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DOE/RL-2018-04
Revision 0

Portable/Temporary Radioactive Air Emission Units and High-Efficiency Particulate Air-Filtered Vacuum Radioactive Air Emission Units Annual Report for Calendar Year 2017

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-09RL14728

MSA
P.O. Box 650
Richland, Washington 99352

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Portable/Temporary Radioactive Air Emission Units and High-Efficiency Particulate Air-Filtered Vacuum Radioactive Air Emission Units Annual Report for Calendar Year 2017

R. A. Kaldor
Mission Support Alliance

Date Published
February 2018

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Assistant Secretary for Environmental Management

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EXECUTIVE SUMMARY

Two radioactive air emission unit licenses issued by the Washington State Department of Health require annual submittal of high-efficiency particulate air filtered vacuum unit and portable/temporary radioactive air emission unit operational log sheets. The approvals are AIR 17-113, dated January 9, 2017, corresponding to DOE/RL-97-50, *Radioactive Air Emissions Notice of Construction for HEPA Filtered Vacuum Radioactive Air Emission Units*, and AIR 17-114, dated January 9, 2017, corresponding to DOE/RL-96-75, *Radioactive Air Emissions Notice of Construction Portable/Temporary Radioactive Air Emissions Units*. This report, due to the Washington State Department of Health by March 31, satisfies the annual reporting requirement.

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CONTENTS

1.0 INTRODUCTION 1

2.0 HEPA-FILTERED VACUUM UNITS ANNUAL REPORT 1
2.1 CONSOLIDATED LIST OF HEPA-FILTERED VACUUM UNITS 1

3.0 PORTABLE/TEMPORARY RADIOACTIVE AIR EMISSION UNIT ANNUAL REPORT 5
3.1 CONSOLIDATED LIST OF PORTABLE/TEMPORARY RADIOACTIVE AIR EMISSION UNITS 5

4.0 REFERENCES 8

APPENDICES

A HEPA-FILTERED VACUUM UNIT OPERATIONAL LOG SHEETS FOR CALENDAR YEAR 2017 ..... A-i

B PORTABLE/TEMPORARY RADIOACTIVE AIR EMISSION UNIT OPERATIONAL LOG SHEETS FOR CALENDAR YEAR 2017 ..... B-i

TABLES

Table 2-1. HEPA-Filtered Vacuum Cleaners on the Hanford Site. 2

Table 2-2. HEPA-Filtered Vacuum Cleaner-Associated Tools on the Hanford Site. 3

Table 3-1. Hanford Site Portable and Temporary Emission Units. 6

TERMS

CY	calendar year
DOE-RL	U.S. Department of Energy, Richland Operations Office
DOH	Washington State Department of Health
HEPA	high-efficiency particulate air (filter)
HVU	HEPA-filtered vacuum unit
NOC	notice of construction
PTRAEU	portable/temporary radioactive air emission unit

1.0 INTRODUCTION

This report satisfies the annual reporting requirement contained in two radioactive air emission permit approvals issued by the Washington State Department of Health (DOH). The approvals are AIR 17-113, dated January 9, 2017, corresponding to DOE/RL-97-50, *Radioactive Air Emissions Notice of Construction for HEPA Filtered Vacuum Radioactive Air Emission Units*, and approval AIR 17-114, dated January 9, 2017, corresponding to DOE/RL-96-75, *Radioactive Air Emissions Notice of Construction Portable/Temporary Radioactive Air Emission Units*. The permit approvals require the submittal of high-efficiency particulate air (HEPA) filtered vacuum unit (HVU) and portable/temporary radioactive air emission unit (PTRAEU) operational log sheets to DOH. The log sheets document HVU and PTRAEU operation during the previous calendar year (CY).

The notice of construction (NOC) approvals specify that the log sheets are formally due to DOH by June 30 of each year. However, the U.S. Department of Energy, Richland Operations Office (DOE-RL) and DOH subsequently agreed to change the submittal date of the report from June 30 to March 31. The March submittal date provides DOE and its contractors schedule relief due to common June deadlines from multiple required reports.

This report is divided into two sections: the HVU log sheets and the PTRAEU log sheets.

2.0 HEPA-FILTERED VACUUM UNITS ANNUAL REPORT

HVUs are portable vacuum cleaners with exhaust flow rates ranging from 50 to 300 ft^3/min. The units minimize radioactive air emissions by filtering the exhaust when vacuuming radioactively contaminated surfaces.

HVUs fall into two operational categories: (1) units used for the reduction of removable radioactive contamination from hard surfaces and (2) units used in conjunction with shrouded tools for sanding, stripping, spalling, drilling, and cutting for removal and/or penetration of fixed radioactively contaminated surfaces. Radioactively contaminated soil matrices are excluded from the scope of the approvals.

Section 2.1 contains a listing of HVUs and a listing of HVU tools that were available for use on the Hanford Site during CY 2017.

Appendix A contains the operational log sheets for each use of an HVU during CY 2017.

2.1 CONSOLIDATED LIST OF HEPA-FILTERED VACUUM UNITS

Appendices A and B of the original HVU NOC permit application list the HVUs and HEPA vacuum-assisted (shrouded) power tools, respectively, to be used on the Hanford Site. New or additional HVUs and/or associated tools not included in the original application must meet requirements stated in the permit application, and notification must be made to DOH prior to use (e-mail is acceptable). The new HVUs are then included in the scope of the next annual report.

Table 2-1 contains a listing of HVUs used or available for use during CY 2017. Table 2-2 contains the listing of HVU-assisted power tools used or available for use during CY 2017.

Table 2-1. HEPA-Filtered Vacuum Cleaners on the Hanford Site. (2 sheets)

Make	Model	Flow Rate (ft^3/min)	Remarks
Atrix	VACOMEGA-Omega Plus	86	
Euroclean[a]	GD-930-HSP, UZ-930, UZ-930S	77	
Euroclean	GD-930-H	79	
Euroclean	UZ-948	270	
Euroclean	UZ-848	105	
Euroclean	UZ-878A	100	
Euroclean	EWD-315	130	Wet and dry
Euroclean	WD215-H	106	Wet and dry
Euroclean	WD260-H	106	Wet and dry
Hako[b] Minuteman	X-250	200	Wet and dry
Hako Minuteman	X-380	190	Wet and dry
Hako Minuteman	X-829	85-130	
Hako Minuteman	X-839	85-130	
Hako Minuteman	X1000-15	100	
Hako Minuteman	MX-1000	100	
Hako Minuteman	X-1000	130	
Hako Minuteman	MX-100	130	Wet and dry
Hako Minuteman	Microvac	95	
Nilfisk[c]	GD-930	77	
Nilfisk	GS-80 or GM-80	87	
Nilfisk	GM-811	87	Wet and dry
Nilfisk	GS-82 or GM-82	191	
Nilfisk	GS-83 or GM-83	208-286	
Nilfisk	GS-625 or GM-625	191-208	
Nilfisk	VT-60	99	Wet and dry
Nilfisk	Explosion Proof	130	Explosion proof/dust ignition proof
Nilfisk	Back Pack Vacuum	87	Portable back pack
Nilfisk	CFM Model 127	190	
Nilfisk	CFM Model 137	286	Wet and dry
Power Products	RADPAC 35	110	Hand carried
Power Products	RADVAC 1500	180	
Power Products	RADVAC 2000	180	Wet and dry
Power Products	RADVAC 3000-SX or 3000-NX	270	SX-(stainless) NX-(painted)
Power Products	RADVAC 3500-SX or 3500-NX	270	Same as 3000 with secondary collection

Table 2-1. HEPA-Filtered Vacuum Cleaners on the Hanford Site. (2 sheets)

