Comments submitted to WA State Department of Ecology electronically:
https://ecology.commentinput.com/?id=FDfZiVsax2

November 4, 2026

To Whom It May Concern,

Thank you for soliciting comments on the proposed draft Renewal 4 of the Air Operating Permit (AOP) for the Hanford Site, No. 00-05-006, addressing applicable requirements for Title V of the federal Clean Air Act.

Hanford Challenge is a non-profit, public interest, environmental, and worker advocacy organization located in Seattle, WA. We are an independent 501(c)(3) organization incorporated in the State of Washington since 2008 and registered in Oregon. Our mission is to create a future for the Hanford Nuclear Site that secures human health and safety, advances accountability, and promotes a sustainable environmental legacy.

Hanford Challenge has members who work at the Hanford Site. Other members of Hanford Challenge work and/or recreate near Hanford, where they may also be affected by hazardous materials emitted into the environment by Hanford. All members have a strong interest in ensuring the safe and effective cleanup of the nation's most toxic nuclear site for current and future generations, and who are therefore affected by conditions that endanger human health and the environment.

Commercial and industrial businesses that emit large amounts of air pollution must get an air operating permit. An Air Operating Permit is a master document that lists all of the air pollution requirements that apply to a business or industry. The Department of Ecology (Ecology) and other clean air agencies in Washington State issue these permits.

Please note, Hanford Challenge has structured this round of comments on the AOP Renewal 4 as responses to Ecology's Response to Comments Hanford Site Air Operating Permit, Renewal 4 document from the first public comment period for the AOP Renewal 4 which ran from July 28-Sept 19, 2025. We appreciate that there is a second opportunity to comment on the AOP Renewal 4 and respond to Ecology's responses to our comments.

In the response to comments, we noticed that Ecology uses the term monitoring interchangeably with sampling. As we understand it, sampling is not the same as monitoring. As stated on the Environmental Protection Agency (EPA) website: "Air monitoring and air sampling are two different methods of looking at air quality. Air monitoring uses electronic devices to provide real-time readings of contaminants in the air. Air sampling involves trapping air over a period of time

in a container that is then sent to a laboratory for analysis to identify and quantify specific compounds." **Our concern in the AOP is with both short-term air sampling over the course of 1-hour using a container to trap air and short-term analyzer methods. Our comments are not concerning continuous air monitoring, such as 24-hour, every day monitoring.**

Our primary concern is regarding sampling methods. Hanford Challenge remains deeply concerned with the accuracy of alternative, unvalidated sampling methods being used at Hanford by the contractor. As we understand it, EPA does not delegate states the authority to allow a permittee to make major alternatives to test methods, which means that Ecology does not have the authority to allow the contractor to use alternative sampling methods and should require the contractor to use EPA methods.

There is currently no way to see what kind of sampling program the contractor is building or how it has been validated against EPA methods. **We are asking that Ecology build a more rigorous sampling program through the AOP by requiring that EPA methods be used, removing the contractor's ability to develop their own sampling protocols, and disallowing selection between multiple compliance options at the contractor's discretion.** We do not trust that the current program would pass validation. Please update the AOP to address our concerns.

Our new comments for this comment period are in blue and are in response to a specific part of Ecology's response to our original comments, which we have highlighted as red text. These comments are focused on AOP Renewal 4.

Thank you for considering our comments.

Excerpts of Ecology's Response to Comments

Response to Comments Hanford Site Air Operating Permit (AOP), Renewal 4 July 28 – Sept. 19, 2025

In comments below, Hanford Challenge responds to Ecology's responses to our Sept 19, 2025 comments that were submitted for the previous comment period on the AOP Renewal 4. Our new comments for the October-November 2026 comment period are in blue and are in response to a specific part of Ecology's response to our original comments, which we have highlighted as red text.

Hanford Challenge Comment O-1-1

To Whom It May Concern,

Thank you for the opportunity to comment on the draft Renewal 4 of the Hanford Site Air Operating Permit (AOP).

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for the Hanford Nuclear Site that secures human health and safety, advances accountability, and promotes a sustainable environmental legacy.

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Commercial and industrial businesses that emit large amounts of air pollution must get an air operating permit. An Air Operating Permit is a master document that lists all of the air pollution requirements that apply to a business or industry. The Department of Ecology and other clean air agencies in Washington State issue these permits.

Please update the Hanford Site Air Operating Permit to address the following concerns:

Specify How the US Department of Energy's (DOE) Hanford Contractors Demonstrate Compliance: It remains unclear how DOE Hanford contractors are expected to demonstrate ongoing compliance with emission limits.

We urge the Washington State Department of Ecology to revise the AOP to include:

- Specific monitoring protocols and data reporting formats
- Defined performance metrics and thresholds for compliance
- Public access to compliance data and enforcement outcomes
- Clear contractor responsibilities and corrective actions in case of violations

These additions would strengthen transparency, accountability, and public trust in the permitting process.

Ecology Response to O-1-1

Thank you for your comments. Ecology does aim to ensure that monitoring protocols, data reporting formats, and limits/thresholds specified in applicable requirements are properly identified in the AOP. If there are cases where applicable requirements are potentially missing, we would appreciate specific comments to identify those gaps.

