



**Response to Comments  
Single Shell Tank (SST)  
Ventilation Notice of  
Construction (NOC) Approval  
Order - DE05NWP-002, Rev. 3  
241-A Tank Farm Exhausters  
Approval Order - DE23NWP-001  
Oct. 2 – Nov. 1, 2023**



For the **Nuclear Waste Program**

Washington State Department of Ecology

Richland, Washington

December 2023, Publication 23-05-011

## Publication Information

This document is available on the Department of Ecology, [Nuclear Waste Program's Publication page](#).<sup>1</sup>

Ecology publishes this document to meet the requirements of [Washington Administrative Code 173-400-171\(7\)\(c\)](#).

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### Cover photo credit

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<sup>1</sup> <https://apps.ecology.wa.gov/publications/summarypages/2305011.html>

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# Department of Ecology's Regional Offices

## Map of Counties Served



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

**Response to Comments  
SST Ventilation NOC Approval Order -  
DE05NWP-002, Rev. 3  
241-A Tank Farm Exhausters Approval Order  
- DE23NWP-001**

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**Oct. 2 – Nov. 1, 2023**

Nuclear Waste Program  
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DEPARTMENT OF  
**ECOLOGY**  
State of Washington

# Table of Contents

**Introduction ..... 6**

**Reasons for Issuing the Permit..... 7**

**Public Involvement Actions ..... 7**

**List of Commenters ..... 8**

**Attachment 1: Comments and Responses**

**Appendix A. Copies of All Public Notices**

**Appendix B. References**

## Introduction

The Washington State Department of Ecology’s Nuclear Waste Program (Ecology) regulates air pollution sources at the Hanford Site. 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 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 periods	SST Ventilation NOC Approval Order - DE05NWP-002, Rev. 3 241-A Tank Farm Exhausters Approval Order - DE23NWP-001 Oct. 2 – Nov. 1, 2023
Approval Order Numbers	DE05NWP-002, Rev. 3 DE23NWP-001
Permittees	United States Department of Energy – Office of River Protection (Energy)
Original Issuance date (Both Orders)	Dec. 11, 2023
Effective date (Both Orders)	Dec. 11, 2023

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)<sup>3</sup>.

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

## Reasons for Issuing the Permit

The Low-Activity Waste (LAW) facility at the Waste Treatment and Immobilization Plant is currently in the process of initial heatup and readiness testing. Once operational, LAW will begin converting waste in the Hanford Site single-shell and double-shell Tank (SST and DST) systems into glass, allowing older SSTs to be emptied.

The 241-A SST Farm will be an early source of this waste. During waste retrievals, portable exhausters are used to ventilate tank headspaces. Historically, this has been authorized under Approval Order DE05NWP-001, first issued on Oct. 12, 2005, and most recently updated as Revision 2 on July 31, 2007. This order covered 12 SST farms, including 241-A.

Previously, waste retrievals were generally used to consolidate waste into more sound tanks on site. The retrieval rate of these operations is significantly less than LAW is capable of processing. One limiting factor has been fogging of the camera systems used to monitor the interior of tanks during retrievals.

Energy has requested an increase in the authorized exhauster flow rate for 241-A, primarily to prevent fogging while tanks are retrieved for treatment at LAW. Exhauster operation at the other SST farms will remain consistent with that which was historically authorized.

Based upon the fact that WAC 173-400-110 (1)(d) limits New Source Review (NSR) to “the emission unit or units proposed to be modified...” Ecology determined that the best approach would be to transition 241-A to a new Approval Order, DE23NWP-001. Energy demonstrated that this project would meet the requirements of Chapter 173-400 WAC, including WAC 173-400-113.

DE23NWP-001 will increase the maximum ventilation rate for 241-A exhausters from 1,000 to 3,000 standard cubic feet per minute. Ecology is concurrently issuing DE05NWP-002, Revision 3, which will continue to authorize the other 11 SST Farms with the same General Approval Conditions. Ecology has updated findings, general conditions, addresses, and certain administrative sections of the order which are not directly tied to the previous NSR evaluations.

## Public Involvement Actions

Ecology encouraged public comment on the draft approval orders and technical support documents during a 30-day, public comment period held Oct. 2, - Nov. 1, 2023.

The following actions were taken to notify the public:

- Emailed a notice announcing the start of the comment period to the Hanford-Info email list, which has 1,600 recipients.
- Posted the comment period notice on the 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.

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

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

## List of Commenters

The table below lists the names of organizations or individuals who submitted a comment on the Approval Order and Technical Support Document. The comments and responses are in [Attachment 1](#).

### **SST Ventilation NOC Approval Order - DE05NWP-002, Rev. 3**

Commenter	Organization
Anonymous	Citizen
WRPS on behalf of the Dept of Energy	Business

### **241-A Tank Farm Exhausters Approval Order - DE23NWP-001**

Commenter	Organization
Bill Green	Citizen
WRPS on behalf of the Dept of Energy	Business



# Attachment 1: Comments and Responses

## **Description of comments:**

Ecology accepted comments from Oct. 2 through Nov. 1, 2023. 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.

## Comment for SST Ventilation NOC Approval Order - DE05NWP-002, Rev. 3

### I-1: ANONYMOUS

#### Comment I-1-1

Provide the public with a full 30-day comment period supported by at least the Permittee's application and Ecology's draft NOC order of approval. There were no supporting document on Ecology's website on 16-Oct.-2023. However, documentation was available for download by 19-Oct.-2023.

#### Response to I-1-1

*Thank you for your comment. All applicable documentation was included for the entirety of the 30-day posting as attachments to the Transmittal Letter, 23-ECD-000072. The NOC application for DE05NWP-002, Revision 3, was Attachment 5. Attachments 1 through 4 provided additional information to support transitioning authorization for the 241-A Tank Farm to a separate approval order, DE23NWP-001.*

### B-1: WRPS ON BEHALF OF THE DEPT OF ENERGY

#### Comment B-1-1

#### DE05NWP-002, Rev 3 comments. Oct 31, 2023.

Page/Condition #/	Incorrect sentence /change request	Please change to
Page 2/Condition 11	241-TX (18 of 18 tanks) SST vessels outside	Move the reference to 241-TX to the bulleted list in condition 10.
Page 2/Condition 10	241-C (16 of 16 tanks)	Should be 15 of 16, since 241-C-106 is outside of scope.
Page 8/Condition 4.3	Failure to allow access is grounds for enforcement action under the Federal Clean Air Act or the Washington State Clean Air Act may result in revocation of this NOC Approval Order.	"...Washington State Clear Air Act <u>and</u> may result...."

#### Response to B-1-1

*Thank you for your comments.*

*Page 2/Condition 11: Accepted, 241-TX (18 of 18 tanks) was moved to the bulleted list in Finding 10.*

*Page 2/Condition 10: WRPS and Ecology agreed to leave the language as is due to Finding 6 in DE05NWP-005, Rev. 0 (2005), which states:*

6. The proposed project has been supplemented to include active ventilation of tanks 241-C-101 through 241-C-112 when these tanks are not undergoing retrieval.

*Page 8/Condition 4.3: Accepted, changed "Act may" to "Act and may."*

## **Comments for 241-A Tank Farm Exhausters Approval Order - DE23NWP-001**

### **I-1: BILL GREEN**

#### **Comment I-1-1**

**Comment 1: The proposed action increases overall emissions by segmenting the number of emission units approved under an existing order of approval into 2 segments, then, for one of the segments (Draft DE23NWP-001), increasing potential emissions allowed by 3-fold or more (from < 1,000 scfm to 3,000 scfm/ exhauster), then, for the 2nd segment, adding additional emissions units.**

The concern is that Ecology is permitting on an emissions unit basis while the public is exposed to the total emissions from the Hanford Site (Hanford facility-wide basis). The Hanford Site is a single "stationary source" required to have a permit under WAC 173-401 & 40 CFR 70, because:

- “• Actual emissions of sulfur dioxide, nitrogen oxides, and carbon monoxide exceed 100 tons per year.
- There are actual emissions of radionuclides, a NESHAP pollutant.
- The cumulative emissions of hazardous air pollutants exceed 25 tons per year.” Statement of Basis for Hanford Site Air Operating Permit No. 00-05-006, State of Washington Department of Ecology, 2001, signed 12/23/1993 by Dan Silver, Assistant Director Waste Management Washington Department of Ecology; D.J. Patin, Assistant Director Central Programs and Enforcement Washington Department of Ecology, and signed on 12/23/1993 by Eric Slagle, Assistant Secretary Washington Department of Health. (This Statement of Basis is based upon certified information provided by the Permittee to support preparation of Hanford’s 1st AOP issued by Ecology.)

