of the B Plant Organic Mixed Waste Storage System which also included vessel systems and process cells. 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). On September 28, 1998, the B Plant Complex was decommissioned and put into surveillance and maintenance.



Figure 1. 276-BA Organic Storage Area including the ISO-East container

The 276-BA Organic Storage Area consists of a single storage container (ISO East) and a coated concrete secondary containment structure. The secondary containment structure has two separate compartments. The west compartment contained the ISO West Vessel. The ISO West vessel was placed as an emergency receiving vessel in the 276-BA Organic Storage Area but was never used. The ISO West vessel was administratively closed and removed from the site in 1998.

The ISO East container and secondary containment temporarily stored organic waste from the B Plant Organic Mixed Waste Storage System during B Plant facility deactivation. In March 1997, the organic mixed waste was pumped via a temporary transfer line from the B Plant Organic Mixed Waste Storage System to the ISO East container, which was staged on a flatbed hauler. Approximately 10,900 liter of organic mixed waste was transferred to the ISO East container, and the container was then moved to the secondary containment at the 276-BA Organic Storage Area. Organic mixed waste stored in the ISO East container was removed in November 1997 and transported offsite for disposal.

A residual heel of less than 7.6 liter of organic mixed waste remains in the ISO East container. 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. 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. As a result, the organic solvent stored by the ISO East container was managed as mixed waste and designated with the listed dangerous waste codes F001 through F005 (spent solvents), D004 through D011 (metals characteristic), and D002 (corrosive characteristic).

The 276-BA ISO East container was previously classified as a tank in the B Plant Complex Part A Form concerning the B Plant Organic Mixed Waste Storage System. Upon further review, the U.S. Department of Energy (USDOE) determined that 276-BA ISO East should be classified as a container because it meets the Resource Conservation and Recovery Act definition of a container in WAC 173-303-040. This classification error that will be corrected with a revised B Plant Complex Part A, and the 276-BA Organic Storage Area will be closed under the container standards in WAC 173-303-630(10).

Each storage vessel was a cylindrically shaped, 3 meter diameter, 6.1 meter long transport vessel with a capacity of 17,500 liters. There was no specific ancillary equipment associated with either vessel. Except for the degradation of the secondary containment concrete coating, no other structural deterioration has been identified.



Figure 2. Aerial Photograph of B Plant Complex with 276-BA Organic Storage Area

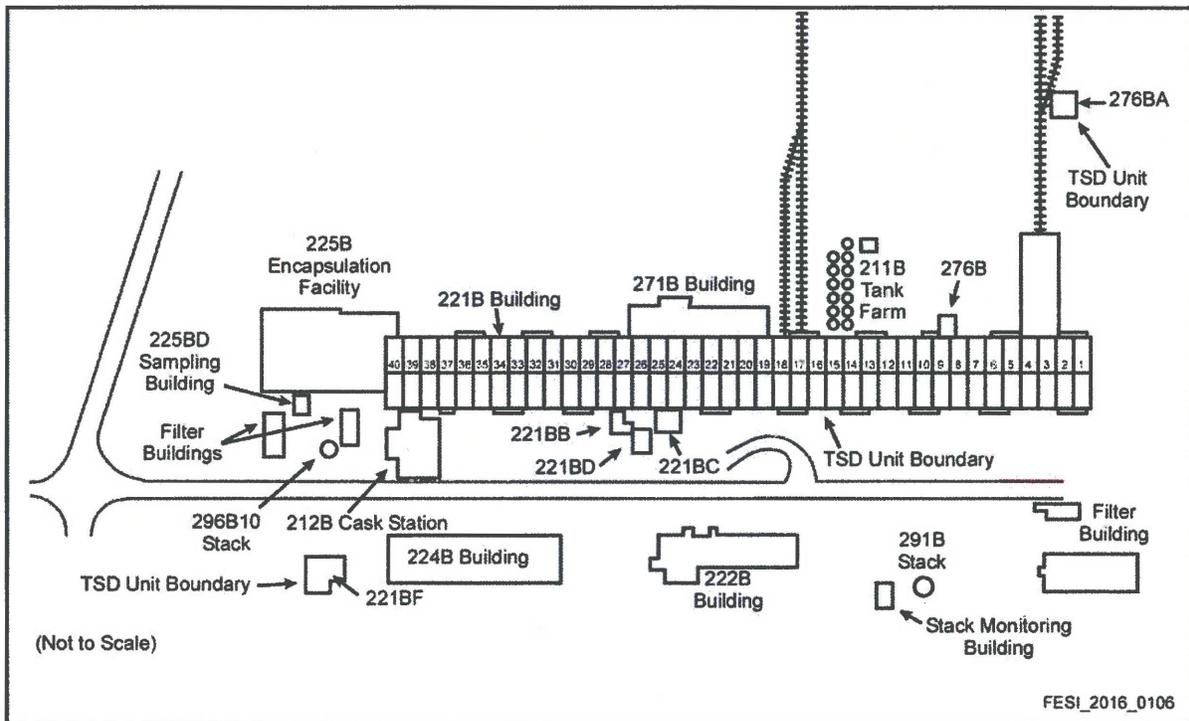


Figure 3. Schematic of B Plant Complex with 276-BA Organic Storage Area

3.0 Class 3 Permit Modification Process for the 276-BA Organic Storage Area

The permittees formally submitted a Class 3 permit modification to add the 276-BA Organic Storage Area to the Hanford Site-wide Permit on May 4, 2016. The 60-day public comment period as required by WAC 173-303-830(4)(c) began on April 25, 2016, and ended on August 6, 2016. The permittees also held a public meeting on May 17, 2016, at the Richland Public Library. Ecology responded to two public comments submitted during that comment period.

Ecology issued a Letter of Incompleteness and Notice of Deficiency for the Class 3 Permit Modification Request on August 11, 2016 in accordance with WAC 173-303-830(4)(c)(vi) and WAC 173-303-840(1)(b). After Ecology worked with the permittees to resolve the deficiencies through a comment and response process, USDOE Richland Operations Office submitted the revised permit modification that addressed the deficiencies on August 30, 2018. Ecology has issued a completeness determination on March 11, 2019 with this draft modification. The draft permit modification to Rev. 8C of the Hanford Site-wide Permit is 8C.2018.8D and is available for public review in locations listed in Section 5.0.

Ecology addressed public comments received during the permittees' comment period in a response to comment document. This response to comment document accompanies the draft permit modification, and is available online at <https://ecology.wa.gov/Waste-Toxics/Nuclear-waste/Public-comment-periods>.

4.0 Proposed Modification to Part V of the Hanford Site-wide Permit

The proposed draft permit modification 8C.2018.8D adds Closure Unit Group 32, 276-BA Organic Storage Area to Part V of the Hanford Site-wide Permit. This draft modification is the second portion of the Class 3 modification.

The draft permit modification consists of unit group specific permit conditions and the Closure Plan for the closure of the 276-BA Organic Storage Area. Addendum H, Closure Plan proposes clean closure activities that will be completed within 180 days of the start date. Clean closure will eliminate the need for future post-closure inspections, monitoring, and maintenance.

The following is a summary of proposed additions to Part V of the Hanford Site-wide Permit:

- **Addendum H, Closure Plan:** The closure plan proposes clean closure activities for the 276-BA Storage Area. A summary of closure activities include the following:
 1. Adding absorbent to stabilize the remaining liquid waste in the container (if found)
 2. Removing the container, intact, and transporting it to the Environmental Restoration Disposal Facility (ERDF)
 3. Flood grouting the interior of the container at ERDF prior to final disposal
 4. Demolishing, containerizing, and disposing of the secondary containment structure at ERDF
 5. Excavating soil beneath the structure up to 3 feet, containerizing, and disposing at ERDF
 6. Focused sampling of the site is proposed due to the relatively small size of the secondary containment structure
 7. Sampling will be at locations where concrete joints, the trench, and the sump are located

The proposed permit modification describes the steps that USDOE will take to perform clean closure of the 276-BA Organic Storage Area.

The unit group permit conditions and Addenda H Closure Plan in Part V, Closure Unit Group 32 are intended to comply with dangerous waste regulations to protect human health and the environment by ensuring the 276-BA Organic Storage Area is closed in accordance with WAC 173-303-610. During the first public comment period, Ecology reviewed the proposed Class 3 permit modification for the 276-BA Organic Storage Area and drafted unit specific permit conditions to ensure that the permittees comply

with environmental standards and close the 276-BA Organic Storage Area in accordance with Addendum H, Closure Plan.

Ecology proposes to incorporate the following permit conditions into Closure Unit Group 32, 276-BA Organic Storage Area. These conditions are to make the new addition of the 276-BA Organic Storage Area Closure Plan enforceable under the Hanford Site-Wide permit.

1. Permit Condition V.32.A requires the permittees to comply with all requirements set forth in the Hanford Site-wide Permit as specified in Permit Attachment 9, Permit Applicability Matrix, including all approved modifications. All addenda, subsections, figures, tables, and appendices included in the unit-group permit conditions are enforceable in their entirety. In the event that the Part V, Unit-Group Conditions for Closure Unit Group 32, the 276-BA Organic Storage Area conflict with the Part I-Standard Conditions and Part II-General Facility Conditions of the Permit, the unit-group conditions will prevail for Closure Unit Group 32, 276-BA Organic Storage Area.
2. Permit Condition V.32.B.2 requires the permittees to comply with all of the requirements set forth in the Addendum H, Closure Plan. This permit condition will require that the 276-BA Storage Area will be closed in accordance with the Addendum H, Closure Plan. [WAC 173-303-610(3)(a)]

5.0 Procedures for Reaching a Final Decision on the Draft Permit Modification

The Washington State Dangerous Waste Regulations in WAC 173-303-830 describe the types of changes or modifications that may be made to a Dangerous Waste Permit issued by Ecology.

Parts I and II Conditions and the Attachment 9 Permit Applicability Matrix will be modified after the public comment period to incorporate elements of Closure Unit Group 32, when the permit modification becomes effective.

This draft permit modification was prepared according to the procedures in WAC 173-303-840(2). As required by WAC 173-303-840(3)(d), draft permits issued by Ecology will have at least a 45-day public comment period. The public comment period for this draft permit will be March 11 through April 26, 2019.

Comments must be post-marked, received by e-mail, or hand-delivered no later than close of business (5:00 p.m. PST) April 26, 2019.

Direct all written comments to:

Stephanie Schleif
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354
E-mail address: hanford@ecy.wa.gov

In accordance with WAC 173-303-840(10)(c), when a permit is modified, only those conditions to be modified will be reopened when a new draft permit is prepared. All other aspects of the existing Permit remain in effect for the duration of the modification.

Ecology will consider and respond to all written comments on this draft permit modification that are submitted by the April 26th deadline. Ecology will then issue a final permit modification that will become effective 30 days after the issuance date. If the final decision includes substantial changes to the draft permit modification because of public comment, we will consider initiating a new public comment period.

A public hearing is not scheduled, but if there is enough interest, we will consider holding one.

To request a hearing or for more information contact:

Daina McFadden
Washington State Department of Ecology
(509) 372-7950
E-mail address: hanford@ecy.wa.gov

After completion of the 45-day public comment period, Ecology will issue the final Hanford Site-wide Permit with Part V, Closure Unit Group 32, 276-BA Organic Storage Area to the permittees. NWP will also issue a Response to Comments document to the permittees and the public. The final permit decision may be appealed within 30 days after issuance of that decision. If there is no appeal, the permit will stand as issued.

Copies of the following documents for Part V, Closure Unit Group 32, 276-BA Organic Storage Area are available for review at the Hanford Public Information Repositories locations listed below:

- Unit Group Specific Conditions
- Addendum H, Closure Plan

For additional information call (509) 372-7950 or e-mail hanford@ecy.wa.gov.

Hanford Public Information Repositories

Richland, Washington

Ecology Nuclear Waste Program Resource
Center
3100 Port of Benton Blvd. Richland, WA 99354
509-372-7950
U.S. Department of Energy Administrative
Record
2440 Stevens Drive, Room 1101 Richland, WA
99354
509-376-2530

Washington State University Tri-Cities
Department of Energy Reading Room
2770 Crimson Way, Room 101L Richland, WA
99354
509-375-7443

Other Locations:

Portland

Portland State University
Branford Price Millar Library
1875 Southwest Park Avenue
Portland, Oregon 97201
(503) 725-4542

Spokane

Gonzaga University
Foley Center
502 East Boone Avenue
Spokane, Washington 99258
(509) 313-6110

Seattle

University of Washington Suzzallo Library
P.O. Box 352900
4000 15th Avenue Northeast
Seattle, Washington 98195
(206) 543-5597

Information on the proposed permit modification is also available online at <http://www.ecy.wa.gov/programs/nwp/commentperiods.htm>. If special accommodations are needed for public comment, contact Ecology's Nuclear Waste Program at (509)372-7950.

6.0 State Environmental Policy Act

Ecology made a State Environmental Policy Act (SEPA) Determination of Non-Significance on November 7, 1994. The DNS was based on a SEPA environmental checklist prepared by the US Department of Energy.

The 1994 DNS and SEPA environmental checklist is available online at:
<http://www.ecy.wa.gov/programs/nwp/commentperiods.htm>.



DEPARTMENT OF
ECOLOGY
State of Washington

Response to Comments
276-BA Organic Storage Area
April 25, 2016 to August 6, 2016

*Summary of a public comment period and responses
to comments*

March 2019

Publication no. 19-05-004

Publication and Contact Information

This publication is available on the Department of Ecology's (Ecology) website at <https://fortress.wa.gov/ecy/publications/SummaryPages/1905004.html>

For more information contact:

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Email: Hanford@ecy.wa.gov

Washington State Department of Ecology – www.ecology.wa.gov

- Headquarters, Lacey 360-407-6000
- Northwest Regional Office, Bellevue 425-649-7000
- Southwest Regional Office, Lacey 360-407-6300
- Central Regional Office, Yakima 509-575-2490
- Eastern Regional Office, Spokane 509-329-3400

Ecology publishes this document to meet the requirements of [Washington Administrative Code 173-303-840 \(9\)](#).

To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 509-372-7950 or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

Response to Comments

276-BA Organic Storage Area
April 25, 2016 to August 6, 2016

Nuclear Waste Program
Washington State Department of Ecology
Richland, Washington

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Introduction

The Washington State Department of Ecology's Nuclear Waste Program (Ecology) manages dangerous waste within the state by writing permits to regulate its treatment, storage, and disposal. When a new permit or a significant modification to an existing permit is proposed, Ecology holds a public comment period to allow the public to review the change and provide formal feedback. (See [Washington Administrative Code \[WAC\] 173-303-830](#) for types of permit changes.)

The Response to Comments is the last step before issuing the final permit, and its purpose is to:

- Specify which provisions, if any, of a permit will become effective upon issuance of the final permit, providing reasons for those changes.
- Describe and document public involvement actions.
- List and respond to all significant comments received during the public comment period and any related public hearings.

This Response to Comments is prepared for:

Comment period: 276-BA Organic Storage Area, April 25, 2016 through August 6, 2016

Permit: *Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit for the Treatment, Storage, and Disposal of Dangerous Waste, Part V, Closure Unit Group 32 (WA7890008967), 276-BA Organic Storage Area*

Permittee(s): U.S. Department of Energy Richland Operations
CH2M Hill Plateau Remediation Company

To see more information related to the Hanford Site and nuclear waste in Washington, please visit our website: <https://www.ecology.wa.gov/Hanford>.

Reasons for modifying the permit

The Washington State Department of Ecology (Ecology) is proposing a change to the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit, Revision 8c (Permit). This change incorporates into the Permit, the Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste for the 276-BA Organic Storage Area. It is located in the northeast portion of the B Plant Complex in the 200 East Area of the Hanford Site. The proposed modification to the Permit will be located in Part V, Closure Unit Group 32.

The purpose of the proposed permit modification is to describe clean closure activities that will be completed within 180 days of the start date. Clean closure will eliminate the need for future post-closure inspections, monitoring, and maintenance.

The following summary is of the proposed additions to Part V of the Permit.

Permit Conditions: Ecology drafted unit-specific permit conditions to reflect the dangerous waste permit requirements for closure.

Addendum H, Closure Plan: The closure plan proposes clean closure activities for the 276-BA Organic Storage Area. A summary of closure activities include the following:

- Adding absorbent to stabilize the remaining liquid waste in the container (if found).
- Removing the container, intact, and transporting it to the Environmental Restoration Disposal Facility (ERDF).
- Flood grouting the interior of the container at ERDF prior to final disposal.
- Demolishing, containerizing, and disposing of the secondary containment structure at ERDF.
- Excavating soil beneath the structure up to 3 feet, containerizing, and disposing at ERDF.
- Focused sampling of the site is proposed due to the relatively small size of the secondary containment structure.
- Sampling at locations where concrete joints, the trench, and the sump are located.

Public involvement actions

USDOE held a 60-day public comment period on the 276-BA Organic Storage Area Permit Modification held April 25, 2016, through August 6, 2016. Following the comment period held in 2016, significant changes were made to the Closure Plan as part of Ecology's completeness determination and technical review.

The following actions were taken by USDOE to notify the public:

- Mailed a public notice announcing the comment period to 1475 members of the public. Copies of the public notice were distributed to members of the public at Hanford Advisory Board meetings.
- Placed a public announcement legal classified advertisement was placed in the *Tri-City Herald* on April 25, 2016.
- Emailed a notice announcing the start of the comment period to the [Hanford-Info email list](#), which has 1115 recipients.

USDOE held a public meeting on May 17, 2016, at 5:30 pm at the Richland Public Library. No members of the public attended.

The Hanford information repositories located in Richland, Spokane, and Seattle, Washington, and Portland, Oregon, received the following documents for public review:

- Public notice
- Transmittal letter
- Draft 276-BA Organic Storage Area Permit Modification

The following public notices for this comment period are in [Appendix A](#) of this document:

- Public notice (focus sheet)
- Classified advertisement in the *Tri-City Herald*
- Notice sent to the Hanford-Info email list

List of Commenters

The table below lists the names of organizations or individuals who submitted a comment on the 276-BA Organic Storage Area Permit modification. The comments and responses follow.

Commenter	Organization
Russell Jim	Yakama Nation ERWM
Mike Conlan	Citizen

Comments received from the Yakama Nation

General:

- Provide SEPA checklist for public review
Ecology Response: Ecology received a State Environmental Policy Act (SEPA) checklist from USDOE with the initial submittal of the Class 3 Permit Modification for the 276-BA Organic Storage Area on May 4, 2016. A checklist for the B Plant Facility was also submitted to Ecology in January 1994. Both SEPA checklists can be found with the permit modification here: <https://ecology.wa.gov/Waste-Toxics/Nuclear-waste/Public-comment-periods>.
- YN has previously provided our objection to the use of the Comprehensive Land-Use Plan (CLUP) and its provisions. It does not recognize YN Treaty Rights. All assessments and cleanup alternatives should be protective of, and based upon, anticipated Tribal subsistence uses.
Ecology Response: Ecology has reminded the U.S. Department of Energy (DOE) in numerous correspondence and documents that the scope of the CLUP is limited to 'at least the next 50 years' per the National Environmental Policy Act (NEPA) Record of Decision. The closure plan does not provide reference in the body text to the CLUP although it does provide the CLUP as one of the cited references at the end of the closure plan. Ecology did not consider the CLUP to establish the closure performance standard.
- Factsheet should clearly define this is a closure plan for a tank system per WAC 173-303-640.
Ecology Response: The Fact Sheet clearly defines that this is a closure plan for a container in accordance with WAC 173-303-630. The permittees reclassified the dangerous waste management unit from a tank to a container in this permit modification.

Chapter 1:

- Introduction: Lines 2-6 state purpose of closure plan is to describe the closure process for a storage area rather than a tank system. Closure requirements apply to individual dangerous waste management units (i.e. in this case, TIC-ISO East, a tank subject to WAC 173-303-640 regulations) not to the administrative designation of its location (i.e. The 276-BA Organic Storage Area). If it were the closure of a storage area, different regulations would also apply. Please edit this section to reflect purpose is the closure of this tank system located within the area designated as the 276-BA Organic Storage Area. In lines 10-12, please to add to end of sentence the following: and contains compliance requirements necessary for conducting closure enforceable under the RCRA Permit.
Ecology Response: The 276-BA container was previously classified as a tank in the B Plant Complex Part A Form concerning the B Plant Organic Mixed Waste Storage System. Upon further review, DOE determined that 276-BA ISO East should be classified as a container because it meets the Dangerous Waste regulations definition

of a container in WAC 173-303-040. The B Plant Complex Part A will be revised under a future permit modification, and the 276-BA Organic Storage Area will be closed under the container standards in WAC 173-303-630(10).

The introduction section of the Closure Plan was edited to reflect the purpose of closure for the container located within the 276-BA Organic Storage Area. The following sentence was also added: "This closure plan complied with WAC 173-303-610(2) through WAC 173-303-610(6), and represents the baseline for closure and the enforceable compliance requirements for conducting closure". The closure plan explains the clean closure of the 276-BA Organic Storage Area in detail.

- Section 1.2: Please clarify what is meant by "successful completion of the treatment reduced the radionuclide concentrations to allow for transfer of the majority of the organic waste for storage or disposal." Does TK-ISO East contain any high-level waste constituents? Clarify the 1997 disposal location of tank contents.

Ecology Response: Ecology has been provided the process knowledge of the waste left in the container. The waste information is included in Section 1.2, Process Information. This Closure Plan covers clean closure of this container by removal in its current configuration (with the residual heel). Previous operational history is included in the B-Plant Preclosure Work Plan (DOE/RL-98-12) as referenced in this Closure Plan.

- Section 1.3: Clarify that listed waste codes will remain and appropriate treatment standards applied as necessary for disposal.

Ecology Response: Section 1.3 describes the waste inventory and characteristics. The Closure Plan explains the listed waste codes will remain and appropriate treatment standards will be applied as necessary for disposal.

- Section 1.4: Please clarify whether the following are found on site or within the general security information for the 200 Areas: posted signs at any access points stating: No trespassing. Security badges required beyond this point. Authorized vehicles only. Public access prohibited. Danger, unauthorized personnel keep out. Clarify that these signs are written in English, legible from a distance of 7.6 meters, and visible from all angles of approach.

Ecology Response: Section 1.4 of the Closure Plan describes security information for the 276-BA Organic Storage Area. If there is no individual unit group security addenda, then the unit group would need to follow the Parts 1 and 2 conditions and associated attachments to comply WAC requirements.

Chapter 2:

- Edit last sentence to clarify that clean closure is anticipated, therefore groundwater investigation and remediation are not addressed as part of this closure plan.

Ecology Response: Section 2 states that the 276-BA Organic Storage Area will be closed by removal, and is not subject to any groundwater monitoring requirements.