That said, applicable requirements for Title V often allow the Department of Energy to generate records which fit a general description, ***develop their own monitoring protocols through a Sampling and Analysis Plan, or even select between multiple compliance options at their own discretion.*** *Ecology has limited authority, under Title V, to gap fill or otherwise modify these requirements as they are incorporated into the AOP.*

Hanford Challenge Comment

Can you cite a regulation, either Federal or State, that allows a source owner such as the Department of Energy (USDOE) to self-police their own compliance methods? That appears to be the opposite of the EPA's Guideline document GD-50, National Stack Testing Guidance,

> *"II Goals of the National Stack Testing Guidance.*
>
> - *Improve uniformity on how stack tests are conducted for determining and demonstrating compliance with the NSPS (40 CFR Part 60), NESHAP (40 CFR Part 61), and MACT (40 CFR Part 63).*
> - *Improve coordination between EPA and state/local agencies"*

Who writes the Sampling and Analysis Plan (SAP)? Do they have backgrounds in AOP compliance at other sites? Do they have experience with EPA stack sampling methods so they can evaluate their methods to produce similar results? Have they done validation studies? If the AOP is going to allow Hanford to self-regulate with their own sampling and analysis plan and methods, those plans and methods need to be put out for public review.

Ecology Response to O-1-1, continued

In particular, Ecology did not identify any equipment at the Hanford Site which would be subject to Compliance Assurance Monitoring (CAM) requirements under 40 C.F.R. Part 64. CAM is the primary driver for an AOP to have more detail regarding monitoring than would be specified in an underlying applicable requirement. However, it only applies to emission units which meet the applicability criteria in 40 C.F.R. 64.2(a) and which don't meet the exemptions in 64.2(b).

Hanford Challenge Comment

We're not sure why your response references CAM requirements. Our question was related to the AOP sampling requirements, not CAM. We are concerned about sampling, not monitoring.

Hanford Challenge Comment O-1-2

Ensure the Air Operating Permit Functions as a Standalone Document: The Air Operating Permit (AOP) should serve as a complete, self-contained set of instructions for demonstrating compliance. As currently drafted, the permit requires readers to cross-reference multiple external regulations, approval orders, and technical standards—many of which are complex, scattered, or subject to interpretation.

This lack of clarity creates barriers for public understanding, regulatory oversight, and contractor accountability.

We urge the Washington State Department of Ecology to revise the AOP so that it:

- Clearly outlines all compliance demonstration methods within the permit itself
- Consolidates relevant requirements from external documents into accessible summaries
- Provides step-by-step guidance for contractors, regulators, and the public
- Includes plain-language explanations and visual aids where appropriate

A permit that requires extensive outside research to interpret is not truly protective or transparent. Ecology has the opportunity to set a precedent for clarity and accessibility in environmental permitting as it sets out to do per its website: https://ecology.wa.gov/regulations-permits/permits-certifications/air-quality-permits

Ecology Response to O-1-2

For the Hanford Site AOP, Ecology does strive to consolidate the relevant portions of applicable requirements and then streamline them into the most straightforward and plain-language compliance demonstration method possible. As stated in Section 504(c) of the federal Clean Air Act (CAA), Ecology develops conditions "to assure compliance with applicable requirements of this chapter [Chapter 85 of the federal CAA], including the requirements of the applicable implementation plan."

Hanford Challenge Comment

Please help us understand how this response relates to our comment about the AOP needing to be a standalone document. ***Hanford Challenge is concerned that the contractor's sampling plan is not rigorous enough and that the use of alternative methods create untrustworthy and inaccurate sampling results. Not being able to trust the results of the sampling program essentially invalidates the entire program.*** *If the AOP contains all of the necessary rules that the contractor needs to follow in order to be compliant, then it could build public confidence in the requirements the contractor is following. Right now, there is too much wiggle room for the contractor to develop their own sampling protocols. We are concerned that as it is written, the AOP may allow the contractor to get around regulations to make sampling easier, such as by making up their own sampling methods that are not being validated instead of doing the job right.*

As the AOP is written now, there is no way to see what kind of sampling program the contractor is building or how it has been validated against EPA methods. *A more rigorous sampling program could be built by requiring in the AOP that EPA methods be used and removing the ability of the contractor to develop their own sampling protocols through a Sampling and Analysis Plan, or even select between multiple compliance options at their own discretion. We do not trust that the current program would pass validation. If someone who knows nothing about sampling is writing the plan, it is not going to be a great plan.*

Please also clarify which regulation you are citing above. The quote referenced in red is not in 504(c), only the first four words. For reference we copied the 504(c) language below:

> *"(c) Inspection, entry, monitoring, certification, and reporting: Each permit issued under this subchapter shall set forth inspection, entry, monitoring, compliance certification, and reporting requirements **to assure compliance with** the permit terms and conditions. Such monitoring and reporting requirements shall conform to any applicable regulation under subsection (b) of this section. Any report required to be submitted by a permit issued to a corporation under this subchapter shall be signed by a responsible corporate official, who shall certify its accuracy."*