Make	Model	Flow Rate (ft^3/min)	Remarks
Power Products	RADVAC 5000-SX or 5000-NX	201	Pneumatic 106 ft^3/min required
Power Products	RADVAC 5500-SX or 5500-NX	201	Same as 5000 with secondary collection
Power Products	RADVAC 6000-SX or 6000-NX	194	Pneumatic 152 ft^3/min required
Power Products	RADVAC 6500-SX or 6500-NX	194	Same as 6000 with secondary collection
Power Products	RADVAC 7000-SX or 7000-NX	187	Pneumatic
Power Products	RADVAC 7500-SX or 7500-NX	187	Same as 7000 with secondary collection
Pullman-Holt[d]	Survivor Series 86ASB54C or 86ASB5D4C	96	First used in 2009
Pulse-Bac[e]	PB- 1050H	170	First used in 2016
Tiger-Vac[f]	B-4 DS	120	Dual speed motor
Tiger-Vac	B-8	110	Wet/dry model
Tiger-Vac	CR-1	96	Dry recovery only

[a] Euroclean is a registered trademark of Nilfisk-Advance, Inc., Plymouth, Minnesota.
[b] Hako is a registered trademark of Hako-Werke GMBH & Co., Federal Republic of Germany.
[c] Nilfisk is a registered trademark of A/S Fisker & Nielsen, Copenhagen, Denmark.
[d] Pullman-Holt is a registered trademark of Pullman-Holt Corporation, Tampa, Florida.
[e] Pulse-Bac is a registered trademark of Christy Inc., Tulsa, Oklahoma.
[f] Tiger-Vac is a registered trademark of Tiger-Vac Enterprise, Montreal, Quebec, Canada.

Table 2-2. HEPA-Filtered Vacuum Cleaner-Associated Tools on the Hanford Site. (2 sheets)

Tool	Applications	Remarks
DESCO[a] Mini Die Grinder with fixed shroud 2 in. and 3 in.	Removal of hazardous and nonhazardous coatings, paint scuffing, surface cleaning and preparation, weld preparation	Pneumatic only
DESCO Bullgrinder with shroud 4 in. and 7 in.	Removal of hazardous and nonhazardous coatings, paint scuffing, surface cleaning and preparation designed to clean right to a vertical surface	Pneumatic and electric
DESCO right angle grinder with floating shroud 3 in., 5 in., and 7 in.	Removal of hazardous and nonhazardous coatings, paint scuffing, surface cleaning and preparation, weld preparation	Pneumatic and electric
DESCO Mini Flush Plate 2.25 in. Hub 3 Hubs available Cutter Hub Hammer Hub Roto-Peen Hub	Removal of hazardous and nonhazardous coatings on structural steel and concrete, grinding, abrading, surface preparation, and profiling	Pneumatic and electric

Table 2-2. HEPA-Filtered Vacuum Cleaner-Associated Tools on the Hanford Site. (2 sheets)

Tool	Applications	Remarks
DESCO FX Tool 4.25 in. Hub 3 Hubs available Cutter Hub Hammer Hub Roto-Peen Hub	Removal of hazardous and nonhazardous coatings on structural steel and concrete, grinding, abrading, surface preparation, and profiling	Pneumatic and electric
DESCO Floor Abrador (Descobrader Walk Behind) 5.25 in. and 10.25 in. 7 Hubs available 3 Cutter Hubs Hammer Hub Roto-Peen Hub BPH Hub Clean and Strip Hub	Removal of hazardous and nonhazardous coatings, rust and non-skid, mastic removal, surface profiling, cleaning, and scarifying and grinding	Pneumatic and electric
DESCO Micro Needle Descaler 2 mm needles Hand-held, straight shank	Removal of hazardous and nonhazardous coatings, paint, stucco, rust, and lightweight, tight-fit applications	Pneumatic only
DESCO Needle Descaler 2 mm, 3 mm, and 4 mm needles Hand-held, straight shank	Removal of hazardous and nonhazardous coatings, paint, stucco, rust, and cleaning of brick and stonework	Pneumatic and electric
DESCO Surface Preparation Tool (BPH Tool)	Removal of hazardous and nonhazardous coatings, weld preparation	Pneumatic and electric
Diamatic[b] 780 Pro	Grinding	Electric only
Metabo[c] WE 14-125 Plus	Grinding, finishing, cutting applications	Electric only
Metabo WE 24-230 MVT	Grinding, finishing, cutting applications	Electric only
Nilfiskd[d] Drill Shield Fits 1/2 in. and 3/4 in.	Dust-free drilling into hazardous and nonhazardous materials	Shroud only (drill not included)
Nilfisk Sabre Saw	Dust-free cutting of hazardous and nonhazardous materials	Electric only. Saw and shroud sold as one
Nilfisk Sawzall Shroud Fits Milwaukee 6511 and 6512	Dust-free cutting of hazardous and nonhazardous materials	Shroud only
Nilfisk Oscillating Saw (Cast Cutter)	Dust-free cutting of hazardous and nonhazardous materials, Asbestos pipe lagging	Pneumatic and electric
Wheelabrator Blastrac[e]	Removal of coatings from concrete surfaces, surface preparation, scabbling	Shot blast type

[a]DESCO is a registered trademark of Desco Manufacturing Co., Inc., Long Beach, California.
[b]Diamatic is a registered trademark of Diamatic USA, San Diego, California.
[c]Metabo is a registered trademark of Metabo, Nürtingen, Germany.
[d]Nilfisk is a registered trademark of A/S Fisker & Nielsen, Copenhagen, Denmark.
[e]Wheelabrator and Blastrac are registered trademarks of Wheelabrator Corporation, LaGrange, Georgia.

3.0 PORTABLE/TEMPORARY RADIOACTIVE AIR EMISSION UNIT ANNUAL REPORT

Environmental cleanup efforts on the Hanford Site often require the use of PTRAEUs. The PTRAEUs support characterization activities, expedited response actions, sampling and monitoring activities, and other routine activities. There are three types of PTRAEUs permitted on the Hanford Site: Type I, Type II, and Type III.

Type I PTRAEUs are portable ventilation filter system units. They are the most common type used on site. Type I units minimize radioactive air emissions by providing filtered ventilation at locations where work activities could potentially disturb radioactive contamination. The Type I capacity ranges from approximately 50 to 2,500 ft^3/min exhaust flow rate.

Type II PTRAEUs are mobile sample preparation units. Type II units minimize unintentional cross-contamination of samples and enhance personnel radiological safety. These units enable technicians to remove material from sampling core barrels, homogenize sampled material, and fill prescribed sample containers for onsite and offsite analysis. Personnel and environmental radiological exposures are minimized by using these self-contained enclosed units.

Type III PTRAEUs are mobile sample screening and analysis units. They provide preliminary screening of samples to identify those samples requiring additional analyses. Field screening of samples decreases the number of samples transported for analysis. Field screening can also provide faster turnaround times for situations requiring expeditious response.

Section 3.1 contains the listing of PTRAEUs that were available for use on the Hanford Site during CY 2017.

Appendix B includes the operational log sheets for each permitted use of a PTRAEU during CY 2017.

If a PTRAEU is used inside or near an existing source whose ventilation stack is registered with DOH and the activity emissions are vented through that stack (causing no net increase to the permitted potential to emit radionuclides), that particular use of the PTRAEU is not required to comply with the permit and, therefore, no log sheets are submitted. All PTRAEU usage for this reporting period was with Type I units.

3.1 CONSOLIDATED LIST OF PORTABLE/TEMPORARY RADIOACTIVE AIR EMISSION UNITS

Appendix D of the original NOC permit application includes a list of PTRAEUs intended for use on the Hanford Site. New or additional PTRAEUs that conform to any of the three types as specified in the permit application can be used without prior approval from DOH. Once placed in service, a unit will be included in the scope of the next annual report.

Table 3-1 lists units available for use during CY 2017.

