



**Response to Comments
Effluent Treatment Facility
Notice of Construction
DE07NWP-003, Rev 2
July 25 - Aug. 24, 2022**

For the **Nuclear Waste Program**

Washington State Department of Ecology

Richland, Washington

September 2022, Publication 22-05-021



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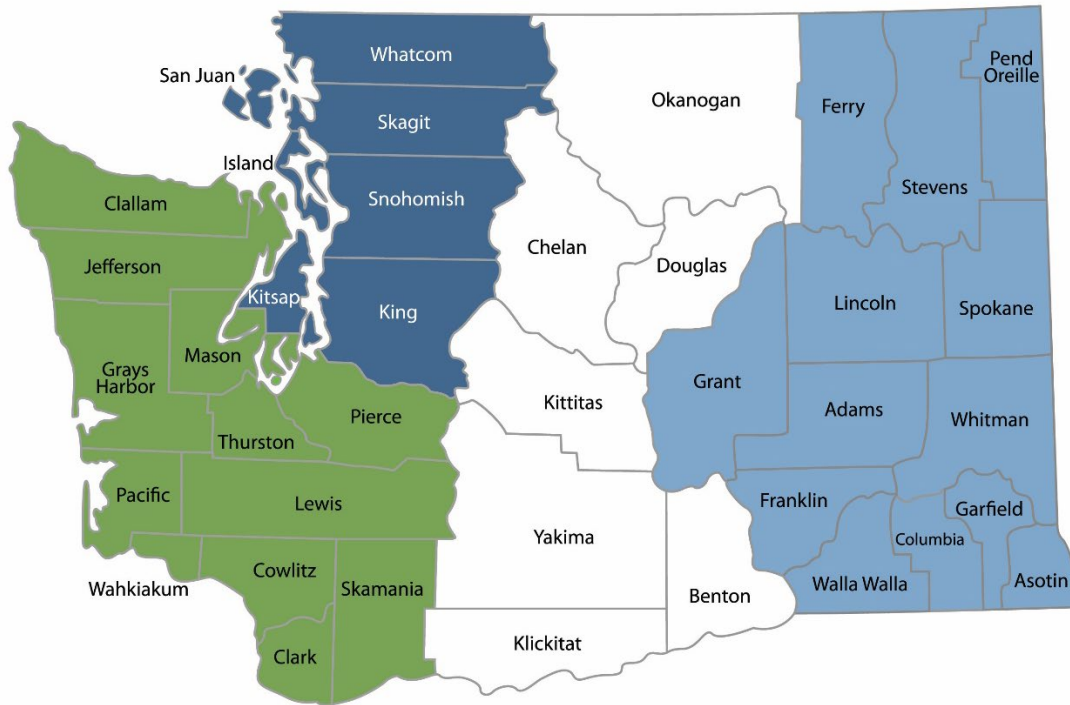
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¹ <https://apps.ecology.wa.gov/publications/summarypages/2205021.html>

² www.ecology.wa.gov/contact

Department of Ecology's Regional Offices

Map of Counties Served



Southwest Region 360-407-6300	Northwest Region 206-594-0000	Central Region 509-575-2490	Eastern Region 509-329-3400
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Region	Counties Served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 46700 Olympia, WA 98504	360-407-6000

Response to Comments Effluent Treatment Facility Notice of Construction DE07NWP-003, Rev. 2

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DEPARTMENT OF
ECOLOGY
State of Washington

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Introduction

The Washington State Department of Ecology's Nuclear Waste Program (Ecology) regulates air pollution sources at the Hanford Site. Specifically, Ecology is the permitting authority for new or modified sources requiring new source review under Washington Administrative Code (WAC) 173-400-110 at Hanford.

When a new order or a modification to an existing order is proposed, Ecology may hold a public comment period to allow the public to review the proposed order and provide formal feedback. (See WAC 173-400-171 for Public Notice and Opportunity for Public Comment requirements for approval of a notice of construction application.)