*Your reference seems to be from United States Code, Title 42, Chapter 85, AIR POLLUTION PREVENTION AND CONTROL — Front Matter **(Chapter 85) §7661c. Permit requirements and conditions**:*

> *"(a) Conditions*
>
> *Each permit issued under this subchapter shall include enforceable emission limitations and standards, a schedule of compliance, a requirement that the permittee submit to the permitting authority, no less often than every 6 months, the results of any required monitoring, and such other conditions as are necessary **to assure compliance with applicable requirements of this chapter, including the requirements of the applicable implementation plan."***

Ecology Response to O-1-2, continued

We encourage comments on any specific language which is unclear or which might not be sufficient to assure compliance with the underlying applicable requirements. But attempting to both fully incorporate and then explain every applicable requirement, to the point where a reader wouldn't need any outside knowledge, is both outside the scope of a Title V permit and likely to lead to a much more difficult document to use (if it could even be accomplished). In many cases, such as federal regulations, developing the guidance requested would likely be inappropriate as it should be EPA to explain and clarify when their regulations are unclear.

Hanford Challenge Comment

We disagree that this can't be done. For example, see the Southwest Clean Air Agency Title V permits that outline exactly what is needed to demonstrate compliance.

The AOP could be made much more clear by incorporating the regulations, which are clear - no wiggle room. The AOP should be written in plain language to eliminate any confusion about what is necessary to demonstrate compliance, ensure that everyone involved is able to understand, and the contractor is able to comply with the public knowing the terms of that

compliance, https://www.govinfo.gov/content/pkg/PLAW-111publ274/pdf/PLAW-111publ274.pdf.

Hanford Challenge Comment O-1-3

Increase Specificity for Air Emission Sampling Methods: There are often multiple categories listed of methods such as OSHA, NIOSH or EPA but the AOP lacks the specifics necessary to know how to demonstrate compliance. For example:

- What OSHA method for what hazardous air pollutant?
- How long of a sample or what is the minimum volume?
- Is it allowed to switch from one method to another at will?
- How can accurate trending occur with the random/inconsistent use of sample methods?
- What studies have been done to show that the various methods are equivalent?
- What is the protocol for requesting EPA administrator approval of changes to sampling methodology? Has the EPA administrator delegated this authority to Ecology staff?

Ecology Response to O-1-3

Please see the EPA response to Claim 1 of Title V Petition No. X-2019-8, which is available in the Title V Petition Database (https://www.epa.gov/title-v-operating-permits/title-v-petition-database) as "2020 Order Denying in a Petition for Object to Title V Operating Permit for Hanford (pdf)."

EPA's response explains why they do not delegate authority for, or approve, monitoring methodology for limits and standards which Ecology establishes under our New Source Review (NSR) program.

Hanford Challenge Comment

This response seems to be dodging our main concern about the AOP's lack of specificity for air emission sampling methods.

Please clarify your comment about delegated authority. If the EPA has "not delegated authority for or approve, monitoring methodology for limits and standards which Ecology establishes under our New Source Review (NSR) program[,]" then why has Ecology assumed that authority? Here is an EPA document on what has and has not been delegated to the states, https://www.epa.gov/caa-permitting/delegation-clean-air-act-authority.

We did look up the document you referenced, which was not easy to find. In the document, Ecology states:

> *"Approval Order DE11NWP-001, Revision 4, as incorporated into the [air operating permit (AOP)] under discharge point 1.4.32, contains enforceable emission limits. Based on the*

above information and responses to other comments in this document, ***the AOP provides monitoring that is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the applicable requirement****, considering the factors identified in the comment." (emphasis added, page 12)*

We are concerned about methods, not limits. There are limits in the permit, however, there are no methods that show how the contractor must meet those limits. In the paragraph above, Ecology references monitoring which is not the same as sampling. We do not agree that the AOP provides sampling methodology that is sufficient to yield reliable data.

Ecology Response to O-1-3, continued

This is especially true when those limits and standards are set for toxic air pollutants (TAPs) under Chapter 173-460 WAC, which is generally the case when non-EPA sampling methods are explicitly allowed in an approval order. EPA has no authority over Washington's TAP program, has not included it in our State Implementation Plan, and does not consider requirements related to TAPs to be applicable for Title V (which is why they are clearly marked as state only in the Hanford Site AOP).

Hanford Challenge Comment

There seems to be a misconception that there is a choice between following the State TAPs list or the Federal HAPs list. They must BOTH be followed, not one or the other. There is significant crossover from the state TAPs list, https://app.leg.wa.gov/WAC/default.aspx?cite=173-460-150, and the federal HAPs list, https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications.

While we agree the state can address the compliance method for something on the TAPs list that is not on the HAPs list, such as ammonia, they cannot be less strict when it comes to items on the TAPs that are also on the HAPs list, such as mercury. 40CFR63, places strict requirements for method modification for HAPs methods.