Given the degree to which Ecology allows segmentation of activities subject to permitting under WAC 173-400 and – 460, Ecology should:

- a.) track the cumulative total potential-to-emit (PTE) of all Ecology-regulated air pollutants on a Hanford facility-wide basis;
- b.) cease authorizing additional activities for the single Hanford stationary source when the PTE authorized exceeds any regulatory limit [This is not an arduous task, because the Permittee is already subject to annual inventory reporting requirements of WAC 173-400-105. (Though the 105 requirements MAY have to be expanded to include all Ecology-regulated air pollutants. See

“...other information deemed. . .and control measures” WAC 173-400-105, 1st paragraph));  
and,

c.) require the Permittee provide contemporaneous information required by WAC 173-400-105 along with its notice of construction application to ensure no limit will be exceeded should the project be approved.

Afterall, the air we breathe is potentially impacted by the combined emissions from the Hanford stationary source, rather than by emissions from single emission units considered one at a time.

### **Response to I-1-1**

*Thank you for your comments. Approval Order DE23NWP-001 does authorize an increase in emissions at the Hanford Site. New Source Review (NSR) for minor sources, as established in WAC 173-400-110, is specifically triggered by an increase in emissions. For a modification, WAC 173-400-110 (1)(d) states that NSR "is limited to the emission unit or units proposed to be modified and the air contaminants whose emissions would increase as a result of the modification."*

*NSR is specifically structured to review each project individually. There are no regulatory limits on site-wide potential to emit (PTE) which would apply to the Hanford Site and site-wide PTE is not required information for a Notice of Construction (NOC) application.*

### **Comment I-1-2**

Comment 2. General: **Provide the public with the total risk to our health anticipated from this proposed action.**

The proposed action does not assess anticipated risks from radioactive emissions, even though there is no possible way to separate non-radioactive air emissions from radioactive air emissions expected from this action. By failing to account for all emissions with the potential to negatively impact human health, Ecology is effectively depriving the public of the opportunity to be informed of the total risk resulting from the proposed action. Afterall, the potential risk to the public is from the total of all regulated air pollutants attributable to the proposed action. Because non-radionuclide air emissions may be below levels of concern, and separately, radionuclide air emissions may be below levels of concern does not guarantee the total emissions from the combination of radionuclide and non-radionuclide air emissions, or any synergistic reactions between/among the constituents in these emissions will be below levels of concern. Through the public comment process, the public must have the ability to impact the air we breathe resulting from ALL regulated air pollutants from the proposed action before this action commences. Any meaningful impacts from public participation need to occur before the proposed action becomes operational.

There is no question the proposed action will release radionuclides.

“The waste contained in the tanks is commonly referred to as being of three types: highly radioactive sludge and lower level radioactive supernate and saltcake. The high-level waste (HLW) sludges contain concentrations of both radionuclides and chemicals (bismuth, cadmium, chromium, iron, nickel, etc.) at very high levels.” TVAR at 11 of 153:

. . . and

“The baseline cost was then adjusted to consider the challenges of installation and operation of technology in the radiological tank farm environment.” NOCTSD at 10 of 27

. . . and

“Waste stored in the tanks consists of hazardous chemicals regulated under the Resource Conservation and Recovery Act of 1976, and radioactive isotopes regulated under the Atomic Energy Act of 1954. The tanks contain mixed waste in the form of liquids and suspended or settled solids. Gases are generated by the reaction of radioactive and hazardous chemicals in the tanks and contained in the headspaces of the tanks.” NOC5314 at 3-1

Washington Administrative Code 173-480-070(1) designates the Washington Department of Health (Health) as the agency responsible for administration of radionuclide air emissions including those attributed to Hanford. (See also RCW 70A.388 and WAC 246-247.) Emissions of radionuclides from Hanford are also regulated federally by 40 CFR 61 subpart H.

Terms and conditions to control radionuclide emissions will be issued by Health, and must eventually appear in Hanford’s Air Operating Permit (AOP). Hanford’s AOP is issued and enforced by Ecology pursuant to WAC 173-401. Under WAC 173-401, Ecology must have the authority to enforce all applicable requirements including those provisions regulating radionuclide air emissions (40 CFR 70.4, including (k)). However, by agreement, that portion of an activity with the potential to emit radionuclide air emissions is regulated by Health via terms and conditions in a license. Terms and conditions in a Health-issued license are only subject to public participation when Hanford’s AOP is re-opened for renewal. Such renewal is required to occur only once every 5 (five) years. Thus, an activity emitting radionuclides can operate for many years before the public has any knowledge of radioactive air emissions from the activity.

At no time in the regulatory process is the public provided with the total risk of the proposed action from all expected regulated air pollutants, both non-radioactive and radioactive emissions combined. While Ecology is not allowed under state law to administer requirements for control of radioactive air emissions, Ecology is not prohibited from informing the public of the TOTAL risk to our health anticipated from a proposed action. (Health risks, rather than specific project activities that are barred from the public by statute.) Furthermore, Ecology contracts with Health regarding implementation of requirements for control of radionuclide emissions from Hanford. It seems Ecology could easily obtain from Health any needed expertise about anticipated risks from exposure to radionuclides (NOT project-specific details).

The public is being victimized by a bifurcated regulatory scheme that effectively mandates ignorance of potential contaminants in the air we breathe. However, it is Ecology’s choice

whether we the public will receive an assessment of the TOTAL risks to our health anticipated from the proposed action.

### **Response to I-1-2**

*Ecology does not have the information requested and is not aware of any readily available source of this information because it is outside of the scope and authority of Chapters 173-400 and 173-460 WAC, as promulgated under the Washington Clean Air Act. When implementing NSR under Chapter 173-400 WAC, Ecology is obligated to operate in accordance with the regulations and the state implementation plan approved by EPA in 40 CFR 52, Subpart WW.*

*The Washington Department of Health (DOH) must operate in accordance with Chapter 246-247 WAC and their delegation for 40 CFR Part 61, Subpart H, from EPA. That includes processing NOC applications for Radioactive Air Emissions Licenses (RAELs) in accordance with WAC 246-247-060.*

### **Comment I-1-3**

**Comment 3. Use a sampling similar to that reported in the TVAR for Tank C-101 (at 27 of 153) whereby samples taken before the waste-disturbing activity begins, when the activity begins, and at the approximate mid-point of the activity, are analyzed to both:**

**a.) verify and validate the use of a single factor of 10 to estimate increase in emissions attributed to waste-disturbing activities; and**

**b.) to verify and validate the accuracy of the ratios established between ammonia and all other TAPs expected from waste-disturbing activities associated with this proposed action.**

The Hanford Tank Vapor Assessment Report (TVAR) was prepared by a nationally recognized, interdisciplinary team of experts in the fields of environmental health, industrial hygiene, engineering, and physics. The experts were charged with providing an independent evaluation of the adequacy of measures and equipment being used to contain the extremely hazardous tank-farm wastes. The TVAR is highly sourced, and highlights many concerns related to the nature of hazardous materials contained in tank farms, and the potential for releases that could cause adverse health impacts.

