



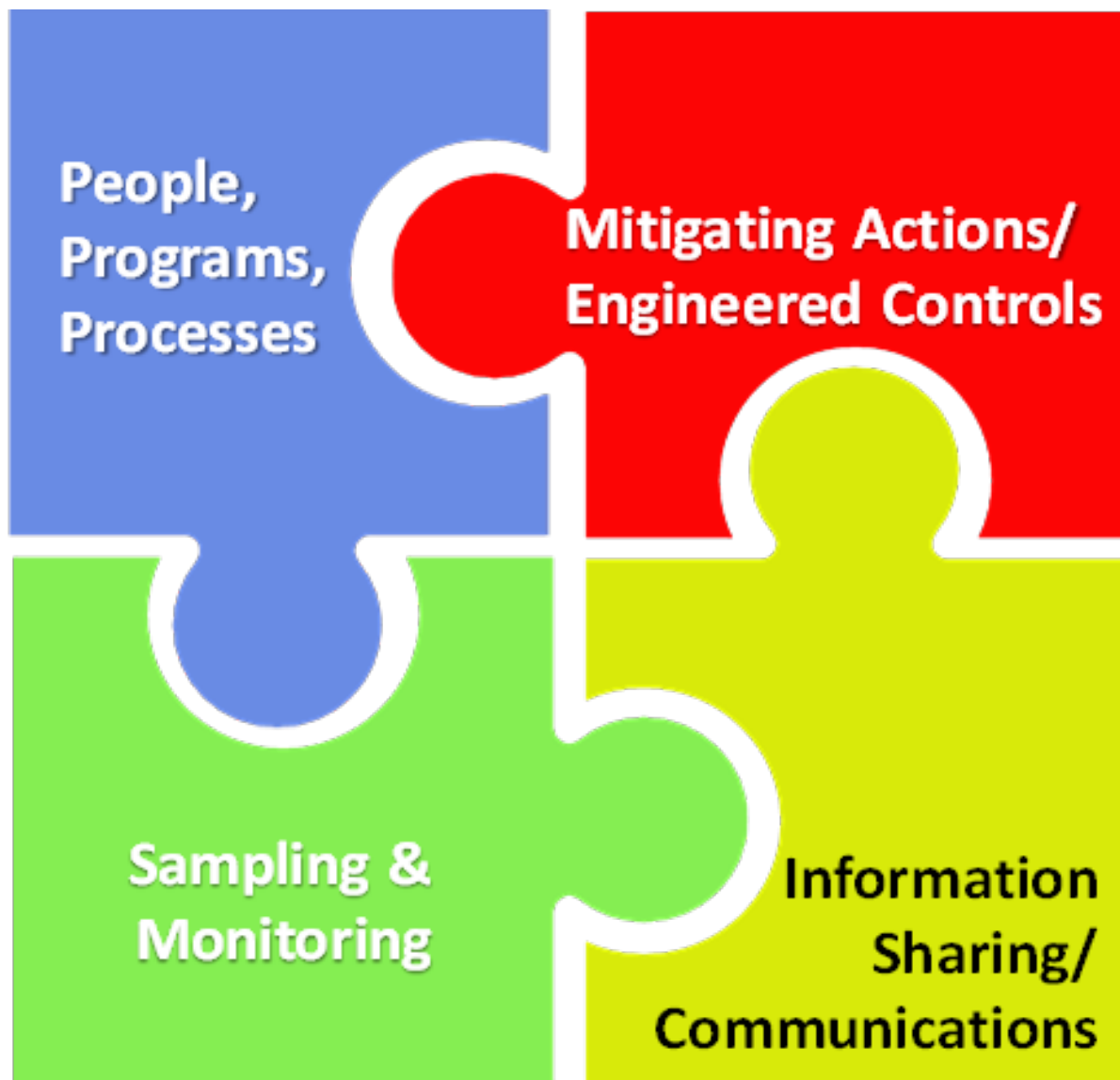
washington **river**
protection solutions