"40CFR63.2 definitions:

- *Administrator means the Administrator of the United States Environmental Protection Agency or his or her authorized representative*
- *Alternative test method means any method of sampling and analyzing for an air pollutant that has been demonstrated to the Administrator's satisfaction, using Method 301 in appendix A of this part, to produce results adequate for the Administrator's determination that it may be used in place of a test method specified in this part.*

40CFR63.7 Performance testing requirements (f) use or an alternative test method: (1) General. Until authorized to use an intermediate or major change or alternative to a test

method, the owner or operator of an affected source remains subject to the requirements of this section and the relevant standard.

(2) The owner or operator of an affected source required to do performance testing by a relevant standard may use an alternative test method from that specified in the standard provided that the owner or operator—

(i) Notifies the Administrator of his or her intention to use an alternative test method at least 60 days before the performance test is scheduled to begin;

(ii) Uses Method 301 in appendix A of this part to validate the alternative test method. This may include the use of specific procedures of Method 301 if use of such procedures are sufficient to validate the alternative test method; and

(iii) Submits the results of the Method 301 validation process along with the notification of intention and the justification for not using the specified test method. The owner or operator may submit the information required in this paragraph well in advance of the deadline specified in paragraph (f)(2)(i) of this section to ensure a timely review by the Administrator in order to meet the performance test date specified in this section or the relevant standard.

(3) The Administrator will determine whether the owner or operator's validation of the proposed alternative test method is adequate and issue an approval or disapproval of the alternative test method. If the owner or operator intends to demonstrate compliance by using an alternative to any test method specified in the relevant standard, the owner or operator is authorized to conduct the performance test using an alternative test method after the Administrator approves the use of the alternative method. However, the owner or operator is authorized to conduct the performance test using an alternative method in the absence of notification of approval/disapproval 45 days after submission of the request to use an alternative method and the request satisfies the requirements in paragraph (f)(2) of this section. The owner or operator is authorized to conduct the performance test within 60 calendar days after he/she is authorized to demonstrate compliance using an alternative test method. Notwithstanding the requirements in the preceding three sentences, the owner or operator may proceed to conduct the performance test as required in this section (without the Administrator's prior approval of the site-specific test plan) if he/she subsequently chooses to use the specified testing and monitoring methods instead of an alternative."

As covered before, https://www.epa.gov/caa-permitting/delegation-clean-air-act-authority. An excerpt from this webpage is shared below to show that even though enforcement can be delegated to Washington State, EPA retains the following authority which is not delegated to the state.

40 CFR Part 63 NESHAP for Source Categories (MACT Standards)

The following provisions of Subpart A ***are not delegated:***

- Section 63.6(g), Approval of Alternative Non-Opacity Emission Standards,
- Section 63.6(h)(9), Approval of Alternative Opacity Standards,
- Sections 63.7(e)(2)(ii) and (f), Approval of Major Alternatives to Test Methods
- Section 63.8(f), Approval of Major Alternatives to Monitoring,
- Section 63.10(f), Approval of Major Alternatives to Recordkeeping and Reporting
- plus any other provisions specifically identified as non-delegable in each individual standard.

Subparts B, C, D, and E ***are not delegated to state and local agencies.***

Last updated on June 9, 2026

The link above shows what is and is not delegated by EPA. The EPA has not delegated method modifications or substitution to the states. And the administrator is the head of the EPA. We continue to believe that the AOP Renewal 4 needs to include increased specificity for air emission sampling ***methods****. As we have stated many times, without this specificity, the AOP lacks the necessary details for the permittee to know how to demonstrate compliance.*

Ecology Response to O-1-3, continued

Ecology integrates NSR requirements into the AOP as accurately as possible, while still trying to meet the standards for clarity and plain language discussed in our response to Comment O-1-2 above. Details about methods, sampling time and volume, and other parameters will depend upon the specific approval order. In many cases, Ecology has allowed the Department of Energy to develop their own Sampling and Analysis Plan for TAPs because of the unique hazards and challenges presented by the tank farms combined with the fact that EPA may not have an appropriate formal method in 40 C.F.R. Part 60, Appendices A-1 through A-8.

Hanford Challenge Comment

The unique hazards and challenges presented by the tank farms do not necessitate alternative sampling methods. EPA methods should be used. Currently less precise, weaker methods are being cobbled together which seem to be more dangerous than using the more rigorous EPA methods considering the unique hazards and challenges presented by the tank farms. The Waste Treatment Plant (WTP) staff found and used EPA methods for the same elements and compounds that need to be sampled at tank farms. The tank farm contractor should also be able to use EPA methods.

Not all EPA source sampling methods are in 40CFR60. They are also in 40CFR51, appendix M, 40CFR63 appendix A and SW-846. One good thing about the HAPs list is that if it is on the federal list the EPA has developed a method to demonstrate compliance.

By allowing Hanford to develop their own SAP and sample methods you are denying the public the opportunity to assess these documents for accuracy and equivalence to reference EPA methods. The documents need to be made public so they can be reviewed with AOP renewal 4.