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

- Specify which changes, 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	Effluent Treatment Facility (ETF) Notice of Construction (NOC) DE07NWP-003, Rev 2, July 25 – Aug. 24, 2022
Approval Order Number	DE07NWP-003, Revision 2
Permittees	U.S. Department of Energy (USDOE)
Effective date	Sept. 9, 2022

To see more information related to the Hanford Site and nuclear waste in Washington, please visit our webpage, [Hanford Cleanup](https://www.ecology.wa.gov/Hanford)³.

³ <https://www.ecology.wa.gov/Hanford>

Reasons for Issuing the Permit

Approval Order DE07NWP-003, Revision 2, authorizes physical and operational changes at the Effluent Treatment Facility (ETF) associated with the Liquid Effluent Retention Facility (LERF). These changes are necessary to allow the ETF to process a new wastewater stream from the Waste Treatment and Immobilization Plant (WTP). Ecology expects the WTP to begin operations in the next several years, to treat millions of gallons of highly toxic and radioactive tank waste currently stored on the Hanford Site.

As the WTP approaches operational status, updated process design and review identified that acetonitrile produced by treating tank waste would likely exceed the treatment capacity of existing systems at the ETF. Further, the increased volume of wastewater sent to the LERF retention basins will require a significant increase in annual operating hours at the ETF. The permittee has proposed adding a steam stripper to selectively transfer acetonitrile into a separate, more concentrated, wastewater stream which can be shipped off-site for treatment at an appropriate facility. This will ensure that the WTP wastewater stream meets water discharge standards for the Hanford Site. The permittee has also proposed changes to the ETF vessel off-gas system and a new brine loadout system which will allow the ETF to operate with less downtime.

Public Involvement Actions

Ecology encouraged public comment on the draft Approval Order and Technical Support Document during a 30-day, public comment period held July 25 through Aug. 24, 2022.

The following actions were taken to notify the public:

- Emailed a notice announcing the start of the comment period to the 1,327 recipients of the Hanford-Info email list.
- Posted the comment period notice on the Washington Department of Ecology's – Hanford Facebook and Twitter pages.
- Posted the comment period notice on the Washington Department of Ecology, Nuclear Waste Program's website.

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

- Notices sent to the Hanford-Info email list
- Notices posted on the Washington Department of Ecology – Hanford's Facebook and Twitter pages

List of Commenters

The table below lists the names of organizations or individuals who submitted a comment on the [unit name] Permit modification. The comments and responses are in [Attachment 1](#).

Commenter	Organization
Clark, Steven	Citizen
Anonymous	Citizen
Hanford Challenge	Organization

Attachment 1: Comments and Responses

Description of comments:

Ecology accepted comments from July 25 through Aug. 24, 2022. This section provides a summary of comments that we received during the public comment period and our responses, as required by RCW 34.05.325(6)(a)(iii). Comments are grouped by individual, and each comment is addressed separately.

I-1: STEVEN CLARK

Comment I-1-1

In the summary of the proposed actions it is stated that Energy is adding a brine loadout system to ship water containing concentrated salts off-site for treatment and disposal. This will be an alternative to drying brine in the existing thin film dryers at ETF. I suggest that they instead send the brine to the Waste Treatment Vitrification Plant to be vitrified with the Hanford tank waste.

Response to I-1-1

Thank you for your comment. Approval Orders issued under WAC 173-400-110 do not have direct authority over waste disposal, if it isn't being emitted to the atmosphere at that facility. However, Ecology does require that permittees comply with Chapter 173-303 WAC, Dangerous Waste Regulations. For the concentrated brine waste, Ecology will ensure the waste will be treated, stored and disposed at an approved facility and in full compliance with dangerous waste regulations and applicable permits in a manner fully protective of human health and the environment.

I-2: ANONYMOUS CITIZEN

Comment I-2-1

Thank you for providing the opportunity to comment on the ETF Notice of Construction (NOC) Application (comments due by August 24, 2022).

I looked at both the original and the revised Notice of Construction documents.

TOC-ENV-NOC-5303, Rev. 00 (April 2021), was the "Criteria and Toxics Air Emissions Notice of Construction for the Modification and Operation of the Effluent Treatment Facility in Support of Direct Feed Low Activity Waste Vitrification," published in April 2021. This report has a scope that includes WTP operations and ETF Brine loadout, but not Acetonitrile concentrate load out capability.

