Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

NOV 16 2017

Ms. Susan B. Fulmer, P.G., Manager
Federal Remediation Section
Division of Site Assessment, Remediation and Revitalization
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Mr. Jon Richards
Acting Savannah River Site Remedial Project Manager
Superfund Division
U. S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303

Dear Ms. Fulmer and Mr. Richards:

SUBJECT: Savannah River Site's Responses to the Regulatory Comments on the Performance Evaluation Report of 2016 for the M-Area Inactive Process Sewer Lines (MIPSL) (081-M) Operable Unit (OU) (U), January through December 2016 (SRNS-RP-2017-00017, Revision 0, March 2017) CERCLIS Number: 19

In accordance with the terms of the Federal Facility Agreement, the U.S. Department of Energy (DOE) is submitting the subject comment responses for your review and approval. The U.S. Environmental Protection Agency's (EPA) comments on the Revision 0 document were received on August 25, 2017. The South Carolina Department of Health and Environmental Control's (SCDHEC) approval of the Revision 0 document was received on July 20, 2017. The performance evaluation report (PER) will not be revised; however, all comment responses will be incorporated in the next PER, as applicable. Please review these responses and provide your approval thirty (30) days from receipt. The time and effort that the SCDHEC and the EPA have given on the subject operable unit are greatly appreciated.

Questions from you or your staff may be directed to me at (803) 952-8365, or the DOE Federal Project Director, Ms. Karen Adams, at (803) 952-7871.

Sincerely,

Brian T. Hennessey
SRS Remedial Project Manager
Infrastructure and Area Completion Division

IACD-18-104

Enclosure:
SRS Responses to EPA Comments on the Performance Evaluation Report of 2016 for the M-Area Inactive Process Sewer Lines (MIPSL) (081-M) Operable Unit (OU) (U), January through December 2016 CERCLIS Number: 19, (SRNS-RP-2017-00017, Revision 0, March 2017)

cc w/o encl:
D. Scaturo, SCDHEC-Columbia
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M. D. Wilson, SCDHEC-Columbia
G. K. Taylor, SCDHEC-Columbia
T. R. Fuss, SCDHEC - Aiken Environmental Affairs Office
R. H. Pope, EPA-Atlanta

cc w/ encl:
D. Lloyd, EPA-Atlanta
M. McRae, TechLaw, Inc.

Savannah River Site Responses to EPA Comments on
Performance Evaluation Report of 2016 for the
M-Area Inactive Process Sewer Lines (MIPSL) (081-M) Operable Unit (OU) (U) –
January through December 2016
CERCLIS Number: 19
SRNS-RP-2017-00017, Revision 0, March 2017

Comments received August 25, 2017

EPA GENERAL COMMENT:
Based on the information presented in the 2016 MIPSL it appears the contaminant mass that exists below the Upland Unit is more significant than has been previously reported. For example, the text in Section 2.1 (System Overview) states the contamination is predominately within the fine-grained sediments (Upland Unit) in the zone below the sewer line to 35-feet below ground surface (bgs). However, the text in Section 1.2 (Nature and Extent of Contamination), Page 2 of 56 states the Upland Unit has limited contaminant mobility to a significant degree although volatile organic compounds (VOCs) have migrated downward, into the more permeable sediments below the Upland Unit. Furthermore, the text in Section 3.0 (Conclusions/Recommendations) on Page 10 of 56, states the vast majority of VOC production at MIPSL has been from MH-01, and approximately 94% of MH-01 production has been from the deeper extraction well screened in the Tobacco Road formation. As seen in Figure 3 Surface Well Configuration (Typical Cutaway View), Page 17 of 56 the SVE well is screened from 60 to 100 feet bgs and only a fraction of the total well screen length is located within the silty sand unit below the Upland Unit and above the clay unit. As such, it appears a majority of the mass removal is from below the Upland Unit and it is uncertain how this may impact the mass removal estimates and the overall remedial cleanup timeframes. Please revise the **next submittal** of the Performance Evaluation Report for the M-Area Inactive Process Sewer Lines (MIPSL) (081-M) Operable Unit (OU) (U), CERCLIS Number 19, (2017 MIPSL) to address this issue.

Response: Agree. The majority of the mass removal at MH-01 has occurred in the sediment below the Upland Unit. Based on a review of the soil vapor data collected from the CPT bore nearest MH-01 (i.e., MIPS-CP007) there was elevated PCE from 30 to 60 ft bgs and a significant indication of PCE at 88 ft bgs. The PCE observed from 30 to 60 ft bgs is below the upland unit in a sandy unit. The PCE hit at 88 ft corresponds to a low permeability unit. In reviewing the hydro-conceptual model (HCM) for the site, it appears that a revision is warranted to more accurately project the Upland Unit and the screened intervals of the well at MH-01. As a result, Section 2.1 will be revised in the 2017 PER to more accurately explain mass removal relative to the geology of the unit as well as future expectations for the remediation. No change to the 2016 PER is proposed.