Chapter 3:

- Edit to state standards are for closure of the TK-ISO East tank. Edit to include the following: Should there be changes in MTCA prior to closure, there will be no 'backsliding' to less stringent cleanup levels. YN requests Ecology ensure enough flexibility within the closure permitting process to allow Ecology to retain its authority to set cleanup levels at more stringent levels and request additional characterization/cleanup to achieve these levels.

Ecology Response: 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" (MTCA) regulations (WAC 173-340-700 through WAC 173-340-760, excluding WAC 173-340-745). According to WAC 173-303-610(2)(b)(i), these numeric cleanup levels, including carcinogens, noncarcinogens, groundwater protection, and ecological indicator values, have been calculated as of the effective date of the permit modification.

Table 1 includes the closure performance standards for the target analytes. A discussion about how the target analytes were selected is included in Section 6.1.1. The closure performance standards considered all risk exposure pathways and are the most conservative values. Groundwater protection is the driver for these closure performance standards. Amendments to this closure plan will be submitted as a permit modification in accordance with WAC 173-303-610(3)(b).

- YN requests the following closure performance standards be identified:
 - Direct contact consistent with WAC 173-340-740(3)
 - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4) (with an exception of modified method B for hexavalent chromium using a Kd value of 0.) or,
Protection of ecological receptors achieved through one of the following methods:
 1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
 2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-3), or
 3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

Ecology Response: Section 3.1, Clean Closure Levels describes the following, "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' (MTCA) regulations (WAC 173-340-700 through WAC 173-340-760, excluding WAC 173-340-745). According to WAC 173-303-610(2)(b)(i), these numeric cleanup levels, including carcinogens, noncarcinogens, groundwater protection, and ecological indicator values, have been

calculated as of the effective date of the permit modification. Table 1 includes the closure performance standards for the target analytes”.

Chapters 4 and 5:

- Edit to combine under one chapter that provides all details compliant with WAC 173-303-610(3). Use of the terms "Closure Strategy" are unnecessarily confusing as these are commonly associated with policy measures rather than required actions. Chapter 4 provides some of the descriptions of needed closure actions/activities and should be identified and integrated under closure activities.

Ecology Response: Clean Closure is described in Chapter 5 Closure Activities in accordance with WAC 173-303-610(3).

- Edit throughout to clearly identify it is the TK-ISO East tank which is a candidate for clean closure and that all sampling will be to demonstrate clean closure of the tank system and soils underneath the secondary containment of TK-ISO East tank.

Ecology Response: The 276-BA Organic Storage Area (ISO-East container and secondary containment) is a candidate for clean closure under WAC 173-303, and verification sampling will be performed. Chapter 5 of the Closure Plan details clean closure for this unit.

- Chapter 4, Section 4.2: This section seems to address only soil sampling, however the regulations require description of the steps needed to remove structures and confirmation of compliance with clean closure standards (WAC 173-303-640). Edit to clarify there will be visual inspection of the tank system prior to commencement of closure activities. And that all visible staining will be noted and samples taken at these locations.

The presence of visible staining can be used as the basis for additional judgmental samples. The absence of visible staining cannot in general be used as the sole basis for concluding that contamination is absent.

Ecology Response: This tank has been reclassified as a container as noted in Section 1, Introduction. The container will be clean closed in accordance with WAC 173-303-630 and WAC 173-303-610. Once the container has been removed, a visual inspection will be performed of the secondary containment structure. The condition of the coating and structural integrity of the concrete pad will be evaluated. Based on the operating record review, waste management records, and past visual inspections, a focused sampling approach will be utilized, as described in Section 6.2. Ecology believes that the information included in the Closure Plan is appropriate as to the recording of the visible staining.

- Edit line 27-28 to delete following text: "including up to 1 m (3ft) of soil beneath the structure, which will meet the requirements of WAC 173-303-610(2)(b)(ii)." There is no guarantee that removal of only 3 ft of soil will suffice to meet clean closure requirements. Clarify the observational approach to sampling will be applied and soil removal will continue until cleanup standards are met or it has been demonstrated that all soil cannot be practicably removed or decontaminated. Clarify that permit modification will be submitted in accordance with WAC 173-303-830.

Ecology Response: Ecology does not agree with deleting the recommended text. Focused sampling of the 276-BA Organic Storage Area will be at locations where

concrete joints, the trench, and the sump are located (Figure 3). Sampling locations will be field adjusted if the visual inspection of the secondary containment structure indicates any areas where the structural integrity is compromised. Focused soil samples will be collected beneath the footprint of the secondary containment up to 1 m (3 ft) depth. The locations proposed for focused sampling are shown in Figure 3. Following removal of soil beneath the secondary containment structure, a second visual inspection will be performed. If any stains are observed on the soil, additional soil will be removed, and additional focused sampling locations will be designated. 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 deeper than the initial removal of up to 1 m (3 ft) will be removed and the unit will be resampled. Post-closure escape of contamination is not anticipated. If not all contaminated soils can be practicably removed, then a permit modification will be submitted to Ecology in accordance with WAC 173-303-830(4).

- Edit lines 36-37 to clarify:
 - what is meant by "where cracks in the secondary containment structure coating warrant sampling." See comment above.
 - Define "predetermined depth."

Ecology Response: Predetermined depth was revised to specify 1 meter in the Closure Plan. Figure 3 contained in the Closure Plan was updated to provide additional information on sample locations. Additional text was also added to state that except for the degradation of the coating, no other structure deterioration has been identified.
- Delete lines 40-43. See comment above.

Ecology Response: See above response.
- Chapter 5: Suggest edit to clarify closure is in accordance with both WAC 173-303-610(5) and WAC 173-303-640(8) requirements as this is closure of a tank system.

Ecology Response: Section 5.1 states, "The container, 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."

Section 1 states, "The 276-BA container was previously classified as a tank in the B Plant Complex Part A Form concerning the B Plant Organic Mixed Waste Storage System. Upon further review, the U.S. Department of Energy (DOE) determined that 276-BA ISO East should be classified as a container because it meets the RCRA definition of a container in WAC 173-303-040. This classification error that will be corrected with a revised B Plant Complex Part A, and the 276-BA Organic Storage Area will be closed under the container standards in WAC 173-303-630(10)."
- Edit to provide additional detail descriptions regarding all waste management and disposal activities to clarify compliance with WAC 173-303-170 thru WAC 173-303-230 requirements. It is unclear how these regulations are being met.

- Identify compliance requirements per WAC 173-303 within each waste management sections. Edit to include :How the nature and extent of contamination will be evaluated; potential types of equipment; detail of equipment decontamination; how additional sampling efforts will be conducted; details to demonstrate compliance with the regulations stated.

Ecology Response: Section 5.2.6 states, "The contaminated soil will be a newly generated waste and must be handled in accordance with all applicable requirements of WAC 173-303-170 through WAC 173-303-230."

Section 5.1.3 and 5.1.4 describes potential types of equipment and details related to equipment decontamination. Section 5.1.3 also states, "If contaminated soil is identified as a result of clean closure verification sampling activities (i.e., samples indicate contamination above clean closure standards), the nature and extent of contamination will be evaluated. Contaminated soil will be removed using equipment capable of removing the quantity of material required to complete removal and clean close the DWMU. Following removal of contaminated soil, additional confirmatory sampling efforts will be conducted in accordance with the approved closure plan SAP to demonstrate clean closure levels."

- Edit to include container management regulations.

Ecology Response: Section 1 states, "The 276-BA container was previously classified as a tank in the B Plant Complex Part A Form concerning the B Plant Organic Mixed Waste Storage System. Upon further review, the U.S. Department of Energy (DOE) determined that 276-BA ISO East should be classified as a container because it meets the RCRA definition of a container in WAC 173-303-040. This classification error that will be corrected with a revised B Plant Complex Part A, and the 276-BA Organic Storage Area will be closed under the container standards in WAC 173-303-630(10)."

- Clarify what is meant by "miscellaneous solid waste will be dispositioned based on waste characterization information."

Ecology Response: Miscellaneous wastes are described in Section 5.2.1. Waste management and characterization is described in Section 5.2.2.

- Delete text which states, "it is presumed that the waste will be treated." Throughout the document, it is unclear as to how the LDRs are to be met and which debris standards are applicable. Provide details as to the disposal facility, where and how treatment for LDRs will be performed and storage locations prior to disposal. Identify anticipated waste treatments types.

Ecology Response: Section 5.1 states, "Because the container meets the definition of empty, it does not need additional treatment at ERDF to meet WAC 173-303 requirements, and consideration for land disposal restrictions (LDRs) will therefore not be necessary."

Section 5.2.6 states that contaminated media is not expected to be found. If it is found, the contaminated soil will be a newly generated waste and must be handled in accordance with all applicable requirements of WAC 173-303-170 through WAC 173-303-230. The contaminated soil will be containerized, labeled, sampled for waste

characterization, designated as dangerous or non-dangerous waste, stored, and transported offsite where it will be treated (if necessary) to meet LDRs in 40 CFR 268 incorporated into WAC 173-303-140(2)(a) by reference, then ultimately disposed of in an appropriate waste disposal facility.

- Clarify process for ERDF acceptance of any RCRA wastes (e.g. TK-ISO East tank) and all demolition wastes.

Ecology Response: Section 5 describes the process for The Environmental Restoration Disposal Facility (ERDF) acceptance of any Resource Conservation and Recovery Act (RCRA) wastes and all demolition wastes.

- Clarify the process for Ecology approval of non-decontamination of TK-ISO East tank.

Ecology Response: The process for Ecology approval of non-decontamination of the ISO East container is not included in the Closure Plan.

- Clarify if and/or how the TK-ISO East tank has been determined by Ecology to be 'empty' such that disposal can be done in the proposed manner (i.e. disposal at ERDF).

Ecology Response: The tank was reclassified as a container as described in Section 1 Introduction. Section 5.1 states, "The ISO East container meets the WAC 173-303-160(2) definition of an empty container because 'all wastes have been taken out that can be removed using the practices commonly employed to remove materials from that type of container' and 'no more than 3 percent by weight of the total capacity of the container remains in the container.' Because the container meets the definition of empty, it does not need additional treatment at ERDF to meet WAC 173-303 requirements, and consideration for land disposal restrictions (LDRs) will therefore not be necessary."

- Clarify how adding absorbent materials render the TK-ISO East tank compliant with LDRs.

Ecology Response: See above comment

- Clarify how the secondary containment structure will be evaluated to determine if it meets LDRs and process for its disposal at ERDF.

Ecology Response: Section 5.2.1 explains the projected waste streams. Section 5.1.3 explains the secondary containment structure demolition and soil removal including applicable WAC 173-303-140 requirements.

- Delete all text which states only 3ft of soils will be removed and rewrite to state the observational approach will be followed.

Ecology Response: Focused sampling of the 276-BA Organic Storage Area will be at locations where concrete joints, the trench, and the sump are located (Figure 3). Sampling locations will be field adjusted if the visual inspection of the secondary containment structure indicates any areas where the structural integrity is compromised. Focused soil samples will be collected beneath the footprint of the secondary containment up to 1 m (3 ft) depth. The locations proposed for focused sampling are shown in Figure 3. Following removal of soil beneath the secondary containment structure, a second visual inspection will be performed. If any stains are observed on the soil, additional soil will be removed, and additional focused sampling locations will be designated. 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 deeper than the initial removal of up to 1 m (3 ft) will be removed and the unit will be resampled. Post-closure escape of contamination is not anticipated. If not all contaminated soils can be practicably removed, then a permit modification will be submitted to Ecology in accordance with WAC 173-303-830(4).

- Clarify the completion criteria is for demolition activities only and only for TK-ISO East tank system. Clarify if the remaining areas within the fence-line are to be remediated under future CERCLA actions.

Ecology Response: This Closure Plan is for the clean closure of the 276-BA Organic Storage Area, which includes the container, secondary containment structure, and any contamination associated with this container. Any other contaminated waste sites or areas within the fence line of the B Plant Complex, not associated with a Treatment, Storage or Disposal (TSD), will be covered under the soil operable unit 200-CP-1.

- Clarify statement regarding storage of dangerous wastes (section 5.2.3) at Hanford TSD units permitted to operate as container storage areas until disposal. The scheduled closure of a RCRA TSD includes its waste disposal. This must be within the 180 days unless an extension is granted. Clarify if there is any intent or possibility that closure activities include waste storage at a RCRA container storage area beyond 180 days. Furthermore, LDR storage provisions state allowance of storage for only the time necessary for treatment. Clarify all inconsistencies.

Ecology Response: Figure 4 contained in the Closure Plan describes the 276-BA Organic Storage Area Closure Plan Schedule.

- Clarify if 'roll-off containers' will be reused and process for their decontamination.

Ecology Response: Section 5.1.3 and Section 5.1.4 describes the use and decontamination of roll-on/roll-off containers.

- Clarify how the waste profile maybe adjusted. Any new waste codes cannot be assigned without a modification to the Part A form.

Ecology Response: This unit chapter does not include a Part A form. Waste codes are explained in Section 1.3, Waste Inventory and Characteristics. If the waste profile is adjusted, a permit modification will need to be submitted to Ecology in accordance WAC 173-303-830.

- Edit recordkeeping to clarify compliance with WAC 173-303-380 requirement and include that these records will be placed in the Administrative Record for the unit. Include statement that sampling logbooks and sampling data and training records will also be retained in the unit's Administrative Record.

Ecology Response: The permittees will keep records in the Administrative Record according to the Part II.I Permit Condition of the Hanford Site Wide Permit. Specifically within the 276-BA Closure Plan, Section 6.2.6 describes documents and records associated with the Closure Plan. Section 9 describes the documentation that will be included in the Administrative Record including documents related to sampling. Training information is described in Section 5.4. Training records are

maintained for each employee in an electronic training record database. The permittee training organization maintains the training records system and training records for personnel will be kept until Ecology approves certification of closure for the 276-BA Organic Storage Area.

- Clarify specific treatments to be used for each anticipated form of demolition wastes.

Provide details as to how and where treatment activities will be conducted.

Ecology Response: Facility demolition and disposal is described in Section 5.1 of the Closure Plan. Section 5.1.3 contains information on the secondary containment structure demolition and soil removal. Treatment for disposal (if required) will be performed at ERDF and is described in Section 5.2.4.

- Clarify maximum wind speeds for application of dust fixatives.

Ecology Response: Requirements for fugitive dust control are located in WAC 173-400 and have been incorporated into the Air Operating Permit for the entire Hanford Site.

- Include training matrix tables for personnel. Include the minimum training requirements for all samplers.

Ecology Response: Section 5.4 describes health and safety requirements and contains Table 3 (Training Matrix for the 276-BA Organic Storage Area Closure). This training matrix describes training requirements for all samplers.

Chapter 6:

- Develop a unit-specific QA/QC plan to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented which includes data verification criteria such that it can be determined whether each individual data element is acceptable for its intended decision-making purpose. Ensure the QA/QC plan contains a Data Quality Assurance Plan. Ensure its consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.

The closure plan must establish specific data acceptance criteria that ensure that data meeting the criteria will result in closure decisions within an acceptable degree of uncertainty. Data that do not meet the acceptance criteria must be rejected, even if the Ecology notification and discussion takes place as described. The quality assurance project plan should also address the circumstance when the quantity of acceptable data fails to meet the completeness criterion established as part of the data acceptance tests, and what corrective action is to be taken when the completeness criterion is not met.

The specific methods, agreements, and procedures to be used must be documented or referenced in the closure plan. Otherwise, Ecology has no basis to evaluate whether or not data from sampling conducted "consistent with laboratory agreements, laboratory analytical procedures, and HASQUARD" are adequate or appropriate to the specific decisions to be made under this closure plan.

Ecology Response: Ecology believes that the Closure Plan has unit specific QA/QC information. The following sections provide this detail. Section 6.1 describes the closure sampling and analysis plan. Sampling and analysis activities will meet applicable requirements of the most current versions 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. In addition, Section 6.2.2 describes analytical methods, Section 6.2.3 describes quality control, Section 6.2.4 describes data verification, Section 6.2.5 describes data validation, and Section 6.2.6 describes documents and records. 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.

- Clarify in SAP, Edit to include text to clarify the required documentation of the specific procedures and equipment that will be used for the proposed treatment, including any sampling and analysis requirements that may be used to verify successful required treatment of LDR wastes. Clarify that all data-not just the listed analytes-will be entered into HEIS.

Ecology Response: Section 6.2.4 describe data verification and explains that analytical results will be received from the laboratory, loaded into a database (Hanford Environmental Information System (HEIS)) and verified. In regards to treatment of Land Disposal Restriction (LDR) wastes, the ISO East container meets the definition of empty and therefore it does not need additional treatment at ERDF to meet WAC 173-303 requirements and consideration for land disposal restrictions (LDRs) will therefore not be necessary. 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 ERDF, as discussed in Section 5.2 of the closure plan. Additional confirmatory sampling efforts will be conducted in accordance with the approved closure plan SAP to demonstrate clean closure levels.

- Clarify why closure actions do not include scabbling of all discolored or staining areas identified on the concrete secondary containment structure. Clarify that judgmental sampling is equivalent to focus sampling for those areas of concern identified during the visual inspection.

Ecology Response: Section 6.2 Sampling Design describes the following:

- *"Focused sampling is distinguished from probability based sampling in that interferences are based on professional judgment, not statistical scientific theory. Therefore, conclusions about the target population are limited and depend entirely on the validity and accuracy of professional judgment.*
- *No structural degradation of the secondary containment has been noted, so all sampling locations were designated to soil beneath low spots and concrete seams in the secondary containment. If upon inspection it is observed that the structural integrity of the secondary containment has been compromised, additional samples will be taken at those locations. 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.”

- Clarify what is meant by 'exposed soil surface will be leveled prior to sample collection'. This is a flat area. Disturbance of soils may lead to sample dilution.
Ecology Response: As described in Section 6.2.1 leveling of the soil is part of the closure process in order for adequate samples to be taken as part of the focus sampling strategy and in order to comply with the closure performance standard. The intent of the process is not to dilute the sample.
- Clarify which field changes made during sampling are considered unexpected events and how they are to be dealt with.
Ecology Response: Section 6.2.7 states, “If changes to the SAP are necessary due to unexpected events during closure that will affect sampling, a revision to this Sampling and Analysis Plan (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.”
- Edit Table 5 schedule to provide the time required for intervening closure activities.
Ecology Response: Figure 4 276-BA Organic Storage Area Closure Plan Schedule shows the intervening closure activities throughout the 180 day closure period.
- More details are needed for clarification that the information will be documented in the Hanford Facility Operating Records and maintained until final closure of the facility including completion of any required post closure care or corrective action.
Ecology Response: The permittees will keep records in the Administrative Record according to the Part II.I Permit Condition of the Hanford Site Wide Permit. Section 9 describes the certification of closure for the 276-BA Organic Storage Area and Section 10 describes the post-closure plan. The closure strategy is to attain clean closure of the 276-BA Organic Storage Area. If clean closure is not achieved, then a revised closure plan will be provided within 180 days after the permittee has demonstrated that not all contaminated soils can be practicably removed or decontaminated.
- Clarify the process for removal of soils surrounding the 'node location.' Confirm that the observational approach will be applied to the vertical and lateral extent of contamination above clean closure levels.
Ecology Response: Section 6.2 describes the sampling design and section 6.2.1 describes the sampling methods and handling. Grab samples will be collected and placed into containers at the chosen node sample locations.
- Clarify and ensure that concept regarding "document version control" is through the permit modification process, not some non-specific administrative document control process as presented.
Ecology Response: Section 6.2.6 describes documents and records. Version control is maintained by the administrative document control process. Ecology expects the

permittees to submit a permit modification in accordance with WAC 173-303-830 if changes are needed to the document control process.

- Clarify what is meant by "sampling will be performed in accordance with established sampling practices."

Ecology Response: Section 6.2 describes the sampling design and Section 6.2.1 describes the sampling methods and handling. 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. This information is included in the Closure Plan.

- Clarify that should a target analyte be detected at or above clean closure levels but less than the PQL or the analytical method, the lab will be asked to evaluate and lower the PQL.

Ecology Response: Section 6.2.2 states, "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."

- Provide references to generalized internal work requirements and processes.

Ecology Response: Section 6.2.6, Document and Records details generalized internal work requirements and processes. 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 will be kept in the project file for five years after Ecology approves clean closure certification.

- Identify the percentage of data to be validated.

Ecology Response: Section 6.2.5, Data Validation states the following, "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, and EPA-540-R-013-001, National Functional Guidelines for Inorganic Superfund Data Review. As defined by the validation guidelines, 5% of the results will undergo Level C validation."

- Clarify the following are included (edit as necessary) as information to be retained:

- Confirmation records.
- Waste information (e.g. manifest numbers).
- Waste sampling records and associated documentation.
- Laboratory records and associated documentation.
- Documentation regarding waste re-evaluation frequencies.
- Special waste analysis requirement documentation.

Ecology Response: Section 6.2.6 describes documents and records related to the closure plan. 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 will be kept for five years after Ecology approves clean closure certification.

- Edit to include immediate (or within 7 days) notification to Ecology of corrective actions applied to field activities.

Ecology Response: The permittees will keep records in the Administrative Record according to the Part II.I Permit Condition of the Hanford Site Wide Permit.

Chapter 7:

- Rewrite to be consistent with WAC 173-303-610(3)(b)(iii). Needing a contingent post-closure plan is an unexpected event.

Ecology Response: Section 7, Contingent Closure Plan states the following, "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." Ecology expects any modifications to be submitted in accordance with WAC 173-303-830.

Chapter 8:

- Page 22, line 1, edit to state Class 2 Permit modification. Unexpected events require a Class 2 modification request. [WAC 173-303-830, Appendix I, Section D.(e).]

Ecology Response: Ecology has edited Section 8 to state "Should unexpected circumstances arise and an extension to the 180-day closure activity expiration date be deemed necessary, a 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". Section 8 references a change in schedule for the closure plan in accordance with WAC 173-303-610(4)(b). An expected circumstance, as stated in Section 8, differs from an unexpected event described in WAC 173-303-830, Appendix I, Section D.(e) and WAC 173-303-610(3)(b)(iii).

Chapter 9:

- Include results of data reviews as a part of the minimum information to be placed in the Administrative record to support closure certification and Ecology determinations.

Ecology Response: Section 9, Certification of Closure includes the review of sampling procedures and results by an IQRPE for certification of closure. The permittees will keep records in the Administrative Record according to the Part II.I Permit Condition of the Hanford Site Wide Permit.

- Clarify which information regarding newly generated wastes, etc will be recorded in the Hanford Site Waste Information Tracking system, and recorded unit-specific facility operating record.

Ecology Response: The permittees will keep records in the Administrative Record according to the Part II.I Permit Condition of the Hanford Site Wide Permit. Section

9, Certification of Closure states that the documentation of removal and final disposition of all dangerous wastes and waste residues, including contaminated media, debris, and any treated residuals will be included in the Administrative Record.