Ecology Response to O-1-3, continued

Emissions trending is not a typical requirement for a specific source under the Washington or federal CAAs and the Hanford Site has no applicable requirements which require emissions trending. Limits and standards are based upon fixed values and specific results are either in or out of compliance. Hanford Site air emissions must be reported annually for the WAC 173-400-103 emission inventory, which is identified as an applicable requirement in Standard Terms and General Conditions Section 5.9. The Hanford Site generally uses the same methods for estimating emissions year after year, so this data should be reasonably consistent for regional planning purposes and could be reviewed for trending if there were a need to do so. But the purpose of the Title V AOP is to identify and ensure compliance with applicable requirements, not create additional compliance obligations.

For equivalency of methods, Ecology has the authority to determine whether the methods employed are appropriate to demonstrate compliance with NSR limits we have set. We can also request additional testing at any time under WAC 173-400-105(4). We have not requested specific studies to compare methods, but if there were a concern about accuracy of monitoring results the appropriate compliance tools do exist to investigate equivalency.

Hanford Challenge Comment

Hanford Challenge disagrees that what we are asking for would create additional compliance obligations, instead, it would clarify and simplify the compliance obligations to ensure that all parties are on the same page and have clear instructions on how to demonstrate compliance.

Hanford Challenge is concerned about the accuracy of sampling results and would like Ecology to use the appropriate compliance tools to investigate equivalency.

https://www.epa.gov/caa-permitting/delegation-clean-air-act-authority
https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-63/subpart-A/section-63.2

Can you cite a regulation, either State or Federal, that allows the use of industrial hygiene or ambient air methods on tank farm exhauster stacks? How about one that allows a source to make up their own methods without any form of method validation? The list of EPA-approved

alternative test methods does not include any OSHA, NIOSH or EPA ambient methods. https://www.epa.gov/emc/broadly-applicable-approved-alternative-test-methods.

Hanford Challenge Comment O-1-4

Increase Specificity for Sampling Frequency when Methods are Specified: Regarding sampling frequency, in many units a specific sampling method is stated, yet details regarding sampling frequency are not available. At times the AOP seems to confuse recordkeeping with sampling. For example:

- Test Method: EPA Method 7A of 40 CFR 60, Appendix A.
- Test Frequency: If Ecology requires under WAC 173-400-105(4)
    - Have these units ever been sampled with the referenced method?
    - Did they pass?
    - How do the requirements justify no routine sample frequency?

Ecology Response to O-1-4

This comment appears to be specifically referencing AOP conditions for DPs 1.4.2, 1.4.7, 1.4.8, 1.4.16, and 1.4.17. These DPs integrate applicable requirements from Approval Order 97NM-138, including Amendment 1, for boilers which were present or soon to be installed at the Hanford Site in 1997 and Approval Order NWP-96-1 for two emergency engines which were added in approximately 1996. These are the oldest active approval orders for the Hanford Site and they were developed under a significantly different NSR process.

Hanford Challenge Comment

Our previous comment from the first AOP Renewal 4 comment period in September 2025 addresses all units that do not have clear sampling frequency throughout the AOP renewal 4. We would like for Ecology to reconsider our previous comment in that context.

Ecology Response to O-1-4, continued

They did not include a Technical Support Document, Statement of Basis, or similar document which established the justification for their testing requirements.

In the case of the boilers authorized by 97NM-138, a representative sample of five boilers was tested twice (1998 and 2003) and did pass. Subsequently, the Permittee requested to remove the requirement to retest every 5 years with Letter 05-AMRC-0291, received June 13, 2005.

Ecology agreed and removed the requirement from the AOP but did not revise 97NM-138. This created a situation where the boilers were in compliance with the AOP, but not the NOC approval order. EPA then established additional testing requirements for these boilers under 40 CFR Part 63, Subpart DDDDD, which were not identified in Renewal 3 of the AOP.

To rectify this situation, Ecology has established a compliance schedule to test the boilers covered by 97NM-138 or shut them down by the end of 2027. This is now discussed in Sections
2.6 and 2.13 of Attachment 1.

For the engines authorized by NWP-96-1, Ecology and DOE were unable to locate records documenting source testing for nitrogen oxides. The approval order states:

> *NOx emissions from Engine E and Engine W shall not exceed 75.5 and 42 pounds per hour, respectively. Compliance shall be determined by EPA Method 7A of 40 CFR Part 60, Appendix A as of July 1, 1991 or an equivalent method approved by the department.*

Normally initial source testing must be completed within 180 days of commencing operation and NWP-96-1 did not establish a schedule for regular retesting. If testing occurred, it would have been approximately 30 years ago and long past the 5-year record retention requirement for the AOP.

The initial Hanford Site AOP, issued June 20, 2001, identified that the test frequency was "not applicable" and that Calculation Model 2B had been established to demonstrate ongoing compliance with these limits. Calculation Model 2B is included in the Attachment 1 Statement of Basis, Section 3.1.2.

Calculation Model 2B compares the average fuel consumption rate calculated from Permittee records to the manufacturer's maximum fueling rate. The NOx limits themselves were established at the maximum fueling rates using an emission factor developed by the United States Environmental Protection Agency. Therefore, as long as the emission factor remains conservative for the engine it shows that real-world emissions must be less than the limit.

