



DEPARTMENT OF
ECOLOGY
State of Washington

FACT SHEET

Proposed Permit Modification to Part III 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, Operating Unit Group 1, Low-Activity Waste Pretreatment System*

September 2020

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FACT SHEET

Proposed Permit Modification to Part III 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 Operating Unit Group 1, Low-Activity Waste Pretreatment System*

PERMITTEES

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
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The Washington State Department of Ecology (Ecology) developed this Fact Sheet in accordance with the requirements of Washington Administrative Code (WAC) 173-303-840(2)(f). Its purpose is to discuss the proposed draft permit modification to Part III 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 Operating Unit Group 1, Low-Activity Waste Pretreatment System (LAWPS) to Part III of the Hanford Site-wide Permit.

This Fact Sheet is divided into six sections:

- 1.0 Hanford Facility Dangerous Waste Permit (Site-Wide Permit) Background.
- 2.0 Low-Activity Waste Pretreatment System Operating Unit Group Description.
- 3.0 Class 3 Permit Modification Process for the LAWPS Operating Unit Group.
- 4.0 Proposed Modification to Part III 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 Facility Dangerous Waste Permit (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 Revised Code of Washington (RCW) and WAC 173-303. The Hanford Site-wide Permit has requirements for the treatment, storage, and disposal of dangerous and/or mixed waste at Hanford. Ecology does not regulate waste that is solely radioactive. The United States Department of Energy (USDOE) has the exclusive authority to regulate radioactive materials and radioactive waste at Hanford.

Ecology first issued the Hanford Site-wide Permit in 1994. 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 dangerous and/or mixed waste Treatment, Storage and Disposal (TSD) Units at Hanford. These TSDs are administratively grouped into operating, closure, or post-closure unit groups in the Hanford 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

Upon approval and issuance of this permit modification the LAWPS Operating Unit Group, (OUG 1) will be added to Part III Operating Units, of the Hanford Site-wide Permit. Approval of this permit will authorized the Permittees to begin construction activities, but it will not authorize operations.

2.0 LAWPS Operating Unit Group Description

The LAWPS OUG will be located in the 200 East Area of the Hanford site. The LAWPS OUG will be operated in phases, with LAWPS Phase One as a Tank Side Cesium Removal (TSCR) unit that will operate for approximately 5 years. Phase Two will either use a permanent cesium removal capability or an additional TSCR unit(s) to support full operations of the Waste Treatment and Immobilization Plant (WTP) Low-Activity Waste (LAW) Facility.

The Dangerous Waste Management Units for the LAWPS Phase One include tank treatment and storage, and container storage. The TSCR unit is a mixed waste treatment and storage unit that will treat Double-Shell Tank (DST) supernatant waste. The TSCR system is housed in a Process Enclosure and is designed to remove undissolved solids by filtration and remove cesium-137 by ion exchange, and discharge the pretreated low activity waste (LAW) stream to DST 241-AP-106. The pretreated LAW will be stored in DST 241-AP-106 until it is transferred to the WTP LAW Facility for vitrification. The container storage areas consist of two outdoor concrete pads for the storage of spent Ion Exchange Columns (IXC) generated from the TSCR process. These include the IXC staging area and the IXC storage pad. All LAWPS OUG DWMUs are located immediately adjacent to the southeast corner of the 241-AP Tank Farm.

Type and Quantity of Waste

TSCR system treatment operations will account for approximately one half of the required 10 gallon-per-minute treatment capacity throughput necessary to operate both melters in the LAW Facility. Tank waste supernatant will be transferred from DST 241-AP-107 at approximately 70 gallons-per-minute to the Process Enclosure where an approximate 5 gallons-per-minute feed portion will be diverted through the TSCR process system. The balance of the feed stream not processed through TSCR will be continuously recycled back to DST 241-AP-107. The feed stream will then be filtered through a dead-end filter before passing through IXCs for cesium removal. Following cesium removal, the stream will pass through a media trap designed to capture ion exchange media in the unlikely event of an upstream screen failure in one of the IXCs. The treated waste will then proceed through a delay tank, which is sized to provide adequate holdup allowing the metastable barium ($^{137}\text{Ba-m}$) to decay so that gamma measurements can be made to ensure processing goals for cesium removal have been reached. After exiting the delay tank, the treated waste will then be passed through two in-line gamma monitors to verify cesium removal before being routed to DST 241-AP-106 for storage and subsequent transfer to the WTP LAW Facility for vitrification. The waste will only be transferred to WTP if it meets WTP's waste acceptance criteria.