Responsible Party: John Bradley, 803-952-2301, john02.bradley@srs.gov

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EPA SPECIFIC COMMENTS:

1) **Section 2.2.1, Samples and Analysis, Page 8 of 56**

The text in Section 2.2.1 presents the generalized equation for mass removal as follows:
(Equation 1)
M = C x Q x T
where:
M = cumulative mass removed (kg)
C = vapor concentration (kg/m3)
Q = extraction flow rate (m3/hr)
T = operational period (hr)

The text also indicates the flow rates, times and contaminant concentrations can be found in the ASVE data tables (Tables 5 and 6A through 6J). However, the information in Tables 5 and 6A through 6J do not provide enough information and/or are not in the correct units to reproduce the cumulative mass removal amounts for PCE and TCE based on the mass removal equation. In **future reporting efforts** (during the next reporting interval, 2017), please revise Section 2.2.1 and/or Tables 5 and 6A through 6J, to include the information specifically used to calculate mass removal amounts for PCE and TCE.

Response: Agree. Equation 1 was a generalized equation to indicate removal rates. As the reviewer noted, this equation does not translate the information presented and will be revised in future PERs. The revised equation will utilize ppmv for concentration and cfm for flow rate with appropriate conversion descriptions to aid calculations of mass removal amounts for PCE and TCE. No change to the 2016 PER is proposed.

Responsible Party: John Bradley, 803-952-2301, john02.bradley@srs.gov

2) Section 2.3, Soil Gas Performance Data, Page 9 of 56

Section 2.3 states, "F12-3 had a PCE concentration of 12.3 ppmv and a TCE concentration of 0.3 ppmv....A larger MicroBlower™ will be installed at Well F12-3 in CY2017 to see determine if a mechanical upgrade reduces the PCE concentration below the 10 ppmv guideline for continuing passive SVE;" however, Section 3.0, Conclusions and Recommendations, Page 11 of 56, states, "At the MicroBlower™ locations, the solar powered system sometimes has too little power to produce a measureable flow. Solar powered MicroBlower™ are efficient and appropriate devices for implementing passive SVE, but solar power and thus flow vary widely depending upon the amount of sunlight and the battery charge. This variability in flow rates brings into question the usefulness of flow data collected during sampling." It is unclear, if a mechanical upgrade to a larger MicroBlower ™, assuming it will be powered also by solar, will be useful both decreasing

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PCE and TCE concentrations at well F12-3 and also produce more measureable flow. Revise Section 2.3 to provide clarification on whether an upgrade to a larger MicroBlower™ will successfully reduce PCE concentrations below the 10ppmv guideline and produce a more measureable and stable flow. EPA appreciates the recommendation to address noted concerns. However, EPA requires an answer to this question before any action is taken with the understanding that EPA would like to ensure this proposed action will effectively reduce contaminant levels.

Response: Clarification. SRS has installed a larger MicroBlower ™ at well F12-3, which is anticipated to improve the vacuum, flow rate, and mass removal. The data sheet for Ametek Model 119378 is attached. No change to the 2016 PER is proposed.

Responsible Party: John Bradley, 803-952-2301, john02.bradley@srs.gov

3) **Section 3.0. Conclusions/Recommendations, Page 11 of 56**
Section 3.0 states, "SRS suggests monitoring of the ASVE unit continue basically unchanged, but that less frequent vapor sampling and a different approach to flow rate evaluation is evaluated for the MicroBlower™ systems." However, neither a new sampling frequency nor different approach to flow rate evaluation is provided. Currently, the vapor sampling frequency for the MicroBlower™ systems is once per year (last sampling event was in October 2016). Revise Section 3.0 to include a proposed sampling schedule and a different approach to flow rate evaluation for the MicroBlower™ systems. EPA has concerns about any sampling frequency that is less than once/year but cannot effectively evaluate any suggested change without a proposal. Please provide the requested information.

Response: Agree. The sampling frequency at the MicroBlower™ systems will remain at once/year. Based upon an analysis of MIPSL flow data, SRS will include a rationale to utilize long-term average flow rates for estimating mass removal in the 2017 PER to be submitted in April 2018. No change to the 2016 PER is proposed.

Responsible Party: John Bradley, 803-952-2301, john02.bradley@srs.gov

4) **Table 7I, 2016 Total Mass Removed from Manhole Locations – Monthly, Page 54 of 56**
The hours of operation for February 2016 at stack location MIPSL-SVEU-Stack-01 is stated as 16 hours; however, Table 6I, 2016 Total Mass Removed Monthly, Page 49 of 56, lists the hours of operation for February 2016 as 20 hours. Revise Table 6I or Table 7I to accurately reflect the correct amount of hours of operation for February 2016.