By all appearances, the Permittee tested these engines or provided Ecology with a satisfactory demonstration of emissions prior to issuance of the original Hanford Site AOP. Additional testing was not required, so the AOP was likely supplemented with recordkeeping designed as monitoring under WAC 173-401-615(1)(b). The reference test method was left in place because it is an applicable requirement and Ecology has a general authority to require testing at any time under WAC 173-400-105(4). To better explain this situation, Ecology has added a WAC 173-401-615(1)(b) citation to the AOP condition which requires Calculation Model 2B.

Hanford Challenge Comment O-1-5

Align Sampling Instructions with Enforceable Procedures: The draft Air Operating Permit (AOP) references sampling frequency "when visible emissions are observed." However, if no personnel are explicitly tasked with observing emissions, and no procedures exist to ensure such observations occur, this condition cannot reliably trigger sampling. In effect, the requirement becomes unenforceable.

We urge the Washington State Department of Ecology to revise the AOP to:

- Define clear procedures for observing visible emissions, including roles, frequency, and documentation
- Ensure that sampling protocols are tied to proactive monitoring—not passive or incidental observation
- Clarify how compliance will be verified if emissions are not observed due to lack of assigned oversight
- Include contingency measures to prevent emissions from going unmonitored due to procedural gaps

Without these updates, the permit risks creating a loophole where emissions may go unsampled simply because no one is required to look. This undermines both environmental protection and public accountability.

Impossible to Judge the Effectiveness of the Permit Without Specifics: Without the sampling methods and sampling frequency specified in the Air Operating Permit, it is impossible to judge the permit's effectiveness. This applies to many different units in the AOP. Please update the AOP to specify methods and sampling frequency to increase transparency, consistency, and confidence in the permit's ability to both cite limits and clarify what is needed to demonstrate compliance with the Air Operating Permit at the Hanford site.

Ecology Response to O-1-5

There is no sampling method for opacity/visible emissions. By definition, opacity is an optical property evaluated by direct human observation (e.g., EPA Method 9 or 22) or a continuous opacity monitoring system (COMS). COMS are relatively expensive and require regular calibration and maintenance. Because of this, they are typically used at sources which produce significant amounts of particulate matter (PM), such as coal-fired power plants, where opacity can be used as a real-time monitoring surrogate for PM. PM blocks visible light, creating the opacity which can be measured or observed.

The discharge points (DPs) which have requirements triggered "when visible emissions are observed" are all non-combustion sources storing or processing dangerous waste at the Hanford Site. These are DPs 1.4.14 (container storage at

the Central Waste Complex), 1.4.19 (Liquid Effluent Retention Facility/Effluent Treatment Facility), 1.4.20 (container storage at T Plant),
1.4.23 (the Pretreatment, High Level Waste, and Low Activity Waste portions of the Waste Treatment and Immobilization Plant), 1.4.26 (Single-Shell Tank exhausters), 1.4.32 (Double-Shell Tank exhausters), and 1.4.80 (the Waste Treatment and Immobilization Plant Effluent Management Facility).

These sources are not expected to have human-quantifiable opacity because they do not produce enough PM while operating normally. The hypothetical scenarios where opacity would be present would be a mechanical failure (e.g., an overheating fan bearing causing a rubber seal to smolder), an unexpected chemical reaction, or a fire. The latter two are best addressed and prevented by the Hanford Site dangerous waste permit, which has much stronger authority under WAC 173-303-395.

There is the possibility of opacity being produced by a mechanical failure, which is why the approval orders for DPs 1.4.13, 1.4.19, 1.4.20, 1.4.23, 1.4.26, 1.4.32, and 1.4.80 have identified it as a trigger to investigate and likely initiate corrective action. These are applicable requirements which must be identified in the AOP. But the applicable requirements very specifically did not establish a schedule for checking opacity or any of the other additional requirements requested by this comment.

Ecology does have authority to add monitoring in the AOP, where it is not specified in the applicable requirement, under WAC 173-401-615(1)(b). But this authority identifies that "recordkeeping designed to serve as monitoring" may already be sufficient. AOP Attachment 1, Section 2.1, Tier 3, identifies that the primary compliance demonstration for visible emissions from these emission units is conducting maintenance in accordance with the Radioactive Air Emissions License or manufacturer recommendations. This is backed up with required maintenance recordkeeping being identified in the AOP Attachment 1, Section 1.4, conditions which point down to Tier 3.

Ecology has not seen evidence of opacity or equipment failure, due to lack of maintenance, during inspections and record reviews for these DPs. Based upon this, it appears that the underlying applicable requirements have established sufficient recordkeeping designed to serve as monitoring and it is not necessary to supplement these requirements under WAC 173-401-615(1)(b).

Hanford Challenge Comment

Can you explain why Method 22 is referenced throughout the permit? We were unable to find a single case of a Method 22 limit. As we understand it, Method 22 can't demonstrate compliance with an opacity limit, so why is it used in the AOP? Opacity limits are there for things like a mechanical failure. Failure is the expectation for why a source would exceed limits, not routine

operations. The only way to know for sure that a source hasn't exceeded limits is by getting reliable data over time with EPA methods.