TOC-ENV-NOC-5303, Rev. 01 (March 2022), has the same title, and its changes are defined as adding brine storage tanks and the acetonitrile load out (ADLO) facility. The revisions show the related increases in chemical emissions.

Further, the Department of Energy has made a Temporary Authorization Request¹ (TA) dated July 25, 2022, to allow the Department to begin construction activities associated with the installation of brine storage tanks, acetonitrile distillate storage tanks and Acetonitrile Distillate Loadout Facility at the ETF.

Each NOC document estimates the toxic air pollutant emissions per year. The table below shows data from both Rev 0 and Rev 1 of the NOC for significant releases.

¹ 22-ECD-001213, TEMPORARY AUTHORIZATION REQUEST FOR LIQUID EFFLUENT RETENTION FACILITY AND 200 AREA EFFLUENT TREATMENT FACILITY OPERATING UNIT GROUP 3 FOR CONSTRUCTION OF THE BRINE STORAGE TANKS, ACETONITRILE STORAGE TANKS AND ACETONITRILE DISTILLATE LOAD-OUT FACILITY (T-2-8, S-2-8), July 25, 2022.

Table 1. Estimated Emissions from the ETF Notices of Construction			
Parameter	TOC-ENV-NOC-5303, Rev. 00 (without acetonitrile loadout)	TOC-ENV-NOC-5303, Rev. 01 (with acetonitrile loadout)	Percent Increase in Emissions from NOC Rev 0 to NOC Rev 1
Acetonitrile (Methyl Cyanide) estimated filtered emissions from ETF, (lb/year)	743	1,410	90%
Ammonia/ammonium estimated ETF Emissions, (lb/year)	3,076	3,330	8%
Emissions Text comparison (See NOC Sections 7.2)	<i>"36% of all acetonitrile received is exhausted with half attributed to volatilization estimates and the balance off the steam stripper condensate vessels."</i>	<i>"36% of all acetonitrile received being exhausted as air emissions, with half estimated to be due to volatilization and the balance attributed to emissions from the steam stripper condensate vessels."</i>	-
Abated release rate of tritium per year (Per TOC-ENV-NOC-5298*, Rev 0, May 12, 2021)	3.01 Ci/Yr	RAD NOC with acetonitrile loadout is unavailable.	Unknown.
*Radiological Air Emissions Notice of Construction Application for the Operation of the Effluent Treatment Facility in Support of Direct Feed Low Activity Waste Vitrification			

1. Section 7.2 in both NOC documents [TOC-ENV-NOC-5303, Rev. 00 and Rev. 1] shows that 36% of all acetonitrile received goes up the stack into the air (percent released is unchanged). Yet the total amount that is released nearly doubles (increases by 90%) when you add the new equipment. In the first NOC, 743 lb is 36% of 2,064 lb received. No mention was made of any changes in the amount or concentration of feed to be received. Therefore, shouldn't the percent released in the updated NOC (Rev 1) be $1,410 \text{ lb} / 2,064 \text{ lb} = 68\%$, a whopping amount of the toxic, volatile material received discharged to the air.

2. Or alternatively, is the second NOC document correct and 1,140 lb is 36% of an updated total received, which would be 3,900 lb received? In this case, how was the feed amount so clearly underestimated?

Response to I-2-1

Thank you for your comment. When preparing Revision 1, the Permittee decided to conservatively assume that there might be two campaigns to treat waste from the WTP Effluent Management Facility (EMF) in any given year instead of one, which is discussed in Section 6.1 of the NOC Application.

Ecology typically limits emissions to the estimates in the NOC Application. Permittees propose a worst-case scenario to ensure that normal operations, otherwise in accordance with the Approval Order, don't lead to an accidental violation of these limits.

In this case, Ecology accepted two WTP EMF campaigns annually as a reasonable overestimation. This will help ensure LERF is always able to accept the WTP wastewater stream without violating Approval Order DE07NWP-003, Revision 2.