Before its final publication the authors provided Washington River Protection Solutions (WRPS) (the same company that prepared NOC-5314) and the U.S. Department of Energy, Office of River Protection with opportunity to review facts contained in the TVAR.

“The draft report underwent a factual accuracy review by WRPS and the Department of Energy's (DOE's) Office of River Protection (ORP), and the TVAT [Tank Vapor Assessment Team] [] incorporated corrections identified in that factual accuracy review into this report.” TVAR at 9 of 153

... and,

“It is notable that the (TVAT) was given full access to data and personnel to assess any aspect of the tank vapor issue without influence from WRPS or the ORP. The TVAT's activities have been observed by members of DOE's Office of Enterprise Assessment

(EA-32) and by members of the Radioactive Air Emissions Section of the **Washington State Department of Health.**” TVAR at 10 of 153, emphasis is mine.

It is not stated why the Washington State Department of Health (Health) participated as a member of the Hanford Tank Vapor Assessment Team and Ecology did not.

In 2014, Washington State Attorney General Bob Ferguson found the TVAR credible enough to support a lawsuit against the U.S. Department of Energy (DOE).

“On June 20, 2014, in response to increasing reports of workers falling ill after chemical vapors escaped from the tanks, Ferguson and Gov. Jay Inslee wrote to the U.S. Secretary of Energy urging an independent safety assessment of workers exposed to the vapors and toxic fumes emitted from the Hanford tanks.

The Department of Energy commissioned an independent panel of experts to study the issue. In October 2014, the panel issued a report finding that gases emitted from the waste tanks during the clean-up process are dangerous to worker health and safety. Specifically, the Hanford Tank Vapor Assessment Report determined that “ongoing emission of tank vapors, which contain a mixture of toxic chemicals, is inconsistent with the provisions of a safe and healthful workplace free from recognized hazards.” <https://www.atg.wa.gov/news/news-releases/ag-s-hanford-worker-safety-lawsuit-leadsbig-win-workers>

In 2018, this litigation was halted (not terminated) when, in federal court, the U.S. DOE agreed to:

- Phased testing of new technology to capture and destroy tank vapors, and, if successful, implementation
- Install a vapor monitoring, detection, and alarm system in the areas where vapor exposures are most likely to occur
- Maintain current safety measures implemented after Ferguson’s lawsuit, including supplied air and respirators, in place to keep workers safe during testing
- Improve sharing of information regarding vapor events, worker protections, worker health monitoring, and medical surveillance
- Pay Washington state and Hanford Challenge \$925,000 to reimburse for costs and fees. Id.

This litigation would resume should U.S. DOE fail to abide by the above conditions.

Neither Washington’s Attorney General nor the U.S. DOE seemed to disagree with the TVAR.

While the TVAR and this Draft Order (DE23NWP-001) were prepared to address different concerns, a common point of overlap between the two regards the nature and behavior of tank waste and tank emissions.

The TVAR was prepared by an independent panel of nationally-recognized experts. Its contents were reviewed for factual accuracy by the Permittee, The Washington State Department of Health, U.S. DOE, and others, and considered accurate enough to support successful litigation by Washington’s Attorney General. It is, therefore, disappointing that Ecology remains ignorant of contents of this report, relying instead on only an unsigned, undated, unstamped report and

an application prepared with the sole purpose of minimizing conditions that will satisfy Ecology, thereby increasing compensation for WRPS. It has been nearly 9 years since the TVAR was published. Litigation based on the TVAR has resulted in an agreement with U.S. DOE, and the payment by U.S. DOE of the better part of 1 million dollars. After 9 years, Ecology's ignorance of the TVAR's contents can only be viewed as willful. Willful ignorance should not excuse Ecology from addressing credible information that is inconsistent with certain underlying assumptions contained in Permittees application and technical support document. Willful ignorance should also not exempt Ecology from examining its previous positions when there exists credible information to the contrary.

### **Response to I-1-3**

*WAC 173-400-111 sets requirements for processing of NOC applications, including a requirement for the Permittee to "provide information on the nature and amounts of emissions to be emitted by the proposed new source or increased as part of the modification...to enable the permitting authority to determine that the construction or modification will meet the requirements of WAC 173-400-113." [WAC 173-400-111 (1)(b)]*

*WAC 173-400-113 requires a demonstration that emissions from the new source or modification will be in compliance with source-specific standards, if they exist, and that they will not cause or contribute to a violation of any ambient air quality standard. Ecology requires permittees to evaluate the worst-case scenario for estimated emissions. Use of a safety factor, based upon engineering judgement, is a common approach in this evaluation when there is uncertainty or variability in emissions.*

*To date, emissions testing at the Hanford Site has shown that a safety factor of 10 is a conservative upper bound for tank emissions. Historical testing includes samples taken during waste disturbance and quiescent events, which are both scaled by the safety factor when emissions are estimated. The cost of additional testing to establish pollutant-specific scaling factors is not justified under Chapter 173-400 WAC when it appears that they would likely be less than 10 over the appropriate averaging periods. There is also no guarantee that a pollutant-specific scaling factor developed for one tank would necessarily be accurate for the waste in all tanks.*

*Ecology is not using a specific ratio of ammonia to other pollutants for DE23NWP-001. Ecology is requiring testing for toxic air pollutants (TAPs) which are the the most likely to exceed their acceptable source impact level (ASIL), which is the appropriate ambient air quality standard. There is no evidence that TAPs which are estimated at less than 1.5% of their ASIL would ever exceed this value. For TAPs with no specific testing, compliance with permit limits is demonstrated through application of Best Available Control Technology (BACT) for toxics (tBACT) and operating in accordance with the NOC application. If needed, Ecology could request additional testing under WAC 173-400-105 (4) at any time.*

*The Tank Vapor Assessment Report (TVAR), SRNL-RP-2014-00791, and Case No. 4:15-cv-5086-TOR in the United States District Court for the Eastern District of Washington do not address ambient air quality standards or apply to WAC 173-400-113. They both specifically address worker, not general public, exposure to tank vapors in the immediate area of Hanford tank*



*farms. As established in EPA guidance "Revised Policy on Exclusions from Ambient Air" dated December 2, 2019, EPA defines ambient air as "that portion of the atmosphere, external to buildings, to which the general public has access." These tank farms, including 241-A, are miles from the nearest ambient air. Additionally, the TVAR focuses on extremely short-term emission rates, stating that "Evidence suggests that the vast majority of worker exposures with adverse reactions to Hanford tank farm vapors are from intermittent and very short-term (seconds duration) exposure in breathing zones..." (TVAR Page 35) The shortest averaging period for an ambient air quality standard is one hour, not seconds.*

*The Permittee has separately implemented worker protection practices, including use of supplied air for workers in the tank farms. These are outside the scope of NSR and Ecology's authority under Chapter 173-400 WAC.*

### **Comment I-1-4**

**3. a.) Require the Permittee to verify and validate the use of a single factor of 10 to estimate increased emissions attributed to waste-disturbing activities by analyzing samples taken before the waste-disturbing activity begins, when this activity begins, and at the approximate mid-point of the activity.**

In both NOC-5314 and NOCTSD the Permittee specifies using a single factor of 10 to account for increased emissions expected from conduct of waste-disturbing activities anticipated with this proposed action.

“The sample concentrations were converted and scaled by a factor of 10 to represent waste-disturbing activities in all 241-A tanks.” NOC-5314, Sec. 5.3, p. 5-2

. . . and,

“Estimated emissions were then scaled by a factor of 10 to bound potential emissions, under the assumption that waste-disturbing activities occur in all 241-A tanks at the same time throughout the year.” NOCTSD at 9 of 14

The origin and pedigree for this single factor of 10 is not addressed.

The independent panel of nationally recognized experts, hired (and funded) by WRPS, [WRPS is the same company that prepared the NOC application now under review], note that:

“[t]ank head space vapor/gas concentrations **can increase several orders of magnitude during tank-disturbing activities.**” TVAR at 52 of 153, emphasis is mine  
[One order of magnitude is a factor of 10 larger, or 10 times larger; 2 orders of magnitude are 100 times larger; and 3 orders of magnitude is 1,000 times larger, etc.]