- Ensure clarification that the information will be documented in the Hanford Facility Operating Records and maintained until final closure of the facility including completion of any required post closure care or corrective action.

Ecology Response: The permittees will keep records in the Administrative Record according to the Part II.I Permit Condition of the Hanford Site Wide Permit. Section 6.2.6 describes documents and records. This section states the following, "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 will be kept for five years after Ecology approves clean closure certification."

Section 10 describes the Post Closure Plan and states, "The closure strategy is to attain clean closure of the 276-BA Organic Storage Area. If the conditions for verification described in Section 6 meet the closure performance standards, then a post-closure plan will not be necessary. If clean closure is not achieved, then a revised closure plan will be provided within 180 days after the permittee has demonstrated that not all contaminated soils can be practicably removed or decontaminated."

- Clarify that the IQRPE's report will be retained in the unit specific operating record and the Administrative Record.

Ecology Response: The permittees will keep records in the Administrative Record according to the Part II.I Permit Condition of the Hanford Site Wide Permit. Section 9, Certification of Closure states, "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."

- Edit to clarify there is no anticipated future use of the 276-BA Organic Storage Area.

Ecology Response: The 276-BA Organic Storage Area will be clean closed by removal.

Chapter 10:

- Edit line 24 to state: closure plan, within 30 days after determination that clean closure standards cannot be met, a permit modification request with an amended closure plan shall be submitted to Ecology. [WAC 173-303-610(3)(b)(iii)]

Ecology Response: Section 10, Post-Closure Plan states, "The closure strategy is to attain clean closure of the 276-BA Organic Storage Area. If the conditions for verification described in Section 6 meet the closure performance standards, then a post-closure plan will not be necessary. If clean closure is not achieved, then a revised closure plan will be provided within 180 days after the permittee has

demonstrated that not all contaminated soils can be practicably removed or decontaminated.”

If the permittees cannot achieve clean closure as stated in this section, a permit modification will need to be submitted to Ecology in accordance with WAC 173-303-610 and WAC 173-303-830 to address contamination that would be left in place.

Permit Condition II.J.3 also addresses changes to the Closure Plan and states that the permittees must submit a permit modification to Ecology in accordance with WAC 173-303-610(3)(b).

Attachment #2:

YN requests review and inclusion of the following text in the development of a QA/QC Plan:

A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined.

Each QA/QC plan shall contain a Data Quality Assurance Plan that includes the following:

- Data Collection Strategy section including, but not limited to, the following:
- A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
- A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
- Sampling section that shall include or describe, and reference or cite:
- Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
- Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
- Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
- Methods for, or specification of, measuring all necessary ancillary data;
- Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:

- Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
- Calibration of field devices (as applicable);
- Collection of replicate samples;
- Submission of field-biased blanks, where appropriate;
- Potential interferences present at the facility;
- Field equipment listing and sample containers;
- Sampling order; and,
- Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
 - Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
 - Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.
- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
 - Scope and application of the procedure;
 - Sample matrix;
 - Potential interferences;
 - Precision and accuracy of the methodology; and
 - Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
- Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
 - Method blank(s);
 - Laboratory control sample(s);

- Calibration check sample(s);
- Replicate sample(s);
- Matrix-spiked sample(s);
- "Blind" quality control;
- Control charts;
- Surrogate samples;
- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
- The Data Management Plan shall include the following as applicable:
- A data record including the following:
- Unique sample or field measurement code;
- Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
- Sampling or field measurement raw data;
- Laboratory analysis identification (ID) number;
- Result of analysis (e.g., concentration);
- Tabular displays, as appropriate, illustrating:
- Unsorted validated and invalidated data;
- Results for each medium and each constituent monitored;
- Data reduction for statistical analysis;
- Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
- Summary data.
- Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:
- Displays of sampling location and sampling grid;
- Identification of boundaries of sampling area and areas where more data is required;
- Displays of concentrations of contamination at each sampling location;
- Displays of geographical extent of contamination;
- Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;

- Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
- Identification of features affecting intramedia transport and identification of potential receptors.

QA personnel and technical experts evaluate the laboratory through onsite observations and/or reviews of the following documentation: copies of the QA/QC documents; records of surveillances/inspections; audits; non-conformances, and corrective actions. The 276-BA Organic Storage Area TK-ISO East operating organization ensures independent organizations; QA personnel and technical experts are qualified to perform these evaluations.

The overriding goal of the analytical program is to support the accurate designation of waste and/or demonstrate compliance to LDR standards. The certified laboratory QA/QC programs will be designed to meet the following objectives:

Minimize errors. Errors may be introduced during preparative, analytical, and/or reporting phases of work. QC program elements include analyses of samples in accordance with procedures.

The designation of waste relies on a combination of Knowledge, historical data, and additional analytical data. Laboratory QA/QC programs ensure accurate, precise, reliable, and reproducible data.

Key QA program elements are designed to provide objective evidence that waste analysis methods meet the performance specifications. QA activities and implementation responsibilities are as follows:

- Activity based laboratory inspections. Inspections will be performed by trained operating unit operating personnel. Inspections verify that specific guidelines, specifications, and procedures for the activities are completed successfully.
- Laboratory analyses. Analyses will be performed by onsite or offsite laboratories on samples of waste using procedures identified in Table 3.
- Development of inspection checklists. Checklists are required for laboratory inspections and are designed to ensure that the inspected activity is consistently addressed. Checklists will be completed during the inspection to document results.
- Instrument calibration and calibration verification. These activities are performed by the laboratory and are required for ensuring data of known accuracy and precision. Calibration data will be maintained and stored to ensure traceability to reported results.
- Laboratory QA/QC inspection results and instrumental calibrations will be documented in the unit-specific Administrative Record files.

Laboratory Quality Assurance/Quality Control

All analytical work will be defined and controlled by a statement of work or work order. These authorization documents will include QA/QC performance requirements. Samples will be handled according to controlled laboratory procedures. The accuracy, precision, and limitations of the analytical data are evaluated through QC performance parameters.

The unit group's operating organization will conduct review analyses to determine completeness of information and whether waste meets the acceptance criteria for treatment, storage, or disposal at one of the Hanford Facility TSD units or those of a chosen offsite TSD facility.

Data Assessment

Data used for decision making will be scientifically sound, of known quality, and thoroughly documented. Data will be assessed to determine compliance with the following:

Precision — The overall precision will be the agreement among the collected samples (duplicates) for the same parameters, at the same location, subjected to the same preparative and analytical techniques. Analytical precision will be the agreement among individual test portions taken from the same sample, for the same parameters, subjected to the same preparative and analytical techniques.

Accuracy — Accuracy of the measurement system will be evaluated by using QA samples, including certified standards, in-house standards, and proficiency testing samples.

Representativeness — Representativeness addresses the degree to which the data accurately and precisely represent a real characterization of the waste stream, parameter variation at a sampling point, sampling conditions and the environmental conditions at the time of sampling. The issue of representativeness is addressed for the following points:

- Based on the generating process, the waste stream, and its volume, there is an adequate number of sampling locations selected;
- The representativeness of selected media has been defined accurately;
- The sampling and analytical methodologies as defined in Table 3;
- The environmental conditions at the time of sampling will be documented in accordance with recordkeeping requirements.

Completeness — Completeness is the amount of usable data obtained from a measurement system compared to the total amount of data requested. The degree of completeness required for decision making must be defined in the statement of work or work order.

Comparability — Comparability is the confidence with which one data set can be compared to another. When comparability of data sets is a defined basis for decision making, the confidence level requirement must be specified in the statement of work or work order.

Ecology Response: The components of the USEPA Data Quality Objective seven-Step DQO process were incorporated into the Closure Plan and reviewed by Ecology. Publication EPA QA/G-4 is the Guidance on Systematic Planning Using the Data Quality Objectives Process. The Guidance can be found at the following link: https://www.epa.gov/sites/production/files/documents/guidance_systematic_planning_dqo_process.pdf

Comments received from Mike Conlan

- 1) Remove all nuclear waste,
- 2) Do not allow anymore nuclear waste into the facility,
- 3) Replace all the single storage tanks,
- 4) Stop all the nuclear leakage entering the Columbia River.

Ecology Response: Ecology is working to ensure that long-term storage, treatment and disposal of the waste is protective of human health and the environment. The proposed permit changes are not to allow new waste, but to better manage the waste already at Hanford. Single-shell tanks are not in the scope of this comment period. Ecology does agree the tanks pose a threat. We believe a better approach to addressing it is to remove the waste from the single-shell tanks and put it in the compliant double-shell tanks to prepare for eventual treatment in the Waste Treatment Plant now being built. The permit modification proposes clean closure for the 276-BA Organic Storage Area. Clean closure will eliminate the need for future post-closure inspections, monitoring, and maintenance.

Appendix A: Copies of all public notices

Public notices for this comment period:

- Public notice (focus sheet)
- Classified advertisement in the *Tri-City Herald*
- Notice sent to the Hanford-Info email list



Permit Changes Proposed for Hanford Dangerous Waste Management Area

The U.S. Department of Energy-Richland Operations Office (DOE-RL) is holding a 60-day comment period on a proposed change to the Hanford Facility's dangerous waste permit. This change proposes that the 276-BA Organic Storage Area, consisting of the International Organization for Standardization (ISO)-East storage tank and secondary containment structure, be clean closed by removing the storage tank and secondary containment structure, including up to one meter of soil beneath the structure.

April 2016

U.S. Department of Energy

Background

The 276-BA Organic Storage Area is located in a secure fenced area in the northeast portion of the B Plant Complex in the 200 East Area of the Hanford Site.

Historically, the 276-BA Organic Storage Area was part of the Organic Mixed Waste Storage System, which was used for chemical processing and to store organic chemicals used in the recovery and purification of strontium.

The 276-BA Organic Storage Area consists of the ISO-East storage tank and secondary containment structure. The secondary containment structure has two separate compartments. The east compartment contains the ISO-East storage tank, which received organic tank waste from the B Plant Organic Mixed Waste Storage System. In November 1997, the waste inside the tank was pumped out and sent for disposal. The west compartment is empty and was never used for dangerous waste storage or treatment.

In addition, the tank never managed waste at its current location. It was moved to B Plant as a compliant shipping container after it was sealed. Therefore, no contamination is expected to be found beneath the tank.

Class 3 Modifications:

Class 3 permit modifications address changes that substantially alter a facility or its operations.

Class 3 modifications require two public participation opportunities:

- 1.) **DOE Comment Period:**
(Happening now)
A minimum 60-day public comment period on the permit modification request, including a public meeting.
- 2.) **Ecology Comment Period:**
(To occur at a later date)
A minimum 45-day public comment period on the permitting decision.



Aerial view of B Plant and the 276-BA Organic Storage Area.

The ISO-East tank currently contains less than two gallons of washed organic residues consisting of normal paraffin hydrocarbons (NPH), di-(2-ethylhexyl) phosphoric acid (D2EHPA) and tributyl phosphate (TBP).

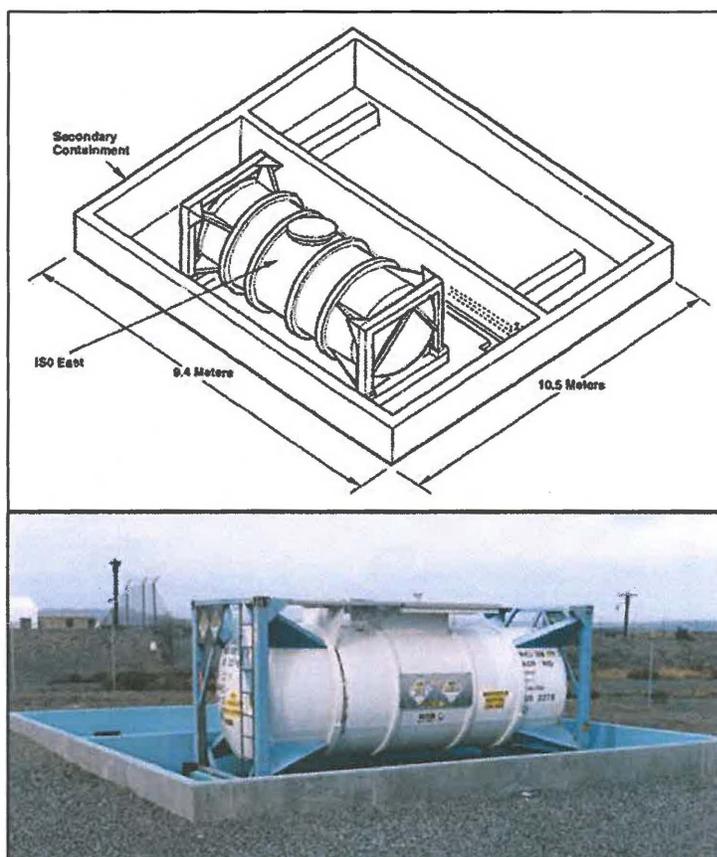
Note: International Organization for Standardization (ISO) is an international standard for design and construction of storage containers. ISO tanks are made of stainless steel and are surrounded by several types of protective layers.

Proposed Closure Strategy

Under the proposed closure plan, clean closure will be achieved by:

- Adding an absorbent to stabilize the remaining liquid waste in the tank (if found).
- Removing the tank intact to the Environmental Restoration Disposal Facility (ERDF).
- Flood grouting the interior of the tank at ERDF prior to final disposal.
- Demolishing, containerizing and disposing of the secondary containment structure at ERDF.
- Excavating soil beneath the structure up to 3 feet, containerize and dispose at ERDF. The soil will be removed to allow for excavation equipment to remove the slab on which the tanks sits.
- Focused sampling of the site is proposed due to the relatively small size of the secondary containment structure. Sampling locations are concentrated at concrete joints.

The closure plan proposes clean closure activities will be completed within 180 days of the start date. The diagram below provides a schematic of the ISO-East tank.



The ISO-East tank.

The DOE-RL contact person for this permit modification request is Kristen Holmes, (509) 376-5803. The Washington Department of Ecology contact person is Stephanie Schleif, (509) 372-7929.

The permittees' compliance history, during the life of the permit being modified, is available from Ecology. Copies of the permit modification request and supporting documentation are available at the Administrative Record, 2440 Stevens Drive, Richland, WA.

Alternatively, the proposed permit modification and supporting documents can be accessed online: <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0077214H>

How you can get involved

Comment period – April 25 through June 24, 2016
Public meeting – May 17, 5:30 p.m., Richland Library (955 Northgate Drive)
Please submit comments by **June 24, 2016**, to:



Stephanie Schleif
Washington State Department of Ecology
3100 Port of Benton Blvd
Richland, WA 99354
Email: Hanford@ecy.wa.gov
Phone: 509-372-7929



The documents are available for review at the Public Information Repositories listed below

HANFORD PUBLIC INFORMATION REPOSITORY LOCATIONS

Portland

Portland State University Library
Government Information
Branford Price Millar Library – LIBW
PO Box 1151
Portland, OR 97207-1151
Attn: Claudia Irla (503) 725-4542
Map: <http://bit.ly/1K7Bfuk>

Seattle

University of Washington
Suzzallo Library
Box 352900
Seattle, WA 98195-2900
Attn: Hilary Reinert c/o ARCS
(206) 543-5597
Map: <http://bit.ly/1QMtUog>

Richland

U.S. Department of Energy Public Reading Room
Washington State University, Tri-Cities
Consolidated Information Center, Room 101-L
2770 University Drive
Richland, WA 99352
Attn: Janice Scarano (509) 375-7443
Map: <http://bit.ly/1LpZKUa>

Spokane

Gonzaga University
Foley Center Library
East 502 Boone Avenue
Spokane, WA 99258
Attn: John Spencer (509) 313-6110
Map: <http://bit.ly/1Cp0mRT>

Administrative Record and Public Information Repository

2440 Stevens Center Place, Room 1101, Richland, WA
509-376-2530

<http://pdw.hanford.gov/arpir/>



U.S. Department of Energy
Richland Operations Office
P.O. Box 550, A7-75
Richland, WA 99352

Invitation to Comment on Proposed Updates to Permit for Hanford Dangerous Waste Management Areas



The U.S. Department of Energy, Richland Operations Office (DOE-RL) is holding a 60-day comment period on a proposed Class 3 modification to the Hanford Facility's dangerous waste permit. These changes are for the 276-BA Organic Storage Facility located at the northeast portion of the B Plant Complex in the 200 East Area of the Hanford Site, about 20 miles north of the city of Richland. The changes include closing the 276-BA Organic Storage Area and removing the ISO-East storage tank and secondary containment structure.

The public comment period will run from April 25, 2016, through June 24, 2016.

DOE-RL and the Washington State Department of Ecology want your input to help make the final cleanup decision! Submit comments by June 24, 2016, in writing, by mail or electronically (preferred) to:

Stephanie Schleif
Washington State Department of Ecology
3100 Port of Benton Blvd
Richland, WA 99354
Email: Hanford@ecy.wa.gov



The DOE-RL contact person for this permit modification request is Kristen Holmes, 509-376-5803. The Washington Department of Ecology contact person is Stephanie Schleif, 509-372-7929.

Copies of the proposed permit modification request and supporting documentation are available online at the Administrative Record, 2440 Stevens Drive, Richland, WA and online at <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0077214H>

You are invited to attend a meeting to discuss the proposed permit modification and provide comments. The meeting is scheduled for:

When: May 17, 2016, 5:30 p.m.
Where: Richland Public Library
955 Northgate Drive
Richland, WA

Please e-mail us at ClassPRMTMods@rl.gov if you require special accommodations to participate in the meetings.

From: ^TPA
To: HANFORD-INFO@LISTSERV.WA.GOV
Subject: Notice of a public comment period: Closure of the 276-BA Organic Storage Facility
Date: Monday, April 25, 2016 7:32:32 AM
Attachments: [276-BA Closure Plan Fact Sheet FINAL.PDF](#)

This is a notice from the U.S. Department of Energy

The U.S. Department of Energy (DOE), Richland Operations Office (RL) proposed a change to Hanford's Dangerous Waste Permit to close the 276-BA Organic Storage Facility located at the B Plant.

DOE has submitted the 276-BA Organic Storage Facility Closure Plan for public comment. This closure plan has been processed as a Class 3 modification to the permit. The proposed Class 3 permit changes require a 60-day comment period led by the permittee (DOE), and a public meeting. The comment period will be followed by an Ecology-led 45-day comment period on the draft permit change.

The DOE contact person for this permit change is Kristen Holmes, 509-376-5803. The Washington State Department of Ecology contact person is Stephanie Schleif, 509-372-7929. The permittees' compliance history during the life of the permit being modified also is available from the Washington State Department of Ecology contact person.

For more information on this facility, please view the attached fact sheet. In addition, copies of the proposed closure plan and supporting documentation are be available at the Administrative Record, 2440 Stevens Drive, Richland, WA or online at: <http://pdw.hanford.gov/arpir/index.cfm/viewDoc?accession=0077214H>

The **public comment period** will be **April 25 to June 24, 2016** (delayed start - originally planned for April 11).

Submit your comments by June 24, 2016 to:

Stephanie Schleif
Washington State Department of Ecology
3100 Port of Benton Blvd
Richland, WA 99354
Email: Hanford@ecy.wa.gov

A **public meeting** will be held May 17, 5:30 p.m., Richland Public Library, 955 Northgate Drive, Richland, WA 99352



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From: [^TPA](#)
To: HANFORD-INFO@LISTSERV.WA.GOV
Subject: Extension of comment period for 276-BA Organic Storage Facility Closure Plan
Date: Tuesday, June 14, 2016 12:28:25 PM
Attachments: [276-BA Closure Plan Fact Sheet Extension FINAL.PDF](#)

Update: This comment period has been extended until August 6, 2016

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The **public comment period** will be **April 25 to ~~June 24, 2016~~ August 6, 2016**.

Submit your comments by ~~June 24, 2016~~ August 6, 2016 to:

Stephanie Schleif
Washington State Department of Ecology
3100 Port of Benton Blvd
Richland, WA 99354
Email: Hanford@ecy.wa.gov



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Appendix B: Copies of all written comments



Confederated Tribes and Bands
of the Yakama Nation ERWM

Established by the
Treaty of June 9, 1855

May 12, 2016

Stephanie Schleif
Washington State Department of Ecology
3100 Port of Benton Blvd
Richland, WA 99354
Email: Hanford@ecy.wa.gov

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RECEIVED
JUN 20 2016
DEPARTMENT OF ECOLOGY
WSP - RICHLAND

Subject: Review of the proposed Closure Plan for B Plant Organic Tank TK-ISO East -
DOE/RL-2015-70, Rev. 0.

Dear Ms. Schleif:

The Confederated Tribes and Bands of the Yakama Nation is a federally recognized sovereign pursuant of the Treaty of June 9, 1855 made with the United States of America (12 Stat. 951). The U.S. Department of Energy Hanford site was developed on land ceded by the Yakama Nation under the 1855 Treaty with the United States. The Yakama Nation retains reserved rights to this land under the Treaty. YN's position regarding the ultimate closure of all Hanford Site waste facilities is cleanup actions (with confirmatory sampling and analysis of surface and subsurface soils) to demonstrate attainment of cleanup levels protective of YN Tribal member health and welfare.

We note similar issues of concern as identified in previous submittals of Hanford site closure plans (e.g. CWC-WRAP, T-Plant, and Trenches 31 & 34). More specifically, the lack of a unit-specific QA/QC plan to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented which includes data verification criteria such that it can be determined whether each individual data element is acceptable for its intended decision-making purpose, the seemingly indefinite storage of wastes prior to disposal, and not least, land-use determinations which do not support full subsistence uses of our YN Treaty Rights.

We look forward to discussing our vision of cleanup and all our concerns with you further.

Sincerely,

Russell Jim
Yakama Nation ERWM Program Manager

cc:

Alex Smith, Washington State Department of Ecology
Stacy Charbonneau, Manager, US Department of Energy
Dennis Faulk, US Environmental Protection Agency
Ken Niles, Oregon Department of Energy
Administrative Record

Attachment #1:

YN ERWM PROGRAM (YN) comments (and requests) on the Class 3 Modification to the Hanford site RCRA Permit for Closure of the 276-BA Organic Storage Area Tank TK-ISO - DOE/RL-205-70, Rev 0.

General:

- Provide SEPA checklist for public review.
- YN has previously provided an objection to the use of the Comprehensive Land-Use Plan (CLUP) and its provisions. It does not recognize YN Treaty Rights. All assessments and cleanup alternatives should be protective of, and based upon, anticipated Tribal subsistence uses.
- Factsheet should clearly define this is a closure plan for a tank system per WAC 173-303-640.