Table 3-1. Hanford Site Portable and Temporary Emission Units. (2 sheets)

Type	Make and Model	Identification Number	Flow Rate (ft^3/min)	Remarks
III	Trailer	64-4231	Air-flow quantity will satisfy hood containment velocity of 125 ft/min inward	Mobile Sample Screening and Analysis Facilities
III	Trailer	64-4228[a]	Air-flow quantity will satisfy hood containment velocity of 125 ft/min inward	Mobile Sample Screening and Analysis Facilities
III	Trailer	64-5452	Air-flow quantity will satisfy hood containment velocity of 125 ft/min inward	Mobile Sample Screening and Analysis Facilities
II	Trailer	64-4229	50	Mobile Sample Screening and Analysis Facilities
I	NFS Radiation Protection Systems PFB-1600	MCF6582	1,600	219-S
I	Radiation Protection Systems SP-700, TP690	PE-001	678	CPRP[b]
I	Abatement Technologies	PE-002	481	CPRP
I	OmniForce by Omnitec	PE-03	2,443	CPRP
I	OmniForce by Omnitec	PE-04	1,750	CPRP
I	OmniForce by Omnitec	PE-05	1,750	CPRP
I	MicroTrap[c]	PE-06	504	CPRP
I	MicroTrap	PE-07	841	CPRP
I	Omni-Aire 600v by Omnitec	PE-014	150-600	CPRP
I	Omni-Aire 600v by Omnitec	PE-015	150-600	CPRP
I	Radiation Protection Systems Model SP−505A, FM 34	45-EXH-1[d]	300	Effluent Treatment Facility
I	Radiation Protection Systems Model SP-1600, FM 12	EXH-11369	1,015-1,720	
I	Bartlett AP-1000	9815407-H	1,000[d]	TF
I	Bartlett AP-1000	9815407-D	1,000[d]	TF
I	Bartlett AP-1000	10290-7	1,000[d]	TF
I	Bartlett AP-1000	9604122	1,000[d]	TF
I	Air Hog[f] 500	AH9905-137	500[d]	TF
I	Bartlett AP-1000	104128-4	1,000[d]	TF
I	Bartlett AP-1000	104128-5	1,000[d]	TF
I	Bartlett AP-1000	104128-1	1,000[d]	TF

Table 3-1. Hanford Site Portable and Temporary Emission Units. (2 sheets)

Type	Make and Model	Identification Number	Flow Rate (ft^3/min)	Remarks
I	Bartlett AP-1000	104128-2	1,000[d]	TF
I	Bartlett AP-1000	104128-3	1,000[d]	TF
I	Bartlett AP-1000	104128-6	1,000[d]	TF
I	Bartlett AP-1000	104128-7	1,000[d]	TF
I	Bartlett AP-2000	9819956-4	1,000[d]	TF
I	Bartlett AP-2000	2417-4	1,000[d]	TF
I	Bartlett AP-2000	2417-5	1,000[d]	TF
I	Bartlett AP-2000	2417-7	1,000[d]	TF
I	Bartlett AP-2000	2417-9	1,000[d]	TF
I	NILFISK[g] GM80	0322-00005	87[e]	TF
I	NILFISK GM82	032317BR5101	191[e]	TF
I	NILFISK GS82	3099	191[e]	TF
I	NILFISK GM80	10097-016	87[e]	TF
I	NILFISK GM80	10097-017	87[e]	TF
I	NILFISK GM80	10097-018	87[e]	TF
I	NILFISK GM80	10097-019	87[e]	TF
I	NILFISK GM80	905-6301-020-0627-042-379	80	TF
I	NILFISK GM80	075339	87[e]	TF
I	NILFISK GM80	075341	87[e]	TF
I	NILFISK GM80	075431	87[e]	TF
I	NILFISK GM80	1052241976	87[e]	TF
I	NILFISK GM80	1121257975	87[e]	TF
I	NILFISK GM80	1129263018	87[e]	TF
I	NILFISK GM80	264705	87[e]	TF
I	NILFISK GM80	264720	87[e]	TF
I	Euroclean[h], GD930	0511-00080	82	TF
I	Euroclean, GD930	0719094075	82	TF
I	Sentry Air Systems[i] Model SS-340-DCH	RSS Hood #1	350	MSA

[a]Removed from service as a portable/temporary radioactive air emission unit; trailer to be used as a shop.
[b]Formerly Central Plateau Surveillance & Maintenance Project.
[c]MicroTrap is a registered trademark of MicroTrap Corporation, Morrisville Pennsylvania.
[d]High-efficiency particulate air filter rated ft^3/min.
[e]Based on maximum air flow of the unit.
[f]Air Hog is a registered trademark of Honeywell International, Inc., Morristown New Jersey.
[g]Nilfisk is a registered trademark of A/S Fisker & Nielsen, Copenhagen, Denmark.
[h]Euroclean is a registered trademark of Nilfisk-Advance, Inc., Plymouth, Minnesota.
[i]Sentry Air Systems, Inc. is a registered trademark of Sentry Air Systems, Inc. Houston TX.

CPRP = Central Plateau Remediation Project
MSA = Mission Support Alliance
TF = tank farms

4.0 REFERENCES

AIR 17-113, 2017, "Final Approval of Notice of Construction (NOC) 1034," external letter from John Martell, Washington State Department of Health, Olympia, Washington, to Doug Shoop, U.S. Department of Energy, Richland Operations Office, Richland, Washington, January 24.

AIR 17-114 (Corrected), 2017, "Final Approval of Notice of Construction (NOC) 1074," external letter from John Martell, Washington State Department of Health, Olympia, Washington, to Doug Shoop, U.S. Department of Energy, Richland Operations Office, Richland, Washington, January 24.

DOE/RL-96-75, 1999, *Radioactive Air Emissions Notice of Construction Portable/Temporary Radioactive Air Emission Units*, Rev. 2, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-97-50, 2002, *Radioactive Air Emissions Notice of Construction for HEPA Filtered Vacuum Radioactive Air Emission Units*, Rev. 2, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

APPENDIX A

HEPA-FILTERED VACUUM UNIT OPERATIONAL LOG SHEETS FOR CALENDAR YEAR 2017

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A.1 HEPA-FILTERED VACUUM UNIT USAGE AT TANK FARMS (AP FARM)

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Data Sheet 1 – HEPA Vacuum Usage.

Vac Make/Model Number: **NILFISK GM-80** Vac Serial No. **3510152805700**	Work Package: **203744**	Aerosol Test Date: **01/28/2016**
Purpose of Operation: **Support clean and inspect of electrical components in AP Farm**	Type of Waste (e.g. dust, concrete) **Dust, dirt and debris**	
Location: **AP Farm Enclosures 201, 211, 221, 231, 500, 900**	Start Time/Date 11/7/16 1330	Stop Time/Date 1400 11/7/16
Area vacuumed: **13,862** Units: **cm²**	Total hours of operation: .5	
HEPA filter Integrity : verify tamper seal is intact Operator Signature/Date R.H. 11/7/16		

Radiological Control			
Pre-job smear of unit exhauster ports Maximum smear result (dpm/100cm²)	Alpha <20 dpm/100cm²	Beta/Gamma <1000 dpm/100cm²	RSR # BOAN-1600286
Post-job smear of unit exhauster ports Maximum smear result (dpm/100cm²)	Alpha <20DPM/100cm²	Beta/Gamma <1000 DPM/100cm²	RSR # BOAN-1600386

Environmental Support and Assessment Program			
Maximum Contamination Encountered or Analysis Results for composite samples in Curies	Alpha <20 dpm/100cm². Used 20dpm/100cm² for calculation	Beta/Gamma <1000 dpm/100cm². Used 1000dpm/100cm² for calculation	
Maximum smear result from **pre-job** smear of area to be vacuumed (dpm/100cm²) **Cannot be a High Contamination Area**	Alpha <20 dpm/100cm². Used 20dpm/100cm² for calculation	Beta/Gamma <1000 dpm/100cm². Used 1000dpm/100cm² for calculation	RSR # BOS-1601007