As of 2014, the Permittee believed the expected increase in emissions owing to waste-disturbing activities was represented by a multiplier of 1,000 or greater.

“The draft report (TVAR) underwent a factual accuracy review by WRPS and the Department of Energy's (DOE's) Office of River Protection (ORP), and the TVAT [Tank

Vapor Assessment Team] [] incorporated corrections identified in that factual accuracy review into this report.” TVAR at 9 of 153

Given this huge discrepancy between a single factor of 10 (1 order of magnitude) and several orders of magnitude, it is highly doubtful the 1 order of magnitude multiplier cited in NOC-5314 and NOCTSD was ever validated or verified with actual emission measurements taken during the conduct of waste-disturbing activities.

The “several orders of magnitude” multiplier noted by the independent panel of nationally recognized experts in the TVAR appears to be partially validated for some regulated pollutants by analyses of samples taken of air emissions from Tank C-101 before the waste-disturbing activity began, when the waste-disturbing activity began, and midway through the waste-disturbing activity.

Table 4-1 below shows the pre-, initial-, and mid-point analyses of samples taken from Tank C-101. Mercury levels continue to rise, whereas others have peaked.

*Table 4-1 Percent of Occupational Exposure Limit*

Compound	Pre-start	Start	Midway
Mercury	12	147.3	923.3
N-Nitrosodimethylamine	19	2390	469
Formaldehyde	26.7	91	65.3
Ammonia	2.7	21.1	2.7

TVAR at 27 of 153

[NOTE: While the TVAR and NOC-5314 address different emission-related concerns, both focus, in large part, on the impact of emission increases from tank waste disturbing activities. Note also that ammonia does not behave proportionally with any of the other pollutants, particularly mercury.]

The Permittee acknowledges in both the NOC Application (NOC-5314) and the Technical Support Document (NOCTSD) that the proposed action includes waste-disturbing activities.

“Active tank waste retrieval includes solids mixing, disturbing bulk tank solids, and removal of enough supernatant to potentially create a gas release event.” NOC-5314 at 8-1

...and,

“The following waste retrieval activities could also be conducted: modified sluicing; saltcake dissolution; enhanced sluicing; mobile arm retrieval sluicing; vacuum system; and/or chemical dissolution.” NOCTSD at 2 of 14 (See also Id. at 9 of 14)

In the NOC Application (NOC-5314), and in the Technical Support Document (NOCTSD) submitted to Ecology, the Permittee uses a single factor (multiplier) of 10 applied to tank waste in a quiescent state to arrive at the expected increase in emissions owing to waste-disturbing activities. This single factor of 10 appears to be considerably smaller than the factor reported in a reputable publication (TVAR) that was approved by the Permittee, DOE-ORP, Health, and others, and was printed at government expense. Both factors can't be accurate.

The Permittee's use of a single factor of 10 in its NOC application, seems to have never been validated or verified, even in part, against actual emission measurements taken under operational conditions. Table 4-1 above confirms such measurements are indeed possible because they have already been performed. The results were subsequently reviewed for accuracy and published.

Because any modeling is only as reliable as the inputs, an increase in those inputs of at least 2 factors of 10 will significantly increase the emission estimates the Permittee used for this project, as well as, the number of toxic air pollutants that exceed a threshold under WAC 173-460.

Given both values were approved by WRPS (the TVAR-reported multiplier was additionally reviewed and also approved DOE-ORP and the Washington State Department of Health), Ecology should require the Permittee provide validation and verification for using a single factor of 10 to “. . . represent potential emissions during waste-disturbing activities.” [NOC-5314 at 5-1]

Ecology should require sampling before the waste-disturbing activity begins, when the waste-disturbing activity begins, and mid-way through the waste-disturbing activity to verify and validate using a single multiplier of 10 to “represent potential emissions during waste-disturbing activities”.

#### **Response to I-1-4**

*Please see the Ecology response to comment I-1-3 regarding the inapplicability of the TVAR for evaluations under WAC 173-400-113. The TVAR focuses on short-term spikes in emissions, generally on the order of seconds, which are much less than the minimum one-hour averaging period for any ambient air quality standard. Over the course of an hour, day, or year, these spikes would be conservatively covered by estimating emissions at 10 times the worst-case result found in historical testing.*

#### **Comment I-1-5**

**3. b.) Require the Permittee conduct sampling before the waste-disturbing activity begins, when the waste-disturbing activity begins, and midway through the waste-disturbing activity to verify and validate the accuracy of ratios established between ammonia and, individually, with all other TAPs expected from waste-disturbing activities associated with this proposed action.**

In the TVAR, which was published as final in 2014, the independent panel of nationally recognized experts described Hanford Tank waste. At that time, the Permittee, DOE-ORP, The Washington State Department of Health, and others, considered the following description to be factually accurate:

“The Hanford tank waste is a complex matrix of aqueous soluble and insoluble inorganic salts combined with an inventory of water and organic components that number into the thousands. These organic components are constantly undergoing radiolysis from the

tank radioactivity plus thermal and chemical reactions with tank contents.” TVAR at 16 of 153

. . . and,

“The waste material is radioactive, continually generating heat, continually catalyzing both known and unknown chemical reactions in all layers, and continually generating gases and known and unknown chemical products that are continuously created and destroyed via chemical, thermal, radiocatalytic and radiolytic processes in all layers.” TVAR at 21 of 153

. . . and,

“It is the head space composition that determines the composition of the vent, stack, and most fugitive emissions. . . .Waste disturbing activities can greatly alter the concentration and composition of the head space gases and vapors.” TVAR at 23 of 153

. . . and,

“However, it was noted that waste-disturbing activities can profoundly disturb the temporal concentrations of chemicals in the head space. More specifically, waste disturbing activities associated with sluicing of waste with water jets, dissolution and transfer pump operations are believed to have the highest potential to release a large fraction of retained gas and vapors over a short time period (citation omitted). The effects are dramatic resulting in organic vapor concentrations increasing by several orders of magnitude (citation omitted).” TVAR at 38 of 153

This unstable and energy-rich environment can never be homogeneous or be in steady-state (unchanging). In this unstable, energy-rich, and ever-changing environment, the Permittee proposes to use ammonia as an indicator compound to arrive at quantities for other TAPs in tank emissions, using ratios. The ratios are between measured amount of ammonia and measured amounts of other pollutants of concern from emissions in quiescent (undisturbed) tanks.

“Measurements were assumed to be made over a quiescent waste in a HEPA-filtered exhaust stream.” NOC-5314, Table of sample data assumptions, assumption 7

These preestablished ratios, between ammonia and the other pollutant of concern, are then used to estimate the quantity of the other pollutants in the tank’s emissions. The (flawed) logic is that once the amount of ammonia is known, then applying the pre-established ratio will yield the amount of any other chemical for which a ratio with ammonia has been established. The use of ammonia in such ratios likely relates to the relative ease of measuring ammonia rather than the accuracy of the results. These ratios are purely mathematical, ignoring molecular structure, associated physical properties, atmospheric conditions, etc.

“Ammonia is proposed to be used as a real-time indicator of potential high TAP release rates from tank operations during active tank waste retrieval. Active tank waste retrieval includes solids mixing, disturbing bulk tank solids, and removal of enough supernatant to potentially create a gas release event.” NOC-5314 at 8-1

The Permittee arrived at its emission estimates using established databases.