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Response: Agree. Table 6I will be updated to reflect that the actual hours of operation in February 2016 were 16 hours. No change to the 2016 PER is proposed.

Responsible Party: John Bradley, 803-952-2301, john02.bradley@srs.gov

5) **Table 7J, 2008 Through 2016 Total Cumulative Mass Removed from Manhole Locations – Annual, Page 55 of 56**

The cumulative amounts of PCE removed in 2011 at manhole location MH-01 from stack MIPSL-SVEU-Stack 01 and manhole location MH-12 from stack MIPSL-SVEU-Stack-12 are 246 pounds (lbs.) and 10 lbs., respectively and is not consistent with the data provided in Table 6D, 2011 Total Mass Removed – Monthly, Page 46 of 56. Based on Table 6D, the cumulative amount of PCE removed from these locations was 236 lbs. and 12 lbs., respectively. Revise tables as appropriate to reflect the correct amount of cumulative PCE removed from manhole locations MH-01 and MH-12.

Response: Agree. Table 7J will be updated to reflect that the actual PCE mass removed in 2011 was 236 pounds at MH-01 and 12 pounds at MH-12. No change to the 2016 PER is proposed.

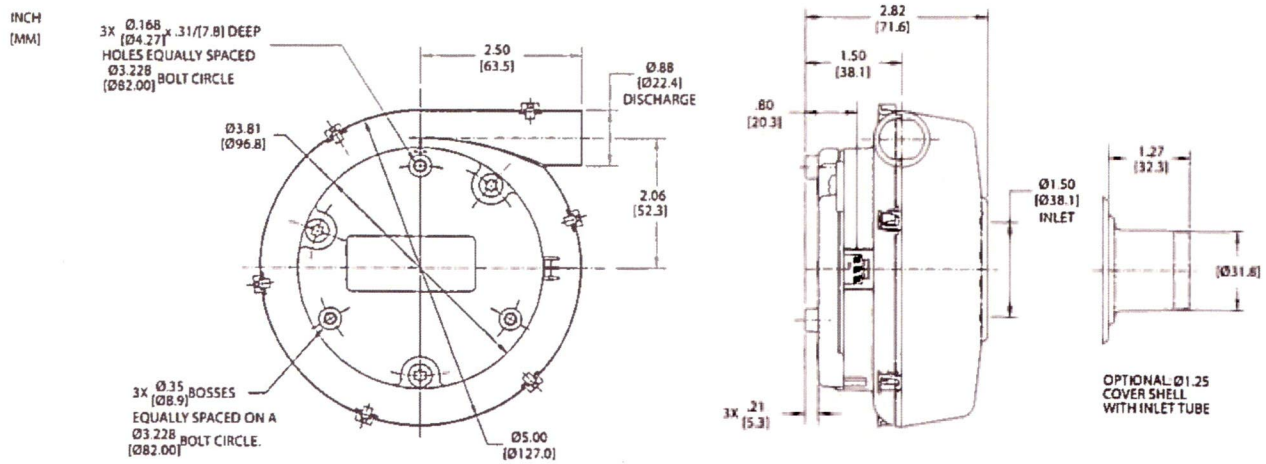
Responsible Party: John Bradley, 803-952-2301, john02.bradley@srs.gov

Low Voltage Brushless DC Blowers

5.0" (127mm) BLDC Low-Voltage Blower

MINIjammer BRUSHLESS DC BLOWERS

12/24 VDC, High Flow System



Specification	Units	Part/ Model Number			
		150166	119375	119378	119379
Voltage	VDC	12	24	24	24
Stages	-	1	1	1	1
Max. Sealed Pressure	In. H2O	20.1	24.9	24.9	24.9
	mbar	50.1	62	62	62
Max Open Flow Rate	CFM	37.7	44.6	44.6	44.6
	m3/hr	64.1	75.8	75.8	75.8
Speed Control	-	0-4V Spd. Cmd.	External	Potent. Adjust.	0-4V Spd. Cmd.

Notes:

- **Temperature**: Working Air: 0°C to 45°C , Ambient Air: 0°C to 45°C, Storage: -40°C to 85°C.
- Customized performance available upon request. Please contact AMETEK Technical & Industrial Products' Marketing and Sales Department.
- When used as a vacuum, the blower performance might be less then shown herein, depending on the operating point.
- Models 119380 through 119385 can be configured and modified for two (2) plane balance option.
- **Optional** - cover shell with air inlet tube.
- **Weight** = 1.2 lb / .54 Kg

Potentiometer Adjustment (Potent. Adjust.) - The specified supply voltage is applied to power the blower and the speed is set by adjusting a potentiometer on the side of the blower.