Basis for Permit Conditions

Ecology worked with the Permittees to develop permit conditions that apply to the construction of the DWMUs and associated ancillary equipment. As a result, Ecology has written conditions that require compliance with the regulations in WAC 173-303. The draft permit conditions are focused on the design and operation requirements found in WAC 173-303-630, *Use and management of containers* and WAC 173-303-640, *Tank systems*.

Ecology has drafted unit specific permit conditions that are applicable to General Waste Management, Waste Analysis Requirements, Reporting and Recordkeeping, Security, Preparedness and Prevention, Contingency Plan, Inspections, Personnel Training, General Requirements, Equivalent Materials, Closure, Containers, Tank Systems, Sample Ports and Waste Transfer Lines.

The intent of this draft permit and the associated permit conditions is to protect human health and the environment while ensuring proper design, construction and future operation of the LAWPS OUG.

3.0 CLASS 3 PERMIT MODIFICATION PROCESS FOR THE LAWPS OPERATING UNIT GROUP

The Permittees formally submitted a Class 3 permit modification to add the LAWPS OUG to the Site-wide Permit on April 24, 2019. The 60-day public comment period as required by WAC 173-303-830(4)(c) began on May 1, 2019 and ended on June 30, 2019. The Permittees also held a public meeting on May 29, 2019, at the Richland Public Library. Ecology responded to 22 comments in four sets of public comments submitted during the public comment period.

Ecology performed a completeness review as required in WAC 173-303-840(1)(b) and notified the Permittees on July 3, 2019 that the permit application was incomplete. The Permittees delivered a second submittal on October 31, 2019, which included the necessary documents to make the application complete. On February 14, 2020, Ecology completed the technical review and detailed the deficiencies in a formal letter to the Permittees (20-NWP-034). Ecology and the Permittees resolved the technical deficiencies identified in 20-NWP-034 as well as additional items through a Response Comment Record. After Ecology worked with the Permittees to resolve the deficiencies, the Permittees submitted a revised set of final files to support the permit modification with the technical deficiencies resolved on April 16, 2020.

Ecology determined that this permit application was complete and drafted the permit for public comment. The draft permit modification to Rev. 8C of the Hanford Site-Wide Permit is 8C.2020.3D and was available for a 45-day public review period from June 22 through August 7, 2020, 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 [Ecology.wa.gov/Waste-Toxics/Nuclear-waste/Public-comment-periods](https://ecology.wa.gov/Waste-Toxics/Nuclear-waste/Public-comment-periods).

During the 45-day public comment period (June 22 through August 7, 2020), Ecology received a public comment that required Ecology to take an action. Based on the public comment received, Ecology is re-opening the LAWPS OUG 1 draft permit for another 45-day public comment period with all of the necessary associated documentation, as detailed in WAC 173-303-840(7).

On March 11, 2020, Ecology received a Temporary Authorization (TA) request from the Permittees (20-ECD-0010) detailing the need for three TAs to support the construction of the LAWPS Project Phase One.

On April 8, 2020, Ecology responded to the TA requests (20-NWP-068). In this letter, Ecology notified the Permittees that they would not consider the TA requests until a draft permit for the LAWPS Operating Unit Group was issued for public comment.

On June 22, 2020, Ecology received the first TA request from the Permittees (via email) detailing a limited scope of construction work that the project wanted to perform. On July 8, 2020, Ecology responded to the TA #1 request and approved a portion of the work requested by the Permittees (20-NWP-115).

On August 11, 2020, Ecology received the second TA request from the Permittees (via email) detailing a limited scope of construction work that the project wanted to perform. On September 1, 2020, Ecology responded to the TA #2 request and approved the work requested by the Permittees (20-NWP-144).

On September 1, 2020, Ecology received the third TA request from the Permittees (via email) detailing a limited scope of construction work that the project wanted to perform. On September 10, 2020, Ecology responded to the TA #3 request and approved the work requested by the Permittees (20-NWP-156).

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

This proposed draft permit modification 8C.2020.3D will add Operating Unit Group 1, LAWPS to Part III of the Hanford Site-wide Permit. The draft permit modification is the second portion of a Class 3 modification and it includes design and construction details to support the LAWPS Project Phase One. The modification includes:

- Addendum A, Part A Form.
- Addendum B, Waste Analysis Plan.
- Addendum C, Process Information.
- Addendum E, Security Requirements.
- Addendum F, Preparedness and Prevention.
- Addendum G, Personnel Training.
- Addendum H, Closure Plan.
- Addendum I, Inspection Plan.
- Addendum J, Contingency Plan.
- Supporting design media (specifications, calculations, reports, and engineering drawings).
- SEPA Determination of Significance and Notice of Adoption

Interim Compliance Schedule

Two specific actions were added to an Interim Compliance Schedule. These items are necessary to support the long term disposal of the Ion Exchange Columns and receipt of the technical details necessary to support operations of the LAWPS OUG.