The pollutant emission estimates are based on the information provided by the Permittee from the following data sources of the Hanford Reservation Site: Tank Waste Information Network System (TWINS) and the Site Wide Industrial Hygiene Database (SWIHD). NOCTSD at 9 of 14

. . . and,

“The pollutant emission estimates are based on the information provided by the Permittee from the following data sources of the Hanford Reservation Site: Tank Waste Information Network System (TWINS) and the Site Wide Industrial Hygiene Database (SWIHD).” NOC-5314 at 1-1

However, it is highly unlikely that sampling results contained in the TWINS and SWIHD databases capture the maximum vaporization concentration for any specific chemical or that any multiplier applied to a TWINS or SWIHD datapoint accurately reflects a maximum release rate (maximum vapor pressure) for all pollutants of concern.

In his report, Dr. Henry Cole states:

“Emission rates are linearly proportional to vapor pressures. . . at temperatures at or above the boiling point, emissions increase extremely rapidly.” Thus, even a miniscule underestimation of any emission will result in a huge increase in the actual emission when tank waste is disturbed. Emission limits and any resultant monitoring requirements need to be based upon actual emission measurements and not upon assumptions (ignorance)’ Cole, Henry S., Ph.D., Review and Comments on Washington State Department of Ecology Requirements for the Measurement and Control of Emissions from Hanford's Nuclear Waste Storage Tanks, Henry S. Cole & Associates, Inc., Feb. 2017, at ~21 (sec. 4), citing to [http://www.physics.nyu.edu/kentlab/How\\_to/ChemicalInfo/VaporPressure/morepressure.pdf](http://www.physics.nyu.edu/kentlab/How_to/ChemicalInfo/VaporPressure/morepressure.pdf) and to ‘Wilmarth, W. et al., “Studies of Mercury in High Level Waste Systems,” Westinghouse Savannah River Co. June 6, 2003. (Ecology has previously been supplied with both hardcopies and electronic copies of Dr. Cole’s report.)

It appears the ratios used to support the proposed activity were never tested under operational conditions. Furthermore, the Draft NOC Order of Approval (DE23NWP-001) (Draft Order) does not require these ratios be re-examined under operational conditions, that include wastedisturbing activities. Such a re-examination under operational conditions seems warranted given the energy-rich, ever changing, non-homogeneous environment within the tanks and the untested use of mathematical ratios requiring all measured chemical compounds to behave like ammonia under all ambient and operational conditions. Chemicals are unique and have unique physical properties. Treating all chemical compounds as if they were ammonia overlooks their uniqueness.

As stated in “3. a.)” above, the independent panel of nationally-recognized experts, (whose publication was funded and reviewed by WRPS) found in sampling conducted from Tank C101 emissions before the waste-disturbing activity began, when the waste-disturbing activity began, and mid-way through the waste-disturbing process, that:

“Mercury levels continue to rise, whereas others (including ammonia) have peaked.

*Table 4-1 Percent of Occupational Exposure Limit*

Compound	Pre-start	Start	Midway
Mercury	12	147.3	923.3
N-Nitrosodimethylamine	19	2390	469
Formaldehyde	26.7	91	65.3
Ammonia	2.7	21.1	2.7

TVAR at 27 of 153

Should any of the ratios established under quiescent conditions under-estimate actual emissions, huge and unmeasured quantities of regulated air pollutants could be released when waste-disturbances occur. Please note, vapors and gases pass freely through HEPA filters.

Ecology should require the Permittee conduct sampling before the waste-disturbing activity begins, when the waste-disturbing activity begins, and midway through the waste-disturbing activity to verify and validate the accuracy of ratios established between ammonia and all other TAPs expected from waste-disturbing activities associated with this proposed action.

**Response to I-1-5**

*Please see the Ecology response to comment I-1-3 regarding the inapplicability of the TVAR for evaluations under WAC 173-400-113. Additionally, there are no ratios established between ammonia and other pollutants for DE23NWP-001. Instead, Ecology is requiring testing for the TAPs which are estimated as being closest to their ASIL and using alternative compliance demonstrations for all other TAPs.*

**Comment I-1-6**

**Comment 4. Provide the actual ammonia - to - pollutant ratios used. It appears only the results of the application of these ratios have been reported.**

**Response to I-1-6**

*There are no ratios established between ammonia and other pollutants for DE23NWP-001. Instead, Ecology is requiring testing for the TAPs which are estimated as being closest to their ASIL and using alternative compliance demonstrations for all other TAPs.*

**Comment I-1-7**

**Comment 5. Require routine monitoring for other forms of mercury, including the highly neurotoxic forms such as dimethyl mercury (CAS # 593-74-8).**

The only form of mercury the Draft Order (DE23NWP-001) requires to be measured is elemental mercury (CAS# 7439-97-6). (Draft Order at 7 of 12.) However, the Permittee identifies the presence of organics in the tank waste inventory. (“Estimated VOC emissions are 12,575 lb/yr.” NOC-5314 at 1-1, and “Only VOCs were estimated to be above the exemption level.” Id. at 5-1)

Given the presence of organics in the tank waste and the energy-rich, ever changing, environment, where:

“ . . . organic components are constantly undergoing radiolysis from the tank radioactivity plus thermal and chemical reactions with tank contents” (TVAR at 16 of 153)

and where tank wastes are:

“ . . . continually generating heat, continually catalyzing both known and unknown chemical reactions in all layers, and continually generating gases and known and unknown chemical products that are continuously created and destroyed via chemical, thermal, radiocatalytic and radiolytic processes in all layers.” (TVAR at 21 of 153)

it is a certainty that organic compounds of mercury will be formed.

Require routine monitoring for other forms of mercury, including the highly neurotoxic forms such as dimethyl mercury (CAS # 593-74-8).

### ***Response to I-1-7***

*The estimated increase in emissions of dimethyl mercury associated with this modification did not exceed the permitting threshold level identified in WAC 173-400-110 (5). Therefore, dimethyl mercury is not subject to NSR and it would be inappropriate for Ecology to set requirements for this TAP. In fact, total estimated emissions of dimethyl mercury for the 241-A Tank Farm remain less than the current permitting threshold levels.*

*The WAC 173-400-150 de minimis emission value for dimethyl mercury, which is also the permitting threshold level, was increased on December 23, 2019. It was established through standard rulemaking procedures, which included public participation. For more information on the appropriate emission thresholds for applications submitted after this date, please see Ecology AQP-POL-2020, issued February 19, 2020. This policy is included as Appendix B.*

### **Comment I-1-8**

Comment 6. (Re; Sections 5 & 6: “Sampling and Testing” and “Reporting”) **Because DE23NWP-001, when issued as final, is an “applicable requirement” under Ecology’s Operating Permit Regulation [see WAC 173-401-200 (4)(c)] and a permit issued pursuant to WAC 173-401 must contain all “applicable requirements” [see WAC 173-401-600 (1)], Ecology should revise reporting requirements to be consistent with the sampling and testing requirements, and the reporting requirements contained in Hanford’s current Air Operating Permit (number 00-05-006, Renewal 3).**

For example, in accordance with WAC 173-401-615 (3)(a) and section 5.6.1 of Hanford's AOP requires that:

“Semiannual reports shall be submitted by September 15th and by March 15th. Reports for January 1st through June 30th and July 1st through December 31st, shall be due September 15th and March 15th, respectively. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official consistent with WAC 173-401-520.”

Relevant to the instant action, contents of the semiannual reports are specified in AOP section 5.6.2 as follows:

“Each semiannual report shall contain the following information for the applicable reporting period.

- a. Reference to reports submitted to the regulatory agencies as required by Section [sic]5.16.
- b. Reports of any required monitoring not previously submitted or reference to reports of required monitoring that were submitted previously during the reporting period.
- c. A summary of any substantiated air emission complaint investigation(s) required in Table 1.1 of Attachment 1 and issued during the reporting period. . . .  
[WAC 173-401-615(3)(a)]”

Required submittal dates for the semiannual reports to be inconsistent with submittal dates and frequencies of reports required in section “6. d.” of the Draft Order, DE23NWP-001.

Ecology should edit the “Sampling and Testing” requirements and the “Reporting” requirements contained in Draft DE23NWP-001 to be consistent with those required in Hanford's AOP.