0-4V Speed Command (0-4V Spd. Cmd.)- Blower speed is proportional to a 0-4V command signal. Maximum speed is reached at 4V or less depending on the blower's operating point. The speed command pin may be connected to the blower's 12V or 24V pin to ensure full speed.

External Control - Designed to operate with an external controller such as AMETEK's model 48133.

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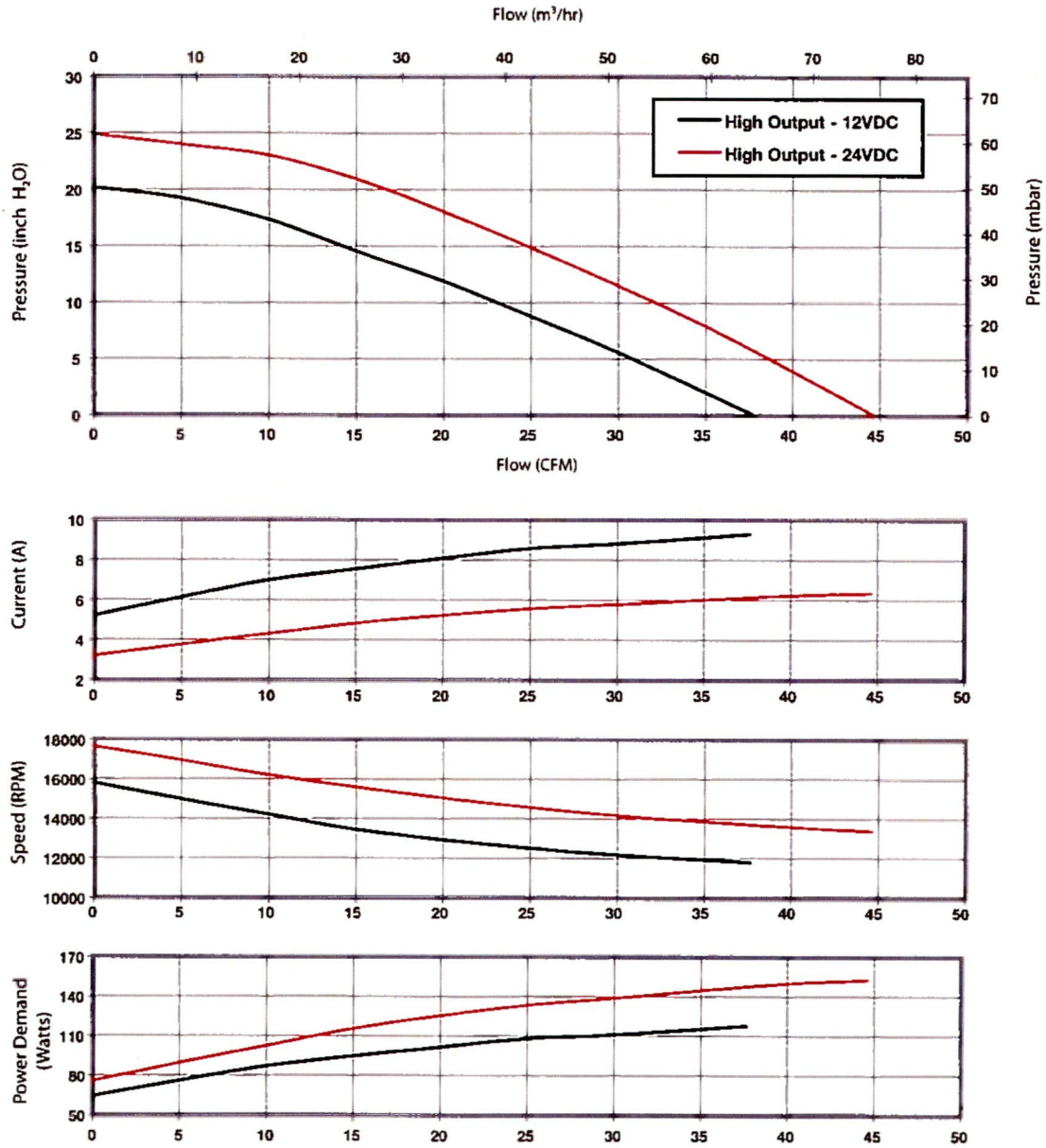
AMETEK PRECISION MOTION CONTROL

Low Voltage Brushless DC Blowers

5.0" (127mm) BLDC Low-Voltage Blower

12/24 VDC, High Flow System

Typical Performance



Data presented represents blower performance at STANDARD AIR DENSITY, .075 lb/ft³ (29.92" Hg, Sea Level, 68° F)
Vacuum performance available upon request.

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