



## U.S. Department of Energy

Hanford Field Office  
P.O. Box 550  
Richland, Washington 99352

April 10, 2025

25-ECD-0052

Ms. Stephanie Schleif  
Program Manager  
Nuclear Waste Program  
Washington State Department of Ecology  
3100 Port of Benton Boulevard  
Richland, Washington 99354

Dear Ms. Schleif:

### U.S. DEPARTMENT OF ENERGY, HANFORD FIELD OFFICE REQUEST TO CHANGE DETECTION LIMIT FOR ARSENIC IN DE19NWP-003

The U.S. Department of Energy, Hanford Field Office (HFO) is requesting a change in the detection limit for Arsenic as shown in DE19NWP-003 condition 5.c.iii.B.

Sample data received in 2023 and 2024 for the 241-AP tank farm exhausters indicated possible exceedances of Toxic Air Permit limits as shown in DE19NWP-003 Table 3 (issued November 30, 2022). Specifically, analytical measurements are not capable of reaching the required detection limits as specified in the Toxic Air Permit (Condition 5.c.iii.B, which requires certain emissions to be below Washington Administrative Code (WAC) 173-460-150 de minimis emissions rate).

Initial metals sampling occurred in December 2023, using U.S. Environmental Protection Agency (EPA) Method 29. Sampling time was 2 hours, and the sample detection limit was  $9.95E-2$  lbs/year which is greater than the requirements of Condition 5.c.iii.B. The sampling event for 2024 was moved forward to March 2024 and the sampling time was increased to 4 hours. This extended sample time resulted in a detection limit of  $4.0E-2$  lbs/year which is still greater than the required limit of  $2.5E-3$  lbs/yr (WAC 173-460-150 de minimis for Arsenic). The sampling did not result in the sensitivity to detect arsenic at or below the de minimis level. Due to analytical requirements and methods, the ability to reach the current detection limit would require continuous sampling times in excess of 24 hours. The reagents used in the EPA method creates special handling and analytical requirements that are not conducive to this low sensitivity analysis.

The detection limit and associated emission limit for DE19NWP-003 were based on laboratory samples that were "U-code" for non-detect analyte. This result generated an artificially low detection limit that is not achievable with the required methodology as outlined in DE19NWP-003.

Table 1 presents the current Arsenic limits in DE19NWP-003, the sample data from December 2023 and March 2024, and the proposed changes to the detection limit of Arsenic.

HFO is requesting to continue to use EPA Method 29 with the standard analytical instruments in accordance with Approval Condition 5.c.iii.B but increasing the sensitivity of the analysis for Arsenic to 90 percent of the Small Quantity Emissions Rates (4.41e-2 lbs/year). Any detected value greater than what is listed in Table 3 of DE19NWP-003 will result in a notification to Washington State Department of Ecology (Ecology) for excess emissions in accordance with WAC 173-400-108/109. No changes to Table 3 are being requested. Any required notification shall be provided 60 days after the end of the month in which sampling took place.

Additionally, HFO is requesting that Ecology include their approval of this change when DE19NWP-003 is integrated into the Hanford Air Operating Permit Renewal 4.

**Table 1. Permit limits, sample results and proposed changes to DE19NWP-003**

<b>WAC 173-460-150 Limits</b>		
Arsenic (annual)	value	units
ASIL	3.00E-04	ug/m3
SQER	4.90E-02	lbs/yr
Demin	2.50E-03	lbs/yr
<b>DE19NWP-003 Arsenic limits (current)</b>		
	value	units
Annual Emission Limit	2.64E-03	lbs/yr
Detection Limit (5.iii.c.B.)	2.50E-03	lbs/yr
<b>December 2023 Sample Data</b>		
Run time	120	min
Measured value (avg)	9.95E-02	lbs/yr
<b>March 2024 Sample Data</b>		
Run time	240	min
Measured value (avg)	< 4.0E-2	lbs/yr
<b>DE19NWP-003 Arsenic limits (proposed)</b>		
	value	units
Annual Emission Limit	2.64E-03	lbs/yr
Detection Limit (5.iii.c.B.)	< 4.41e-2	lbs/yr

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If you have any questions, please contact me, or you may contact Corey A. Low, Assistant Manager for Safety and Environment, at (509) 376-4820.

Sincerely,

**Brian T.  
Vance**

 Digitally signed by Brian  
T. Vance  
Date: 2025.04.10  
17:09:59 -07'00'

Brian T. Vance  
Manager

ECD:BRT

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