### ***Response to I-1-8***

*Ecology agreed with moving the deadline to March 15th to align with the AOP semiannual report. Although consistency with the AOP is not required, using the same reporting deadline is likely to make it easier to submit and review the required report for the 241-A Tank Farm.*

### **Comment I-1-9**

Comment 7. (Re: Section “5. e.”, Sampling and analysis plan): **The required pre-issuance Public Review process for this Draft Order (DE23NWP-001) is incomplete without providing the public with an opportunity to review a sampling and analysis plan (SAP). The SAP states how the Permittee will comply with “. . . testing under Approval Conditions 5.a and 5.b.”**

The public cannot affectively participate in lessening contaminants in the air we breathe, without the opportunity to review and comment on how, and under what circumstances, the Permittee proposes to quantify pollutants in emissions from the proposed action. Provide the public with a reasonable opportunity review and comment on the Permittee's SAP.



### **Response to I-1-9**

*Documents and records which are generated by the Permittee to demonstrate compliance with an approval order, after it is issued under the procedures in WAC 173-400-111, are not subject to requirements for public participation. WAC 173-400-171 identifies the types of actions which have public participation requirements.*

### **Comment I-1-10**

Comment 8. (Re: Section 3, "Operations & Maintenance", Draft Order, p. 6 of 12) **Add condition "b. iii" that states "All O&M manual(s) and PM programs must be reviewed by Ecology before activities allowed under this order can commence", or something similar.**

Without such a statement, conditions in "3. b." are unenforceable.

### **Response to I-1-10**

*Approval Condition 3.b is enforceable because the requirement is for the permittee to develop and update maintenance manuals which are sufficient to ensure compliance with Approval Condition 3.a. The approval order requires the Permittee to have these documents available upon request.*

*Ecology does not typically pre-approve maintenance programs for approval orders issued under Chapter 173-400 WAC. Ecology generally reviews maintenance as part of an inspection or other compliance evaluation, with other generated records. If needed, the most recent manuals are requested at the time of review.*

### **Comment I-1-11**

Comment 9. (Re: Draft Order, Condition 6. "Reporting", "f. iii".) **Add the following, or similar, text as condition "C" under condition "6. f. iii": "C. Documentation of any changes to the O&M manual(s), revised PM program(s) and changes to any other relevant operating plans."**

Absent such a condition the Permittee has no obligation to inform Ecology of changes to the referenced documentation.

### **Response to I-1-11**

*In approval orders issued under Chapter 173-400 WAC, Ecology does not typically require that notifications be provided when operation and maintenance manuals are updated. Such a condition would be inconsistent with requirements for other permitted sources throughout the state.*

*Compliance history for the Permittee indicates that they will develop an appropriate maintenance program. Therefore, Ecology has determined that it is not necessary to make an exception to general practice regarding notification of changes to this program.*

## Comment I-1-12

Comment 10. (Re: Section 2, "Operational Limitations", condition "d.", "Visible Emissions")

**Thank you Ecology! This is a vast improvement over most of Ecology's visible emission conditions contained in past orders of approval regarding tank farms. An additional improvement would be to require the Permittee to check for visible emissions daily and record and report all results semi-annually and positive results within < 24 hours. (Note: certain NPDES permits require the permittee visually check for sheen on the water daily, and self-report.)**

Ecology should specify that there shall be no visible emissions. (The visible emission limit is zero.)

If memory serves, there are no combustion sources in the implicated tank farm. Any visible emissions, except water vapor, and perhaps from equipment failure, at tank farms would very likely indicate a catastrophic event that certainly could translate into catastrophic consequences for the public.

Visible emissions attributable to water vapor could indicate failure of a portion of the required control technology, for example, the moisture eliminator. Such emissions could also result from equipment failure, say an overheated bearing.

Failure of any portion of the control technology (e.g., moisture eliminator) or of any piece of equipment should be immediately reported to Ecology and repairs affect at the earliest possible date.

All visible emissions resulting from a catastrophic event, water vapor, or equipment failure, are of short duration, likely too short to properly conduct either a Method 22 or a Method 9 survey. Given the seriousness nature of the likely cause of such visible emissions, the Permittee should be required to immediately report to Ecology, along with what the Permittee suspects caused such emissions. It would then be Ecology's call whether to require a Method 22 or a Method 9 survey.

This condition should be re-written to minimally require the following, or something similar:

- Daily checks for visible emissions with the results recorded in a log. The log is to be submitted semi-annually.
- Immediate (<24 hrs.) notification State of Washington Department of Ecology (Ecology), Nuclear Waste Program (NWP) of any visible emissions. The notification to include the suspected cause.
- At Ecology NWP's request, the permittee shall:
  - (i) determine the cause, and/or
  - (ii) affect corrective actions or repairs, and/or
  - (iii) conduct a follow-up assessment using Method 22 or Method 9, and/or
  - (iv) shut the portable exhausters(s) down.
- Upon observation of visible emission during a Method 22 visible emissions survey, the Permittee shall either:

- (i) Take corrective action within 24 hours of the Method 22 visible emissions survey and; then immediately conduct an additional Method 22 visible emissions survey; or,
- (ii) Demonstrate compliance with the opacity limit using Method 9; or,
- (iii) Cease operating the exhausters and contact Ecology NWP to discuss options to re-start operations.

### **Response to I-1-12**

*The cost to implement daily visible emission surveys would make the tBACT determination significantly out of line with those previously issued for the Hanford Site and other sources in Washington. Surveys would also be unlikely to significantly reduce TAP emissions, due to extremely limited emission rates for particulates.*

*Ecology determined tBACT using the preferred presumptive approach described in guidance AQP-GUI-2022 BACT and tBACT, last revised April 21, 2022. The tBACT determination for the 241-A Tank Farm was based upon the most recent BACT and tBACT determination for the 241-AP Tank Farm, which used a top-down approach.*

*For exhausters associated with tank farms at the Hanford Site, Ecology has generally considered installation and operation of HEPA filtration to be essentially free. This level of control is required for nuclear safety and established as Best Available Radionuclide Control Technology in RAELs issued under Chapter 246-247 WAC. However, if Ecology were to require significant changes to design, operation, or monitoring for control of TAP emissions there would be additional costs which should be considered for the tBACT determination. Daily visible emission surveys would be one example of an increased cost associated only with control of TAPs.*

*The NOC application for DE23NWP-001 estimated that particulate TAP emissions could be up to 130 pounds per year if HEPA filters were not used. Even if it were assumed that HEPA filtration would be rendered nonfunctional without daily surveys, this would be the maximum emission reduction which could be credited for tBACT.*

*Historical tBACT determinations for the Hanford Site have used a variety of cost effectiveness thresholds up to \$100,000 per ton. Based upon this threshold and a reduction of 130 pounds per year, the cost to implement tBACT needs to be less than \$6,500 per year to be cost effective. It would not be possible to implement daily visible emissions surveys and associated recordkeeping for less than \$6,500 per year, even if they were entirely responsible for the reduction in TAP emissions.*

### **Comment I-1-13**

**Comment 11. While Ecology does address visible emission and odor, Ecology overlooks other requirements of WAC 173-400-040. Edit this Draft Order (DE23NWP-001) to capture all requirements of WAC 173-400-040.**

Requirements of WAC 173-400-040 apply to “[a]ll sources and emissions units . . .” regulated pursuant to WAC 173-400, with an exception that doesn’t appear to be applicable here. [WAC 173-400-040 (1)(a)] These requirements address:

- visible emissions; Id. at (2)
- fallout; Id. at (3)
- fugitive emissions; Id. at (4)
- odors; Id. at (5)
- emissions detrimental to persons or property; Id. at (6)
- sulfur dioxide; Id. at (7)
- concealment and masking. Id. at (8), and
- fugitive dust. Id. at (9)

Regulations under which Ecology is conditioning approval of this Draft Order (DE23NWP-001) include WAC 174-400.