Comment I-2-2

3. When 68% of toxic air pollutants are vented to the air — it appears that best available control technology for toxics has not been applied. Can you provide a tBACT analysis? Acetonitrile in these concentrations is newly generated at WTP in the melter off-gas. How has tBACT been applied from the outset? Thermal oxidation is preferred, but has not been discussed with respect to melter off-gas (upstream of the submerged bed scrubber) or with respect to ETF steam stripper off-gas prior to condensing and prior to storage or load out. The "safe by design" approach would recommend changing operations so the acetonitrile is not produced and not sent to LERF, or by destroying it per EPA preferences as close to the source as possible. The impacts are non-trivial. The SQER for acetonitrile will likely exceed 4.4 lb/24-hr because ETF does not process this feed steadily every day. So sometimes, the 24-hr result will be higher. It would be very helpful if you can discuss this topic.

Response to I-2-2

For Approval Order DE02NWP-002, Revision 3, acetonitrile emissions from WTP operating in the Direct Feed Low Activity Waste configuration are estimated as 10,300 pounds per year abated and 30.6 tons per year unabated. This is a control efficiency of 99.7%, which reflects the fact that the primary emissions from the melters will be controlled by a catalytic thermal oxidizer and carbon adsorption, in addition to the scrubbers, electrostatic precipitator, and high efficiency particulate air filter. This combination of treatment systems is very unusual, due to the radiation release risk and variable composition of tank waste to be treated.

LERF acetonitrile emissions are estimated at 1,416.5 pounds per year with two EMF campaigns. At this emission rate, the Permittee demonstrated that additional air pollution controls would not be cost effective in Section 7.0 of TOC-ENV-NOC-5303, Rev. 1. The WAC 173-460-020(3), definition of best available control technology (BACT) for toxics (tBACT) refers back to the WAC 173-400-030(13) definition of BACT, which requires consideration of economic impacts. This cost evaluation is a key part of Environmental Protection Agency and Ecology guidance on

determining what would reasonably qualify as BACT. Ecology also considered options that did not require control equipment, such as requiring compliance with substantive requirements of 40 C.F.R Part 63 Subpart H - National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks. However, due to the limited emission rate, the cost of compliance would also not be reasonable as tBACT. Requiring the Hanford Site to spend hundreds of thousands or millions of dollars to reduce potential emissions of less than a ton of acetonitrile would be significantly out of line with the requirements which have historically been placed on other air pollution sources in Washington.

When evaluating emissions for Chapter 173-460 WAC, emissions for any toxic air pollutant with 1-hour or 24-hour standards were based upon instantaneous emissions, while operating, scaled up to the appropriate averaging period. Only the annual TAPs were estimated with averaged data for the expected annual treatment campaigns. Without this split approach there would have been the potential to miss a threshold exceedance, as you noted.

Comment I-2-3

4. The impact of the revised NOC on ETF operations is not clearly stated — a review of the last several years of Hanford Site Air Emissions Inventory Reports² shows that ETF had performed admirably, in that the ETF VOC emissions for each year was 0. None. So the proposed changes are a complete change to the usual operations and personnel hazards.

Response to I-2-3

Ecology is currently reviewing recent emissions inventory reports for the Hanford Site and may require corrections, based upon this comment. It appears, potentially, that a minimum reporting threshold was assumed for VOC emissions.

While conducting this review, Ecology is issuing Approval Order DE07NWP-003, Revision 2. WAC 173-400-111(3) does not require sources subject to Chapter 173-401 WAC, Operating Permit Regulation, demonstrate that they are in compliance with inventory and operating permit fee requirements.

Comment I-2-4

5. The cumulative impact of the revised NOC on ETF radioactive operations is not discussed, so I looked up the last NOC for radionuclides at ETF, TOC-ENV-NOC-5298, April 2021. This RAD NOC addresses installation of a steam stripper. It does not mention acetonitrile or the acetonitrile loadout capability. This NOC is dated April 2021, the same as the out of date chemical toxics NOC Rev O. Looking at the 90% estimated increase in acetonitrile emissions from Rev O to Rev 1, it appears likely that tritium emissions would also increase (contrary to the ALARA principal). I would appreciate if Ecology would check to see the cumulative impact on isotopes released. The regulatory network may restrict reviews of individual agencies, but that makes no difference to the persons breathing the air. They get both the chemicals and the isotopes to breathe.