Chapter 1:

- Introduction: Lines 2-6 state purpose of closure plan is to describe the closure process for a storage area rather than a tank system. Closure requirements apply to individual dangerous waste management units (i.e. in this case, TK-ISO East, a tank subject to WAC 173-303-640 regulations) not to the administrative designation of its location (i.e. The 276-BA Organic Storage Area). If it were the closure of a storage area, different regulations would also apply. Please edit this section to reflect purpose is the closure of this tank system located within the area designated as the 276-BA Organic Storage Area. In lines 10-12, please to add to end of sentence the following: *and contains compliance requirements necessary for conducting closure enforceable under the RCRA Permit.*
- Section 1.2: Please clarify what is meant by "successful completion of the treatment reduced the radionuclide concentrations to allow for transfer of the majority of the organic waste for storage or disposal." Does TK-ISO East contain any high-level waste constituents? Clarify the 1997 disposal location of tank contents.
- Section 1.3: Clarify that listed waste codes will remain and appropriate treatment standards applied as necessary for disposal.
- Section 1.4: Please clarify whether the following are found on site or within the general security information for the 200 Areas: posted signs at any access points stating: No trespassing. Security badges required beyond this point. Authorized vehicles only. Public access prohibited. Danger, unauthorized personnel keep out. Clarify that these signs are written in English, legible from a distance of 7.6 meters, and visible from all angles of approach.

Chapter 2: Edit last sentence to clarify that clean closure is anticipated, therefore groundwater investigation and remediation are not addressed as part of this closure plan.

Chapter 3:

- Edit to state standards are for closure of the TK-ISO East tank. Edit to include the following: *Should there be changes in MTCA prior to closure, there will be no 'back-sliding' to less stringent cleanup levels.* YN requests Ecology ensure enough flexibility within the closure permitting process to allow Ecology to retain its authority to set cleanup levels at more stringent levels and request additional characterization/cleanup to achieve these levels.
- YN requests the following closure performance standards be identified:
 - Direct contact consistent with WAC 173-340-740(3)
 - Soil concentrations to protect groundwater: derived using WAC 173-340-747(4) (with an exception of modified method B for hexavalent chromium using a Kd value of 0.) or,

Protection of ecological receptors achieved through one of the following methods:

1. Excavation of contaminated soil to a minimum of 15 feet below ground surface, or
2. Excavation of contaminated soil such that residual soil concentrations do not exceed ecological screening levels listed in WAC 173-340-900 (Table 749-3), or
3. A site-specific demonstration that remedial standards eliminate threats to ecological receptors.

Chapters 4 and 5:

- Edit to combine under one chapter that provides all details compliant with WAC 173-303-610(3). Use of the terms "Closure Strategy" are unnecessarily confusing as these are commonly associated with policy measures rather than required actions. Chapter 4 provides some of the descriptions of needed closure actions/activities and should be identified and integrated under closure activities.
- Edit throughout to clearly identify it is the TK-ISO East tank which is a candidate for clean closure and that all sampling will be to demonstrate clean closure of the tank system and soils underneath the secondary containment of TK-ISO East tank.
- Chapter 4, Section 4.2: This section seems to address only soil sampling, however the regulations require description of the steps needed to remove structures and confirmation of compliance with clean closure standards (WAC 173-303-640). Edit to clarify there will be visual inspection of the tank system prior to commencement of closure activities. And that all visible staining will be noted and samples taken at these locations.

The presence of visible staining can be used as the basis for additional judgmental samples. The absence of visible staining cannot in general be used as the sole basis for concluding that contamination is absent.

- Edit line 27-28 to delete following text: "including up to 1 m (3ft) of soil beneath the structure, which will meet the requirements of WAC 173-303-610(2)(b)(ii)." There is no guarantee that removal of only 3 ft of soil will suffice to meet clean closure requirements. Clarify the observational approach to sampling will be applied and soil removal will continue until cleanup standards are met or it has been demonstrated that all soil cannot be practicably removed or decontaminated. Clarify that permit modification will be submitted in accordance with WAC 173-303-830.
- Edit lines 36-37 to clarify:
 - what is meant by "where cracks in the secondary containment structure coating warrant sampling." See comment above.
 - Define "predetermined depth."
- Delete lines 40-43. See comment above.
- Chapter 5: Suggest edit to clarify closure is in accordance with both WAC 173-303-610(5) and WAC 173-303-640(8) requirements as this is closure of a tank system.
- Edit to provide additional detail descriptions regarding all waste management and disposal activities to clarify compliance with WAC 173-303-170 thru WAC 173-303-230 requirements. It is unclear how these regulations are being met.
 - Identify compliance requirements per WAC 173-303 within each waste management sections. Edit to include: How the nature and extent of contamination will be evaluated; potential types of equipment; detail of equipment decontamination; how additional sampling efforts will be conducted; details to demonstrate compliance with the regulations stated.
- Edit to include container management regulations.
- Clarify what is meant by "miscellaneous solid waste will be dispositioned based on waste characterization information."

- Delete text which states, "it is presumed that the waste will be treated." Throughout the document, it is unclear as to how the LDRs are to be met and which debris standards are applicable. Provide details as to the disposal facility, where and how treatment for LDRs will be performed and storage locations prior to disposal. Identify anticipated waste treatments types.
- Clarify process for ERDF acceptance of any RCRA wastes (e.g. TK-ISO East tank) and all demolition wastes.
- Clarify the process for Ecology approval of non-decontamination of TK-ISO East tank.
- Clarify if and/or how the TK-ISO East tank has been determined by Ecology to be 'empty' such that disposal can be done in the proposed manner (i.e. disposal at ERDF).
- Clarify how adding absorbent materials render the TK-ISO East tank compliant with LDRs.
- Clarify how the secondary containment structure will be evaluated to determine if it meets LDRs and process for its disposal at ERDF.
- Delete all text which states only 3ft of soils will be removed and rewrite to state the observational approach will be followed.
- Clarify the completion criteria is for demolition activities only and only for TK-ISO East tank system. Clarify if the remaining areas within the fence-line are to be remediated under future CERCLA actions.
- Clarify statement regarding storage of dangerous wastes (section 5.2.3) at Hanford TSD units permitted to operate as container storage areas until disposal. The scheduled closure of a RCRA TSD includes its waste disposal. This must be within the 180 days unless an extension is granted. Clarify if there is any intent or possibility that closure activities include waste storage at a RCRA container storage area beyond 180 days. Furthermore, LDR storage provisions state allowance of storage for only the time necessary for treatment. Clarify all inconsistencies.
- Clarify if 'roll-off containers' will be reused and process for their decontamination.
- Clarify how the waste profile maybe adjusted. Any new waste codes cannot be assigned without a modification to the Part A form.
- Edit recordkeeping to clarify compliance with WAC 173-303-380 requirement and include that these records will be placed in the Administrative Record for the unit. Include statement that sampling logbooks and sampling data and training records will also be retained in the unit's Administrative Record.
- Clarify specific treatments to be used for each anticipated form of demolition wastes. Provide details as to how and where treatment activities will be conducted.
- Clarify maximum wind speeds for application of dust fixatives.
- Include training matrix tables for personnel. Include the minimum training requirements for all samplers.

Chapter 6:

- Develop a unit-specific QA/QC plan to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented which includes data verification criteria such that it can be determined whether each individual data element is acceptable for its intended decision-making purpose. Ensure the QA/QC plan contains a Data Quality Assurance Plan. Ensure its consistency with Ecology Publication #09-05-007 [Guidance for Preparing Waste Sampling and Analysis Documents and QA/QC Requirements at Nuclear Waste Sites.

The closure plan must establish specific data acceptance criteria that ensure that data meeting the criteria will result in closure decisions within an acceptable degree of uncertainty. Data that do not meet the acceptance criteria must be rejected, even if the

Ecology notification and discussion takes place as described. The quality assurance project plan should also address the circumstance when the quantity of acceptable data fails to meet the completeness criterion established as part of the data acceptance tests, and what corrective action is to be taken when the completeness criterion is not met.

The specific methods, agreements, and procedures to be used must be documented or referenced in the closure plan. Otherwise, Ecology has no basis to evaluate whether or not data from sampling conducted "consistent with laboratory agreements, laboratory analytical procedures, and HASQUARD" are adequate or appropriate to the specific decisions to be made under this closure plan.

- Clarify in SAP, Edit to include text to clarify the required documentation of the specific procedures and equipment that will be used for the proposed treatment, including any sampling and analysis requirements that may be used to verify successful required treatment of LDR wastes. Clarify that all data-not just the listed analytes-will be entered into HEIS.
- Clarify why closure actions do not include scabbling of all discolored or staining areas identified on the concrete secondary containment structure. Clarify that judgmental sampling is equivalent to focus sampling for those areas of concern identified during the visual inspection.
- Clarify what is meant by 'exposed soil surface will be leveled prior to sample collection'. This is a flat area. Disturbance of soils may lead to sample dilution.
- Clarify which field changes made during sampling are considered unexpected events and how they are to be dealt with.
- Edit Table 5 schedule to provide the time required for intervening closure activities.
- More details are needed for clarification that the information will be documented in the Hanford Facility Operating Records and maintained until final closure of the facility including completion of any required post closure care or corrective action.
- Clarify the process for removal of soils surrounding the 'node location.' Confirm that the observational approach will be applied to the vertical and lateral extent of contamination above clean closure levels.
- Clarify and ensure that concept regarding "document version control" is through the permit modification process, not some non-specific administrative document control process as presented.
- Clarify what is meant by "sampling will be performed in accordance with established sampling practices."
- Clarify that should a target analyte be detected at or above clean closure levels but less than the PQL or the analytical method, the lab will be asked to evaluate and lower the PQL.
- Provide references to generalized internal work requirements and processes.
- Identify the percentage of data to be validated.
- Clarify the following are included (edit as necessary) as information to be retained:
 - Confirmation records.
 - Waste information (e.g. manifest numbers).
 - Waste sampling records and associated documentation.
 - Laboratory records and associated documentation.
 - Documentation regarding waste re-evaluation frequencies.
 - Special waste analysis requirement documentation.

- Edit to include immediate (or within 7 days) notification to Ecology of corrective actions applied to field activities.

Chapter 7: Rewrite to be consistent with WAC 173-303-610(3)(b)(iii). Needing a contingent post-closure plan is an unexpected event.

Chapter 8: Page 22, line 1, edit to state *Class 2 Permit modification*. Unexpected events require a Class 2 modification request. [WAC 173-303-830, Appendix I, Section D.(e).]

Chapter 9:

- Include results of data reviews as a part of the minimum information to be placed in the Administrative record to support closure certification and Ecology determinations.
- Clarify which information regarding newly generated wastes, etc will be recorded in the Hanford Site Waste Information Tracking system, and recorded unit-specific facility operating record.
- Ensure clarification that the information will be documented in the Hanford Facility Operating Records and maintained until final closure of the facility including completion of any required post closure care or corrective action.
- Clarify that the IQRPE's report will be retained in the unit specific operating record and the Administrative Record.
- Edit to clarify there is no anticipated future use of the 276-BA Organic Storage Area.

Chapter 10: Edit line 24 to state: closure plan, *within 30 days after determination that clean closure standards cannot be met, a permit modification request with an amended closure plan shall be submitted to Ecology.* [WAC 173-303-610(3)(b)(iii)]

Attachment #2:

YN requests review and inclusion of the following text in the development of a QA/QC Plan:

A quality assurance/quality control (QA/QC) plan, or equivalent, to document all monitoring procedures to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. Each QA/QC plan shall include, or contain a reference to another document, which will be used and includes, the elements as defined.

Each QA/QC plan shall contain a Data Quality Assurance Plan that includes the following:

- Data Collection Strategy section including, but not limited to, the following:
- A description of the intended uses for the data, and the necessary level of precision and accuracy for those intended uses; and,
- A description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data;
- Sampling section that shall include or describe, and reference or cite:
- Criteria for selecting appropriate sampling locations, depths, etc., or identification and justification of sample collection;
- Sampling methods including the identification of sampling equipment and a description of decontamination procedures to be used;
- Criteria for providing a statistically sufficient number of samples as defined in EPA guidance, or criteria for determining a technically sufficient number of measurements to meet the needs of the project as determined through the Data Quality Objective (DQO) planning process;
- Methods for, or specification of, measuring all necessary ancillary data;
- Criteria for establishing, or specification of, which parameters are to be measured at each sample collection point, and the frequency that each parameter is to be measured;
- Criteria for, or specification of, identifying the type of sampling (e.g., discrete), and number of samples to be collected;
- Criteria for, or specification of, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points;
- Methods and documentation of field sampling operations and procedure descriptions, as appropriate, including:
 - Procedure descriptions and forms for recording the exact location, sampling conditions, sampling equipment, and visual condition of samples;
 - Calibration of field devices (as applicable);
 - Collection of replicate samples;
 - Submission of field-biased blanks, where appropriate;
 - Potential interferences present at the facility;
 - Field equipment listing and sample containers;
 - Sampling order; and,
 - Descriptions of decontamination procedures.
- Selection of appropriate sample containers, as applicable;
- Sample preservation methods, as applicable; and,
- Chain-of-custody procedure descriptions as applicable, including:
 - Standardized field tracking reporting forms to establish sample custody in the field prior to, and during shipment; and,
 - Pre-prepared sample labels containing all information necessary for effective sample tracking, except where such information is generated in the field, in which case, blank spaces shall be provided on the pre-prepared sampling label.

- Certification that all samples obtained for analysis will be delivered to a responsible person, at the recipient laboratory, who is authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
- Provision for a laboratory sample custody log; and,
- Specification of chain-of-custody procedures for sample handling, storage, and disbursement for analysis.
- Sample storage procedure descriptions and storage times;
- Sample preparation methods;
- Descriptions of analytical procedures, including:
 - Scope and application of the procedure;
 - Sample matrix;
 - Potential interferences;
 - Precision and accuracy of the methodology; and,
 - Method detection limits.
- Descriptions of calibration procedures and frequency;
- Data reduction, validation, and reporting;
- Internal laboratory quality control checks, laboratory performance, and systems audits and frequency, include:
 - Method blank(s);
 - Laboratory control sample(s);
 - Calibration check sample(s);
 - Replicate sample(s);
 - Matrix-spiked sample(s);
 - “Blind” quality control;
 - Control charts;
 - Surrogate samples;
- Each QA/QC plan shall include a Data Management Plan, or equivalent, to document and track data and results.[WAC 173-303-380(1)(f)]. This plan shall identify and establish data documentation materials and procedures, project or unit file requirements, and project-related progress reporting procedures and documents. The storage location for the raw data shall be identified. The plan shall also provide the format to be used to record and, for projects, present the validated and invalidated data and conclusions.
- The Data Management Plan shall include the following as applicable:
 - A data record including the following:
 - Unique sample or field measurement code;
 - Sampling or field measurement location including surveyed horizontal coordinates and elevation of the sample location, and sample or measurement type;
 - Sampling or field measurement raw data;
 - Laboratory analysis identification (ID) number;
 - Result of analysis (e.g., concentration);
 - Tabular displays, as appropriate, illustrating:
 - Unsorted validated and invalidated data;
 - Results for each medium and each constituent monitored;
 - Data reduction for statistical analysis;
 - Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and,
 - Summary data.
 - Graphical displays (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.), as appropriate, presenting the following:

- Displays of sampling location and sampling grid;
- Identification of boundaries of sampling area and areas where more data is required;
- Displays of concentrations of contamination at each sampling location;
- Displays of geographical extent of contamination;
- Aerial and vertical displays of contamination concentrations, concentration averages, and concentration maxima, including isoconcentration maps for contaminants found in environmental media at the Facility;
- Illustrations of changes in concentration in relation to distance from the source, time, depth, or other parameters;
- Identification of features affecting intramedia transport and identification of potential receptors.

QA personnel and technical experts evaluate the laboratory through onsite observations and/or reviews of the following documentation: copies of the QA/QC documents; records of surveillances/inspections; audits; non-conformances, and corrective actions. The 276-BA Organic Storage Area TK-ISO East operating organization ensures independent organizations; QA personnel and technical experts are qualified to perform these evaluations.

The overriding goal of the analytical program is to support the accurate designation of waste and/or demonstrate compliance to LDR standards. The certified laboratory QA/QC programs will be designed to meet the following objectives:

Minimize errors. Errors may be introduced during preparative, analytical, and/or reporting phases of work. QC program elements include analyses of samples in accordance with procedures.

The designation of waste relies on a combination of Knowledge, historical data, and additional analytical data. Laboratory QA/QC programs ensure accurate, precise, reliable, and reproducible data.

Key QA program elements are designed to provide objective evidence that waste analysis methods meet the performance specifications. QA activities and implementation responsibilities are as follows:

- Activity based laboratory inspections. Inspections will be performed by trained operating unit operating personnel. Inspections verify that specific guidelines, specifications, and procedures for the activities are completed successfully.
- Laboratory analyses. Analyses will be performed by onsite or offsite laboratories on samples of waste using procedures identified in Table 3.
- Development of inspection checklists. Checklists are required for laboratory inspections and are designed to ensure that the inspected activity is consistently addressed. Checklists will be completed during the inspection to document results.
- Instrument calibration and calibration verification. These activities are performed by the laboratory and are required for ensuring data of known accuracy and precision. Calibration data will be maintained and stored to ensure traceability to reported results.
- Laboratory QA/QC inspection results and instrumental calibrations will be documented in the unit-specific Administrative Record files.

Laboratory Quality Assurance/Quality Control

All analytical work will be defined and controlled by a statement of work or work order. These authorization documents will include QA/QC performance requirements. Samples will be handled

according to controlled laboratory procedures. The accuracy, precision, and limitations of the analytical data are evaluated through QC performance parameters.

The unit group's operating organization will conduct review analyses to determine completeness of information and whether waste meets the acceptance criteria for treatment, storage, or disposal at one of the Hanford Facility TSD units or those of a chosen offsite TSD facility.

Data Assessment

Data used for decision making will be scientifically sound, of known quality, and thoroughly documented. Data will be assessed to determine compliance with the following:

Precision – The overall precision will be the agreement among the collected samples (duplicates) for the same parameters, at the same location, subjected to the same preparative and analytical techniques. Analytical precision will be the agreement among individual test portions taken from the same sample, for the same parameters, subjected to the same preparative and analytical techniques.

Accuracy – Accuracy of the measurement system will be evaluated by using QA samples, including certified standards, in-house standards, and proficiency testing samples.

Representativeness – Representativeness addresses the degree to which the data accurately and precisely represent a real characterization of the waste stream, parameter variation at a sampling point, sampling conditions and the environmental conditions at the time of sampling. The issue of representativeness is addressed for the following points:

- Based on the generating process, the waste stream, and its volume, there is an adequate number of sampling locations selected;
- The representativeness of selected media has been defined accurately;
- The sampling and analytical methodologies as defined in Table 3;
- The environmental conditions at the time of sampling will be documented in accordance with recordkeeping requirements.

Completeness – Completeness is the amount of usable data obtained from a measurement system compared to the total amount of data requested. The degree of completeness required for decision making must be defined in the statement of work or work order.

Comparability – Comparability is the confidence with which one data set can be compared to another. When comparability of data sets is a defined basis for decision making, the confidence level requirement must be specified in the statement of work or work order.

From: Mike <mikeconlan@hotmail.com>
Sent: Wednesday, April 27, 2016 11:30 AM
To: Hanford (ECY)
Subject: Permit Changes Proposed for Hanford Dangerous Waste Management Area

Stephanie Schleif:

- 1) Remove all nuclear waste,
- 2) Do not allow anymore nuclear waste into the facility,
- 3) Replace all the single storage tanks,
- 4) Stop all the nuclear leakage entering the Columbia River.

Mike Conlan

Redmond WA

**276-BA ORGANIC STORAGE AREA
CHANGE CONTROL LOG**

Change Control Logs ensure that changes to this unit are performed in a methodical, controlled, coordinated, and transparent manner. Each unit addendum will have a “**Last Modification Date**” which represents the last date the portion of the unit has been modified. The “**Modification Number**” represents Ecology’s method for tracking the different versions of the permit. This log will serve as an up to date record of modifications and version history of the unit.

Last modification to 276-BA Organic Storage Area

Addenda	Last Modification Date	Modification Number
Unit-Specific Conditions		
A. Part A Form		
B. Reserved		
C. Reserved		
D. Reserved		
E. Reserved		
F. Reserved		
G. Reserved		
H. Closure Plan		

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DRAFT

**276-BA ORGANIC STORAGE AREA
PART V, CLOSURE UNIT GROUP 32 CONDITIONS
CHANGE CONTROL LOG**

Change Control Logs ensure that changes to this unit are performed in a methodical, controlled, coordinated, and transparent manner. Each unit addendum will have its own change control log with a modification history table. The “**Modification Number**” represents Ecology’s method for tracking the different versions of the permit. This log will serve as an up to date record of modifications and version history of the unit.

Modification History Table

Modification Date	Modification Number

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**PART V, CLOSURE UNIT GROUP 32 CONDITIONS
276-BA ORGANIC STORAGE AREA**

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DRAFT

1
2 **PART V, CLOSURE UNIT GROUP 32 CONDITIONS**
3 **276-BA ORGANIC STORAGE AREA**
4
5

6 **UNIT DESCRIPTION**

7 The 276-BA Organic Storage Area Dangerous Waste Management Unit (DWMU) is located in the
8 northeast portion of the B Plant Complex in the 200 East Area of the Hanford Site. The unit consists of a
9 single storage container (ISO East) and secondary containment, which was used to temporarily store
10 organic mixed waste during the B Plant Facility deactivation.

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

14 The 276-BA Organic Storage Area is proposed to be clean closed as detailed in Addendum H, Closure
15 Plan. The soil will be sampled and must meet clean closure levels. The 276-BA container was previously
16 classified as a tank. Upon further review, the U.S. Department of Energy (USDOE) determined that
17 276-BA ISO East should be classified as a container because it meets the Resource Conservation and
18 Recovery Act (RCRA) definition of a container in [WAC 173-303-040](#). The 276-BA Organic Storage Area
19 will be closed under the container standards in [WAC 173-303-630\(10\)](#).

20 **LIST OF ADDENDA SPECIFIC TO CLOSURE UNIT GROUP 32**

21 Addenda H Closure Plan

22 **DEFINITIONS**

23 Reserved

24 **ACRONYMS**

25 ISO International Organization for Standardization

26 **V.32.A COMPLIANCE WITH PERMIT CONDITIONS**

27 The Permittees shall comply with all requirements set forth in the Hanford Facility
28 Resource Conservation and Recovery Act Permit (Permit) as specified in Permit
29 Attachment 9, Permit Applicability Matrix, including all approved modifications. All
30 addenda, subsections, figures, tables, and appendices included in the following
31 Unit-Group Permit Conditions are enforceable in their entirety. In the event that the
32 Part V, Unit-Group Conditions for Closure Unit 32, the 276-BA Organic Storage Area
33 conflict with the Part I Standard Conditions and/or Part II General Facility Conditions of
34 the Permit, the Unit-Group Conditions will prevail for Closure Unit 32, 276-BA Organic
35 Storage Area.

