U.S. Department of Energy
Hanford Site

May 3, 2021

21-ECD-001508

Mr. John Martell, Manager
Radioactive Air Emissions Section
Washington State Department of Health
309 Bradley Blvd., Suite 201
Richland, Washington 99352

Dear Mr. Martell:

QUARTERLY HIGH EFFICIENCY PARTICULATE AIR-FILTERED VACUUM RADIOACTIVE AIR EMISSION UNITS REPORT

This is submitted in accordance with the June 20, 2018, AIR 18-619 letter, which requires the submittal of Hanford Site High-Efficiency Particulate Air (HEPA)-filtered vacuum log sheets to the Washington State Department of Health (DOH) within 30 days after the end of each calendar quarter.

The Attachment provides the completed HEPA-filtered vacuum log sheets subject to AIR 18-619 for the first quarter of Calendar Year (CY) 2021.

There was no Portable/Temporary Radioactive Air Emission Unit (PTRAEU) log sheet completed during the first quarter of CY 2021. Accordingly, no PTRAEU log sheet is included in this submittal. However, Washington River Protection Solutions, LLC notified DOH of two missing CY 2020 log sheets during this quarter (TOC-ENV-NOT-2021-4594, January 27, 2021), as previously addressed in 21-ESQ-000793.

If you have any questions, please contact me, or you may contact Paul M. Pak, Director, Environmental Compliance Division, on (509) 376-4798.

Sincerely,

GLYN TRENCHARD
Digitally signed by GLYN TRENCHARD
Date: 2021.05.03 14:16:30 -07'00'

Glyn D. Trenchard, Acting Assistant Manager
for Safety and Environment

ECD:AET

Attachment and cc: See page 2

cc w/attach:
J. Bramson, CPCCo
S. D. Berven, DOH
F. Carleo, CPCCo
M. J. Demiter, HMIS
D. Einan, EPA
M. D. Gerle, WRPS
R. D. Haggard, BNI
T. M. McDermott, PNSO
K. M. McDonald, PNNL
M. T. Schanke, CPCCo
J. M. Shoemake, HMIS
R. Utley, WDOH
Administrative Record
Environmental Portal, G3-35

Attachment

21-ESC-001508

COMPLETED HEPA-FILTERED VACUUM LOGS SUBJECT TO AIR 18-619 FOR QUARTER 1 OF CALENDAR YEAR 2021

4 pages including this cover page

CH2M HILL Plateau Remediation Company

HIGH EFFICIENCY PORTABLE AIR FILTER VACUUMS (HEPA VACS) LOG SHEET

For the 200W **Area of the Hanford Site**

Description/Specific Location of Activity:

T Plant Stack area - Drill several 4" X 3/8" holes into concrete slab for (service HTR) weather enclosure.

HEPA Vac Unit/Number:	3510173903804	Shrouded Tool ID:	N/A
Date of Last Annual Aerosol Test: [1]	01/11/2021	Work Package Number:	2T-17-06499
Is the unit on the MSA Sitewide List? [2] ◉ Yes ○ No	Nilfisk - GM80	Has MSA been contacted on the use? ◉ Yes ○ No	

Baseline Radiological Conditions

		Alpha: [5]	Beta/Gamma: [5]	RSR *(If applicable)*:
1	Removable Contamination *(dpm/100cm²)*: [3, 4] ○ Average ◉ Expected	<20	<1000	NA
	Maximum Removable Contamination (dpm/100cm²): [6] ○ Average ◉ Expected *(Choose One)*	<20	<1000	NA
2	Radionuclides of Concern:	T Plant isotopes found in AIR-17-206		

TEDE Contribution from Activity

NOTE: Preliminary calculations are done to ensure that the permitted limit is not exceeded. Final calculations can be the preliminary values, if bounding and true. If not, they are to be based off of actual data.

Ensure that additional calculation(s) are included as an attachment.

Was the pre-calculation used as the final calculation? ◉ Yes ○ No

Step 1	Enter Area Vacuumed Up to 12 drill holes 4" X 3/8" into concrete slab	1	m²
Step 2	Enter Average Beta/Gamma Reading	~~1000~~ @ 1-28-21 999	dpm/100cm²
Step 3	Enter TEDE/m² value from Column C of Table B13 *(DOE/RL-97-50 R3)* for the Hanford Area that you're working in	3.66E-09	mrem/m²
Step 4	Multiply values from Step 1, 2, and 3, and divide by 1,000,000	~~2.05E-10~~ @ 1-28-21 3.66 E-12	mrem
Step 5	Enter average alpha reading	~~20~~ @ 1-28-21 19	dpm/100cm²
Step 6	Enter TEDE/m2 value from Column C of Table B14 *(DOE/RL-97-50 R3)* for the Hanford Area that you're working in	3.23E-08	mrem/m²
Step 7	Multiply values from Step 1, 5, and 6 and divide by 250,000	~~2.58E-12~~ @ 1-28-21 2.46 E-12	mrem
Step 8	Add values from Step 4 and Step 7	~~6.24E-12~~ @ 1-28-21 6.12 E-12	mrem