² DOE/RL-2022-06 (2021), DOE/RL-2021-11 (2020), DOE/RL-2020-07 (2019), DOE/RL-2010-20 (2009).

Response to I-2-4

Ecology has reached out to the Washington Department of Health (Health) regarding this comment and the updated emissions calculation for the NOC Application. Health is not required to use the same assumptions for Chapter 246-247 WAC, Radiation Protection-Air Emissions, that are used in calculating potential to emit, as defined in WAC 173-400-030(76). However, a representative of Health confirmed that the radiological NOC they are reviewing has been revised to include two treatment campaigns for WTP EMF wastewater per year to match assumptions for Approval Order DE07NWP-003, Revision 2.

Comment I-2-5

6. The impact of adding the acetonitrile steam stripper to ETF can also be evaluated in terms of the prior operating history for tritium. Looking at the recent Radionuclide Air Emissions Reports³ for the Hanford Site shows that ETF had non-reportable or zero discharges of tritium (a volatile isotope) for all years where data are available. The change instituted with addition of the steam stripper increased the tritium discharges from 0 Ci/year to 3 Curies per year. The additional discharges due to addition of the acetonitrile loadout facility and storage tanks have not been evaluated. Will tritium be increased in the same percentage as the acetonitrile? Note that releasing tritium up the stack at ETF is entirely contrary to ALARA and to the facility design that focused on discharging tritium in an aqueous phase so that it would decay in the SALDS and not make it to the river or where it would expose the public. I would appreciate if Ecology could request DOH to make an ALARA review or revisit the BARCT basis for ETF.

Response to I-2-5

Ecology has reached out to Health regarding this comment and estimated tritium emissions. However, Approval Order DE07NWP-003, Revision 2, addresses emissions of criteria and toxic air pollutants regulated under Chapters 173-400 and 173-460 WAC. If appropriate, Health will be responsible for reviewing to ensure that the Permittee is in compliance with Chapter 246-247 WAC.

Comment I-2-6

7. Lastly, the updated NOC does not identify a final treatment method for the acetonitrile concentrate. The concentrate is radioactively contaminated. This should be a dealbreaker, since a DOE failure to treat the volatile waste will result in storage for an indefinite (forever) period, where it will continue to be a hazard to personnel and the public. I would very much appreciate if you will reject DOE's temporary construction authorization request to build taxpayer funded, orphan equipment, until such time as there is a permanent and fully approved (not vaguely "promised") disposal pathway. Ecology has already noted that Perma-Fix Northwest (PFNW) does not have the appropriate permits⁴. In addition the PFNW EIS does not cover processing of

³ DOE/RL-2014-14 (2013), DOE/RL-2015-12 (2014), DOE/RL-2016-10 (2015), DOE/RL-2017-17 (2016), DOE/RL-2018-05 (2017), DOE/RL-2019-09 (2018), DOE/RL-2020-08 (2019), DOE/RL-2021-12 (2020), DOE/RL-2022-07 (2021)

⁴ According to Ecology: "Perma-Fix Northwest is not currently permitted to receive any waste that would be generated through the DFLAW waste treatment process." (See January 2021 Ecology Publication 21-05-005.

this waste or anything like it. For context, DOE is busy trying to find destruction techniques for Acetonitrile⁵.

Response to I-2-6

This comment is outside the scope for this Approval Order. When processing NOC Applications, WAC 173-400-111(3) does not require that a permittee demonstrate compliance with Chapter 173-303 WAC for solid waste generated by emission units or activities covered by the issued Approval Order. Those regulations are separately evaluated and enforced.

Ecology does require that permittees comply with Chapter 173-303 WAC, Dangerous Waste Regulations. For the acetonitrile concentrate, Ecology will ensure the waste will be treated, stored and disposed at an approved facility and in full compliance with dangerous waste regulations and applicable permits in a manner fully protective of human health and the environment.

O-1: HANFORD CHALLENGE

Comment O-1-1

Why did the U.S. Department of Energy ("USDOE") and regulators wait so long to address this acetonitrile issue? It appears that these issues surrounding acetonitrile were known to USDOE since at least 2004⁶. It is unfortunate that USDOE waited until the last minute to create workarounds like the steam stripper that appear to be insufficient at best and potentially creates a more hazardous working condition. Is there a justification for this delay?