“The proposed project, if operated as specified, will be in accordance with applicable rules and regulations, as set forth in Chapters 173-400 WAC and 173-460 WAC . . .” Draft Order at 4-5 of 12

Washington Administrative Code (WAC) 173-400-040 (1)(a) does contain an exception to its applicability:

“Where an emission standard listed in another chapter is applicable to a specific emissions unit, such standard takes precedence over a general emission standard listed in this chapter.” Id.

Should Ecology believe this precedent over the general standard applies, it should clearly identify the superseding standard.

### **Response to I-1-13**

*WAC 173-400-040 (1)(a) states that an emission unit-specific standard "listed in another chapter" of WAC takes precedence. Where an approval order sets a similar standard, sources must be in compliance with both.*

*As noted in this comment, the general standards of WAC 173-400-040 apply to all sources and do not need to appear in an approval order to be enforceable. When processing NOC applications under the procedures of WAC 173-400-111, Ecology is not required to review or address WAC 173-400-040. However, when there is a source-specific concern, Ecology may write approval conditions which are equivalent to, or more stringent than, WAC 173-400-040. This is generally part of the BACT and tBACT review.*

*As an example, a working landfill might have conditions for fugitive dust because haul roads and storage piles should be regularly monitored and might need to be watered as BACT. Such conditions would not be appropriate for exhausters associated with 241-A, because they do not generate fugitive dust. For DE23NWP-001, Ecology did identify odor as one concern of which the Permittee should be aware. Opacity and visible emissions were also addressed, with more stringent limitations, to provide a method of evaluating condition of the HEPA filters between leak checks which are required for nuclear safety purposes.*

## **Comment I-1-14**

**Comment 12. (Draft Order, section “5e”.) Require the Permittee actually analyze for “. . . compounds not previously identified in emissions estimates [] found during sampling, including tentatively identified compounds (TICs).” Draft Order at 8 of 12**

Under section “5e” of the Draft Order, Ecology requires the Permittee report:

“. . . compounds not previously identified in emissions estimates [] found during sampling, including tentatively identified compounds (TICs).” Draft Order at 8 of 12

As written, “5e” is meaningless because there is no requirement to analyze for TICs or other “compounds not previously reported”. Only elemental mercury and ammonia are required to be monitored monthly. Two other chemicals (N-Nitrosodimethylamine and 1,3-butadiene) are to be measured quarterly.

## **Response to I-1-14**

*To clarify the intent, Approval Condition 5.e now specifically states that it could apply to sampling results for testing other than under Approval Conditions 5.a or 5.b. The Permittee regularly conducts sampling for other approval orders or purposes, such as industrial hygiene. Additionally, test methods often tentatively identify peaks which are not the target analyte. Approval Condition 5.e is intended to ensure that Ecology is aware of new credible data which indicates that the emissions estimate might not have include all TAPs being emitted.*

## B-1: WRPS ON BEHALF OF THE DEPT OF ENERGY

### Comment B-1-1

Comment #1: The draft proposed approval order includes condition 3.b, which states that the O&M manuals must be updated within 30 days of the effective date. WRPS has determined that condition 3.b.ii will allow operational flexibility to the project by allowing the operations staff time to ensure that the O&M manuals are updated and compliant before increasing exhauster flowrates above the current limit of 1000 cfm. It is requested to have 3.b revised to match the implementation period described in 3.b.ii. Comment #2. Tech edits as shown in the attached file. Edits include draft approval order and the TSD.

### DE23NWP-001 comments. Oct 31, 2023.

Page/Condition #/	Incorrect sentence	Please change to
Page 2/Modified Sluicing	the 1950s through 1970ds at the Hanford	1970's
Page 2/Modified Sluicing	The sludge's characteristics including relatively high viscosity and will plug the	The sludge's characteristics including relatively high viscosity will plug the
Page 2/Enhanced Sluicing 1 <sup>st</sup> bullet	telescoping sluicer assemblies to broaden the angel of attack	angle
Page 3/Vacuum system	the introduced fluid id double-shelled	Is Shell
Page 3/Chemical Dissolution	in from a double-shelled tank	shell
Page 7/Cond 5.a	POR518 or POR519 e operating	are
Page 9/Cond 6.f.iii.B	still be able to meet	Still able to meet

### DE23NWP-001 TSD comments. Oct 31, 2023.

Page/Condition #/	Incorrect sentence	Please change to
Page 2/Modified Sluicing	the 1950s through 1970ds at the Hanford	1970's
Page 2/Modified Sluicing	The sludge's characteristics including relatively high viscosity and will plug the	The sludge's characteristics including relatively high viscosity will plug the
Page 2/Enhanced Sluicing 1 <sup>st</sup> bullet	telescoping sluicer assemblies to broaden the angel of attack	angle
Page 3/Vacuum system	the introduced fluid id double-shelled	Is Shell
Page 3/Chemical Dissolution	in from a double-shelled tank	shell

### Response to B-1-1

*Thank you for your comments. Ecology has updated the implementation period for Approval Condition 3.b to be consistent with 3.b.ii. Additionally, the noted technical edits have been included in the issued DE23NWP-001.*

## Appendix A. Copies of All Public Notices

Public notices for this comment period:

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

**From:** [Washington Department of Ecology](#)  
**To:** [McFadden, Daina \(ECY\)](#)  
**Subject:** 2 comment periods starting today!  
**Date:** Monday, October 2, 2023 10:02:53 AM

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Washington Department of Ecology logo

A bright sunset with Rattlesnake mtn. silhouetted



2 public comment periods start today, Approval Order



DE23NWP-001 and NOC Approval Order DE05NWP-002,  
Revision 3

## **241-A Tank Farm Exhausters NOC Approval Order - DE23NWP-001 public comment period**

**Oct. 2 - Nov. 1, 2023**

We are holding a 30-day public comment period on draft Approval Order DE23NWP-001, which would authorize use of two exhausters in 241-A at a flow rate of up to 3,000 standard cubic feet per minute (scfm) per exhauster.

### **Proposed changes**

The United States Department of Energy is proposing to modify the method of operation for portable exhauster systems used during retrieval of waste from single shell tanks (SSTs) in the 241-A Tank Farm.

Currently, portable exhausters in 241-A are limited to 1,000 scfm under Approval Order DE05NWP-002, Revision 2. That order addressed multiple tank farms, including 241-A. However, no change in method of operation has been proposed for the other tank farms. We are holding a separate public comment period for a new DE05NWP-002, Revision 3, which will no longer include 241-A.

Please submit comments by **Nov. 1, 2023**. [Electronically](#) (preferred). Mail or delivery address below.

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## **SST Ventilation NOC Approval Order - DE05NWP-002, Revision 3 public comment period**

**Oct. 2 - Nov. 1, 2023**

We are holding a 30-day public comment period under WAC 173-400-171 (3)(n) for a Notice of Construction (NOC) Application which has been determined to be of significant public interest.

### **Proposed changes**

The United States Department of Energy has requested that the 241-A Tank Farm be removed from Approval Order DE05NWP-002, Revision 2. This order authorized use of portable exhausters during retrieval of waste from multiple single shell tank farms at the Hanford Site. No change in method of operation has been proposed for the 241-AX, 241-B, 241-BX, 241-BY, 241-C, 241-S, 241-SX, 241-T, 241-TX, 241-TY, and 241-U Tank Farms.

We are proposing to issue DE05NWP-002, Revision 3, which will continue to cover the tank farms which did not trigger New Source Review under WAC 173-400-110. A separate comment period has been opened for a new DE23NWP-001, which will cover 241-A alone.

Please submit comments by **Nov. 1, 2023**. [Electronically](#) (preferred). Mail or delivery address below.

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The draft Approval Orders are available for review online at the Nuclear Waste Program's [public comment page](#).

**For mail or hand delivery contact:**

Daina McFadden  
3100 Port of Benton Blvd  
Richland WA 99354

Drafts

## 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](mailto:Hanford@ecy.wa.gov)

509-372-7950



Washington Department of Ecology - Hanford

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Two Hanford public comment periods opened today!