Annual Possession Quantity (APQ) Contamination as Plutonium-239/240 or as Strontium-90 (Curies per year)	Alpha		Beta/Gamma	
	East	West	East	West
	4.57 E-03	**7.70 E-03**	**2.30 E-01**	**3.88 E-01**
Estimate Curies of Activity: Data Sheet 1, 2, or 3	**1.25 E-05**	**N/A**	**6.24 E-04**	**N/A**
Total Curies Used to Date:	**1.08E-08**	**N/A**	**1.89E-04**	**N/A**
Sum of Estimated Curies plus Total Curies to Date. If less than 90% of APQ, proceed. If exceeds 90%, DOH approval required.	**1.25 E-05**	**N/A**	**8.13 E-04**	**N/A**

Environmental Approval to use HEPA VAC Signature and Date	Don Heidelberg 11/7/16
Environmental Post job Review Signature and Date:	Don Heidelberg 10/27/17

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A.2 HEPA-FILTERED VACUUM UNIT USAGE AT TANK FARMS (B Plant)

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~~WCN-1~~ JR 10/12/17

B-Plant ACT HEPA Filter Change Out

Attachment 2 – HEPA Vacuum Log Sheet

Log Sheet for Operation of High-Efficiency Particulate Air Filtered Vacuums

Work Package #: SM-17-01487 Location of Operation: ACT-1 Purpose of Operation: Clean Primary Housing

Unit # 35101635 01286 Make: NILFISK Model: GM-80 Filters Tested on: 11/12/16

Type Radiological Area: RA/CA/ARA Source Constituents (if known):

Dates of operation	Area cleaned (m^2)	Maximum contamination or analyses (dpm/100 cm^2)		Potential curies released [b]		RCT Name/ Signature	Exhaust smear (dpm/100 cm^2) [c]			
							Before		After	
		α	β/γ	α	β/γ	[illegible]	α	β/γ	α	β/γ
10/11/17	40						<20	<1000	<20	<1000
~~10/12/17~~							<20	<1000	JR 10/24/17 NOTE: NOT USED THIS DAY	

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL- 96-75) and also the actual emissions determined after use of the PTRAEU.
[b] Information calculated after the project is complete
[c] Based on smears of the HEPA Vac exhaust port.

[Pu-239] Ci = 40 m^2 (1000 dpm/100 cm^2) 4.5 E-9 Ci/dpm m^2 Ci · cm^2 / m^2 · dpm
= 0.00018 = 1.8 E-4 Ci

[Sr-90] Ci = 40 (20) (4.5 E-9)
= 3.6 E-6 Ci

APPENDIX B

PORTABLE/TEMPORARY RADIOACTIVE AIR EMISSION UNIT OPERATIONAL LOG SHEETS FOR CALENDAR YEAR 2017

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B.1 PORTABLE/TEMPORARY RADIOACTIVE AIR EMISSION UNIT (219-S)

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219-S PTRAEU ACTIVITY LOG 1 of 2

PTREAU NAME/MODEL/SERIAL #: 219S PTRAEU/Model# PB-15A /Serial# 116179 **Work Package:** 220165 **ABCASH EDP Code: 340 Date:**

Operator's Name [Print / Sign]	Start [Date/ Time]	Stop [Date/ Time]	Hrs/Min's of Operation	Purpose of Operation	Source (Liquid, gas, solid)	Estimated Emissions (Ci/yr)	Confirmatory Measurements (µCi/cc)	Control Equipment on PTRAEU	Air Sample Log #	Comments
JOHN BETZSOLD John Betzsold	1055 4-4-17	1218 4-4-17	1.4 hrs	219S Entry	Solid	7.22 E-8	a See log 2 of 2 b	HEPA Filter	See log 2 of 2	
Kevin Nordstrom	1000 4-5-17	4-5-17 1040	1.7	219S Entry	Solid	7.22 E-8	a b	HEPA Filter		
Kevin Nordstrom	4-6-17 1020	1330 4-6-17	3:10 hrs	219S Entry	Solid	7.22 E-8	a b	HEPA Filter		Gopsenek @ 3.75 cfm Lm
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		

Shaded Areas to be filled in by Environmental

Calculations performed by: TIM MEDFORD 3/30/17

Calculations verified by: Eric Van Masen 3/30/17 (Print/Sign/Date)

Page 1 of 1

A-6005-957 (REV 0)

219-S PTRAEU ACTIVITY LOG 2 of 2

PTREAU NAME/MODEL/SERIAL #: 219S PTRAEU/Model#PB-15A /Serial# 116179 **Work Package:** **ABCASH EDP Code: 340 Date:**

Operator's Name [Print / Sign]	Start [Date/ Time]	Stop [Date/ Time]	Hrs/Min's of Operation	Purpose of Operation	Source (Liquid, gas, solid)	Estimated Emissions (Ci/yr)	Confirmatory Measurements (µCi/cc)	Control Equipment on PTRAEU	Air Sample Log #	Comments
David Lowe	4-5-17 1800	N/A	N/A	219-S Entry	Solid	7.22 E-8	a b	HEPA Filter		3.75 cfm
N/A	N/A	N/A	N/A	Fixative App 4/6	Solid	7.22 E-8	a b	HEPA Filter		4/7/17 J-1701483
N/A	N/A	N/A	N/A	4/6 Fixative App	Solid	7.22 E-8	a b	HEPA Filter		4/8/17 J-1701497
N/A	N/A	N/A	N/A	4/6 Fix. App.	Solid	7.22 E-8	a b	HEPA Filter		4/9/17 J-1701510
N/A	N/A	N/A	N/A	4/6 Fix. App.	Solid	7.22 E-8	a b	HEPA Filter		4/10/17 J-1701523
N/A	N/A	N/A	N/A	4/6 Fix App	Solid	7.22 E-8	a b	HEPA Filter		4/11/17 J-1701558
N/A	N/A	N/A	N/A	4/6 Fix App	Solid	7.22 E-8	a b	HEPA Filter		4/12/17 J-1701582
David Lowe	N/A	4-13-17 1540	173:20	4/6 Fix App	Solid	7.22 E-8	a b	HEPA Filter		4/13/17 J-1701597 3.75 cfm
Lee Houser	10 04 5/18/17	1400 5/18/17	3:08	219-S entry	Solid	7.22 E-8	a b	HEPA Filter		
David Lowe	1030 5-25-17	1320 5-25-17	2:50	219S	Solid	7.22 E-8	a 1.1 E-17 b 2.1 E-17	HEPA Filter	5969530 *	
					Solid		a b	HEPA Filter		* 1 sample for all runs under WO 116179 (sheets 1 and 2)
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		
					Solid		a b	HEPA Filter		

Shaded Areas to be filled in by Environmental

Calculations performed by: Tim Medford 3/30/17

Calculations verified by: Eric VanMasse 3/30/17 (Print/Sign/Date)

A-6005-957 (REV 0)

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219-S PTRAEU ACTIVITY LOG

* one sample for all runs

(1) PTREAU Name/Model/Serial No.: 219S/MODEL#PB-15A/#116179 (2) Work Package: 219582 (3) ABCASH EDP Code: 340 Aerosol Test Date:

(4) Operator's Name (Print First and Last Name/ Signature)	(5) Start (Date/ Time)	(6) Stop (Date/ Time)	(7) Hrs/Min's of Operation	(8) Purpose of Operation	(9) Source (Liquid, gas, solid)	(10) Estimated Emissions (Ci/yr)	(11) Confirmatory Measurements (µCi/cc)	(12) Control Equipment on PTRAEU	(13) Air Sample Log No.	(14) Comments
Guy Bar	10/3/17 1305	10/3/17 1320	25 mins	maint	Solid	7.22 E-8	a 1.9 E-17 * b 4.7 E-17	HEPA Filter	S4724518	S-1704426
Lee Hoisch	0830 10/4/17	1350 10/4/17	4:30	P-1/P-2	Solid	7.22 E-8	a b	HEPA Filter		S-1704424
Guy Bar	0850 10/10/17	1050 10/10/17	2:20	P-1/P2	Solid	7.22 E-8	a b	HEPA Filter		S-1704535
Guy Bar	10/10/17	10/10/17	4:20	P-1/P-2	Solid	7.22 E-8	a b	HEPA Filter		NA
Guy Bar	0740 10/11/17	1200 10/11/17	4:20	P-1/P-2	Solid	7.22 E-8	a b	HEPA Filter		S-1704524
Guy Bar	0830 10/12/17	1300 10/12/17	4:30	P-1/P-2	Solid	7.22 E-8	a b	HEPA Filter		S-1704564
Guy Bar	0810 10/16/17	1110 10/16/17	3:00	P-1/P-2	Solid	7.22 E-8	a b	HEPA Filter		S-1704627
Guy Bar	0940 10/23/17	1500 10/23/17	5:20	P1/P-2	Solid	7.22 E-8	a b	HEPA Filter		S-1704743
Guy Bar	0800 10/24/17	1210 10/24/17	4:10	P1/P-2	Solid	7.22 E-8	a b	HEPA Filter		S-1704759
Guy Bar	0800 10/25/17	1530 10/25/17	7:30	P1/P-2	Solid	7.22 E-8	a b	HEPA Filter		S-1704774
Guy Bar	0830 10/30/17	1030 10/30/17	2:00	P1/P-2	Solid	7.22 E-8	a b	HEPA Filter		S-1704845
Guy Bar	0900 10/31/17	1230 10/31/17	4:30	P1/P2	Solid	7.22 E-8	a b	HEPA Filter		S-1704863
Guy Bar	0800 11/1/17	1200 11/1/17	4:00	P1/P2	Solid	7.22 E-8	a b	HEPA Filter		S-1704877
Guy Bar	0830 11/2/17	1150 11/2/17	3:50	P1/P2	Solid	7.22 E-8	a b	HEPA Filter		S-1704892
Guy Bar	0800 11/6/17	1215 11/6/17	3:15	P1/P2	Solid	7.22 E-8	a b	HEPA Filter		S-1704902
Guy Bar	0830 12/18/17	1430 12/18	3:00	P1/P2	Solid	7.22 E-8	a b	HEPA Filter		S-1705618

Shaded Areas to be filled in by Environmental HD66A-8 6/6/18 @ 4:6 PM

(15) Calculations performed by:
Timothy Medford — Print First and Last Name
Signature
08/16/2017 — Date

(16) Calculations verified by:
HR WOODWORTH — Print First and Last Name
HR Woodworth — Signature
8/17/17 — Date

Page 1 of 1

A-6005-957 (REV 1)

B.2 PORTABLE/TEMPORARY RADIOACTIVE AIR EMISSION UNIT (B PLANT)

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Attachment 1 – PTRAEU Log Sheet

LOG SHEET FOR TRACKING PORTABLE/TEMPORARY RADIOACTIVE AIRBORNE EMISSIONS UNITS (PTRAEU -- PORTABLE EXHAUSTERS) FOR THE

200 E AREA OF THE HANFORD SITE

Work Package #: SM-17-01487

Location of Operation: ACT-B-001 Tent B-plant S. Side Purpose of Operation: Negative

Unit # 604534 Make: OMNI AIRE Model: 6000

Control equipment: NAM Filters Tested on: 8/02/17

Source Type (liquid, gas or solid): Aerosol Estimated Emissions (Ci/hr) [a]: _____

	Date and time	Total hours of operation	Confirmatory smear measurement(s) (dpm/100 cm^2) [b]		RCT name
			Alpha	Beta/gamma	
Start	0838 8/10/17	1,128	NA	LIK	JEFF Stewart
Stop	0820 9/26/17		NA	LIK	JEFF Stewart
Start	0924 10/4/17		NA	LIK	JEFF Stewart
Stop					
Start					
Stop					
Start					
Stop					
Start					
Stop					

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL-96-75) and also the actual emissions determined after use of the PTRAEU.

[b] Based on smears of the PTRAEU's exhaust port.

Attachment 1 – PTRAEU Log Sheet

LOG SHEET FOR TRACKING PORTABLE/TEMPORARY RADIOACTIVE AIRBORNE EMISSIONS UNITS (PTRAEU – PORTABLE EXHAUSTERS) FOR THE

200E AREA OF THE HANFORD SITE

Work Package #: SM-17-01487

Location of Operation: B-Plant S. Side Purpose of Operation: Negative on Tent

Unit # 170238204 Make: Omni Aire Model: 600U

Control equipment: NAM Filters Tested on: 3/16/17

Source Type (liquid, gas or solid): Aerosol Estimated Emissions (Ci/hr) [a]: _____

	Date and time	Total hours of operation	Confirmatory smear measurement(s) (dpm/100 cm²) [b]		RCT name
			Alpha	Beta/gamma	
Start	7/6/17 1000	1,528	NA	LIK	Felipe Uvalle
Stop	9/26/17 0820		NA	LIK	Jeff Stewart
Start					
Stop					
Start					
Stop					
Start					
Stop					
Start					
Stop					

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL-96-75) and also the actual emissions determined after use of the PTRAEU.

[b] Based on smears of the PTRAEU's exhaust port.

Attachment 1 – PTRAEU Log Sheet

LOG SHEET FOR TRACKING PORTABLE/TEMPORARY RADIOACTIVE AIRBORNE EMISSIONS UNITS (PTRAEU -- PORTABLE EXHAUSTERS) FOR THE

200 E **AREA OF THE HANFORD SITE**

Work Package #: SM-17-01487

Location of Operation: B-Plant S. Side Purpose of Operation: Negative

Unit # PE-015 Make: Omni Aire Model: 600V

Control equipment: NAM Filters Tested on: 7/5/17

Source Type (liquid, gas or solid): Aerosol Estimated Emissions (Ci/hr) [a]: _____

	Date and time	Total hours of operation	Confirmatory smear measurement(s) (dpm/100 cm²) [b]		RCT name
			Alpha	Beta/gamma	
Start	8/15/17 0846	1,008	NA	<1K	JEFF STEWART
Stop	9/16/17 0820		NA	<1K	JEFF STEWART
Start	0927 10/4/17		NA	<1K	JEFF STEWART
Stop					
Start					
Stop					
Start					
Stop					
Start					
Stop					

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL-96-75) and also the actual emissions determined after use of the PTRAEU.

[b] Based on smears of the PTRAEU's exhaust port.

Attachment 1 – PTRAEU Log Sheet

LOG SHEET FOR TRACKING PORTABLE/TEMPORARY RADIOACTIVE AIRBORNE EMISSIONS UNITS (PTRAEU -- PORTABLE EXHAUSTERS) FOR THE

200 E. AREA OF THE HANFORD SITE

Work Package #: SM-17-02728

Location of Operation: B-Plant Purpose of Operation: Negative on Ducting

Unit # PE-015 Make: DMS Air 600 Model: 600V

Control equipment: N.A.M Filters Tested on: 7/5/17

Source Type (liquid, gas or solid): Aerosol Estimated Emissions (Ci/hr) [a]: _____

	Date and time	Total hours of operation	Confirmatory smear measurement(s) (dpm/100 cm²) [b]		RCT name
			Alpha	Beta/gamma	
Start	7/19/17 1016	193	<20	<1000	Felipe Uvalle
Stop	7/27/17 0930		<20	<1000	Jeff Stewart
Start	8/15/17 0846	1,008	<20	<1000	Jeff Stewart
Stop	9/26/17 0820		NA	<1K	Jeff Stewart
Start					
Stop					
Start					
Stop					
Start					
Stop					

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL-96-75) and also the actual emissions determined after use of the PTRAEU.