WRPS Integrated Chemical Vapor Hazard Control
Program

Monthly Report – February 2019

Published: March 21, 2019



At the end of Fiscal Year (FY) 2016, Washington River Protection Solutions LLC (WRPS) was completing Phase I of the *Implementation Plan for Hanford Tank Vapor Assessment Report Recommendations* (WRPS-1500142), developed to address Tank Vapors Assessment Team (TVAT) recommendations. The implementation plan actions were originally planned to occur in two phases. Phase I was completed at the end of fiscal year FY 2016. During the latter part of Phase I, multiple assessments were conducted on the progress of the implementation plan and/or the overall Industrial Hygiene (IH) program, including those conducted by the National Institute for Occupational Safety and Health (NIOSH), Office of Inspector General (OIG), Center for Toxicology and Environmental Health, LLC (CTEH), and DOE-Office Environment, Safety, and Health Assessments (EA-32). Assessment results, feedback from stakeholders, and the Phase II actions were incorporated into a comprehensive vapor management strategy, focusing on the vision that all workers on the Hanford Central Plateau continue to be protected by the comprehensive approach to vapors management, and that workers **are safe and feel safe**. The *Comprehensive Vapor Action Plan* (CVAP), as the plan became known, presented the new implementation strategy, and replaced the *Implementation Plan for Hanford Tank Vapor Assessment Report Recommendations*.

The CVAP was organized around eight Key Performance Parameters (KPPs):

- ✚ Engagement and effectiveness measurement
- ✚ Industrial hygiene technical basis
- ✚ Industrial hygiene program parity
- ✚ Engineered controls
- ✚ Unrestricted work boundaries
- ✚ Single shell tank stewardship program
- ✚ Chemical vapor respiratory protection hierarchy of controls, and
- ✚ Support medical program enhancements

The Plan was implemented during fiscal years 2017 to 2018.

The Chemical Protection Program Office (CPPO) was established in October 2016. The mission of the CPPO is to provide independent monitoring of vapor action status, and facilitate the flow of clear and transparent information throughout WRPS and to stakeholders to promote understanding of Hanford tank vapors by:

- Providing independent measures of progress to ensure actions achieved the required intent
- Both leading and supporting vapors engagement and communication efforts

From FY 2017 to FY 2018, CPPO delivered KPP 1 of the CVAP: “[e]stablish a comprehensive vapor communication plan, engagement processes, and effectiveness measures,” in part by publishing the *CPPO Weekly Report*. The weekly updated all the KPPs as described in the CVAP. WRPS’s ongoing actions, aimed at managing chemical vapor hazards from the Hanford

Tank Farms, are now focused around the outcomes of the CVAP. Instead of describing the outcomes in terms of KPPs, WRPS is now using the following descriptors:

-  **People, Programs and Processes**
-  **Mitigating actions/Engineering controls**
-  **Information Sharing/Communication**
-  **Sampling and Monitoring**

The *CPPPO Weekly Report* is now the *WRPS Integrated Chemical Vapor Hazard Control Program Monthly Report*.

1. People, Programs, Processes

“People, Programs, and Processes describes actions to ensure employees are qualified and trained, processes are in place to perform work safely, and programs are developed and updated.”

Exposure Assessments

February 2019 Update:

No exposure assessments were published in February; however, work continued on the *SY Exposure Assessment*, initiated in January.

IH Training





February 2019 Update:

IH reported that 78 percent of IHTs had completed a *ToxiRAE Pro Laboratory Preparation & Calibration Training* by the end of February. Forty-two percent (42%) of IHTs had completed *ToxiRAE Pro Field Use Training* for all On-the-Job Trainer /On-the-Job-Evaluator (OJT/OJE) Qualified IHTs.