These Interim Compliance Items will ensure that the waste generated during the operations of the LAWPS OUG will be managed and disposed of correctly and the necessary operating details for the LAWPS OUG will be added to the permit prior to operations of the facility.

Draft Permit Conditions

Ecology collaborated with the Permittees to discuss the development of construction and operating permit conditions in support of the LAWPS Project. The results are proposed permit conditions that address the construction, operation and maintenance of the LAWPS dangerous waste management units and ancillary equipment.

Engineering Documents

Engineering documents that were added include:

- General Arrangement drawings for LAWP DWMUs.
- Independent Qualified Registered Professional Engineering Report for TSCR.
- TSCR Control Logic Narrative.
- Piping and Instrumentation Diagrams for the TSCR Process.
- Calculations and Specifications for TSCR DWMU components.

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.

Part I and II Conditions and the Attachment 9 Permit Applicability Matrix will be modified after the public comment period to incorporate elements of Operating Unit Group 1, 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 was held from June 22 through August 7, 2020. Ecology will consider and respond to all written comments on this draft permit modification that were submitted by the August 7, 2020 deadline.

During the 45-day public comment period (June 22 through August 7, 2020), Ecology received a public comment that required Ecology update the State Environmental Policy Act (SEPA) documentation necessary to support this draft permit. Based on the public comments received, Ecology is re-opening the LAWPS Public Comment period for another 45-day public comment period as detailed in WAC 173-303-840(7). This re-opened public comment period for the LAWPS OUG 1, will include all of the same information as previously provided during the public comment period that ran from June 22 to August 7, 2020 as well as the finalized SEPA decision that supports this draft permit. The re-opened public comment period will run from September 28 through November 12, 2020.

As detailed in WAC 173-303-840(7), comments filed during the reopened comment period will be limited to the substantial new questions that caused its reopening. Any public comment received between September 28 and November 12, 2020 should remain focused on the scope of the SEPA determination that was issued to support this draft permit.

Comments must be post-marked, received by e-mail, or hand-delivered no later than close of business (5:00 p.m. PST) November 12, 2020.

Direct all comments to (electronic preferred):

Daina McFadden

Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

eComments link: <http://nw.ecology.commentinput.com/?id=ifWeC>

At the completion of the 45-day public comment period Ecology will make a final permitting decision. If the final decision is to issue the permit, Ecology will issue a final permit for Part III of the Hanford Site-wide Permit, Operating Unit Group 1, LAWPS, to the Permittees 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, Ecology 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

Ecology will also issue a response to comments document to the Permittees and the public upon issuance of the final permit. The final permit decision may be appealed within 30 days after issuance. If there is no appeal, the permit will be effective 30 days following issuance.

At this time, **Ecology's offices are currently not open for in-person permit document reviews.** When in-person reviews become available again, Ecology will let you know. In the meantime, you can still view permit records on the Ecology website at <https://ecology.wa.gov/Waste-Toxics/Nuclear-waste/Public-comment-periods>. To view documents at the other Hanford Public Information Repositories, including the USDOE Administrative Record at 2440 Stevens Drive, please contact those facilities for access to public comment period documents.

If you have difficulty accessing documents on the Ecology website or at the other Public Information Repositories, we will work with you to arrange a way to provide records to you electronically or hard copy.

Members of the public can request a DVD or hard copy of the proposed permit modification or receive additional information by calling (509) 372-7950 or sending an e-mail to hanford@ecy.wa.gov.

This approach is consistent with Washington State Department of Ecology offices across the state.

Copies of the documents for Part III, Operating Unit Group 1, LAWPS are available for review at the Hanford Public Information Repositories locations listed below:

Hanford Public Information Repositories and Administrative Records

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 <https://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

The State Environmental Policy Act (SEPA) requires that state agencies like Ecology should use concise, high quality environmental documents and information in making decisions [WAC 197-11-650(a)]. An agency may use environmental documents that have previously been prepared in order to evaluate proposed actions, alternatives, or environmental impacts [WAC 197-11-600(2)]. Ecology issued a SEPA Determination of Significance and Notice of Adoption to support the LAWPS. Ecology is adopting Tank Closure and Waste Management Environmental Impact Statement (TC&WM EIS) Alternative 2 for tank waste treatment, "Implement the *Tank Waste Remediation System EIS* Record of Decision with Modifications." Ecology is also adopting TC&WM EIS "Waste Management Alternative 2: Disposal in IDF, 200-East Area Only." This Determination of Significance and Notice of Adoption supports Ecology's permit decision on the LAWPS Operating Unit Group.

The relevant documents are online at [the Department of Ecology SEPA register](#).