Response to O-1-1

Thank you for your comments. The Permittee has a limited time to commence construction of the project authorized by Approval Order DE07NWP-003, Revision 2. WAC 173-400-111(7) requires that construction commences within 18 months of Approval Order issuance. Ecology can choose to extend this a further 18 months. The NOC Application could only be submitted and reviewed as the WTP approached operation.

For more information, please see Comment Response I-2-1 in Ecology Publication 22-05-019, Response to Comments for the Class 2 Dangerous Waste Permit Modification covering the steam stripper.

Comment O-1-2

How will DOE Ensure Workers are Protected from Acetonitrile?: The USDOE surveillance report, "Surveillance of the Washington River Protection Solutions LLC Process Hazard Analysis for Effluent Treatment Facility Acetonitrile Treatment Project, DOE-ASMT-2021-3251, August 27, 2021"⁷, highlighted the need for a solution to potential worker exposures to acetonitrile. We

⁵ WRPS-67868, Acetonitrile Destruction and Fate of Organics in the Reverse Osmosis System at the ETF, December 2021. See also EXPRESSION OF INTEREST (EOI) FOR SUPPLEMENTAL ORGANIC TREATMENT, April 1, 2019, <https://www.hanford.gov/tocpmm/files.dm/EOI - Supplemental Organic Treatment 3-28-2019.pdf>

⁶ See Waste Treatment Plant Effluent Treatability Evaluation, HNF-8306, September 2004.

⁷ This report is submitted as part of these comments as additional concerns with acetonitrile as stated by USDOE.

appreciate that this surveillance took place and that efforts were made to investigate this worker health and safety hazard after it was identified that it had not been properly evaluated. However, Hanford Challenge believes this surveillance should have had findings and not "opportunities for improvement," because of the omission of significant vapor hazards from acetonitrile that rendered the hazards analysis inadequate to support design. The Permit Modification for ETF should take these opportunities for improvement to heart and ensure that workers are protected.

Response to O-1-2

Ecology agrees in the importance of worker protection, but WAC 173-400-111 review is limited to ambient air because it enforces standards which are often more stringent to protect sensitive populations. The Permittee has a monitoring system in place, but was not required to provide details because it was out of the scope of Ecology's authority under Chapter 173-400 WAC.

Comment O-1-3

Why Not Destroy the Acetonitrile?: It is still unclear to Hanford Challenge why the steam stripper project was selected instead of a treatment technology that oxidatively or catalytically destroys the acetonitrile. We would still like this explained and reconsidered, especially the rationale to concentrate the waste for treatment at Perma-Fix Northwest when acetonitrile is so dangerous in concentrations far smaller than the 23,000 ppm acetonitrile distillate concentration proposed here for treatment.

Response to O-1-3

As discussed in TOC-ENV-NOC-5303, Revision 1, Section 7.2.2, Ecology has recently required the Permittee to evaluate thermal oxidation and related technologies for tank vapors which are significantly more concentrated in volatile organic compounds (VOC) such as acetonitrile than those which would be generated by any wastewater processed at LERF. That evaluation demonstrated that there are no air pollution control technologies which currently qualify as BACT or tBACT for tank vapors beyond the high efficiency particulate air filters already installed for radioactive air emissions. Air emissions from LERF wastewater have similar properties and would be significantly more expensive to destroy on a cost per ton basis.

Without the steam stripper boiler, the airborne concentration of acetonitrile would be much lower than 23,000 ppm. For technologies like thermal oxidation, it's more expensive to destroy dilute VOC streams because the incoming air must also be heated. Trying to destroy acetonitrile by letting it naturally evaporate and combusting it with an external fuel would simply not be a feasible approach.

If the Permittees were to use a boiler and then feed it into a thermal oxidizer, the increased water vapor would massively increase the fuel cost. This system would also require fuel or electricity for the boiler itself. The costs and secondary environmental impacts for this system would make it infeasible.