[b] Based on smears of the PTRAEU's exhaust port.

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Attachment 1 – PTRAEU Log Sheet

LOG SHEET FOR TRACKING PORTABLE/TEMPORARY RADIOACTIVE AIRBORNE EMISSIONS UNITS (PTRAEU – PORTABLE EXHAUSTERS) FOR THE

200E AREA OF THE HANFORD SITE

Work Package #: SW-17-02728/W

Location of Operation: B-Plant Purpose of Operation: Negative on Tent

Unit # 170238204 Make: LABCONCO Model: 3970002

Control equipment: Negative Air Machine Filters Tested on: 3/16/17

Source Type (liquid, gas or solid): Aerosol Estimated Emissions (Ci/hr) [a]: 222 CFM

	Date and time	Total hours of operation	Confirmatory smear measurement(s) (dpm/100 cm²) [b]		RCT name
			Alpha	Beta/gamma	
Start	5/2/17 0843	2.25	N/A	<1K	Jeff Stewart
Stop	5/2/17 1057		N/A	<1K	Jeff Stewart
Start	7/11/17 0915	1.0	N/A	<1K	Todd Robertson
Stop	7/11/17 1015		N/A	<1K	Todd Robertson
Start	7/11/17 1000	1.50	N/A	<1K	Felipe Urquiza
Stop	9/11/17 0830		N/A	<1K	Jeff Stewart
Start					
Stop					
Start					
Stop					

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL-96-75) and also the actual emissions determined after use of the PTRAEU.

[b] Based on smears of the PTRAEU's exhaust port.

Attachment 1 – PTRAEU Log Sheet

LOG SHEET FOR TRACKING PORTABLE/TEMPORARY RADIOACTIVE AIRBORNE EMISSIONS UNITS (PTRAEU -- PORTABLE EXHAUSTERS) FOR THE

200E AREA OF THE HANFORD SITE

Work Package #: SM-16-05528

Location of Operation: ACT-B-001 Tent B Plant So Side Purpose of Operation: Negative

Unit # 604534 Make: Omni Aire Model: 600V

Control equipment: NAM Filters Tested on: 8/2/17

Source Type (liquid, gas or solid): Aerosol Estimated Emissions (Ci/hr) [a]: _____

	Date and time	Total hours of operation	Confirmatory smear measurement(s) (dpm/100 cm²) [b]		RCT PTRAEUe
			Alpha	Beta/gamma	
Start	0838 8/10/17	1,128	<20	<1K	Jeff Stewart
Stop	0830 9/26/17		NA	<1K	JEFF Stewart
Start					
Stop					
Start					
Stop					
Start					
Stop					
Start					
Stop					

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL-96-75) and also the actual emissions determined after use of the PTRAEU.

[b] Based on smears of the PTRAEU's exhaust port.

2017 3rd Quarter PTRAEU EMISSIONS for B-Plant ACT Pre Filter Change Out													
Unit Number	Location	From	To:	Radionuclide	Measured Activity (Ci/100cm^2)[A]	Total area (cm^2)	Total activity (Ci)	2006-29 Table	Height	Offsite Dose factor[B]	Onsite Dose Factor[B]	Maximum Dose (mrem)	
604534	South Side of Tent Act-B001	8/10/2017	9/26/2017	α (Pu-239)	NA	4.00E+02	#VALUE!	4.4	<40 m	2.78E+00	3.28E+00	#VALUE!	
604534	South Side of Tent Act-B001	8/10/2017	9/26/2017	β/γ (Sr-90)	9.00E-12	4.00E+02	3.60E-11	4.4	<40m	1.93E-01	3.96E-02	6.95E-12	
170238204	South Side of Tent Act-B001	7/12/2017	9/26/2017	α (Pu-239)	NA	4.00E+02	#VALUE!	4.4	<40m	2.78E+00	3.28E+00	#VALUE!	
170238204	South Side of Tent Act-B001	7/12/2017	9/26/2017	β/γ (Sr-90)	9.00E-12	4.00E+02	3.60E-11	4.4	<40m	1.93E-01	3.96E-02	6.95E-12	
PE-015	B-Plant South Side	8/15/2017	9/26/2017	α (Pu-239)	NA	4.00E+02	#VALUE!	4.4	<40m	2.78E+00	3.28E+00	#VALUE!	
PE-015	B-Plant South Side	8/15/2017	9/26/2017	β/γ (Sr-90)	9.00E-12	4.00E+02	3.60E-11	4.4	<40m	1.93E-01	3.96E-02	6.95E-12	
PE-015	Negative on Ducting	7/19/2017	7/27/2017	α (Pu-239)	4.50E-10	4.00E+02	1.80E-09	4.4	<40m	2.78E+00	3.28E+00	5.90E-09	
PE-015	Negative on Ducting	7/19/2017	7/27/2017	β/γ (Sr-90)	9.00E-12	4.00E+02	3.60E-11	4.4	<40m	1.93E-01	3.96E-02	6.95E-12	
PE-015	Negative on Ducting	8/15/2017	9/26/2017	α (Pu-239)	4.50E-10	4.00E+02	1.80E-09	4.4	<40m	2.78E+00	3.28E+00	5.90E-09	
PE-015	Negative on Ducting	8/15/2017	9/26/2017	β/γ (Sr-90)	9.00E-12	4.00E+02	3.60E-11	4.4	<40m	1.93E-01	3.96E-02	6.95E-12	
170238204	Negative on Tent	7/11/2017	7/11/2017	α (Pu-239)	NA	4.00E+02	#VALUE!	4.4	<40m	2.78E+00	3.28E+00	#VALUE!	
170238204	Negative on Tent	7/11/2017	7/11/2017	β/γ (Sr-90)	9.00E-12	4.00E+02	3.60E-11	4.4	<40m	1.93E-01	3.96E-02	6.95E-12	
170238204	Negative on Tent	7/12/2017	9/16/2017	α (Pu-239)	NA	4.00E+02	#VALUE!	4.4	<40m	2.78E+00	3.28E+00	#VALUE!	
170238204	Negative on Tent	7/12/2017	9/16/2017	β/γ (Sr-90)	9.00E-12	4.00E+02	3.60E-11	4.4	<40m	1.93E-01	3.96E-02	6.95E-12	
604534	South Side of Tent Act-B001	8/10/2017	9/26/2017	α (Pu-239)	4.50E-10	4.00E+02	1.80E-09	4.4	<40m	2.78E+00	3.28E+00	5.90E-09	
604534	South Side of Tent Act-B001	8/10/2017	9/26/2017	β/γ (Sr-90)	9.00E-12	4.00E+02	3.60E-11	4.4	<40m	1.93E-01	3.96E-02	6.95E-12	

Total Dose (mrem/yr)	1.78E-08

Notes:

2017 2nd Quarter PTRAEU EMISSIONS for B-Plant ACT Pre Filter Change Out													
Unit Number	Location	From	To:	Radionuclide	Measured Activity ($Ci/100cm^2$)[A]	Total area (cm^2)	Total activity (Ci)	2006-29 R2 Table	Height	Offsite Dose factor[B]	Onsite Dose Factor[B]	Maximum Dose (mrem)	
170238204	South Side of Tent Act-B001	5/2/2017	5/2/2017	α (Pu-239)	NA	4.00E+02	#VALUE!	4.4	<40m	2.78E+00	3.28E+00	#VALUE!	
170238204	South Side of Tent Act-B001	5/2/2017	5/2/2017	β/γ (Sr-90)	9.00E-12	4.00E+02	3.60E-11	4.4	<40m	1.93E-01	3.96E-02	6.95E-12	

Total Dose (mrem/yr)	6.95E-12

Notes:

A. Alpha readings were only required to be taken is beta/gamma was found. All readings were <20 alpha and <1000 beta/gamma. 20 and 1000 used conservatively and converted to $Ci/100cm^2$.