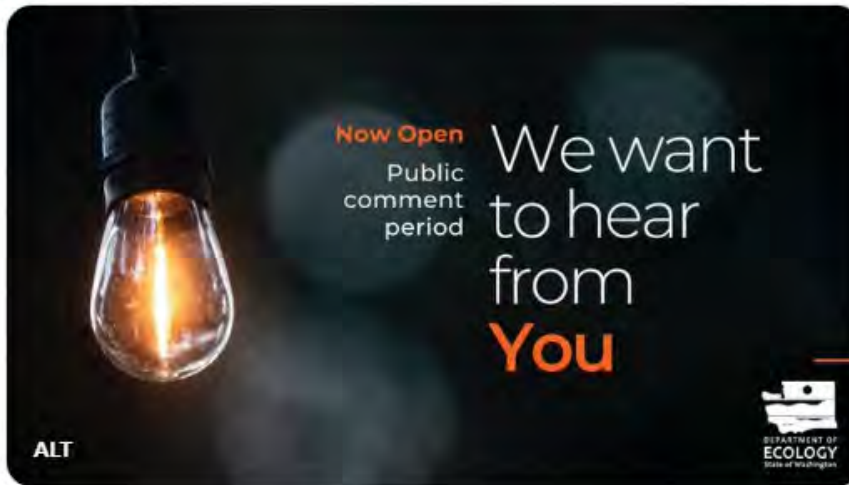
Check out our website and provide your input: <https://ecology.wa.gov/.../Nuclear.../Public-comment-periods>



Ecology - Hanford @ecyHanford · 32m

Two Hanford public comment periods opened today!

Check out our website and provide your input: [ecology.wa.gov/.../Nuclear...](https://ecology.wa.gov/.../Nuclear...)



# SST Ventilation NOC Approval Order – DE05NWP-002, Revision 3

Oct. 2 - Nov. 1, 2023

We are holding a 30-day public comment period under WAC 173-400-171 (3)(n) for a Notice of Construction (NOC) Application which has been determined to be of significant public interest. The United States Department of Energy has requested that the 241-A Tank Farm be removed from Approval Order DE05NWP-002, Revision 2. This order authorized use of portable exhausters during retrieval of waste from multiple single shell tank farms at the Hanford Site. No change in method of operation has been proposed for the 241-AX, 241-B, 241-BX, 241-BY, 241-C, 241-S, 241-SX, 241-T, 241-TX, 241-TY, and 241-U Tank Farms.

We are proposing to issue DE05NWP-002, Revision 3, which will continue to cover the tank farms which did not trigger New Source Review under WAC 173-400-110. A separate comment period has been opened for a new DE23NWP-001, which will cover 241-A alone.

Please submit comments by **Nov. 1, 2023**, [electronically](#) , by mail, or 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  
[Hanford@ecy.wa.gov](mailto:Hanford@ecy.wa.gov)  
509-372-7950

## Documents

[Transmittal letter](#)   
[Draft Approval Order](#)   
[Technical Support Document](#)   
[Approval Order](#) 

# 241-A Tank Farm Exhausters Approval Order - DE23NWP-001

Oct. 2 - Nov. 1, 2023

The United States Department of Energy is proposing to modify the method of operation for portable exhauster systems used during retrieval of waste from single shell tanks (SSTs) in the 241-A Tank Farm. We are holding a 30-day public comment period on draft Approval Order DE23NWP-001, which would authorize use of two exhausters in 241-A at a flow rate of up to 3,000 standard cubic feet per minute (scfm) per exhauster.

Currently, portable exhausters in 241-A are limited to 1,000 scfm under Approval Order DE05NWP-002, Revision 2. That order addressed multiple tank farms, including 241-A. However, no change in method of operation has been proposed for the other tank farms. We are holding a separate public comment period for a new DE05NWP-002, Revision 3, which will no longer include 241-A.

Please submit comments by **Nov. 1, 2023**, [electronically](#) , by mail, or 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:

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## Documents

[Transmittal letter](#)   
[Draft Approval Order](#)   
[Technical Support Document](#) 

## Appendix B. References



## Air Quality Program Policy

Title: AQP-POL-2020 How to Apply 460 Standards

Date initially issued: February 19, 2020

Date last revised: Not applicable

**Authority:** RCW 70.94.152, WAC 173-400-111(8), WAC 173-460-040, WAC 173-460-080(4), and *Five Corners Family Farmers v. Ecology*, PCHB No. 09-106 (2010)

### Policy on Applying Emission Standards in WAC 173-460-150

#### **Purpose:**

This policy describes how to apply the list of toxic air pollutants (TAPs), acceptable source impact levels (ASILs), small quantity emission rates (SQERs), or de minimis emission values in WAC 173-460-150 to an approval order (aka permit) issued or amended on or after December 23, 2019.

#### **Applicability:**

This policy applies to approval orders issued in Ecology's air quality jurisdiction and a second or third tier review.

### Policy

1. An approval order must reflect the emission standards in WAC 173-460-150 that are in effect when the order is issued.
2. This policy applies to every notice of construction (NOC) application submitted to Ecology:
  - That is still being processed on or after December 23, 2019, even if a proposed approval order has completed a public comment period; and
  - Every new NOC application submitted after December 23, 2019.
3. For a change that qualifies as a modification, any modified TAP that has increased emissions greater than its de minimis emission level in WAC 173-460-150 must be reviewed.
4. Only the revised conditions in an approval order must meet the requirements in WAC 173-460-150 that was effective on December 23, 2019. Conditions from an existing approval order that were not revised remain unchanged.

### Background

On November 22, 2019, Ecology updated WAC 173-460-150, Table of ASIL, SQER, and de minimis emission values. The rule amendment's effective date is December 23, 2019.



An approval order allows a facility to operate under the terms and conditions in the order in perpetuity, with a few exceptions. When there is a change to a rule, a permittee must request a revision or cancellation of an existing approval order if they want to apply different values to a facility. Regarding the 2019 amendments to Chapter 173-460 WAC, Ecology must issue a revised approval order with new conditions before the 2019 values in WAC 173-460-150 would apply, or rescind the approval order for a TAP that was removed. A new approval order must reflect the most current acceptable emission thresholds that protect public health for all portions of the permit subject to the modification.

### **Pollution Control Hearings Board (PCHB) Decision**

In 2010, after a similar rule update, the PCHB found that Ecology should have applied the newly-adopted ASIL values in effect at the time the approval order was issued to establish the conditions for a permittee. Ecology applied the older, less protective standards in effect when we determined the application was complete. *Five Corners Family Farmers v. Ecology*, PCHB No. 09-106 at 18-22 (2010). The PCHB found that:

“Ecology has the regulatory flexibility to make accommodations when instituting new standards, but such discretion should be *exercised to protect the public health and provide relief only as necessary* [emphasis added] to avoid true hardship to applicants for air quality approval.... Ecology’s practice of allowing any applicant whose NOC application is complete to use standards that have been eclipsed by new science cuts too broadly and does not tie the exemption to the underpinnings for the practice.” *Five Corners Family Farmers v. Ecology*, PCHB No. 09-106 at 18-22 (2010) (emphasis added).

### **Guidance Document History**

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Previous versions of this policy:

Commercial and Industrial Steering Committee, “Guidance on Applying the New Air Toxics Rule (WAC 173-460) to Notice of Construction Applicants,” Memorandum, addressed to Air Quality Program Commercial and Industrial Permitting Staff, July 23, 2009.

On November 3, 2010, the PCHB rejected the approach of this memorandum as applied to the Easterday Feedlot approval order. *Five Corners Family Farmers v. Ecology*, PCHB No. 09-106 at 18-22 (2010).

### **Approval Authority**

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Kathy Taylor  
Air Quality Program Manager

February 19, 2020

Date