Health Process Plan (HPP) and Charter 71

February 2019 Update:


The following four HPP reports (also known as Charter 71 reports) were further developed by Pacific Northwest National Laboratory (PNNL) and WRPS in February:

-  ***Hanford Tank Farm Occupational Exposure and Risk Assessment Plan*** (PNNL-25791, Revision 1): The report is undergoing WRPS legal review. PNNL will address comments once received.
-  ***Proposed Risk-Based Approach for Nitrosamine Chemicals of Potential Concern*** (PNNL-26787): Also in WRPS legal review is PNNL-26787.
-  ***Chemical Mixtures and Modeling Recommendations*** (PNNL-27089): PNNL scientists continue developing Health Code Numbers for the chemicals of potential concern (COPC) to be used in calculating health risks from tank vapor chemical mixtures.
-  ***Short-Duration Vapor Concentrations in Worker Breathing Zones in and near the Hanford Tank Farms: A Summary of Current Knowledge (RPP-RPT-61280)***: The project team received all comments from WRPS and determined additional funding is needed to disposition external reviewer comments.

Chemical Worker Training

February 2019 Update:

The CTEH toxicologists moderated Question & Answer (Q&A) sessions at the conclusion of the only *Chemical Worker Training* in February. This gave the course trainees an opportunity to get answers to their questions regarding the toxicology and potential health impacts from tank vapor chemicals.




-  **February 27, 2019:** Class trainees expressed concern about uncertainties in compound identification in tank farm air, dermal exposures to tank vapors, and the disposition of individual cases of workers believed to be permanently injured by tank farm work. One trainee expressed concern that workers would never likely leave SCBA use as long as anyone in the workforce was worried about hazardous exposures. Dr. Lumpkin discussed the technical basis by which direct-read instrumentation (DRI) technology filled the perceived “gap” in knowledge of vapor constituents in the air. He also discussed findings from earlier PNNL research how injuries from dermal absorption of tank vapors was technically implausible. He also discussed the health implications for skin contact with condensed tank vapor liquids and mentioned the upcoming CPPO notebook on that very subject.

The Data Access and Visualization Tool (DAV)

No Update

January 2019 Update:

PNNL and IH kicked off the Internal DAV (IDAV) project in November, the purpose of which is to add efficiencies to the process used to analyze the exposure assessment data. IDAV uses Tableau Server and scripting languages to augment critical IH and engineering data analysis functions. The fully automated tool sets are expected to assist qualified IH staff in updating exposure assessments. In January, a demonstration of the current state of the Tableau tools used for AX and SY exposure assessments was given to ORP during the HPP meeting. Additionally, in January:

-  The Chemical Mixture Methodology (CMM) was incorporated into Tableau, and prototype visualizations were created for the AX Farm data set developed for the exposure assessment. Initial discussions with PNNL SMEs and WRPS IH staff were held to explore potential use cases.
-  IH and PNNL began developing the design specifications for the IDAV Exposure Assessment module in January.
-  Initial data conditioning for the SY Farm Exposure Assessment was conducted using Tableau. The results were shared with WRPS IH for verification.

Integrated Sampling & Monitoring Strategy

February 2019 Update:

Progress continues on the draft sampling and monitoring strategy for the IH Program.

ToxiRAE Implementation

February 2019 Update:

“Beginning February 26, 2019, the ToxiRAE Pro personal ammonia sensors [became] available for use on all shifts (days, back shift, overtime) for Risk Classification One (RC1) and RC2 work being performed in all actively ventilated farms. Industrial Hygiene technicians (IHTs) [issue] the ToxiRAE Pro monitors as a primary means of monitoring ammonia concentrations to establish any change of conditions in the farm,” announced Mr. Rob Cantwell in an all-employee message.

Root Cause Analysis (RCA)

February 2019 Update:


Competing priorities and the snowy February weather interfered with the RCA Team’s progress. The Team’s timeline has been updated. The final report is scheduled for completion in the 3rd Quarter of FY 2019.