B. For conservatism the highest of the Dose Factors was used. Onsite for beta/gamma and offsite for alpha.

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Attachment 1 – PTRAEU Log Sheet

LOG SHEET FOR TRACKING PORTABLE/TEMPORARY RADIOACTIVE AIRBORNE EMISSIONS UNITS (PTRAEU -- PORTABLE EXHAUSTERS) FOR THE

200 E **AREA OF THE HANFORD SITE**

Work Package #: SM-17-01487

Location of Operation: B-Plant S. Side Purpose of Operation: Negative

Unit # PE-015 Make: Omni Aire Model: 600V

Control equipment: NAM Filters Tested on: 7/5/17

Source Type (liquid, gas or solid): Aerosol Estimated Emissions (Ci/hr) [a]: < 1.23 E-6

	Date and time	Total hours of operation	Confirmatory smear measurement(s) (dpm/100 cm²) [b]		RCT name
			Alpha	Beta/gamma	
Start	8/15/17 0846	1,008	NA	<1K	JEFF STEWART
Stop	9/16/17 0820		NA	<1K	JEFF STEWART
Start	0927 10/4/17	193	NA	<1K	JEFF STEWART
Stop	10/12/17 1039		NA	<1K	Rod Powell
Start	10/17/17 0847	1.5	NA	<1K	Seyed Tabatabai
Stop	10/17/17 1017		NA	<1K	Felix Uribe
Start	10-19-17 0851	2	NA	<1K	Seyed Tabatabai
Stop	10-19-17 1050		NA	<1K	Doug McBride
Start	0906 10-24-17	1.75	NA	<1K	Jeff Stewart
Stop	1053 10-24-17		NA	<1K	Jeff Stewart

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL-96-75) and also the actual emissions determined after use of the PTRAEU.

[b] Based on smears of the PTRAEU's exhaust port.

Attachment 1 – PTRAEU Log Sheet

LOG SHEET FOR TRACKING PORTABLE/TEMPORARY RADIOACTIVE AIRBORNE EMISSIONS UNITS (PTRAEU -- PORTABLE EXHAUSTERS) FOR THE

200E **AREA OF THE HANFORD SITE**

Work Package #: SM-17-01487

Location of Operation: B-Plant S. Side Purpose of Operation: Negative

Unit # P-015 Make: Omni-Aire Model: 600V

Control equipment: N.A.M. /PTRAEU Filters Tested on: 7/5/17

Source Type (liquid, gas or solid): Aerosol Estimated Emissions (Ci/hr) [a]: <1.65 E-5

	Date and time	Total hours of operation	Confirmatory smear measurement(s) (dpm/100 cm²) [b]		RCT name
			Alpha	Beta/gamma	
Start	10-25-17 0843	50	NA	<1K	Seyed Tabatabai
Stop	10-27-17 1045		NA	<1K	Seyed Tabatabai
Start	11-01-17 0845	27	NA	<1K	Seyed Tabatabai
Stop	11-02-17 1154		NA	<1K	Seyed Tabatabai
Start	11-06-17 1224	1.5	NA	<1K	Seyed Tabatabai
Stop	11-06-17 1345		NA	<1K	Seyed Tabatabai
Start	11-07-17 0938	5.25	NA	<1K	Seyed Tabatabai
Stop	11-07-17 1456		NA	<1K	Doug McBride
Start	11-08-17 0850	6.0	NA	<1K	Troy Swallow
Stop	11-08-17 1453		NA	<1K	Troy Swallow

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL-96-75) and also the actual emissions determined after use of the PTRAEU.

[b] Based on smears of the PTRAEU's exhaust port.

Attachment 1 – PTRAEU Log Sheet

LOG SHEET FOR TRACKING PORTABLE/TEMPORARY RADIOACTIVE AIRBORNE EMISSIONS UNITS (PTRAEU – PORTABLE EXHAUSTERS) FOR THE

200 E **AREA OF THE HANFORD SITE**

Work Package #: SM-16-05528

Location of Operation: 221-B Purpose of Operation: Filter change

Unit # PE-015 Make: Omnitec Model: OAL 00V

Control equipment: PTRAEU Filters Tested on: 7/5/17

Source Type (liquid, gas or solid): Aerosol Estimated Emissions (Ci/hr) [a] <7.9 x10^-6

	Date and time		Total hours of operation	Confirmatory smear measurement(s) (dpm/100 cm²) [b]		RCT Name
				Alpha	Beta/gamma	
Start	~~12/5/17~~ 12/6/17	1232	0.75	<20	<1000	S. Collingham
Stop	12/6/17	1320		<20	<1000	S. Collingham
Start	1232	12/11/17	187.25	<20	<1000	S. Collingham
Stop	0910	12-19-17		<20	<1000	[illegible]
Start						
Stop						
Start						
Stop						
Start						
Stop						

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL-96-75) and also the actual emissions determined after use of the PTRAEU.

[b] Based on smears of the PTRAEU's exhaust port.

Attachment 1 – PTRAEU Log Sheet

LOG SHEET FOR TRACKING PORTABLE/TEMPORARY RADIOACTIVE AIRBORNE EMISSIONS UNITS (PTRAEU -- PORTABLE EXHAUSTERS) FOR THE

200 E AREA OF THE HANFORD SITE

Work Package #: SM-17-01487

Location of Operation: ACT-B-001 Tent B-Plant S. Side Purpose of Operation: Negative

Unit # 604534 Make: OMNI AIRE Model: 6000V

Control equipment: NAM Filters Tested on: 8/02/17

Source Type (liquid, gas or solid): Aerosol Estimated Emissions (Ci/hr) [a]: < 1.11 E-6

	Date and time	Total hours of operation	Confirmatory smear measurement(s) (dpm/100 cm²) [b]		RCT name
			Alpha	Beta/gamma	
Start	0838 8/10/17	1,128	NA	<1K	JEFF STEWART
Stop	0820 9/26/17		NA	<1K	JEFF STEWART
Start	0924 10/4/17	193	NA	<1K	JEFF STEWART
Stop	1056 10/12/17		NA	<1K	Rod Powell
Start	0834 10/17/17	1.5	NA	<1K	Seyed Tabatabai
Stop	1017 10/17/17		NA	<1K	Felipe Huallere
Start	0815 10/18/17	0.5	NA	<1K	Doug McBride
Stop	0845 10/18/17		NA	<1K	Doug McBride
Start	10-19-19 0848	2	NA	<1K	Seyed Tabatabai
Stop	10-19-19 1050		NA	<1K	Doug McBride

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL-96-75) and also the actual emissions determined after use of the PTRAEU.

[b] Based on smears of the PTRAEU's exhaust port.

Attachment 1 – PTRAEU Log Sheet

LOG SHEET FOR TRACKING PORTABLE/TEMPORARY RADIOACTIVE AIRBORNE EMISSIONS UNITS (PTRAEU -- PORTABLE EXHAUSTERS) FOR THE

200E. **AREA OF THE HANFORD SITE**

Work Package #: SM-17-01487

Location of Operation: ACT-001 Tent / ACT-002 E. Side 10/31/17 B-Plant S. Side Purpose of Operation: Negative

Unit # 604534 Make: OMNI-AIRE Model: 600V

Control equipment: N.A.M. Filters Tested on: 8/02/17

Source Type (liquid, gas or solid): Aerosol Estimated Emissions (Ci/hr) [a]: <1.14 E-5

	Date and time	Total hours of operation	Confirmatory smear measurement(s) (dpm/100 cm²) [b]		RCT name
			Alpha	Beta/gamma	
Start	10-24-17 0906	1.75	NA	<1K	JEFF STEWART
Stop	10-24-17 1051		NA	<1K	JEFF STEWART
Start	10-25-17 0845	50	NA	<1K	Seyed Tabatabai
Stop	10-27-17 1438		NA	<1K	Seyed Tabatabai
Start	10-31-17 1315	47	NA	<1K	Doug McBride
Stop	11-02-17 1158		NA	<1K	Seyed Tabatabai
Start	11-06-17 1220	1.5	NA	<1K	Seyed Tabatabai
Stop	11-06-17 1346		NA	<1K	Seyed Tabatabai
Start	11-07-17 0939	30	NA	<1K	Seyed Tabatabai
Stop	~~11-08-17~~ 11-09-17 1451		NA	<1K	Troy Swallow

[a] Attach expected emissions calculations determined using the guidelines in the "Notice for Approval to Construct and Operate Portable/Temporary Radioactive Airborne Emissions Units" (DOE/RL-96-75) and also the actual emissions determined after use of the PTRAEU.