36 **V.32.B CLOSURE**

37 **V.32.B.1** The Permittees will comply with all requirements set forth in the Addendum H, Closure
38 Plan for the 276-BA Organic Storage Area, and close the 276-BA Organic Storage Area
39 in accordance with the Addendum H, Closure Plan. [[WAC 173-303-610\(3\)\(a\)](#)]

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**276-BA ORGANIC STORAGE AREA
ADDENDUM H
DANGEROUS WASTE MANAGEMENT UNIT CLOSURE PLAN
CHANGE CONTROL LOG**

Change Control Logs ensure that changes to this unit are performed in a methodical, controlled, coordinated, and transparent manner. Each unit addendum will have its own change control log with a modification history table. The “**Modification Number**” represents Ecology’s method for tracking the different versions of the permit. This log will serve as an up to date record of modifications and version history of the unit.

Modification History Table

Modification Date	Modification Number

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**ADDENDUM H
276-BA ORGANIC STORAGE AREA
DANGEROUS WASTE MANAGEMENT UNIT CLOSURE PLAN**

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ADDENDUM H
276-BA ORGANIC STORAGE AREA
DANGEROUS WASTE MANAGEMENT UNIT CLOSURE PLAN

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TERMS

ASTM	American Society for Testing and Materials
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
HEIS	Hanford Environmental Information System
HEPA	High-Efficiency Particulate Air (Filter)
IQRPE	Independent Qualified Registered Professional Engineer
LDR	Land Disposal Restriction
MTCA	Model Toxics Control Act
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
TSD	Treatment, Storage, and Disposal
WAC	Washington Administrative Code
WESF	Waste Encapsulation Storage Facility

5

1 H.1 INTRODUCTION

2 The purpose of this plan is to describe the *Resource Conservation and Recovery Act of 1976* (RCRA)
3 closure process for the 276-BA Organic Storage Area Dangerous Waste Management Unit (DWMU),
4 located in the northeast portion of the B Plant Complex in the 200 East Area of the Hanford Site.
5 The 276-BA Organic Storage Area, which consists of a single storage container (ISO East) and secondary
6 containment, was used to temporarily store organic mixed waste during B Plant Facility deactivation.

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

10 Closure will be performed in accordance with the schedule provided in [Section H.8](#). This closure plan
11 complies with Washington Administrative Code ([WAC 173-303-610](#)(2) through [WAC 173-303-610](#)(6),
12 and represents the baseline for closure and the enforceable compliance requirements for conducting
13 closure. Amendments to this closure plan will be submitted as a permit modification in accordance with
14 [WAC 173-303-610](#)(3)(b). The 276-BA container was previously classified as a tank in the B Plant
15 Complex Part A Form concerning the B Plant Organic Mixed Waste Storage System. Upon further
16 review, the U.S. Department of Energy (DOE) determined that 276-BA ISO East should be classified as a
17 container because it meets the RCRA definition of a container in [WAC 173-303-040](#). This classification
18 error that will be corrected with a revised B Plant Complex Part A and the 276-BA Organic Storage Area
19 will be closed under the container standards in [WAC 173-303-630](#)(10).

20 H.1.1 Physical Description

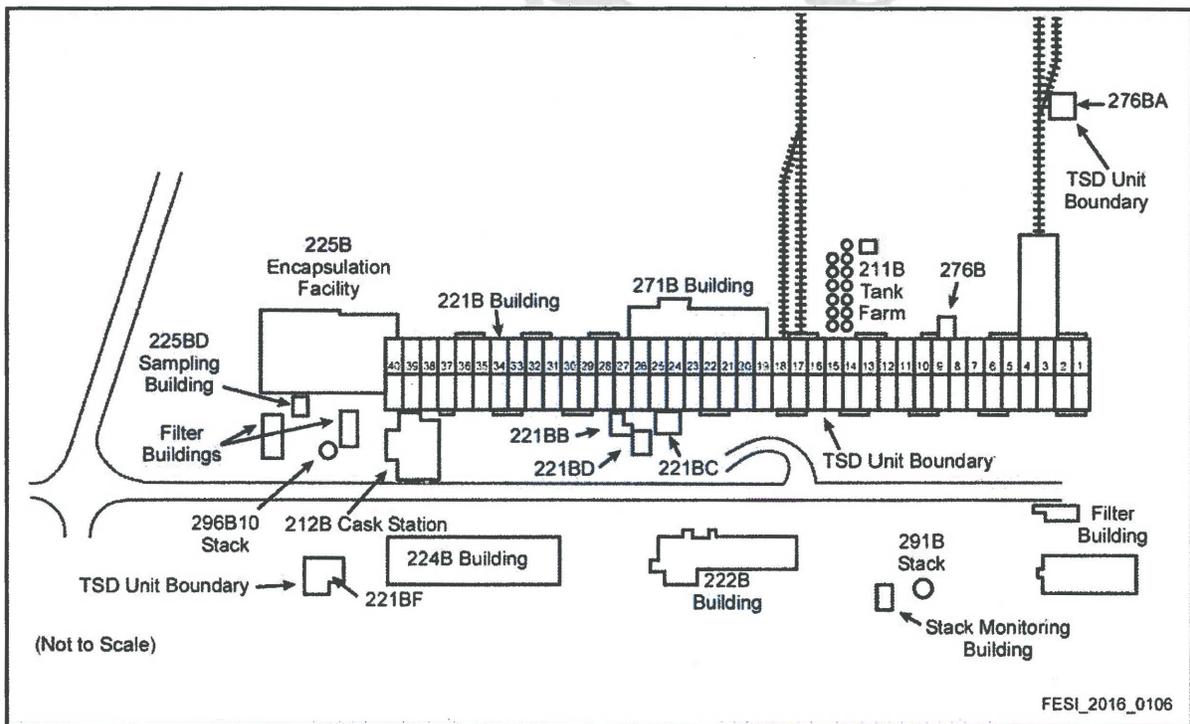
21 The 276-BA Organic Storage Area is located in the 200 East Area, northeast of the 221-B Building
22 (B Plant) within the B Plant Complex. The 276-BA Organic Storage Area is surrounded by a chain-link
23 fence and is accessible through a locked gate. When it was constructed in 1996, the 276-BA Organic
24 Storage Area consisted of a secondary containment structure and two identical aboveground stainless-steel
25 storage vessels: ISO West and ISO East. The secondary containment structure provided individual
26 containment for both vessels and was lined with compatible coating for organic mixed waste as
27 a precaution for unplanned releases. The structure was built per drawing H-2-926596 and polymer
28 coating was applied to all interior surfaces including retaining walls, sumps, trenches, and the top of
29 curbs, as specified.

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

34 At present, the 276-BA Organic Storage Area consists of one aboveground container (ISO East) and the
35 coated concrete secondary containment structure. No known spills have occurred within the secondary
36 containment. Except for the degradation of the coating, no other structural deterioration has been
37 identified.

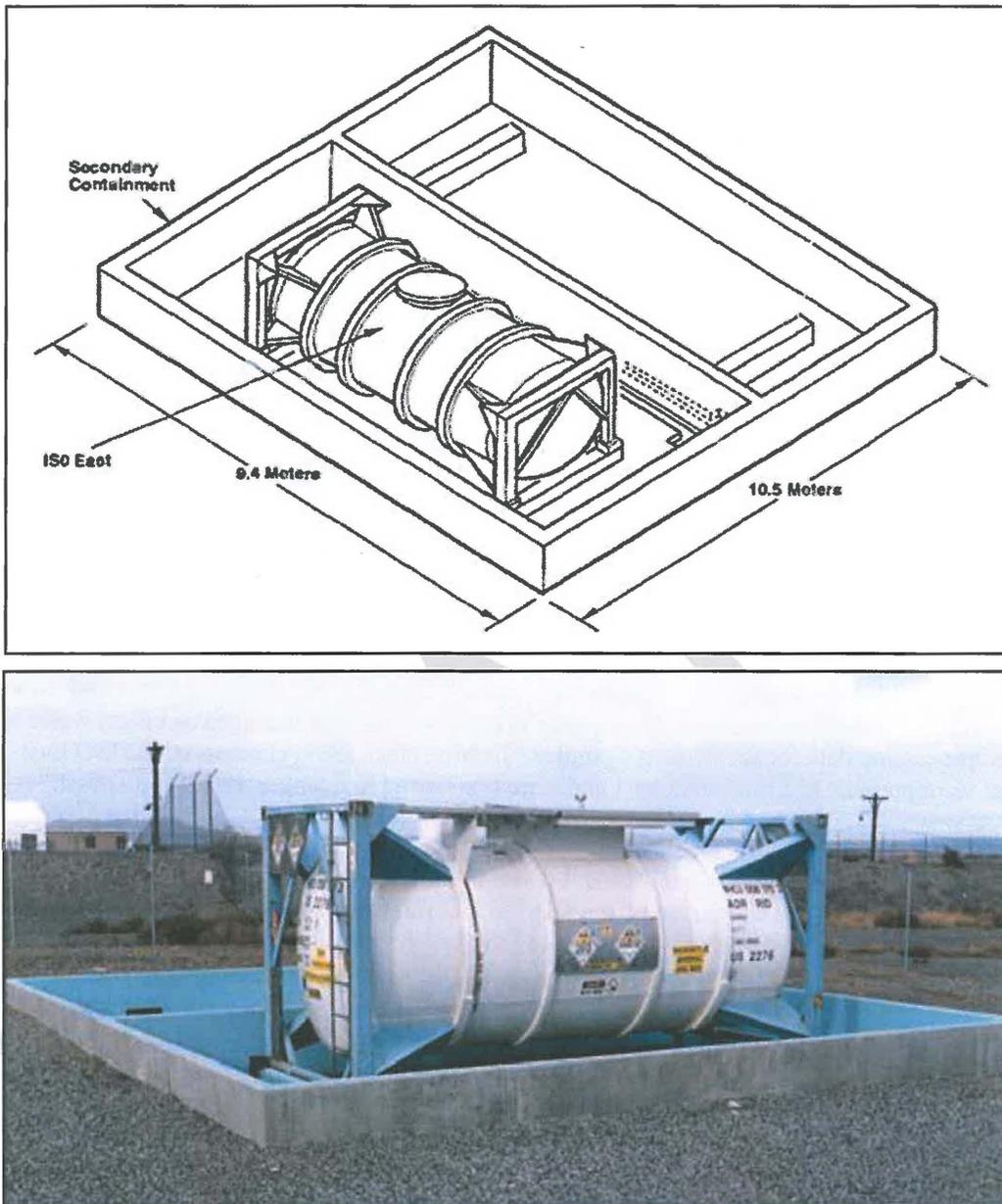
38 [Figure H.1](#) shows the location of the 276-BA Organic Storage Area within the B Plant Complex area.
39 [Figure H.2](#) provides a schematic of the ISO East container and secondary containment structure
40 associated with the 276-BA Organic Storage Area.

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

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

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H.1.2 Process Information

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The B Plant Organic Mixed Waste Storage System included 10 vessel systems, the 276-BA Organic

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Storage Area, and five process cells in B Plant. The organic tank system included tanks TK-26-1,

7

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

8

Storage Area, which consisted of two external storage vessels (ISO West and ISO East). The Organic

9

Mixed Waste Storage System was used for chemical processing and to store organic chemicals used in the

10

recovery and purification of strontium. Strontium was purified through a series of solvent extraction

1 columns, scrubbed, and concentrated for encapsulation as strontium fluoride at the Waste Encapsulation
2 Storage Facility (WESF).

3 Previous activities covered under DOE/RL-98-12, *B Plant Preclosure Work Plan*, were implemented
4 between 1995 and 1997 (including waste removal in 1997) as part of the overall facility transition process
5 to place the B Plant Complex in a safe configuration with respect to human health and the environment.
6 To prepare for the removal and disposal of organic mixed wastes, radionuclide concentrations in the
7 organic mixed waste were reduced through chemical washing and filtering. The organic and aqueous
8 phases were separated and stored separately. Rare earth elements and calcium impurities were stripped
9 from the organic stream and routed to the Double-Shell Tank System. The organic solvents remained in
10 the B Plant Organic Mixed Waste Storage System.

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

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

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

26 **H.1.3 Waste Inventory and Characteristics**

27 The ISO East container received organic mixed waste from the B Plant Organic Mixed Waste Storage
28 System in 1997. Because of the derived-from and mixture rules that applied to liquid mixed waste from
29 the B Plant Complex, all of the treatment and storage vessel systems that handled liquid mixed waste
30 were managed as listed waste upon disposal. As a result, the organic solvent stored by the ISO
31 East container was managed as mixed waste and designated with the listed dangerous waste codes F001
32 through F005 (spent solvents) D004 through D011 (metals characteristic) and D002 (corrosive
33 characteristic).

34 The total quantity of organic mixed waste received by the ISO East container was approximately 10,900 L
35 (2,880 gal). The residual content of the ISO East container was estimated to be less than 7.6 L (2 gal) of
36 material, including NPH, D2EHPA, and TBP. [Sections H.3](#) and [H.6](#) of this closure plan describes the
37 target analytes associated with each of the waste codes assumed for this closure.

38 **H.1.4 Security Information**

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

¹ In 1998, the ISO West vessel 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]").

1 **H.2 GROUNDWATER MONITORING**

2 The 276-BA Organic Storage Area will be closed by removal, and is not subject to any groundwater
3 monitoring requirements.

4 **H.3 CLOSURE PERFORMANCE STANDARDS**

5 The closure performance standards for the 276-BA Organic Storage Area are based on
6 [WAC 173-303-610\(2\)](#), which requires the owner or operator of a TSD Facility to close the facility in a
7 manner that will accomplish the following objectives:

- 8 • Minimize the need for further maintenance
- 9 • Control, minimize, or eliminate post-closure escape of dangerous waste, dangerous waste
10 constituents, leachate, contaminated runoff, or dangerous waste decomposition products to the
11 ground, surface water, or atmosphere to the extent necessary to protect human health and the
12 environment
- 13 • Return the land to the appearance and use of surrounding land areas

14 According to [WAC 173-303-610\(2\)\(b\)\(ii\)](#), the Washington State Department of Ecology (Ecology) will
15 set the container and secondary containment clean closure standards individually in accordance with the
16 closure performance standards of [WAC 173-303-610\(2\)\(a\)\(ii\)](#) and in a manner that minimizes or
17 eliminates post-closure escape of dangerous waste. Clean closure of the ISO East container and
18 secondary containment structure will be achieved by removal.

19 These performance standards as well as the closure requirements listed in [WAC 173-303-630\(10\)](#) are met
20 through [Section H.3.1](#) and [Section H.9](#).

21 **H.3.1 Clean Closure Levels**

22 The 276-BA Organic Storage Area will be clean closed. The soil will be sampled and must meet clean
23 closure levels. In accordance with [WAC 173-303-610\(2\)\(b\)\(i\)](#), clean closure levels for soil are the
24 numeric cleanup levels calculated using unrestricted use exposure assumptions according to
25 [WAC 173-340, Model Toxics Control Act—Cleanup](#) (MTCA) regulations ([WAC 173-340-700](#) through
26 [WAC 173-340-760](#), excluding [WAC 173-340-745](#)). According to [WAC 173-303-610\(2\)\(b\)\(i\)](#),
27 these numeric cleanup levels, including carcinogens, noncarcinogens, groundwater protection, and
28 ecological indicator values, have been calculated as of the effective date of the permit modification.
29 [Table H.1](#) includes the closure performance standards for the target analytes. A discussion about how the
30 target analytes were selected is included in [Section H.6.1.1](#). The closure performance standards
31 considered all risk exposure pathways and are the most conservative values. Groundwater protection is
32 the driver for these closure performance standards.

33 **Table H.1. Closure Performance Standards for Target Analytes**

Target Analyte (EPA Hazardous Waste Code)	CAS Number	Closure Performance Standard (mg/kg)
Arsenic (D004)	7440-38-2	20.0
Barium (D005)	7440-39-3	132
Cadmium (D006)	7440-43-9	0.69
Chromium (D007)	7440-47-3	42.0
Lead (D008)	7439-92-1	50.0
Mercury (D009)	7439-97-6	0.2

Table H.1. Closure Performance Standards for Target Analytes

Target Analyte (EPA Hazardous Waste Code)	CAS Number	Closure Performance Standard (mg/kg)
Selenium (D010)	7782-49-2	10.0
Silver (D011)	7440-22-4	2.0
Methylene chloride (F001, F002)	75-09-2	0.0218
1,1,1-Trichloroethane (F001, F002)	71-55-6	1.58
Acetone (F003)	67-64-1	28.9
Methyl isobutyl ketone (F003)	108-10-1	2.73
o-cresol (F004)	95-48-7	2.33
p-cresol (F004)	106-44-5	8.00
Methyl ethyl ketone (F005)	78-93-3	19.6

CAS = Chemical Abstracts Service

EPA = U.S. Environmental Protection Agency

1

2 **H.3.2 Null Hypothesis**

3 A null hypothesis is generally assumed true until evidence indicates otherwise. As defined in
4 [WAC 173-340-200](#), the null hypothesis for the 276-BA Organic Storage Area is that soil is assumed to be
5 above unrestricted use cleanup levels, commonly called MTCA ([WAC 173-340](#)) Method B cleanup
6 levels. Therefore, the site is presumed to be contaminated. Rejection of the null hypothesis means
7 sampling and analysis results of the site indicated that soil contains contamination below the MTCA
8 ([WAC 173-340](#)) Method B cleanup levels. Sampling and analysis will be used to determine whether the
9 null hypothesis can be rejected, thereby confirming that soil meets closure performance standards (MTCA
10 [[WAC 173-340](#)] Method B).

11 Should sampling and analysis provide a basis that the null hypothesis can be accepted, such an event will
12 be considered an unexpected event during closure and the soil would be identified as contaminated
13 environmental media and managed in accordance with [Section H.5.2.6](#).

14 **H.3.3 Clean Closure**

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

21 **H.4 CLOSURE STRATEGY**

22 The proposed closure strategy is based primarily on review of the operational history, operational records,
23 waste management records, and a visual inspection of the 276-BA Organic Storage Area. [Table H.2](#)
24 provides an inspection summary. Waste was removed from the ISO East container in 1997 during B
25 Plant's transition phase, and routine surveillance and maintenance inspections have been performed
26 annually since that time. Windblown debris is removed on a periodic basis from the secondary
27 containment structure. Rainfall and snowmelt accumulate on the floor of the containment structure and
28 evaporate naturally. Inspections performed in the late 1990s indicated some loss of adhesion and rippling

1 of the surface coating that was applied to the secondary containment concrete at installation. However,
2 no evidence of spills or leaks from the ISO East container have been documented (DOE/RL-98-12).

3

Table H.2. Annual Inspection Summary for 276-BA

Requirement Description	Inspection Event
Signage	Signs are posted and visible at each approach visible from 25 feet with legible, unobscured print
Building/Area secure	Fence locks and related postings are in place and functional, no obvious indication of unauthorized entry into or use of area
Structural integrity	No damage or deterioration; no obvious abnormal or unsafe conditions; no leaking
Ground subsidence	No indications of ground subsidence
Water intrusion (leaks)	No standing water or evidence of current or recent water pathways

4

5 Based on these reviews, the 276-BA Organic Storage Area is a candidate for clean closure under
6 [WAC 173-303](#), and verification sampling will be performed. Sampling and analysis activities were
7 developed using the results of record reviews and visual inspection (EPA/240/R-02/005, *Guidance on*
8 *Choosing a Sampling Design for Environmental Data Collection*; Ecology Publication 94-111, *Guidance*
9 *for Clean Closure of Dangerous Waste Units and Facilities*) and will be conducted via a Sampling and
10 Analysis Plan (SAP) (see [Section H.6.1](#) of this closure plan). The objective of sampling described in this
11 closure plan is to determine if MTCA ([WAC 173-340](#)) unrestricted use standards for soil will be met for
12 the target analytes identified in [Table H.4](#) after removal of the 276-BA Organic Storage Area,
13 demonstrating clean closure of the soil underneath the secondary containment enclosure. The
14 components of the U.S. Environmental Protection Agency (EPA) Data Quality Objective seven-step
15 process are contained within this closure plan.

16 **H.4.1 Pre-Closure Activities**

17 The stored organic mixed waste was transferred out of the ISO East container for offsite disposal in
18 November 1997 during B Plant's transition phase. Originally part of the 276-BA Organic Storage Area,
19 the ISO West vessel did not receive waste but underwent administrative closure in 1998 and was removed
20 from the site (98-EAP-136, *Certified ISO West Interim Organic Storage Tank [ISO West Tank]*
21 *Administrative Closure Technical Data Synopsis [TSD: TS-2-3J]*).

22 **H.4.2 Clean Closure Strategy**

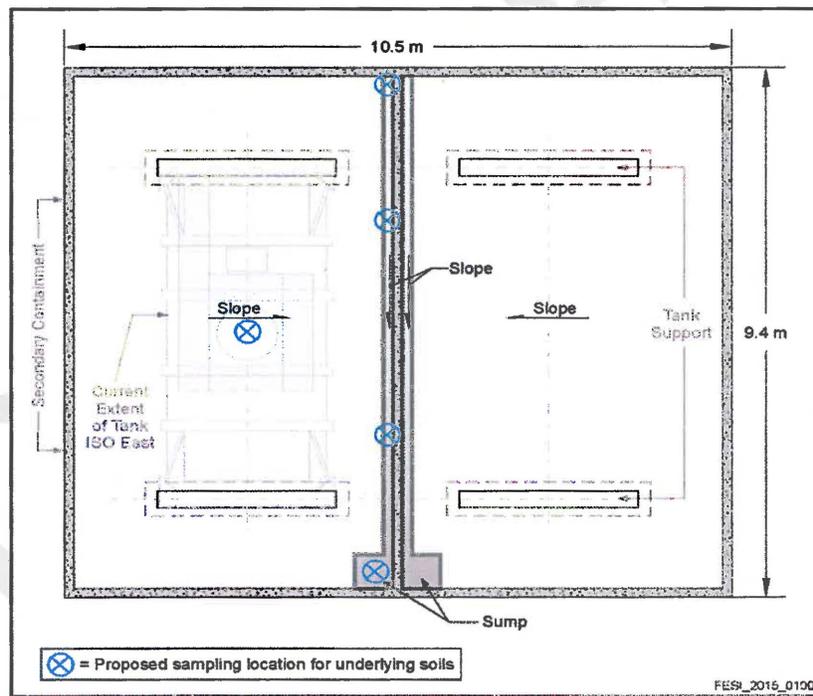
23 The 276-BA Organic Storage Area will be clean closed by removing the ISO East storage container and
24 secondary containment structure, including up to 1 m (3 ft) of soil beneath the structure, which will meet
25 [WAC 173-303-610\(2\)\(b\)\(ii\)](#) requirements. In accordance with [WAC 173-303-610\(2\)\(b\)\(i\)](#),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

28 Once the container has been removed, a visual inspection will be performed of the secondary containment
29 structure. The condition of the coating and structural integrity of the concrete pad will be evaluated.
30 Based on the operating record review, waste management records, and past visual inspections, a focused
31 sampling approach will be utilized, as described in [Section H.6.2](#). Focused sampling involves the
32 selective sampling of areas where potential or suspected soil contamination would be expected if the
33 release of a hazardous substance had occurred. Focused sampling is distinguished from probability based
34 sampling in that inferences are based on professional judgment, not statistical scientific theory. Focused

1 sampling is considered biased sampling and therefore cannot be statistically demonstrated to meet the
2 MTCA B closure performance standards. The decision criteria for the focused sampling results will be a
3 direct comparison to ensure individual values do not exceed the MTCA Method B clean closure
4 performance standards.