2. Mitigating Actions/Engineered Controls

AW Stack Extension

February 2019 Update:

The scope of this effort is to extend the stack's current elevation from 27 feet to 60 feet. As a result of issues identified during the permitting review process, the schedule for completing the AW Stack extension was extended to FY 2019. The goals for FY 2019 are to complete the field installation and turn over the stack to Operations. Summarized below are the February accomplishments:

-  **Permitting:** The Alternative Respiratory Protection Assessment (ARPA) document was completed and is in review. WRPS is collaborating with the Department of Ecology on an approved permit.

A Farm Exhausters

February 2019 Update:

Below is a summary of the February accomplishments:





-  **Exhausters:** Installed the access stairs and sun shields.
-  **Exhauster Valve Manifold:** Installed two of the six Exhauster Valve Manifold subassemblies (Figure 1).
-  **Ductwork:** Installed ducting between the exhausters and the moisture separators.
-  **Procurement/Fabrication:** Four grout boxes were received in February.



Figure 1.
A Farm
Exhauster
Valve
Manifold
Construction
– 2 of 6
Subassembly
Platforms
Installed.

NUCON® Thermal Oxidation Vapor Abatement Unit (VAU)

February 2019 Update:

The NUCON® Thermal Oxidation VAU is a collaborative effort between WRPS, PNNL, TerraGraphics, and NUCON®. Below is a summary the February accomplishments:

TerraGraphics:

- Finalized the design approach for eliminating condensate at the NUCON® VAU Skid.
- Continued developing the *Thermal Oxidation System (TOS) Infrastructure 60% Design* package.

NUCON®:

- Completed the *NUCON® VAU Skid 30% Design Package* on February 19, 2019.
- Collaborated with TerraGraphics on the interface design between the TOS infrastructure and the NUCON® VAU Skid.

WRPS:

- Prepared a draft white paper on the rationale for sizing the TOS for the BY-108 field demonstration.
- Continued reviewing the *NUCON® VAU Skid 30% Design Package*.

PNNL:


- The *NUCON® TOS Performance on Hanford Tank Farm Chemicals of Potential Concern*, Rev. 1, was cleared for public release.
- Continued the *Electrical Isolation Engineering Facility Modification Package*, which was modified initially for the instrumentation trailer.

AP Farm Ultra-Violet Fourier Transformer Infrared Spectrometer (UV-FTIR)

No Update

January 2019 Update:

The goal for FY 2019 is to turn the AP Farm UV-FTIR over to Operations. Below is a summary of what was accomplished in January:

 **Ammonia-Only Turn over:** A number of parallel activities are being prepared in support of the ammonia-only turn over and are discussed below:

- Continued reviewing the ammonia-only results and continued interim reliability Operational Acceptance Test (OAT) testing.

- Continued the no-gas OAT.
- Instrumentation and Control Engineering continued developing the IDMS interface, and continued reviewing the UV-FTIR software installation plan.
- Continued preparing the maintenance and operating procedures.
- Continued compiling evidence to support the readiness of the UV-FTIR to Operations.

✚ **Multi-Gas Only Turn over:** A number of parallel activities are being prepared in support of the multi-gas only turn over, including:

- Continued preparing the OAT procedure to support testing.
- Continued procuring permeation tubes for calibration and testing.
- Continued compiling evidence to support the UV-FTIR-to-Operations readiness.

🏠 **Continuous Emissions Monitor Sampler**

No Update

January 2019 Update:

The Continuous Emissions Monitor Sampler, previously called the Autosampler, is scheduled for modification in FY 2019.

🏠 **Stack Monitor Turnover/VMDS Upgrade**

No Update

1st Quarter Summary:

In FY 2018, VMDS stack monitors were installed on the AW, AX (2), AN, and 702-AZ exhausters. The goal for FY 2019 is to turn over the monitors to Operations. Summarized below are the January accomplishments:

- ✚ **Set-point Calculation:** The sub-contract for the set-point calculation was awarded to ARES. ARES started preparing the draft calculations for all the farms in November.
- ✚ **Test Requirements:** Test requirements and OATs for all the farms were started in November.
- ✚ **AX Farm Stack Monitors:** The test plan supporting the interim OAT was drafted; the software development test matrix was started too.