[b] Based on smears of the PTRAEU's exhaust port.

B.3 PORTABLE/TEMPORARY RADIOACTIVE AIR EMISSION UNIT (6270 BUILDING)

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Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH **HEPA Aerosol Test Date:** 2/3/16

Operator Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
12/12/16 Brian Parsons MM	12/12/16	0800	11:00	3:00	SOLID	9.38E-10	Alpha: <20 Survey #: DC-16-0924	Ø
Brian Parsons MM	12/27/16	0730	1:00	3:30	SOLID	9.38E-10	Alpha: <20 Survey #: DC-16-0955	Ø
Brian Parsons MM	1/12/17	10:30	12:00	1:30	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-0029	Ø
1/16/17 Brian Parsons	1/16/17	0800	0930	1:30	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-0031	Ø

RSS Review (print/sign/date): 1/23/2017

Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH **HEPA Aerosol Test Date:** 8/3/16

Operator Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
Brian Parsons	2/1/17	0915	10:15	1:00	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-0079	Ø
Brian Parsons	2/7/17	0815	1015	2:00	SOLID	9.38E-10	Alpha: <20 Survey #: DC-1700005	Ø
Brian Parsons	2/22/17	10:00	11:30	1:30	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-00051	Ø
Brian Parsons	2/27/17	10:00	11:30	1:30	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-00063	Ø

RSS Review (print/sign/date): RUBY MEDORA 3/23/2017

Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH **HEPA Aerosol Test Date:** 8/3/16

Operator Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
Brian Preans	3/4/17	0800	1100	3:00	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-00081	Ø
Brian Preans	3/14/17	1500	1800	3:00	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-00107	Ø
Brian Preans	3/21/17	1500	1800	3:00	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-00126	Ø
Brian Preans	3/28/17	0930	1230	3:00	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-00143	Ø

RSS Review (print/sign/date): [illegible] 4/13/2017

Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH

HEPA Aerosol Test Date: 8/3/16

Operator Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
Brian Parsons	7/29/17	0730	0930	2:00	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-00149	Ø
Brian Parsons	4/4/17	0800	1030	2:30	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-00160	Ø
Brian Parsons	4/11/17	0800	1100	3:00	SOLID	9.38E-10	Alpha: <20 Survey #: DC-17-00178	Ø
					SOLID	9.38E-10	Alpha: Survey #:	

RSS Review (print/sign/date): [signature] 4/13/2017

Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH **HEPA Aerosol Test Date:** 8/2/16

Operators Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
TIMOTHY Hidalgo	4/26/17	1700	1800	1HR	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-1700229	Ø
TIMOTHY Hidalgo	4/27/17	1000	1130	1.5HR	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-1700233	Ø
Brian Parsons	5/2/17	0800	1230	4:30	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-1700246	Ø
Brian Parsons	5/3/17	0930	13:30	4:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17002	Ø

RSS Review (print/sign/date): [signature] 5/16/2017

Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH **HEPA Aerosol Test Date:** 8/3/16

Operators Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
Brian Parsons	5/9/17	0800	0970	1:30	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00269	Ø
Brian Parsons	5/16/17	0730	1030	3:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00286	Ø
Brian Parsons	5/18/17	1200	1470	2:30	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00700	Ø
Brian Parsons	5/23/17	0900	1100	2:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00705	Ø

RSS Review (print/sign/date): [illegible]

Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH **HEPA Aerosol Test Date:** 8/3/16

Operators Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
Brian Preston	6/6/17	0800	1100	3:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00334	Ø
Brian Preston	6/26/17	0900	1500	6:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00370	Ø
Brian Preston	6/21/17	0800	1000	3:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00373	Ø
Brian Preston	7/5/17	0730	1030	3:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00406	Ø

RSS Review (print/sign/date): R. MEDORA 8/17/2017

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Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH **HEPA Aerosol Test Date:** 8/3/16

Operators Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
Brian Presons	7/18/17	0900	1100	2:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-1700443	Ø
Brian Presons	7/20/17	0730	1100	3:30	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-1700455	Ø
Brian Presons	7/25/17	0900	1100	2:00 [illegible] 7/25/17	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-1700461	Ø
Brian Presons	8/1/17	0800	1400	6:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-1700478	Ø

RSS Review (print/sign/date): R. MEDORA [signature] 8/17/2017

Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH **HEPA Aerosol Test Date:** 8/3/16

Operators Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
Brian Presons	8/8/17	09:15	11:15	3:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-1700492	Ø
Brian Presons	8/17/17	0800	0900	1:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-1700522	Ø
Brian Presons	8/29/17	0800	1100	3:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00555	Ø
Brian Presons	9/13/17	0900	11:00	2:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00-582	Ø

RSS Review (print/sign/date): R. Medora 9/14/2017

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Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH **HEPA Aerosol Test Date:** 8/3/16

Operators Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
Brian Presons	9/26/17	0830	1230	4:00	SOLID	9.38 E-10	Alpha: <20 Survey#: PC-17-00599	Ø
Brian Presons	9/27/17	0900	1230	3:30	SOLID	9.38 E-10	Alpha: <20 Survey#: PC-17-00609	Ø
Brian Presons	9/28/17	0730	0900	1:30	SOLID	9.38 E-10	Alpha: <20 Survey#: PC-17-00614	Ø
Brian Presons	10/9/17	0730	1130	4:00	SOLID	9.38 E-10	Alpha: <20 Survey#: PC-17-00646	Ø

RSS Review (print/sign/date): Wendy [illegible] 11/16/17

Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH **HEPA Aerosol Test Date:** 8/3/16

Operators Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
Brian Presons	10/18/17	0800	1230	4:30	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00677	Ø
Brian Presons	11/1/17	0900	1300	4:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00697	Ø
Brian Presons	11/8/17	0800	1000	2:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00717	Ø
Brian Presons	11/14/17	0800	1000	2:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00730	Ø

RSS Review (print/sign/date): Wendy Mocher 11/16/17

Operation Log for Portable Temporary Radioactive Air Emission Unit (PTRAEU)

6270 Building Instrument Triage Hood

PTRAEU Make and Model: Sentry Air Systems Model SS-340-DCH **HEPA Aerosol Test Date:** 8/3/16

Operators Name (Print)	Date Used	Start Time (hh:mm)	Stop Time (hh:mm)	Total Operating Time (hh:mm)	Source Type (solid, liquid, gas)	Estimated Emissions (Ci/yr)	Confirmatory Measurement (exhaust port swipe) (dpm)	Curies Released (convert dpm to Ci) (Ci)
Brian Parsons	12/5/17	0900	1100	2:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00775	Ø
Brian Parsons	12/12/17	0830	1100	2:30	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00794	Ø
Brian Parsons	12/19/17	0800	1100	3:00	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-17-00808	Ø
Brian Parsons	1/9/18	0800	1030	2:30	SOLID	9.38 E-10	Alpha: <20 Survey#: DC-18-00021	Ø

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