5 Focused sampling of the 276-BA Organic Storage Area will be at locations where concrete joints,
6 the trench, and the sump are located (Figure H.3). Sampling locations will be field adjusted if the visual
7 inspection of the secondary containment structure indicates any areas where the structural integrity is
8 compromised. Focused soil samples will be collected beneath the footprint of the secondary containment
9 up to 1 m (3 ft) depth. The locations proposed for focused sampling are shown in Figure H.3. Following
10 removal of soil beneath the secondary containment structure, a second visual inspection will be
11 performed. If any stains are observed on the soil, additional soil will be removed, and additional focused
12 sampling locations will be designated. Should sampling and analysis of soils underlying the
13 276-BA Organic Storage Area secondary containment structure indicate contamination above the MTCA
14 (WAC 173-340) Method B unrestricted use standards, additional soil deeper than the initial removal of up
15 to 1 m (3 ft) will be removed and the unit will be resampled. Post-closure escape of contamination is not
16 anticipated. If not all contaminated soils can be practically removed, then a permit modification will be
17 submitted to Ecology in accordance with WAC 173-303-830(4).

18



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

20

21 H.5 CLOSURE ACTIVITIES

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

23

- Review operating and inspection records
- Remove and transport the ISO East container to Environmental Restoration Disposal Facility (ERDF) or another approved facility for disposal

24

25

- 1 • Perform visual inspection of secondary containment structure
- 2 • Demolish and remove the secondary containment structure
- 3 • Perform visual inspection of soil beneath secondary containment (after 1 m of soil removed) to
- 4 identify additional focused sampling locations (i.e., staining)
- 5 • Perform focused sampling of the soil to confirm that clean closure standards are met
- 6 • If detected during initial sampling efforts, remove any contaminated environmental media present
- 7 • Resample as necessary to confirm that MTCA ([WAC 173-340](#)) Method B clean closure levels
- 8 have been met
- 9 • Transmit closure certification to the Washington State Department of Ecology

10 In accordance with [WAC 173-303-610\(3\)\(a\)\(iv\)](#), a detailed description of the closure activities is
11 described in the sections below.

12 **H.5.1 Facility Demolition and Disposal**

13 Demolition of the 276-BA Organic Storage Area will include removal of the ISO East container and
14 secondary containment structure. The ISO East container is itself a transport vessel and will be removed
15 intact using a flatbed hauler. Any residual heel remaining in the ISO East container will be stabilized for
16 disposal. The container, its contents, and any waste generated from stabilization and demolition activities
17 will be disposed in accordance with [WAC 173-303-610\(5\)](#) and applicable regulations. The ISO East
18 container meets the [WAC 173-303-160\(2\)](#) definition of an empty container because “all wastes have been
19 taken out that can be removed using the practices commonly employed to remove materials from that type
20 of container” and “no more than 3 percent by weight of the total capacity of the container remains in the
21 container.” Because the container meets the definition of empty, it does not need additional treatment at
22 ERDF to meet [WAC 173-303](#) requirements, and consideration for land disposal restrictions (LDRs) will
23 therefore not be necessary. The following subsections provide details on the closure activities.

24 **H.5.1.1 Mobilization and Site Preparation**

25 Demolition mobilization and site preparation include the activities necessary for field setup and closure
26 action implementation. This includes obtaining field crew resources, equipment, and materials; and
27 performing field job site activities (e.g., site assessments and map development, worker support
28 infrastructure, waste management areas, and other site preparation, as required). Global Positioning
29 System (GPS) coordinates will be taken prior to removal of the secondary containment to ensure that
30 focused sampling locations will be laid out (see [Section H.6](#) of this closure plan). GPS coordinates will
31 be taken using the NAD83 State Plane Washington South Coordinate System. Other pre-work tasks may
32 include installing barriers and postings, performing site walkdowns, completing pre-demolition reviews,
33 and testing equipment.

34 **H.5.1.2 Container Removal and Disposal**

35 Prior to removal of the ISO East container, absorbent material will be added to stabilize any remaining
36 liquid content. The container will then be lifted with a forklift or crane and placed on a flatbed hauler for
37 intact disposal at ERDF. To meet ERDF waste acceptance criteria for void space, the container will be
38 grouted. Grouting will be performed at ERDF. The container meets the definition of an empty container
39 provided in [WAC 173-303-160\(2\)](#) and therefore does not require additional treatment at ERDF to meet
40 requirements of [WAC 173-303](#).

41 **H.5.1.3 Secondary Containment Structure Demolition and Soil Removal**

42 The secondary containment structure walls and floor will be demolished and removed. Demolition will
43 require the use of an excavator with various attachments. Other standard industry or conventional
44 demolition practices also will be used (hydraulic shears with steel shear jaws, concrete pulverizer jaws,

1 or breaker jaws). The decision to remove the secondary containment is not due to any history of spills but
2 is instead to clear the structure footprint for future land use to support B Plant cleanup.

3 Soil below the containment structure will be excavated to a depth of up to 3 ft (1 m) using an excavator
4 and grading equipment, and loaded into roll-on/roll-off containers. Treatment for disposal (if required)
5 will be performed at ERDF. Based on the secondary containment structure footprint of 9.4 m (30.8 ft)
6 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
7 (40.8 ft) long by 13.5 m (44.4 ft) wide. If necessary, field adjustments may be made and provided in the
8 closure report.

9 Water may be used to control dust generated from demolition activities. The amount of water used will
10 be minimized to prevent ponding and runoff. While unlikely, other controls such as portable ventilation
11 filter units, high-efficiency particulate air (HEPA) filter vacuum cleaners, greenhouses, and/or fogging
12 agents may be used. Additional stormwater run-on/runoff controls may be implemented, as needed. The
13 demolition activities presume that the waste will be treated, if applicable, to meet all applicable
14 requirements of [WAC 173-303-140](#), *Land Disposal Restrictions*, and (by reference) [40 Code of Federal](#)
15 [Regulations \(CFR\) 268](#), *Land Disposal Restrictions*, prior to disposal in the Hanford Site ERDF, as
16 discussed in [Section H.5.2](#) of this closure plan. If the waste is not disposed at ERDF, then the waste will
17 be disposed at a permitted RCRA TSD unit authorized for disposal.

18 If contaminated soil is identified as a result of clean closure verification sampling activities (i.e., samples
19 indicate contamination above clean closure standards), the nature and extent of contamination will be
20 evaluated. Contaminated soil will be removed using equipment capable of removing the quantity of
21 material required to complete removal and clean close the DWMU. Following removal of contaminated
22 soil, additional confirmatory sampling efforts will be conducted in accordance with the approved closure
23 plan SAP to demonstrate clean closure levels.

24 **H.5.1.4 Decontamination**

25 The ISO East container, the secondary containment structure, and the equipment used to support clean
26 closure will not be decontaminated. The storage container will be removed intact, and the secondary
27 containment structure will be demolished and placed in roll-on/roll-off disposal containers for transport
28 to ERDF. If equipment is contaminated, it will be decontaminated using dry methods (e.g., brushing,
29 wiping, and using HEPA filtered vacuum cleaners) to the extent possible. When the use of wet methods
30 (e.g., water wash and pressure washers) is required to achieve decontamination objectives, the associated
31 water or cleaning solutions will be collected, and work will be conducted by trained site workers in
32 accordance with best management practices.

33 **H.5.1.5 Stabilization**

34 Upon completion of closure activities at the 276-BA Organic Storage Area, the site will be leveled to
35 mitigate potential industrial safety hazards and not unduly hinder future remediation in the
36 immediate vicinity.

37 **H.5.1.6 Completion Criteria**

38 The demolition is considered complete after the container and containment structure have been removed,
39 all waste generated during demolition has been dispositioned, the bottom of the excavation has been
40 sampled, and results have been documented. When the sample results verify that the soil meets the
41 cleanup criteria, the excavation will be backfilled.

42 **H.5.2 Waste Management**

43 A variety of waste streams may be generated under this closure action and will be in solid form. All of
44 the waste will be designated and managed as non-dangerous or dangerous/mixed waste. For dangerous or
45 mixed waste, the generator requirements of [WAC 173-303-200](#), *Accumulating Dangerous Waste On-Site*,
46 will be followed as applicable.

1 Waste generated through implementation of this closure action will be treated, if required, and disposed of
2 at ERDF or an approved RCRA TSD unit. ERDF is the preferred waste disposal facility. Waste is
3 expected to meet the waste acceptance criteria of ERDF-00011, *Environmental Restoration Disposal*
4 *Facility Waste Acceptance Criteria*, formerly WCH-191, as is. Waste volume-reduction practices
5 (e.g., minimizing cross-contamination during the remedial action or segregation of clean materials from
6 contaminated materials) will be implemented where feasible. Waste management activities include waste
7 characterization, designation, staging, packaging, handling, marking, labeling, segregation, storage,
8 transportation, treatment, and disposal. These waste management activities are briefly described in the
9 following subsections.

10 The 276-BA Organic Storage Area was included in DOE/RL-2010-102, *Action Memorandum for*
11 *Decontamination, Deactivation, Decommissioning, and Demolition (D4) Activities for 200 East Tier 2*
12 *Buildings/Structures*, by a modification through TPA-CN-722, Tri-Party Agreement Change Notice Form:
13 DOE/RL-2010-102, Revision 0, Action Memorandum for Decontamination, Deactivation,
14 Decommissioning, and Demolition (D4) Activities for 200 East Tier 2 Buildings/Structures. This
15 inclusion provides a disposition pathway for placing waste from this closure activity into ERDF,
16 following approval of a Removal Action Work Plan.

17 **H.5.2.1 Projected Waste Streams**

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

- 21 • Stainless-steel container and residual heel contents
- 22 • Concrete and associated debris
- 23 • Soils
- 24 • Miscellaneous waste (e.g., rubber, glass, paper, personal protective equipment, cloth, plastic,
25 and metal)
- 26 • Equipment and construction materials

27 **H.5.2.1.1 Hazardous/Dangerous Waste, Low-Level Waste, and Mixed Waste Management**

28 These wastes will be packaged, stored, and transported to prevent dispersion and public exposure.
29 Waste-specific storage and packaging requirements will comply with [WAC 173-303](#) requirements,
30 as applicable.

31 **H.5.2.1.2 Solid Waste Management**

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

39 **H.5.2.2 Waste Management and Characterization**

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

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

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

7 **H.5.2.3 Waste Handling, Storage, and Packaging**

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

13 **H.5.2.3.1 Management of Bulk Waste**

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

24 **H.5.2.3.2 Management of Waste Containers**

25 Prior to disposal, dangerous waste containers will be managed in accordance with [WAC 173-303-200](#),
26 as applicable.

27 **H.5.2.3.3 Waste Profile**

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

32 **H.5.2.3.4 Final Waste Disposal**

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

39 **H.5.2.3.5 Waste Disposal Records**

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

1 **H.5.2.4 Waste Treatment**

2 Based on available information, typical treatment of waste from demolition activities (e.g., grouting,
3 macroencapsulation, solidification, separation, size reduction, and/or repackaging) may be needed.
4 If treatment is required to provide safe transport or meet waste disposal facility waste acceptance criteria,
5 such treatment may be conducted at the generating site or at ERDF. It is expected that the waste may
6 need to be grouted or size reduced at ERDF. Residuals from treatment of waste originating from
7 activities addressed in this closure plan can be disposed at ERDF if the treatment residuals meet ERDF
8 waste acceptance criteria. Because ISO East meets the definition of an empty container and is therefore
9 not subject to LDR regulations, treatment to meet LDR requirements will not be necessary.

10 Contaminated soil is not expected to be encountered. In the event that soil is contaminated, it will be
11 addressed as described in [Section H.5.2.6](#).

12 **H.5.2.5 Waste Minimization and Recycling**

13 Waste minimization practices will be followed to the extent technically and economically feasible during
14 waste management. Introduction of clean materials into a contamination area, as well as contamination of
15 clean materials, will be minimized to the extent practicable. Emphasis will be placed on source reduction
16 to eliminate or minimize the volume of waste generated.

17 **H.5.2.6 Identifying and Managing Contaminated Environmental Media**

18 Contaminated media is not expected once the container and secondary containment are removed.
19 If contaminated environmental media (soil) is identified as a result of clean closure verification sampling
20 activities (i.e., samples indicate contamination above clean closure standards), the nature and extent of
21 contamination will be evaluated. Contaminated soil will be removed using equipment capable of
22 removing the quantity of material required to complete removal and clean closure. Following removal of
23 contaminated soil, additional confirmatory sampling efforts will be conducted in accordance with the
24 approved closure plan SAP to demonstrate clean closure levels (see [Section H.6.2](#)).

25 If contaminated soil removal is required, it will be managed as a newly generated waste stream in
26 accordance with [WAC 173-303-610\(5\)](#). Contaminated soil generated during the closure period will be
27 properly disposed.

28 The contaminated soil will be a newly generated waste and must be handled in accordance with all
29 applicable requirements of [WAC 173-303-170](#) through [WAC 173-303-230](#). The contaminated soil will be
30 containerized, labeled, sampled for waste characterization, designated as dangerous or non-dangerous
31 waste, stored, and transported offsite where it will be treated (if necessary) to meet LDRs in [40 CFR 268](#)
32 incorporated into [WAC 173-303-140\(2\)\(a\)](#) by reference, then ultimately disposed of in an appropriate
33 waste disposal facility.

34 **H.5.3 Air Emissions**

35 There is no expectation that substantial emissions criteria and toxic air pollutants will result from
36 demolition activities. Reasonable precautions will be taken to minimize visible dust emissions from
37 active structural demolition with standard emission control techniques. Active excavations shall use
38 water or crusting agents (e.g., Soil-Sement[®]) as approved for dust control. Water usage for dust control
39 will be minimized to protect against contaminant migration. Crusting agents or fixatives will be applied
40 to any disturbed portion of the contamination area that will be inactive for more than 24 hours. Material
41 to be disposed at ERDF will also comply with the moisture content and other applicable requirements of
42 the ERDF waste acceptance criteria (ERDF-00011). A dust fixative will be applied to the demolition and
43 excavation site when potential concerns arise regarding health issues or the spread of contamination.

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

1 Airborne emissions associated with closure activities will be minimized by the use of appropriate work
2 controls. Potential radiological air emissions will be evaluated and licensed as a separate action from
3 RCRA closure requirements under the *Clean Air Act of 1990*, which is achieved by following the
4 requirements of [WAC 246-247](#), *Radiation Protection—Air Emissions*. Airborne releases of contaminants
5 during closure activities will be controlled in accordance with DOE radiation control and substantive air
6 pollution control standards in order to maintain emissions of air pollutants at the Hanford Site to as low as
7 reasonably achievable levels. Minimal operations associated with deactivation methods (e.g., welding or
8 laser cutting) reaching temperatures of greater than 100°C (212°F) are expected.

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

16 **H.5.4 Health and Safety Requirements**

17 Closure will be performed in a manner to ensure the safety of human health and the environment.
18 Qualified personnel will perform any necessary closure activities in compliance with established safety
19 and environmental procedures. Personnel will be equipped with appropriate personal protective
20 equipment. Qualified personnel will be trained in safety and environmental procedures and have received
21 appropriate training and experience in sampling activities. Field operations will be performed in
22 accordance with health and safety requirements. If an emergency would occur, the on-call building
23 emergency director will be notified, and the requirements associated with DOE/RL-94-02,
24 *Hanford Emergency Management Plan*, will be implemented. The permittees have instituted training or
25 qualification programs to meet training requirements imposed by regulations, DOE orders, and national
26 standards (e.g., standards published by the American National Standards Institute/American Society of
27 Mechanical Engineers). For example, the environmental, safety, and health training program provides
28 workers with the knowledge and skills necessary to execute assigned duties safely. The Hanford Facility
29 RCRA Permit describes specific requirements for the Hanford Facility Personnel Training program. The
30 permittees will comply with the training matrix shown in [Table H.3](#), which provides training requirements
31 for Hanford Facility personnel associated with 276-BA.

32 Field personnel will have completed the following training before starting work:

- 33 • Occupational Safety and Health Administration 40-Hour Hazardous Waste Worker Training
- 34 • 8 Hour Hazardous Waste Worker Refresher Training (as required)
- 35 • Hanford General Employee Training

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

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

1

Table H.3. Training Matrix for the 276-BA Organic Storage Area Closure

Job Title/Position	General Hanford Facility/Orientation Program	Contingency Plan/Emergency Response	Emergency Coordinator	Operations	
				General Waste Management and Closure Support	Container Management
NCO	X	X		X*	X
Building Emergency Director	X		X		
Operations Manager	X	X			
Field Work Supervisor	X	X			
ECO	X			X*	
Waste Service Provider	X			X*	X
D&D Worker	X	X			
Sampler	X			X*	

*Training received is commensurate with the duties performed. Individuals in this category who do not perform these duties are not required to receive this training.

D&D = decontamination and demolition

ECO = environmental compliance officer

NCO = nuclear chemical operator

2

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

- 5 • Objective of the activities
- 6 • Individual tasks to be performed
- 7 • Hazards associated with the planned tasks
- 8 • Environment in which the job will be performed
- 9 • Facility where the job will be performed
- 10 • Equipment and material required
- 11 • Safety protocols applicable to the job
- 12 • Training requirements for individuals assigned to perform the work
- 13 • Level of management control
- 14 • Proximity of emergency contacts

15 Training records are maintained for each employee in an electronic training record database.
16 The permittee training organization maintains the training records system. Training records for personnel
17 will be kept until Ecology approves certification of closure for the 276-BA Organic Storage Area.

H.5.5 State Environmental Policy Act Requirements

Revised Code of Washington (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 Ecology makes decisions. 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.

H.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.

H.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. The components of the EPA Data Quality Objective seven-step process are contained within this closure plan. This closure SAP utilizes 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* (ASTM, 2014); and applicable EPA guidance. Sampling and analysis activities will meet applicable requirements of the most current versions 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.

H.6.1.1 Target Analytes

The characteristics of B Plant Complex liquid mixed waste (DOE/RL-98-12) was reviewed, which identified the applicable dangerous waste codes for the ISO East container and the appropriate 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 organic constituents of concern include acetone, *o*-cresol, *p*-cresol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, and 1,1,1-trichloroethane.

Table H.4 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 container and secondary containment structure.

Table H.4. Target Analyte List

Target Analyte (EPA Hazardous 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

Table H.4. Target Analyte List

Target Analyte (EPA Hazardous Waste Code)	CAS Number
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
<i>o</i> -cresol (F004)	95-48-7
<i>p</i> -cresol (F004)	106-44-5
Methyl ethyl ketone (F005)	78-93-3

CAS = Chemical Abstracts Service

1

2 **H.6.1.2 Verification Sampling Schedule**

3 Verification closure sampling and analysis will be performed in accordance with the closure plan schedule
4 provided in [Section H.8](#).

5 **H.6.1.3 Project Management**

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

8 **H.6.2 Sampling Design**

9 The objective of sampling the soil underneath the secondary containment structure is to obtain analytical
10 data to confirm that the soil does not contain contaminants exceeding the MTCA ([WAC 173-340](#))
11 Method B clean closure performance standards for the target analytes listed in [Table H.4](#). Closure
12 performance standards are discussed in [Section H.3](#).

13 This SAP utilizes Ecology Publication 94-111, Section 7.0, *Sampling and Analysis for Clean Closure*, to
14 determine the type of sampling design to be used to demonstrate clean closure. When designing a
15 sampling plan, both focused and area wide (grid) sampling methods were considered. Ecology
16 Publication 94-111, Section 7.2.1, identifies that area wide sampling is appropriate when the spatial
17 distribution of contamination at or from the closure unit is uncertain. Focused sampling (as identified in
18 Section 7.2.2 of Ecology Publication 94-111) involves selective sampling of areas where contamination is
19 expected or releases have been documented. The 276-BA Organic Storage Area briefly stored organic
20 mixed waste and shows no history of spills, leaks, or other monitoring concerns. There is no history of
21 releases, but due to the configuration of the secondary containment, which has a sloped floor, trench, and
22 sump ([Figure H.3](#)), a focused sampling approach is proposed for collecting soil samples underlying the
23 276-BA Organic Storage Area.

24 Focused sampling is defined as follows: The selection of sampling units (i.e., the number and location
25 and/or timing of collecting samples) is based on knowledge of the feature or condition under investigation
26 and professional judgment. Focused sampling is distinguished from probability based sampling in that
27 interferences are based on professional judgment, not statistical scientific theory. Therefore, conclusions
28 about the target population are limited and depend entirely on the validity and accuracy of professional
29 judgment. Probabilistic statements about parameters are not possible.

30 The secondary containment is a single structure consisting of two basins that held the individual ISO East
31 and ISO West vessels. The basin formerly housing the empty ISO West vessel never received waste of
32 any kind. The ISO East container, which received waste directly from the B Plant Complex, was placed
33 in the 276-BA Organic Storage Area secondary containment structure, sealed and intact. Stored wastes

1 were then removed from the ISO East container to a tanker truck for offsite disposal. Any potential
2 releases from the ISO East container would likely be encountered in the location of the sump or trench
3 within the ISO East portion of the secondary containment structure. These areas have been identified for
4 soil sampling to demonstrate clean closure.

5 For focused sampling beneath the concrete secondary containment structure, the number and location of
6 samples was determined based on the configuration of the secondary containment. The basin cell that
7 housed the ISO West vessel was administratively clean closed and will not be sampled. Five sampling
8 locations beneath the ISO East secondary containment structure were determined to be sufficient to
9 support the overall sampling approach. No structural degradation of the secondary containment has been
10 noted, so all sampling locations were designated to soil beneath low spots and concrete seams in the
11 secondary containment. If upon inspection it is observed that the structural integrity of the secondary
12 containment has been compromised, additional samples will be taken at those locations. In addition, any
13 discoloration or concrete staining will be examined to determine if additional focused sampling locations
14 are warranted upon removal of the concrete structure. [Figure H.3](#) provides the proposed sampling
15 locations beneath the secondary containment. GPS coordinates will be obtained to determine the
16 locations for the sample sites within the sump and along concrete seams. After the secondary
17 containment structure is removed, these locations will then be sampled.