Hanford Challenge Comment O-1-6

Incorporate Requirements Instead of Referencing old/outdated Notice of Construction: The permit renewal should incorporate the actual requirements instead of referencing old notice of construction (NOC), some of which are over 20 years old and no longer reflect current regulations. Please update the AOP to incorporate the requirements directly.

Ecology Response to O-1-6

The referenced NOC approval orders are applicable requirements which must be incorporated into the AOP. Without them, facilities such as tank farms would have no non-radioactive applicable requirements beyond general standards such as WAC 173-400-040. There are no other requirements to incorporate directly.

Stationary equipment at the Hanford Site, other than engines and boilers, is generally not subject to non-radioactive categorical standards. This is due to some combination of being too unique to have been addressed by EPA, not meeting applicability thresholds, meeting an exemption, or construction before applicability dates. Categorical air regulations are very specific in their applicability, without the equivalent of the WAC 173-303-680 "miscellaneous unit" which exists in dangerous waste regulations.

Hanford Challenge Comment

We are not suggesting you drop the requirements, we are just asking that you incorporate all NOC requirements into the AOP rather than the many cases we see where the AOP language and requirements and the NOC language and requirements are not the same. This creates confusion on how to demonstrate compliance.

Ecology Response to O-1-6 continued

It is accurate that NOC approval orders are written to the regulations and permitting standards at the time of issuance. This is an intentional design of the air permitting regulations developed from both the federal and Washington CAAs. Air permitting is structured to authorize projects through a New Source Review (NSR) process when they exceed permitting thresholds. The issued permits or approval orders do not expire unless they are specifically rescinded/revoked. They do not need to be revised, renewed, or otherwise updated unless there is a subsequent project which triggers NSR or the permittee requests a change to existing conditions.

In part to address the fact that facilities might have requirements spread across many regulations and permits, EPA later developed the Title V AOP program to collect all applicable requirements for more-polluting sources into one permit which does need to be periodically reviewed and renewed. However, as EPA stated in their January 9, 2024, proposed rulemaking "Clarifying the Scope of "Applicable Requirements" Under State Operating Permit Programs and the Federal Operating Permit program" (EPA-HQ-OAR-2023-0401; FRL-9118-01-OAR):

> *Beyond title V's consolidation and compliance assurance functions, title V generally does not impose new pollution control requirements on sources or provide a vehicle to modify such requirements established under other CAA programs. Thus, the EPA's regulations expressly provide: "All sources subject to these regulations shall have a permit to operate that assures compliance by the source with all applicable requirements. While title V does not impose substantive new requirements, it does require that . . . certain procedural measures be adopted especially with respect to compliance." 40 CFR 70.1(b) (emphasis added). For additional information about the purpose and function of title V, see section IV.E.2. of this preamble.*

In summary, the title V operating permit program is a vehicle for compiling air quality control requirements from other CAA programs and for providing requirements necessary to assure compliance with such requirements, but not for creating or changing applicable requirements. Put simply, title V is a catch-all, not a cure-all. The discussion throughout the remainder of this preamble builds upon these longstanding general principles, which the EPA does not propose to change through this rulemaking.

Hanford Challenge Comment O-1-7

Address Synergistic Effects of Radiation and Chemical Carcinogens: We echo the concern raised by longtime Hanford health advocate, Bill Green: the Air Operating Permit (AOP) treats radioactive and non-radioactive carcinogens as separate regulatory categories, without accounting for their additive or synergistic health impacts.

This siloed approach fails to reflect current scientific understanding. Studies have shown that combined exposure to ionizing radiation and chemical carcinogens can result in amplified biological effects—posing greater risks to workers, nearby communities, and ecosystems than either exposure alone.

We urge the Washington State Department of Ecology to revise the AOP to:

- Incorporate cumulative risk assessments that account for synergistic interactions
- Require integrated monitoring and reporting of co-occurring contaminants
- Consult with toxicologists and radiation health experts to inform permit conditions

- Prioritize precautionary measures where synergistic risks are plausible but not fully quantified

Hanford's legacy demands a permitting framework that reflects the complexity of its hazards. Addressing synergistic effects is not just scientifically sound—it's ethically necessary.

Ecology Response to O-1-7

Ecology has no regulatory authority to do what is requested under the federal or Washington CAAs. It would especially be inappropriate to do so under Title V authority. Please see responses to comments I-2-1 and O-1-6 above for more information.

Hanford Challenge Comment

*See the full comment thread regarding Bill Green's issues in 1-2-1, included below. Our comment on Ecology's response to 1-2-1 is: *AOP renewal 4 has two attachments, one for non-radioactive and another for radioactive emissions. Both being part of the AOP, assessing them together would appear to be required. By comparison, would you evaluate the individual cancer risk for each compound emitted in Attachment 1: Non-Radioactive Air Approval Orders, Permits, and Regulations Primarily Enforced by Ecology? No, you would evaluate the cumulative risk.*

Hanford Challenge Comment O-1-8

Create a Working Group to Address Issues and Suggest Improvements to Hanford's Air Operating Permit: There is concern that a lack of awareness, training, and expertise on air operating permits is partially to blame for the lack of specificity and problems with the Air Operating Permit. One way to address this is to create a working group with expertise to review and suggest improvements to Hanford's AOP, to ensure that Hanford employees and the public are able to understand the permit, know what the regulations are, and know how to demonstrate compliance with the permit.