In addition to the turn over activities, the design work for the installation of the ultra violet-differential optical absorption spectrometer (UV-DOAS) stack monitor in A Farm continued.

Public Address System (PA)



February 2019 Update:

The focus in FY 2019, to install all the reader boards associated with the PA system, has been realized. All 16 reader boards have been installed and functionally tested. The *Integrated Test Plan* was submitted on January 22, 2019.

SST Farm Automation

February 2019 Update:

The purpose of the single-shell tank (SST) Stewardship Program is to identify and evaluate the procedures required for entry into the SSTs, and to determine whether those requirements can be eliminated or reduced. The goals for FY 2019 are to install the remote monitoring equipment at both TY and TX Farms with turn over to Operations. The following was accomplished in February:

-  **SST Remote Monitoring Equipment:** Veolia Nuclear Solutions (VNS) was sub-contracted to perform the work early in the quarter. VNS integrated the T-Complex construction work package in February.
-  **T-Complex Field Construction:** RFP proposals from construction subcontractors were received on February 27, and technical evaluations are underway.

FFAPR and PAPR

February 2019 Update:

Full-Face Air-Purifying Respirators (FFAPR) were rolled out in AY, AZ, and AX Farms on February 21, 2019. The IH Newsletter reported that, “[i]t was a smooth transition” and “work was performed efficiently.”

3. Information Sharing/Communication

🏠 Chemical Vapors Solution Team (CVST) Meetings

February 2019 Update:

The February 13, 2019, CVST Meeting was cancelled due to adverse winter weather.

🏠 CVST Sub-team Meetings

February 2019 Update:

🏠 No CVST Sub-team meetings were held in February.

🏠 HanfordVapors.com Metric

February 2019 Update:

As depicted in **Figure 2**, the Hanford Vapors website logged about 1460 in February 2019, a drop of 29 percent from the previous month. Total access to the site has dropped this FY from the previous year, however, since October it continues to experience an average of 65 hits per day. C&PR reported 4 new items were posted to the website in February (**Table 1**).



Figure 2. February 2019 - Hanford Vapors Website – Total Hits Per Month and Average Hits Per Day



Table 1. HanfordVapors.com Website Posts – February 2019

PTR-MS Mobile Laboratory System Fact Sheet
PER AOP-015 Monthly Report January 2019
EIR-2019-003 AOP-015
PNNL-27816, NUCON® Vapor Abatement Unit Performance on Hanford Tank Farm Chemicals of Potential Concern

CPPO Notebook Metric

February 2019 Update:

The CPPO Notebook is distributed on a weekly basis to aid managers in providing vapor-related information to staff on current topics of interest. With the multiple facility closures resulting from the winter weather, and the President's Day holiday, only two editions were released this month:

-  An update on the stack extension at AW Farm, and
-  An overview of the recent CTEH reassessment report.

The notebooks are now provided as part of the weekly Safety Startup. However, CPPO continues to provide the information directly to managers to share with the workforce. Use of the notebook via this distribution route continues to be monitored through an email tally of 'voting' replies received from the managers who are sent a copy of the notebook via email each week. Since the notebook may be used weeks after distribution, the data regarding the utilization of individual editions may change over time (and is reflected in updates to monthly reporting). The data for February, to date, show that an average of 12 managers reported making use of notebook each week. Utilization of the *CPPO Notebooks* by subject and transmission date is shown in **Figure 3**. Since the beginning of FY 2019, the data show WRPS managers reported utilizing the notebooks to present vapors-related information to the workforce 184 times.