18 **H.6.2.1 Sampling Methods and Handling**

19 A grab sample matrix normally consists of soil collected in pre-cleaned sample containers, taken at a
20 depth of 0 to 15.24 cm (0 to 6 in.) below ground surface. No historical dangerous waste releases were
21 identified; therefore, subsurface sampling is deemed unnecessary. For the purpose of this SAP, the “soil
22 surface” is defined as the exposed surface layer once the secondary containment structure and up to 1 m
23 of soil has been removed. The exposed soil surface will be leveled prior to sample collection. Collection
24 of soil samples would be accomplished with tools such as shovels, trowels, pick-axes, and scoops.

25 After the soil is sampled, the sampled media will be screened to remove material larger than
26 approximately 2 mm (0.08 in.) in diameter per [WAC 173-340-740\(7\)\(a\)](#), which will allow for a larger
27 surface area to volume ratio and would be more likely to identify any potential contamination in the
28 sample. Grab samples will be collected and placed into containers at the chosen node sample locations.
29 To ensure sample and data usability, sampling will be performed in accordance with established sampling
30 practices, procedures, and requirements pertaining to sample collection, collection equipment, and
31 sample handling.

32 Sample container, preservation, and holding time requirements are specified in [Table H.5](#) for soil samples.
33 These requirements are in accordance with the specified analytical methods. The final container type and
34 volumes will be identified on the sampling authorization form (SAF) and the chain-of-custody form.

35 **Table H.5. 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 H.5. Preservation, Container, and Holding Time Requirements for Soil Samples

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

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

1

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

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

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

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

- 13 • SAF and form number
- 14 • HEIS number
- 15 • Sample collection date and time
- 16 • Sampler identification
- 17 • Analysis required
- 18 • Preservation method (if applicable)

19 Sample records must include the following information:

- 20 • Analysis required
- 21 • Sample location
- 22 • Matrix (e.g., water or soil)

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

27 All waste (including unexpected waste) generated by sampling activities will be managed in accordance
28 with [WAC 173-303-170](#) through [173-303-230](#).

29 **H.6.2.2 Analytical Methods**

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

1 will be taken, as discussed in [Section H.7](#). Analytical methods and performance requirements associated
2 with the target analytes are outlined in [Table H.6](#).

3 **H.6.2.3 Quality Control**

4 Quality control (QC) procedures must be followed in the field and laboratory to ensure that decisions
5 made using the data are within an acceptable range of uncertainty. Field QC samples will be collected to
6 evaluate the potential for cross-contamination and to provide information pertinent to field sampling
7 variability. Field QC will include collection of the following types of samples:

- 8 • Full trip blanks
- 9 • Field transfer blanks
- 10 • Equipment rinsate blanks
- 11 • Field duplicates
- 12 • Field split samples

13 Laboratory QC samples estimate the precision and bias of the analytical data. Field and laboratory QC
14 samples and summarized in [Table H.7](#).

15 A data quality assessment will be performed utilizing the guidance in EPA/240/B-06/002, *Data Quality*
16 *Assessment: A Reviewer's Guide*, and implementing the specific requirements in [Section H.6.2.5](#).

17 Data verification, data validation, and data quality assessment will include both the primary samples and
18 the QC samples.

Table H.6. Soil Analytical Performance Requirements

CAS Number	Analyte	Analytical Method	Soil Cleanup Level ^a (mg/kg)		Closure Performance Standard ^b (mg/kg)	Practical Quantitation Limit ^c (mg/kg)	Accuracy Req't (Percent Recovery) ^d	Precision Req't (Relative Percent Difference) ^d
			Carcinogens	Noncarcinogens				
7440-38-2	Arsenic	SW-846 Method 6020	0.667	24	20.0	0.2	±30	≤30
7440-39-3	Barium	SW-846 Method 6010		16,000	132	2.0	±30	≤30
7440-43-9	Cadmium	SW-846 Method 6010		80	0.69	0.5	±30	≤30
7440-47-3	Chromium (total)	SW-846 Method 6010		120,000	42.0	1.0	±30	≤30
7439-92-1	Lead	SW-846 Method 6010		250	50.0	5.0	±30	≤30
7439-97-6	Mercury	SW-846 Method 7471		24	0.2	0.002	±30	≤30
7782-49-2	Selenium	SW-846 Method 6010		400	10.0	0.75	±30	≤30
7440-22-4	Silver	SW-846 Method 6010		400	2.0	1.0	±30	≤30
71-55-6	1,1,1-trichloroethane	SW-846 Method 8260		160,000	1.58	0.005	±30	≤30
67-64-1	Acetone	SW-846 Method 8260		72,000	28.9	0.02	±30	≤30
75-09-2	Methylene chloride	SW-846 Method 8260		480	0.0218	0.005	±30	≤30
78-93-3	Methyl ethyl ketone	SW-846 Method 8260		48,000	19.6	0.01	±30	≤30
108-10-1	Methyl isobutyl ketone	SW-846 Method 8260		6,400	2.73	0.01	±30	≤30
95-48-7	<i>o</i> -cresol	SW-846 Method 8270		4,000	2.33	0.33	±30	≤0

Table H.6. Soil Analytical Performance Requirements

CAS Number	Analyte	Analytical Method	Soil Cleanup Level ^a (mg/kg)		Closure Performance Standard ^b (mg/kg)	Practical Quantitation Limit ^c (mg/kg)	Accuracy Req't (Percent Recovery) ^d	Precision Req't (Relative Percent Difference) ^d
			Carcinogens	Noncarcinogens				
106-44-5	<i>p</i> -cresol	SW-846 Method 8270			8.00	0.33	±30	≤30

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

a. Soil cleanup levels are the numeric cleanup levels calculated according to [WAC 173-340](#), *Model Toxics Control Act—Cleanup*, Method B (unrestricted use standards).

b. Closure performance standards are numeric cleanup levels listed in 17-AMRP-0217, Attachment 1.

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

d. 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.

CAS = Chemical Abstracts Service

Table H.7. 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 H.6 .	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 QA plan and/or analysis procedures.

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

f. The DOE quality systems for analytical services require annual audit for commercial laboratories.

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

1 **H.6.2.4 Data Verification**

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

- 4 • Amount of data requested matches that received (number of samples for requested methods
5 of analytes)
- 6 • Correct procedures and methods are used
- 7 • Documentation/deliverables are complete
- 8 • Hard copy and electronic versions of the data are identical
- 9 • Data appear to be reasonable based on analytical methodologies
- 10 • Sample results are evaluated against QA/QC parameters

11 **H.6.2.5 Data Validation**

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

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

17 The format and requirements for data validation activities are based upon the most current version of
18 EPA-540-R-014-002, *National Functional Guidelines for Superfund Organic Methods Data Review*, and
19 EPA-540-R-013-001, *National Functional Guidelines for Inorganic Superfund Data Review*. As defined
20 by the validation guidelines, 5% of the results will undergo Level C validation.

21 **H.6.2.6 Documents and Records**

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

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

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

- 38 • Field logbooks or operational records
- 39 • Data forms
- 40 • GPS data
- 41 • Chain-of-custody forms
- 42 • Sample receipt records

- 1 • Inspection or assessment reports and corrective action reports
- 2 • Interim progress reports
- 3 • Final reports
- 4 • Laboratory data packages
- 5 • Verification and validation reports

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

- 7 • Analytical logbook
- 8 • Raw data and QC sample records
- 9 • Standard reference material and/or proficiency test sample data
- 10 • Instrument calibration information

11 Records may be stored in either electronic or hard copy format. Documentation and records, regardless of
12 medium or format, are controlled in accordance with internal work requirements and processes to ensure
13 the accuracy and retrievability of stored records. Records will be kept for five years after Ecology
14 approves clean closure certification.

15 **H.6.2.7 Revisions to the Sampling and Analysis Plan and Constituents to be Analyzed**

16 If changes to the SAP are necessary due to unexpected events during closure that will affect sampling,
17 a revision to this SAP will be submitted no later than 30 days after the unexpected event as a RCRA
18 permit modification as required in [WAC 173-303-610\(3\)\(b\)\(iii\)](#) and [WAC 173-303-830](#).

19 **H.7 CONTINGENT CLOSURE PLAN**

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

25 **H.8 SCHEDULE FOR CLOSURE**

26 [Table H.8](#) describes the primary and secondary closure activities and the expected duration of activities.
27 Container removal, secondary containment demolition, verification sampling, and analysis activities will
28 be completed within 180 days after approval of the permit modification incorporating this closure plan
29 ([Figure H.4](#)). Should unexpected circumstances arise and an extension to the 180-day closure activity
30 expiration date be deemed necessary, a permit modification request will be submitted to Ecology for
31 approval at least 30 days prior to the 180-day expiration date in accordance with [WAC 173-303-610\(4\)\(c\)](#)
32 and [WAC 173-303-830](#). The extension request would also demonstrate that all steps to prevent threats to
33 human health and the environment, including compliance with all applicable permit requirements and
34 criteria in [WAC 173-303-610\(4\)\(b\)\(i\)](#) or (ii), have been and will be taken.

Table H.8. Closure Activity Description

Primary Activity	Secondary Activity	Expected Duration
ISO East container removal and disposal: <ul style="list-style-type: none"> • Stabilize liquid container contents (if present) with absorbent material • Remove stabilized container from secondary containment structure • Place container on flatbed truck for transport for disposal • Dispose container in ERDF or other approved disposal facility 	Verify sampling and analysis of soils for clean closure levels: <ul style="list-style-type: none"> • Locate focused sampling nodes • Collect soil samples • Analyze samples • Validate data • Analyze data 	180 days
Secondary containment structure demolition and disposal: <ul style="list-style-type: none"> • 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 (IQRPE) certification	Transmit closure certification to Ecology	60 days

1

1

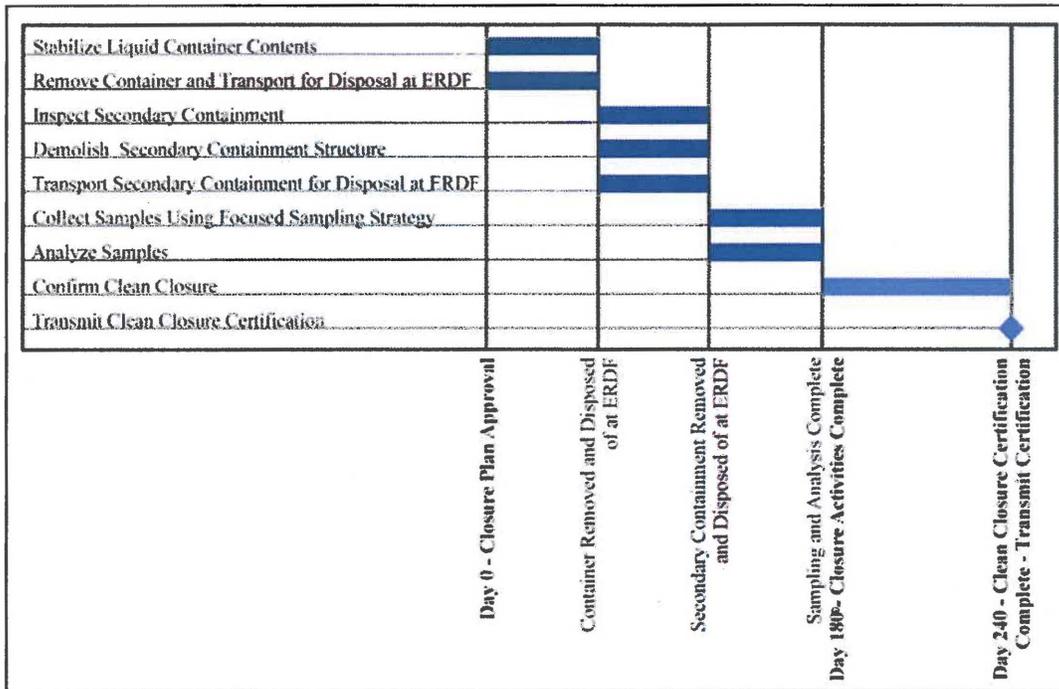


Figure H.4. 276-BA Organic Storage Area Closure Plan Schedule

H.9 CERTIFICATION OF CLOSURE

Within 60 days of completion of closure, a certification that the 276-BA Organic Storage Area has been closed in accordance with the specifications in the approved closure plan will be submitted to Ecology by registered mail. Both DOE and the co-operator identified on the current RCRA Part A Form will sign the certification of closure, and an 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 container 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.

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

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

14 **H.10 POST-CLOSURE PLAN**

15 The closure strategy is to attain clean closure of the 276-BA Organic Storage Area. If the conditions for
16 verification described in [Section H.6](#) meet the closure performance standards, then a post-closure plan
17 will not be necessary. If clean closure is not achieved, then a revised closure plan will be provided within
18 180 days after the permittee has demonstrated that not all contaminated soils can be practicably removed
19 or decontaminated.

20 **H.11 AMENDMENT OF CLOSURE PLAN**

21 As required by [WAC 173-303-610\(3\)\(b\)](#), a permit modification request will be submitted if changes to
22 closure activities require modification of the approved closure plan.

23 **H.12 REFERENCES**

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DRAFT



Central File: _____
File Name: Plant
Cross Reference: _____

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

November 8, 1994

Mr. Al Conklin
Department of Health
P.O. Box 47827
Olympia, WA 98504-7827

Dear Mr. Conklin:

Enclosed for your Agency's review is a **Determination of Non-Significance, Environmental Checklist, and Addendum** under the State Environmental Policy Act (SEPA). This is for the **B. Plant Complex** treatment and tank storage capacity expansion and revision to the Hanford Facility Dangerous Waste Part A Permit Application. This project is located in the Hanford **Tank Farm Facilities 200 East Area**.

If you have any questions, please call me at (206) 407-7112.

Sincerely,

Geoff Tallent
Program SEPA Coordinator
Nuclear Waste Program

GR:RE:jr
Enclosures

DETERMINATION OF NONSIGNIFICANCE

Description of proposal: B Plant Complex Notice Of Intent for expansion of treatment and tank storage capacity under interim status and revision to the Hanford Facility Dangerous Waste Part A Permit Application, Form 3.

Proponent: U.S. Department of Energy Richland Operations Office, Richland Washington.

Location of proposal, including street address if any: The B Plant Complex is located north of I7th Street , east of Akron Avenue, and south of Baltimore Avenue in the Northwestern portion of the 200 East Area. This is near the center of the Hanford facility. The site is approximately 22 miles (40.7) Kilometers northwest of Richland WA. in Section 4, Township 12 North, Range 27 East W.M

Lead agency: Department of Ecology, Nuclear Waste Program

The lead agency for this proposal has determined that it does not have a probable significant impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request at the Department of Ecology, P.O. Box 47600, Olympia, Washington 98504-7600.

- There is no comment period for this DNS.
- This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 15 days from the date below. Comments must be submitted by ____/____/____.

Responsible official: Dru Butler

Position/Title: Program Manager, Nuclear Waste Program

Address: Department of Ecology, PO Box 47600, Olympia, WA 98504-7600

Date 11-7-94 Signature Dru Butler

**STATE ENVIRONMENTAL POLICY ACT
ENVIRONMENTAL CHECKLIST FORMS**

FOR THE

**HANFORD FACILITY,
B PLANT COMPLEX**

REVISION 0

JANUARY 1994

**WASHINGTON ADMINISTRATIVE CODE
ENVIRONMENTAL CHECKLIST FORMS
[WAC 197-11-960]**

A. BACKGROUND

1
2
3
4 1. Name of proposed project, if applicable:

5
6 Hanford Facility, Notice of Intent (NOI) for Expansion Under Interim
7 Status for the B Plant Complex tank treatment and storage capacity
8 expansion. In the context of the document, 'site' refers to only the
9 physical structures of the B Plant Complex, whereas 'Site' refers to the
10 Hanford Site.

11
12 2. Name of applicants:

13
14 U.S. Department of Energy, Richland Operations Office (DOE-RL) and
15 Westinghouse Hanford Company

16
17 3. Address and phone number of applicants and contact persons:

18
19 U.S. Department of Energy
20 Richland Operations Office
21 P.O. Box 550
22 Richland, Washington 99352

Westinghouse Hanford Company
P.O. Box 1970
Richland, Washington 99352

23
24 Contact:

25
26 J. D. Bauer, Program Manager
27 Office of Environmental Assurance,
28 Permits, and Policy
29 (509) 376-5441

R. E. Lerch, Deputy Director
Restoration and Remediation
(509) 376-5556

30
31 4. Date checklist prepared:

32
33 January 3, 1994

34
35 5. Agency requesting the checklist:

36
37 Washington State
38 Department of Ecology
39 P. O. Box 47600
40 Olympia, WA 98504-7600

41
42 6. Proposed timing or schedule: (including phasing, if applicable):

43
44 This SEPA Environmental Checklist is being submitted concurrently with
45 the Hanford Facility, B Plant Complex NOI. The NOI is being submitted in
46 accordance with the Washington State Department of Ecology (Ecology)
47 *Dangerous Waste Regulations*, Washington Administrative Code (WAC)
48 173-303-281, "Notice of Intent", which require that dangerous waste
49 facility owners and/or operators submit an NOI before submittal of a
50 Part A permit application, Form 3, for new or expanded dangerous waste
51 treatment, storage, and/or disposal (TSD) units. After submittal of the
52 NOI, there will be an opportunity for public notification and review for

1 150 days. Submittal of the revised Hanford Facility Dangerous Waste
2 Part A Permit Application (Part A), Form 3, for the B Plant Complex will
3 occur after the public comment period.
4

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

8 Future activities related to this proposal are the proposed tank
9 integrity/corrective action as identified in the *Hanford Federal Facility*
10 *Agreement and Consent Order* (Tri-Party Agreement) Milestone M-32-00.
11 (Once this tank integrity assessment is completed and the results
12 analyzed, upgrades to the dangerous waste tank systems at the B Plant
13 Complex will be initiated where necessary.)
14

- 15 8. List any environmental information you know about that has been prepared,
16 or will be prepared, directly related to this proposal.
17

18 This SEPA Environmental Checklist is being submitted to Ecology
19 concurrently with the NOI for the Hanford Facility, B Plant Complex. The
20 Hanford Facility dangerous waste permit application documentation for the
21 B Plant Complex will be submitted to Ecology by September 30, 1995.
22

23 Environmental information on the Hanford Site, in general, can be found
24 in the following references: (1) *Hanford Site National Environmental*
25 *Policy Act (NEPA) Characterization*, PNL-6415 (Revision 5, Pacific
26 Northwest Laboratory, 1992, Richland, Washington); (2) *Archaeological*
27 *Survey of the 200 East and 200 West Areas, Hanford Site Washington*,
28 PNL-7264 (Pacific Northwest Laboratory, 1990, Richland, Washington);
29 (3) *Final Environmental Impact Statement - Decommissioning of Eight*
30 *Surplus Production Reactors at the Hanford Site, Richland, Washington*,
31 DOE/EIS-0119 (U.S. Department of Energy, 1989, Washington, D.C.);
32 (4) *Final Environmental Impact Statement - Disposal of Hanford Defense*
33 *High-Level, Transuranic and Tank Wastes*, DOE/EIS-0113 (U.S. Department of
34 Energy, 1987, Richland, Washington); (5) *Final Environmental Impact*
35 *Statement - Waste Management Operations*, ERDA-1538 (U.S. Energy Research
36 and Development Administration, 1975, Richland, Washington).
37

- 38 9. Do you know whether applications are pending for government approvals of
39 other proposals directly affecting the property covered by your proposal?
40 if yes, explain.
41

42 No other applications are pending.
43

- 44 10. List any government approvals or permits that will be needed for your
45 proposal, if known.
46

47 The Hanford Facility dangerous waste permit application documentation for
48 the B Plant Complex will be submitted to Ecology by September 30, 1995,
49 in accordance with Tri-Party Agreement Milestone M-20-21A.
50

- 1 11. Give brief, complete description of your proposal, including the proposed
2 uses and the size of the project and site. There are several questions
3 later in this checklist that ask you to describe certain aspects of your
4 proposal. You do not need to repeat those answers on this page.
5

6 This SEPA Environmental Checklist has been prepared for submission with
7 the B Plant Complex NOI for expansion under interim status, which is
8 being completed in association with a revision to the Hanford Facility
9 Dangerous Waste Part A Permit Application, Form 3, B Plant Complex. The
10 Part A permit application, Form 3, revision is necessary to accurately
11 reflect the present and future operations of the dangerous waste tank
12 systems at the B Plant Complex. The boundaries of the tank systems will
13 be defined and tank storage designations will be added to existing tank
14 treatment systems when the Part A revision is submitted.
15

16 The tanks are located in various process cells of the 221-B Building. A
17 typical cell is 34 feet (10 meters) long by 18 feet (5.5 meters) wide by
18 13 feet (3.9 meters) deep. Each cell is covered with four concrete cover
19 blocks. These tanks currently are being operated under interim status
20 and will be closed at the end of the operational life.
21

- 22 12. Location of the proposal. Give sufficient information for a person to
23 understand the precise location of your proposed project, including a
24 street address, if any, and section, township, and range, if known. If a
25 proposal would occur over a range of area, provide the range or
26 boundaries of the site(s). Provide a legal description, site plan,
27 vicinity map, and topographic map, if reasonably available. While you
28 should submit any plans required by the agency, you are not required to
29 duplicate maps or detailed plans submitted with any permit applications
30 related to this checklist.
31

32 The B Plant Complex is located north of 7th Street, east of Akron Avenue,
33 and south of Baltimore Avenue in the northwestern portion of the 200 East
34 Area near the center of the Hanford Facility. The B Plant Complex is
35 approximately 22 miles (40.7 kilometers) from the city of Richland.
36
37

38 B. ENVIRONMENTAL ELEMENTS

39 TO BE COMPLETED BY APPLICANT

40 EVALUATIONS FOR 41 AGENCY USE ONLY

42 1. Earth

- 43 a. General description of the site (circle one):
44 Flat, rolling, hilly, steep slopes, mountainous,
45 other _____
46

47 Flat.
48
49
50

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EVALUATIONS FOR
AGENCY USE ONLY

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

The approximate slope of the land at the site of the B Plant Complex is less than 2 percent.

- c. What general types of soils are found on the site? (for example, clay, sandy gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

The soil at the site consists of compacted sand and gravel fill material underlain by sandy gravel with excellent drainage characteristics. No farming is permitted on the Hanford Facility.

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

No. There has been no history of unstable soils or subsidence in the area of the B Plant Complex.

- e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

No filling or grading will be required.

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

No clearing or construction is required for this expansion. Erosion will not occur.

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

The existing building will not have any additional surface area of any kind covered by this expansion.

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

No impacts are expected.

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EVALUATIONS FOR
AGENCY USE ONLY

2. Air

- a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities, if known.