CH2M HILL Plateau Remediation Company

HIGH EFFICIENCY PORTABLE AIR FILTER VACUUMS (HEPA VACS) LOG SHEET (Continued)

For the _____ **Area of the Hanford Site**

If the pre-calculation was not used, what was final TEDE value in attached calculation?
(attach calculation)

6.24E-12 mrem

Effluent Port (HEPA Exhaust) Survey Log

	Date	Time	Total Hours of Operation	Confirmatory smear measurement(s) *(dpm/100 cm²)*[7] Alpha	Beta/Gamma	RCT Name
Start	1/28/21	8:17 am		~~<20~~ <19 1-28-21	~~<1000~~	Baseline Radiological Conditions
Stop	1/28/21	8:27 am		<19	<999	

1. *In the event that the system is modified, opened, or annually, the HEPA Vac will be retested. Ensure that the last test date is affixed to the label on the unit.*
2. *See DOE/RL-97-50, Revision 3 (Appendix A) for the Sitewide List of Approved HEPA Vac Units.*
3. *Average readings to be used in calculations.*
4. *When less than detectable radiological readings are observed/expected, these values are assumed to be 20 dpm/100 cm² alpha and 1,000 dpm/100 cm² beta/gamma.*
5. *HEPA Vac Units are NOT to be used where removable contamination exceeds 2000 dpm/100 cm2 alpha or 100,000 dpm/100 cm2 beta/gamma.*
6. *These values are recorded for documentation purposes only.*
7. *To be done at the beginning and end of use. In an anomalous situation, a smear should be taken immediately.*

Final Reviewer Signature

Eric Miller
~~Ryan Malmberg~~ (FWS)/John Hultman (ECO) _____ 1/28/21
Print First and Last Name *Signature* *Date*

EM 1/28/21

Provide completed form to AIR Subject Matter Expert (SME) upon completion.

Appendix A - Operation of Approved HEPA Filtered Vacuum Data Sheet

Pre-Job Activities			
Job Site Location (include Hanford Area): 225B/K3N/200E	Vacuum Make/ Model #: NiLfisk/	Procedure/Work Package #: 2C-21-00942	
Description of Activity: Clean Fire Screen			
Radionuclides, if known: Sr90/Cs-13		Type of Waste (dust, sand, concrete): DUST	
Pre-Job Radiological Control Surveys			
	Alpha	Beta/Gamma	RSR #
Average Removable Contamination (dpm/100 cm^2)[1]	For WESF this can be assumed 0 based on process knowledge.	5500 dpm/100 cm^2	CS-2100170
Average Fixed Contamination (dpm/100 cm^2)[1]	For WESF this can be assumed 0 based on process knowledge.	N/A	N/A
Exhaust port smear (dpm/100 cm^2)[1]	For WESF this can be assumed 0 based on process knowledge.	<200 dpm/100 cm^2	CS-2100170
RCT (Name, Date, Signature)	Ozzie Olwee/3/4/21/		
Note 1: Average, not maximum, readings should be reported			
Vacuum Operations			
Start Date/Time: 3/4/21	End Date/Time: 3/4/21/1300	Area Vacuumed (m^2): 1	
Post-Job Radiological Control Surveys			
Exhaust port smear (dpm/100 cm^2)	Alpha	Beta/Gamma	RSR
	For WESF this can be assumed 0 based on process knowledge.	<200	CS-2100170
RCT (Name, Data, Signature)	Ozzie Olwee/3/4/21/		

TEDE Contribution from Activity			
Step 1	Enter Area Vacuumed	1	m^2
Step 2	Enter Average Beta/Gamma reading [1]	5500	dpm/100 cm^2
Step 3	Enter TEDE/m^2 value from Column C of Table B13 for Hanford Area that you're working in [3]	4.71E-09	mrem/m^2
Step 4	Multiply values from Step 1, 2, and 3, and divide by 1,000,000 This is the TEDE contribution from the Activity	$2.5905e^{-11}$	mrem
Note 1: Average, not maximum, readings should be reported			
Note 2: When less than detectable readings are observed (e.g., <1,000 dpm/100 cm^2 for beta/gamma) these values are assumed to be zero.			
Note 3: If radionuclide mix for Hanford Area is not consistent with Appendix B, see Example 3 in Appendix C for calculating TEDE manually.			
Approval (Name, date, signature): Plager, Christopher L Digitally signed by Plager, Christopher L Date: 2021.03.08 10:44:58 -08'00'			