Comment O-1-4

Do Not Dispose of Acetonitrile at the Integrated Disposal Facility: We have major concerns with disposing of a concentrated acetonitrile waste form at IDF, due to its explosive and flammable

nature. It does not seem worth the risk of starting an underground fire in this landfill, when there are technologies that could destroy the acetonitrile.

Could you please explain how the steam stripper process was selected when there is no disposal pathway for the concentrated acetonitrile? How could that happen if USDOE needs to get a DOE Order 435.1 exemption before sending off-site? What alternatives are being considered for disposal? Where is the preferred onsite treatment?

Response to O-1-4

This comment is outside the scope for this NOC.

Regarding the concern of disposal at IDF: Maintaining the acetonitrile concentration in the distillate less than 5% ensures there are no ignitability concerns. ETF is expected to maintain the concentration of acetonitrile distillate stored at ETF lower than 3%. This low concentration will carry over to the grouted concentrated acetonitrile distillate, eliminating ignitability concerns.

The steam stripper unit was permitted under a previous Dangerous Waste permit modification. With that, air stripping and steam stripping were ranked highest after a rigorous engineering evaluation and alternative analysis of 26 different technologies. It was determined these two technologies were best suited to achieve removal of the acetonitrile from the WTP liquid effluents that will be processed at ETF. This technical evaluation was conducted to ensure there was not a more suitable technology that was readily available and applicable to the waste stream being treated. Steam stripping was selected as the most desirable method to remove and capture the acetonitrile for treatment and disposal.

In accordance with USDOE M 435.1-1, the USDOE Field Element Manager will issue a letter documenting the approval of an exemption for the use of non-USDOE facilities for treatment and disposal of secondary waste on a case-by-case basis. This order will be in place before any shipment of waste off-site.

Comment O-1-5

What is the Treatment Plan for Acetonitrile?: It appears that there is still no selected offsite treatment facility, however, other documents indicate that Perma-Fix Northwest is the assumed treatment facility. Could you please explain where you imagine the acetonitrile distillate being treated and how long it would sit in storage while awaiting treatment? Just to note, Hanford Challenge does not believe the acetonitrile distillate should be sent to PFNW for treatment. It poses too great a threat to workers, the public, and the environment.

Response to O-1-5

This NOC does not address where the acetonitrile distillate should be shipped for treatment and disposal. Comments specific to PFNW's operation should be addressed through the PFNW's permit; therefore, this comment is outside the scope for this NOC.

Ecology will ensure that all such wastes are treated, stored, and disposed of at an approved facility and in full compliance with dangerous waste regulations and applicable permits in a manner fully protective of human health and the environment.

Comment O-1-6

Better Worker Protections Are Needed: Please explain what is being done to protect workers from the contents of the process and tanks? Are there design changes planned for the ETF ventilation system? We believe real-time monitoring is necessary to detect dangerous working conditions (i.e. not modeling) and that workers should be required to wear respirators if they are in a work area where there is the potential to be exposed to acetonitrile vapors. Not only should workers have access to respirators, but these respirators should be in good working order and maintained properly. The "improper use of respirators is dangerous. Respirators should only be used if the employer has implemented a written program that takes into account workplace conditions, requirements for worker training, respirator fit testing, and medical exams, as described in the OSHA Respiratory Protection Standard (29 CFR 1910.134)." It is important that rigorous protocols are in place to ensure that all PPE is clean and in good working order, including any respiratory protection equipment. There have been worker exposures at ETF in the recent past that add weight to the recommendations below for respiratory protection (2018).

Additionally, the NJ Right to Know Hazardous Substance Fact Sheet recommends: "Where the potential exists for exposure over 13 ppm, use a NIOSH approved full facepiece respirator with an organic vapor cartridge. Increased protection is obtained from full facepiece powered-air purifying respirators." "Where the potential exists for exposure over 200 ppm, use a NIOSH approved supplied-air respirator with a full facepiece operated in a pressure-demand or other positive pressure mode. For increased protection use in combination with an auxiliary self-contained breathing apparatus operated in a pressure-demand or other positive-pressure mode."