Because the B Plant Complex is an existing TSD unit, no construction will be performed for this expansion. Approximate quantities of air emissions from the B Plant Complex are given in documentation titled *Calendar Year 1992 Air Emissions Report for the Hanford Site* (DOE-RL 1993).

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

No.

- c. Proposed measures to reduce or control emissions or other impacts to the air, if any?

None at this time.

3. Water

a. Surface

- 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.

There is no surface water body on or in the immediate vicinity of the B Plant Complex. Two intermittent streams traverse through the Hanford Facility: Cold Creek and Dry Creek. Water drains through these creeks during the wetter winter and spring months. No perennial streams originate within the Pasco Basin. Primary surface water features associated with the Hanford Facility are the Columbia and Yakima Rivers, and their major

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EVALUATIONS FOR
AGENCY USE ONLY

1 tributaries, the Snake and Walla Walla
2 Rivers. West Lake, about 10 acres
3 (4.05 hectares) in size and less than 3 feet
4 (0.9 meter) deep, is the only natural lake
5 within the Hanford Facility. Waste water
6 ponds, cribs, and ditches associated with
7 nuclear fuel reprocessing and waste disposal
8 activities also are present on the Hanford
9 Facility.

- 10
11 2) Will the project require any work over, in,
12 or adjacent to (within 200 feet) the
13 described waters? If yes, please describe and
14 attach available plans.

15
16 The B Plant Complex treatment and storage
17 will not require any work over, in, or
18 adjacent to the described waters.

- 19
20 3) Estimate the amount of fill and dredge
21 material that would be placed in or removed
22 from surface water or wetlands and indicate
23 the area of the site that would be affected.
24 Indicate the source of fill material.

25
26 There would be no dredging or filling from or
27 to surface waters or wetlands.

- 28
29 4) Will the proposal require surface water
30 withdrawals or diversions? Give general
31 description, purpose, and approximate
32 quantities if known.

33
34 The water supply for the 200 Areas is pumped
35 from the Columbia River. The treatment and
36 storage in tanks at the B Plant Complex uses
37 relatively little of this overall withdrawal.
38 The estimated amounts are insignificant
39 compared to normal daily water used in the
40 200 Areas.

- 41
42 5) Does the proposal lie within a 100-year
43 floodplain? If so, note location on the site
44 plan.

45
46 The B Plant Complex is not within the
47 100-year or 500-year floodplains [Hanford
48 Site National Environmental Policy Act (NEPA)]

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EVALUATIONS FOR
AGENCY USE ONLY

1 *Characterization*, PNL-6415, Revision 5,
2 December 1992].

- 3
4 6) Does the proposal involve any discharges of
5 waste materials to surface waters? If so,
6 describe the type of waste and anticipated
7 volume of discharge.

8
9 No.

10
11 b. Ground

- 12
13 1) Will ground water be withdrawn, or will water
14 be discharged to ground water? Give general
15 description, purpose, and approximate
16 quantities if known.

17
18 No groundwater would be withdrawn in support
19 of this project, and water would not be
20 discharged to the aquifer. In the vicinity
21 of the B Plant Complex, the depth to
22 groundwater is over 260 feet (79 meters).

- 23
24 2) Describe waste material that will be
25 discharged into the ground from septic tanks
26 or other sources, if any (for example:
27 Domestic sewage; industrial, containing the
28 following chemicals...; agricultural; etc.).
29 Describe the general size of the system, the
30 number of such systems, the number of houses
31 to be served (if applicable), or the number
32 of animals or humans the system(s) are
33 expected to serve.

34
35 Waste material will not be discharged into
36 the ground.

37
38 c. Water Run-off (including storm water)

- 39
40 1) Describe the source of run-off (including
41 storm water) and method of collection and
42 disposal, if any (include quantities, if
43 known). Where will this water flow? Will
44 this water flow into other waters? If so,
45 describe.

46
47 The Hanford Facility receives only 6 to
48 7 inches (15.2 to 17.8 centimeters) of annual
49 precipitation. Precipitation runs off the

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EVALUATIONS FOR
AGENCY USE ONLY

1 existing buildings and seeps into the soil on
2 and near the buildings. This precipitation
3 does not reach the groundwater or surface
4 waters. The precipitation would not come
5 into contact with any of the mixed waste
6 treated and/or stored by normal activities.
7

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

10
11 No waste materials are expected to enter
12 ground or surface waters.
13

14 d. Proposed measures to reduce or control surface,
15 ground, and run-off water impacts, if any:

16 No surface, ground, or run-off water impacts are
17 expected.
18
19

20 4. Plants

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

- 22 ___ deciduous tree: alder, maple, aspen, other
23 ___ evergreen tree: fir, cedar, pine, other
24 X shrubs
25 X grass
26 ___ pasture
27 ___ crop or grain
28 ___ wet soil plants: cattail, buttercup, bulrush,
29 skunk cabbage, other
30 ___ water plants: water lily, eelgrass, milfoil,
31 other
32 X other types of vegetation
33

34
35
36 The most common vegetation community in the
37 vicinity of the B Plant Complex is the
38 sagebrush/cheatgrass or Sandberg's bluegrass.
39 Native vegetation in the immediate vicinity of the
40 B Plant Complex has been eradicated. Vegetation
41 consists primarily of cultivated ornamentals.
42

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

45 No native vegetation alternation would occur.
46
47

TO BE COMPLETED BY APPLICANT

EVALUATIONS FOR
AGENCY USE ONLY

- 1 c. List threatened or endangered species known to be
2 on or near the site.
3

4 None. Additional information on the Hanford
5 Facility environment can be found in the
6 environmental document referred to in the answer
7 to Checklist Question A.8.
8

9 The Hanford Facility contains some federal and
10 state listed threatened and endangered plant and
11 animal species. Additional information on species
12 can be found in *Hanford Site National*
13 *Environmental Policy Act (NEPA) Characterization,*
14 *PNL-6415 (Revision 5, Pacific Northwest*
15 *Laboratory, 1992, Richland, Washington).*
16

- 17 d. Proposed landscaping, use of native plants, or
18 other measures to preserve or enhance vegetation
19 on the site, if any:
20

21 Not applicable.
22

23 5. Animals
24

- 25 a. Indicate (by underlining) any birds and animals
26 which have been observed on or near the site or
27 are known to be on or near the site:
28

29 birds: hawk, heron, eagle, songbirds,
30

31 other:

32 mammals: deer, bear, elk, beaver,
33

34 other:

35 fish: bass, salmon, trout, herring, shellfish,
36
37 other:

38 Raptors (burrowing owls, ferruginous, redtail, and
39 Swainson's hawks) are seen occasionally in the
40 200 East Area. Small passerines (sparrows,
41 starlings, finches) also are present in the
42 general vicinity of the B Plant Complex. Mule
43 deer, rabbits, badgers, and coyotes occasionally
44 are seen in the general area.
45

- 46 b. List any threatened or endangered species known to
47 be on or near the site.
48

49 Two federal and state listed threatened or
endangered species have been identified on the
560 square mile (1,450 square kilometer) Hanford

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EVALUATIONS FOR
AGENCY USE ONLY

1 Site along the Columbia River; the bald eagle and
2 peregrine falcon. In addition, the state listed
3 white pelican, sandhill crane, and ferruginous
4 hawk also occur on or migrate through the Hanford
5 Site. Of these five species, only the ferruginous
6 hawk is likely to use the upland shrub-steppe
7 habitat of the 200 Areas. Although ferruginous
8 hawks have been seen in the general area on
9 occasion, ferruginous hawks have not been observed
10 to use the habitat in the vicinity of the B Plant
11 Complex for perching, hunting, or nesting.
12

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

15
16 The Hanford Site is a part of the broad Pacific
17 Flyway.
18

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

21
22 This project contains no specific measures to
23 preserve or enhance wildlife.
24

25 6. Energy and Natural Resources

- 26
27 a. What kinds of energy (electric, natural gas, oil,
28 wood stove, solar) will be used to meet the
29 completed project's energy needs? Describe
30 whether it will be used for heating,
31 manufacturing, etc.
32

33 Electricity is used to provide heating,
34 ventilation, and lighting and to operate the
35 B Plant Complex.
36

- 37 b. Would your project affect the potential use of
38 solar energy by adjacent properties? If so,
39 generally describe.
40

41 No.
42

- 43 c. What kinds of energy conservation features are
44 included in the plans of this proposal? List
45 other proposed measures to reduce or control
46 energy impacts, if any:
47

48 Energy consumption is not anticipated to be
49 significant, and energy conservation features are

TO BE COMPLETED BY APPLICANT

EVALUATIONS FOR
AGENCY USE ONLY

1 not easily applicable to the storage of waste at
2 the B Plant Complex.
3

4 7. Environmental Health
5

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

11 Possible environmental health hazards to workers
12 could arise from activities at the B Plant
13 Complex. The hazard could come from exposure to
14 radioactive, dangerous or mixed waste. Stringent
15 administrative controls and engineered barriers
16 are employed to minimize the probability of even a
17 minor incident and/or accident. A chemical spill,
18 release, fire, or explosion could occur only as a
19 result of a simultaneous breakdown in multiple
20 barriers or a catastrophic natural forces event.
21

- 22
23 1) Describe special emergency services that
24 might be required.
25

26 Hanford Facility security, fire response, and
27 ambulance services are on call at all times
28 in the event of an onsite emergency.
29

30 Hanford Site security, fire response, and
31 ambulance services are on call at all times
32 in the event of an onsite emergency. Hanford
33 Site emergency services personnel are
34 specially trained to manage a variety of
35 circumstances involving chemical and/or mixed
36 waste constituents and situations.
37

- 38 2) Proposed measures to reduce or control
39 environmental health hazards, if any:
40

41 All personnel are trained to follow proper
42 procedures during the B Plant Complex storage
43 and treatment operations to minimize
44 potential exposure. The B Plant Complex has
45 systems for ventilation, radiation
46 monitoring, fire protection, and alarm
47 capability. The heating, ventilation, and
48 air-conditioning systems maintain a negative
49 air pressure.

TO BE COMPLETED BY APPLICANT

EVALUATIONS FOR
AGENCY USE ONLY

1 The B Plant Complex has measures in place to
2 reduce or control environmental health
3 hazards. These measures include containment
4 structures and equipment, protective
5 equipment and clothing, and operating
6 procedures to ensure hazards are minimized.
7 The physical security of a chain link fence
8 around the 200 East Area and limitation of
9 access to authorized personnel would further
10 reduce potential exposures.

11
12 **b. Noise**

- 13
14 1) What type of noise exists in the area which
15 may affect your project (for example:
16 traffic, equipment, operation, other)?

17
18 While there is a minor amount of traffic,
19 operation, and equipment noise in the
20 vicinity, it is not expected to affect
21 personnel at the B Plant Complex.

- 22
23 2) What types and levels of noise would be
24 created by or associated with the project on
25 a short-term or a long-term basis (for
26 example: traffic, construction, operation,
27 other)? Indicate what hours noise would come
28 from the site.

29
30 Minor amounts of noise from traffic and
31 equipment are expected during day-shift
32 hours.

- 33
34 3) Proposed measures to reduce or control noise
35 impacts, if any:

36
37 If Occupational Safety and Health
38 Administration noise standards are exceeded,
39 appropriate measures to protect workers would
40 be employed.

41
42 **8. Land and Shoreline Use**

- 43
44 a. What is the current use of the site and adjacent
45 properties?

46
47 The Hanford Facility is a single RCRA facility
48 identified by the U.S. Environmental Protection
49 Agency (EPA)/State Identification Number

TO BE COMPLETED BY APPLICANT

EVALUATIONS FOR
AGENCY USE ONLY

1 WA7890008967 that consists of over 60 TSD units
2 conducting dangerous waste management activities.
3 These TSD units are included in the *Hanford*
4 *Facility Dangerous Waste Part A Permit*
5 *Application*. The Hanford Facility consists of all
6 contiguous land, and structures, other
7 appurtenances, and improvements on the land, used
8 for recycling, reusing, reclaiming, transferring,
9 storing, treating, or disposing of dangerous
10 waste, which, for the purposes of the RCRA, are
11 owned by the U.S. Government and operated by the
12 DOE-RL (excluding lands north and east of the
13 Columbia River, river islands, lands owned or used
14 by the Bonneville Power Administration, lands
15 leased to the Washington Public Power Supply
16 System, and lands owned by or leased to the state
17 of Washington).

- 18
19 b. Has the site been used for agriculture? If so,
20 describe.

21
22 No portion of the 200 Areas has been used for
23 agricultural purposes since 1943, if ever.

- 24
25 c. Describe any structures on the site.

26
27 The B Plant Complex consists of three structures:
28 the 221-B Building, the 271-B Building, and the
29 225-B Waste Encapsulation and Storage Facility
30 (WESF).

31
32 The 221-B Building is made of reinforced concrete
33 and is 850 feet (260 meters) long by 68 feet
34 (21 meters) wide by 74 feet (23 meters) high,
35 covering an area of 57,800 square feet
36 (5,400 square meters). The 221-B Building
37 consists of a canyon (which is divided into
38 20 sections, each section contains two cells),
39 three galleries (operating, pipe, and electrical),
40 and one craneway.

41
42 The 271-B Building provides space for
43 administrative activities including office space
44 and locker rooms.

45
46 The 225-B (WESF) is a structure that was used for
47 the encapsulation of purified cesium and
48 strontium. The WESF currently houses pool cells

TO BE COMPLETED BY APPLICANT

EVALUATIONS FOR
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used for the safe storage of the cesium and strontium capsules.

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

No structures will be demolished.

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

The Hanford Site is zoned as an Unclassified Use (U) district by Benton County.

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

The 1985 Benton County Comprehensive Land Use Plan designates the Hanford Site as the "Hanford Reservation." Under this designation, land on the Site may be used for "activities nuclear in nature." Nonnuclear activities are authorized "if and when DOE approval for such activities is obtained."

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

Does not apply.

- h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

No.

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

It has been estimated that approximately one worker year of effort generally will be required to monitor the B Plant Complex, perform periodic maintenance, and handle waste transfers.

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

None.

TO BE COMPLETED BY APPLICANT

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

Does not apply.

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

Does not apply.

9. Housing

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

None.

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

None.

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

Does not apply.

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?

No construction is 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:

None.

TO BE COMPLETED BY APPLICANT

EVALUATIONS FOR
AGENCY USE ONLY

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11. Light and Glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
None.
- 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:
None.

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?
None.

TO BE COMPLETED BY APPLICANT

EVALUATIONS FOR
AGENCY USE ONLY

1 13. Historic and Cultural Preservation

- 2
3 a. Are there any places or objects listed on, or
4 proposed for, national, state, or local
5 preservation registers known to be on or next to
6 the site? If so, generally describe.

7
8 No places or objects listed on, or proposed for
9 national, state, or local preservation registers
10 are known to be on or next to the B Plant Complex.
11 Additional information concerning Hanford Site
12 cultural resources can be found in *Hanford Site*
13 *National Environmental Policy Act (NEPA)*
14 *Characterization*, PNL-6415, Revision 5,
15 December 1992.

- 16
17 b. Generally describe any landmarks or evidence of
18 historic, archaeological, scientific, or cultural
19 importance known to be on or next to the site.

20
21 There are no known landmarks or evidence of
22 historic, archaeological, scientific, or cultural
23 importance at the B Plant Complex.

- 24
25 c. Proposed measures to reduce or control impacts, if
26 any:

27
28 Does not apply.

29
30 14. Transportation

- 31
32 a. Identify public streets and highways serving the
33 site, and describe proposed access to the existing
34 street system. Show on site plans, if any.

35
36 Does not apply.

- 37
38 b. Is site currently served by public transit? If
39 not, what is the approximate distance to the
40 nearest transit stop?

41
42 The B Plant Complex is not accessible to the
43 public and is not served by public transit.

- 44
45 c. How many parking spaces would the completed
46 project have? How many would the project
47 eliminate?

48
49 Does not apply.

TO BE COMPLETED BY APPLICANT

EVALUATIONS FOR
AGENCY USE ONLY

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

No.

e. Will the project 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? If known, indicate when peak volumes would occur.

None.

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

None.

15. Public Services

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

No.

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

Does not apply.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:

Electricity, telephone, water, and steam.

TO BE COMPLETED BY APPLICANT

**EVALUATIONS FOR
AGENCY USE ONLY**

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- 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.

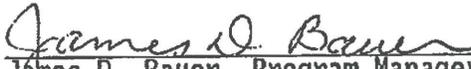
No new utilities are proposed. No construction activities are anticipated.

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1 SIGNATURES

2
3 The above answers are true and complete to the best of my knowledge. We
4 understand that the lead agency is relying on them to make its decision.
5
6
7

8
9 
10 James D. Bauer, Program Manager
11 Office of Environmental Assurance,
12 Permits, and Policy
13 U.S. Department of Energy
14 Richland Operations Office
15
16
17
18
19

3/21/94
Date

20 
21 R. E. Lerch, Deputy Director
22 Restoration and Remediation
Westinghouse Hanford Company

3/21/94
Date

1
2 **SEPA Environmental Checklist**

3
4 **A. Background**

5
6 **1. Name of proposed project, if applicable:**

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

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

11 **2. Name of applicant:**

12 DOE-RL

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

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

18 Contact:

19 Stacy L. Charboneau, Manager
20 Richland Operations Office
21 509-376-7395

22 **4. Date checklist prepared:**

23 September 2015

24 **5. Agency requesting checklist:**

25 Washington State Department of Ecology
26 Nuclear Waste Program
27 3100 Port of Benton Boulevard
28 Richland, WA 99354

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

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

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

34 No.

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

37 The *B Plant 276-BA Organic Storage Area SEPA Environmental Checklist*, Revision 0, is to be submitted with
38 the permit request for the *B Plant 279-BA Organic Storage Area Closure Plan*, Rev 0, submitted in September
39 2015.

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

- 4 • DOE/EIS-0 113, *Final Environmental Impact Statement; Disposal of Hanford Defense High-Level,*
5 *Transuranic and Tank Wastes*, December 1987
- 6
- 7 • DOE/EIS-0 I 89F, *Final Environmental Impact Statement for the Tank Waste Remediation System,*
8 *Richland, Washington*, August 1996
- 9
- 10 • DOE/EIS-039 1, *Final Tank Closure and Waste Management Environmental Impact Statement for the*
11 *Hanford Site, Richland, WA*, December 2012

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

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

21 No applications are pending at this time.

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

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

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

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

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

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

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

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

7 B. Environmental Elements

8 1. Earth

9 a. General description of the site:

10 Flat.

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

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

13 c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you 14 know the classification of agricultural soils, specify them and note any agricultural land of long-term 15 commercial significance and whether the proposal results in removing any of these soils.

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

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

21 No.

22 e. Describe the purpose, type, total area, and approximate quantities and total affected area of any 23 filling, excavation, and grading proposed. Indicate source of fill. [help]

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

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

28 No.

29 g. About what percent of the site will be covered with impervious surfaces after project construction 30 (for example, asphalt or buildings)?

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

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

34 None.

35 2. Air

36 a. What types of emissions to the air would result from the proposal during construction, operation, 37 and maintenance when the project is completed? If any, generally describe and give approximate 38 quantities if known.

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

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

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

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

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

13 **3. Water**

14 **a. Surface Water:**

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

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

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

22 No.

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

26 None.

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

29 No.

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

31 No.

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

34 No.

35 **b. Ground Water:**

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

40 No.

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

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

7 **c. Water runoff (including stormwater):**

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

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

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

18 No waste materials will enter ground or surface waters.

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

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

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

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

27 **4. Plants**

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

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

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

33 Not applicable.

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

35 None.

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

38 Not applicable.

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

40

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

3 **5. Animals**

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

6 birds: ground nesters and songbirds

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

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

11 DOE practices will be employed to ensure compliance with the *Migratory Bird Treaty Act of 1918* and in
12 line with the guidance provided in the *Hanford Site Biological Resources Management Plan DOE/RL 96-*
13 *32, Rev. 1* and the Memorandum of Understanding between DOE and the U.S. Fish and Wildlife Service
14 per Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds.*

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

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

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

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

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

27 See response to 5a.

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

29 See response to 5a.

30 **6. Energy and Natural Resources**

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

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

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

38 No.

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

41 None.

1 **7. Environmental Health**

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

5 The 276-BA Organic Storage Area ISO East tank formerly stored organic mixed waste solvent resulting
6 from the B Plant strontium recovery process. Wastes were removed from the tank and disposed offsite in
7 1997. Less than two gallons of liquid organic mixed waste remain in the tank and will be stabilized with
8 absorbent prior to tank removal. There have been no reported leaks or spills at the site. Because the tank
9 will be removed intact under the proposed action, no releases to the environment from past or present
10 use/management are anticipated.

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

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

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

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

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

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

21 Not applicable.

- 22 **4) Describe special emergency services that might be required.**

23 Not applicable.

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

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

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

- 29 **b. Noise**

- 30
31 **1) What types of noise exist in the area which may affect your project (for example:**
32 **traffic, equipment, operation, other)?**

33 None.

- 34
35
36 **2) What types and levels of noise would be created by or associated with the project on a**
37 **short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate**
38 **what hours noise would come from the site.**

39 Construction from the hours of 0700 to 1700.

- 40
41
42 **3) Proposed measures to reduce or control noise impacts, if any:**

43 None.
44

1 **8. Land and Shoreline Use**

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

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

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

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

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

17 Not applicable.

- 18 **c. Describe any structures on the site.**

19 See responses to A.11 and A.12.

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

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

- 22 **e. What is the current zoning classification of the site?**

23 Not applicable.

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

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

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

29 Not applicable.

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

31 No.

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

33 None.

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

35 None.

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

37 Not applicable.

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

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

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

4 Not applicable.

5 **9. Housing**

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

8 Not applicable.

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

11 Not applicable.

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

13 Not applicable.

14 **10. Aesthetics**

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

17 Not applicable; no new structures are being proposed.

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

19 None.

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

21 Not applicable.

22 **11. Light and Glare**

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

25 None. All activities will occur in daylight.

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

27 No.

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

29 None.

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

31 Not applicable.

32 **12. Recreation**

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

34 None.

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

36 No.

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

3 Not applicable.

4 **13. Historic and cultural preservation**

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

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

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

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

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

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

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

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

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

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

8 **14. Transportation**

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

11 None.

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

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

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

18 Not applicable.

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

22 No.

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

25 No.

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

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

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

33 No.

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

35 Not applicable.

36 **15. Public Services**

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

39 No.

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

1 Not applicable.

2 **16. Utilities**

3 **a. Circle utilities currently available at the site:**

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

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

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

11

12 **C. Signature**

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

15

16 Signature:

Stacy Charboneau

17 Name of signee

Stacy Charboneau

18 Position and Agency/Organization

Manager, DOE RL

19 Date Submitted:

5/4/16

20