Ecology Response to O-1-8

Ecology encourages comments on how applicable requirements are incorporated into the Hanford Site AOP, but the proposed working group does not appear to be compatible with the Title V permitting processes established in Chapter 173-401 WAC.

A working group may help to close the gap between the AOP's wording to help the public's understanding of the requirements. Further these comments and answers identify many questions between Ecology's interpretation of their authority and the federal requirements.

Hanford Challenge Comment

To clarify, the working group would be internal to Hanford contractors, USDOE, Ecology, and EPA; not for the public to participate in. The public would be one of the beneficiaries of an updated AOP that addresses our many concerns. The working group would be a mechanism through which these concerns could be addressed.

Can you please clarify why an internal working group is not compatible with the Title V permitting processes established in Chapter 173-401 WAC?

The following comment is copied as a reference point for the comment and response 0-1-7.

***I-2: BILL GREEN**

Comment I-2-1

COMMENT 1: a) The draft (40 C.F.R. 70.2) Hanford Site Air Operating Permit, Number 00-05-006, Renewal 4 (hereafter The Permit) does not appear to consider any additive or synergistic risks to the public from the presence of both radioactive regulated air pollutants (40 C.F.R. 70.2) and non-radioactive regulated air pollutants.

b) Please provide the process/procedure, if any, Ecology uses to set emission limits when both radioactive regulated air pollutants and non-radioactive regulated air pollutants are encountered at any emissions unit (40 C.F.R. 70.2) or from any source of fugitive emissions (40 C.F.R. 70.2).

BACKGROUND:

According to Ecology's announcement for the public comment period for The Permit:

"Three agencies administer the Hanford Site AOP. Ecology regulates the nonradioactive criteria and toxic air emissions [in Attachment 1]. Health regulates radioactive air emissions [in Attachment 2]. The Benton Clean Air Agency regulates outdoor burning [in Attachment 3]." [State of Washington, Department of Ecology, "Hanford Site Air Operating Permit Renewal 4, Public Comment Period", Publication 25-05-012, July, 2025 at 2.] See RCW 70A.15, and WAC 173-401.

Quoting from RCW 70A.388.040 (formerly codified at RCW 70.98.050):

"(1) The department of health is designated as the state radiation control agency, . . ., and shall be the state agency having sole responsibility for administration of the regulatory, licensing, and radiation control provisions of this chapter." RCW 70A.388.040

Thus, it appears only the Department of Health has the requisite statutory authority to regulate and enforce radioactive regulated air pollutants, whereas "Ecology only regulates the nonradioactive criteria and toxic air emissions" in accordance with RCW 70A.15 and WAC 173-401.

Ecology Response to I-2-1

Ecology does not consider additive or synergistic risks of radioactive and non-radioactive air pollutants because there is no authority or regulatory mechanism to do so. Until the appropriate legislative and regulatory processes are used to create those applicable requirements, Ecology must follow the regulations as they are currently written.

In particular, it would be inappropriate for Ecology to consider creating new requirements in this manner through a Title V process. As stated by EPA in their January 9, 2024, proposed rulemaking "Clarifying the Scope of "Applicable Requirements" Under State Operating Permit Programs and the Federal Operating Permit program" (EPA-HQ-OAR-2023-0401; FRL-9118-01-OAR): "the title V operating permit program is a vehicle for compiling air quality control requirements from other CAA programs and for providing requirements necessary to assure compliance with such requirements, but not for creating or changing applicable requirements. Put simply, title V is a catch-all, not a cure-all."

Washington state regulations are already more stringent than federal requirements for both radioactive air emissions and toxic air pollutants. This is reflected in the applicable requirements that have been incorporated into the Hanford Site AOP from NOC approval orders and Radioactive Air Emissions License (RAEL) FF-01. But these applicable requirements are based upon state law and regulations which have been established through appropriate legislative and rulemaking processes, including public participation.

Ecology will, therefore, continue to follow the regulations as they are written when evaluating non-radioactive air pollutants for NOC approval orders under Chapters 173-400 and 173-460 WAC. Health will do the same when evaluating radionuclides for RAEL FF-01 under Chapter 246-247 WAC. Ecology will then follow the appropriate processes for Chapter 173-401 WAC and 40 C.F.R. Title 70 to incorporate these requirements into the Hanford Site AOP.

Hanford Challenge Comment

AOP renewal 4 has two attachments, one for non-radioactive and another for radioactive emissions. Both being part of the AOP, assessing them together would appear to be required. By comparison, would you evaluate the individual cancer risk for each compound emitted in Attachment 1: Non-Radioactive Air Approval Orders, Permits, and Regulations Primarily Enforced by Ecology? No, you evaluate the cumulative risk.

In conclusion, Hanford Challenge appreciates the opportunity to clarify our original AOP Renewal 4 comments and provide additional context. Please update the AOP Renewal 4 to address our concerns.

Thank you for considering our comments,

Nikolas Peterson, Executive Director, Hanford Challenge