Response to O-1-6

Ecology agrees in the importance of worker protection, but WAC 173-400-111 review is limited to ambient air because it enforces standards which are often more stringent to protect sensitive populations. The Hanford Site has systems for monitoring worker exposure and use of respirators, but the Permittee was not required to provide details because they are out of the scope of Ecology's authority under Chapter 173-400 WAC.

For more information regarding worker protection, please see Comment Response I-3-1 in Ecology Publication 22-05-019, Response to Comments for the Class 2 Dangerous Waste Permit Modification covering the steam stripper.

Comment O-1-7

Offsite Impacts: Where will offsite environmental impacts be evaluated for acetonitrile treatment? There is an incomplete analysis of the plan to concentrate acetonitrile distillate and treat it offsite, without information, such as groundwater impacts, worker health and safety threats, and transportation risks resulting from treating waste at Perma-Fix Northwest in Richland or another offsite treatment facility. Is it possible to treat acetonitrile onsite?

Response to O-1-7

Offsite environmental impacts, beyond those directly to ambient air, are outside the scope of Chapter 173-400 WAC.

These impacts would potentially be evaluated through the receiving facility's compliance with Chapter 173-303 WAC, Dangerous Waste Regulations, and State Environmental Policy Act (SEPA) requirements under Chapter 197-11 WAC, SEPA Rules.

Appendix A. Copies of All Public Notices

Public notices for this comment period:

- Notices sent to the Hanford-Info email list
- Notices posted on Washington Department of Ecology – Hanford’s Facebook and Twitter pages
- Posted the comment period notice on the Washington Department of Ecology, Nuclear Waste Program’s website.

From: [Washington Department of Ecology](#)
To: [McFadden, Daina \(ECY\)](#)
Subject: ETF Notice of Construction public comment period starts today!
Date: Monday, July 25, 2022 2:16:05 PM



ETF Notice of Construction

Ecology is holding a 30-day public comment period for a Notice of Construction Application proposing to modify the Effluent Treatment Facility (ETF) associated with the Liquid Effluent Retention Facility. The permittee is the U.S. Department of Energy (Energy). The ETF is located on the Hanford Site in southeastern Washington.

Comment period starts: July 25, 2022

Comment period ends: Aug. 24, 2022

Proposed changes

Energy is proposing to modify the ETF which is used to treat certain wastewater streams from the Hanford Site to ensure they meet state discharge standards for pH, organic and specific chemical content, suspended solids, and other parameters.

Energy has determined that the ETF ultraviolet oxidation system does not have sufficient capacity to break down acetonitrile expected in a stream from the Waste Treatment and Immobilization Plant's Effluent Management Facility, once it is operational.

Energy will install a steam stripper and loadout system to separate acetonitrile into a more concentrated wastewater stream for shipment and treatment off-site. Additionally, Energy is adding a brine loadout system to ship water containing concentrated salts off-site for treatment and disposal. This will be an alternative to drying brine in the existing thin film dryers at ETF.

How to comment

The proposed modification is available for review online at the Nuclear Waste Program's [public comment page](#). Electronic copies of the proposed modification are also located at the [Administrative Record](#).

Please submit comments by **August 19, 2022**. Electronic submission is preferred.

[Comment](#)

Mail or hand-deliver to:

Mail or hand-deliver to:

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

Permit Communication Specialist

✉ Hanford@ecy.wa.gov

☎ 509-372-7950

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From: [Washington Department of Ecology](#)
To: [McFadden, Daina \(ECY\)](#)
Subject: ETF Notice of Construction public comment period - date correction
Date: Tuesday, July 26, 2022 9:59:06 AM



ETF Notice of Construction

Date correction

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How to comment

Copies of the proposed permit modification and supporting documents are available below at the [Hanford Administrative Record](#).

Please submit comments by **Aug. 24, 2022**, [electronically](#) (preferred), or deliver to:

Daina McFadden
3100 Port of Benton Blvd
Richland WA 99354

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Documents

[Draft Notice](#)
[Draft TSD Notice](#)
[Initial Application](#)
[Application Update Request](#)
[Updated Application](#)
[HNF-3172 Rev. 10](#)
[24590-BOF-M4C-DEP-00002_00B](#)
[Airborne Release Fractions](#)