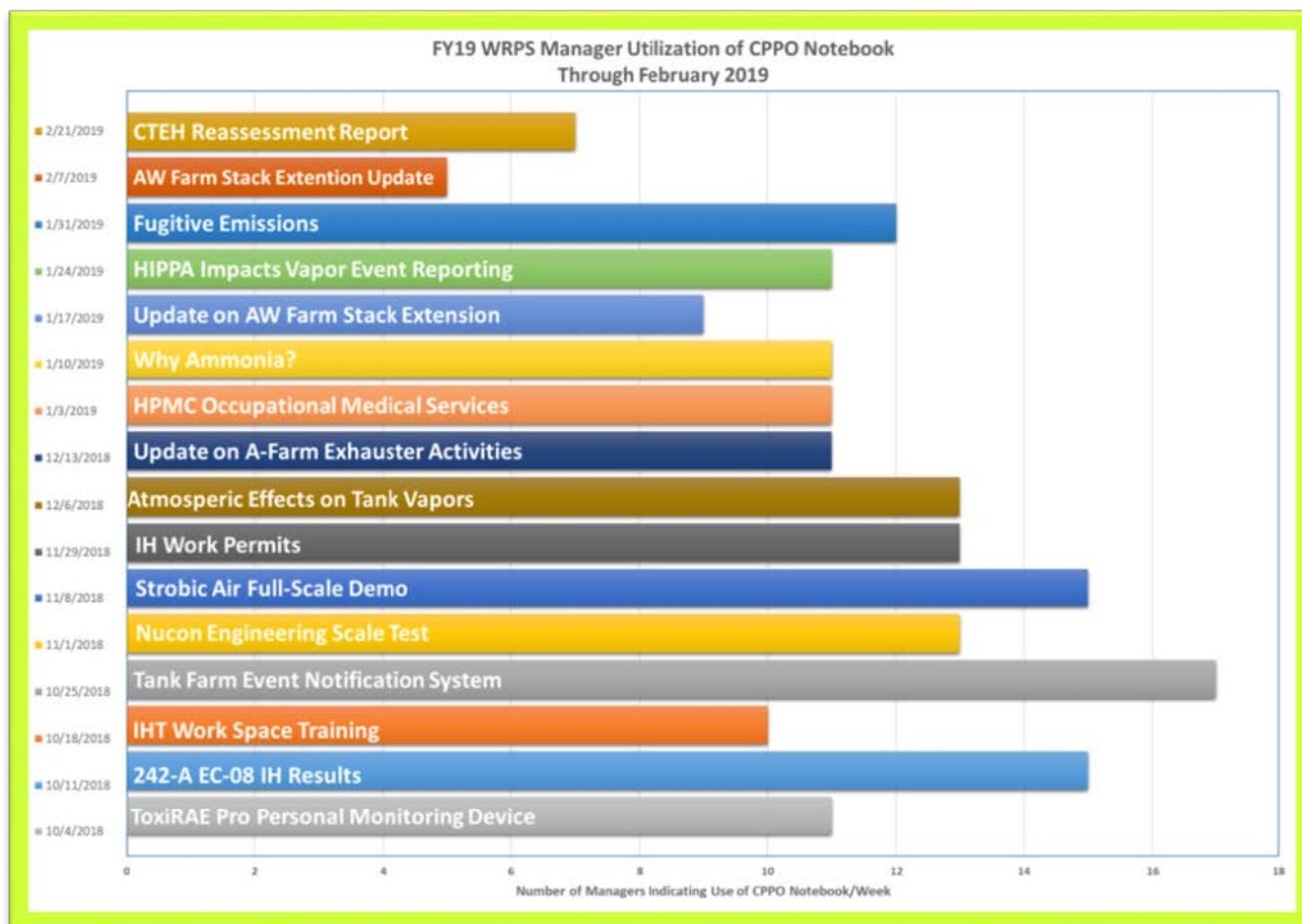


Figure 3. FY 2019 CPPO Notebook Use through February 2019

The notebooks are also posted to the intranet, available to all WRPS staff to access at will. **Figure 4** shows February website traffic statistics for visits to the CPPO Multimedia Library since the beginning of the fiscal year. This data suggests a larger reach than what is reported by the management distribution list. The February data is significantly lower than previous months – likely due to fewer editions distributed, and the facility closures experienced this month.

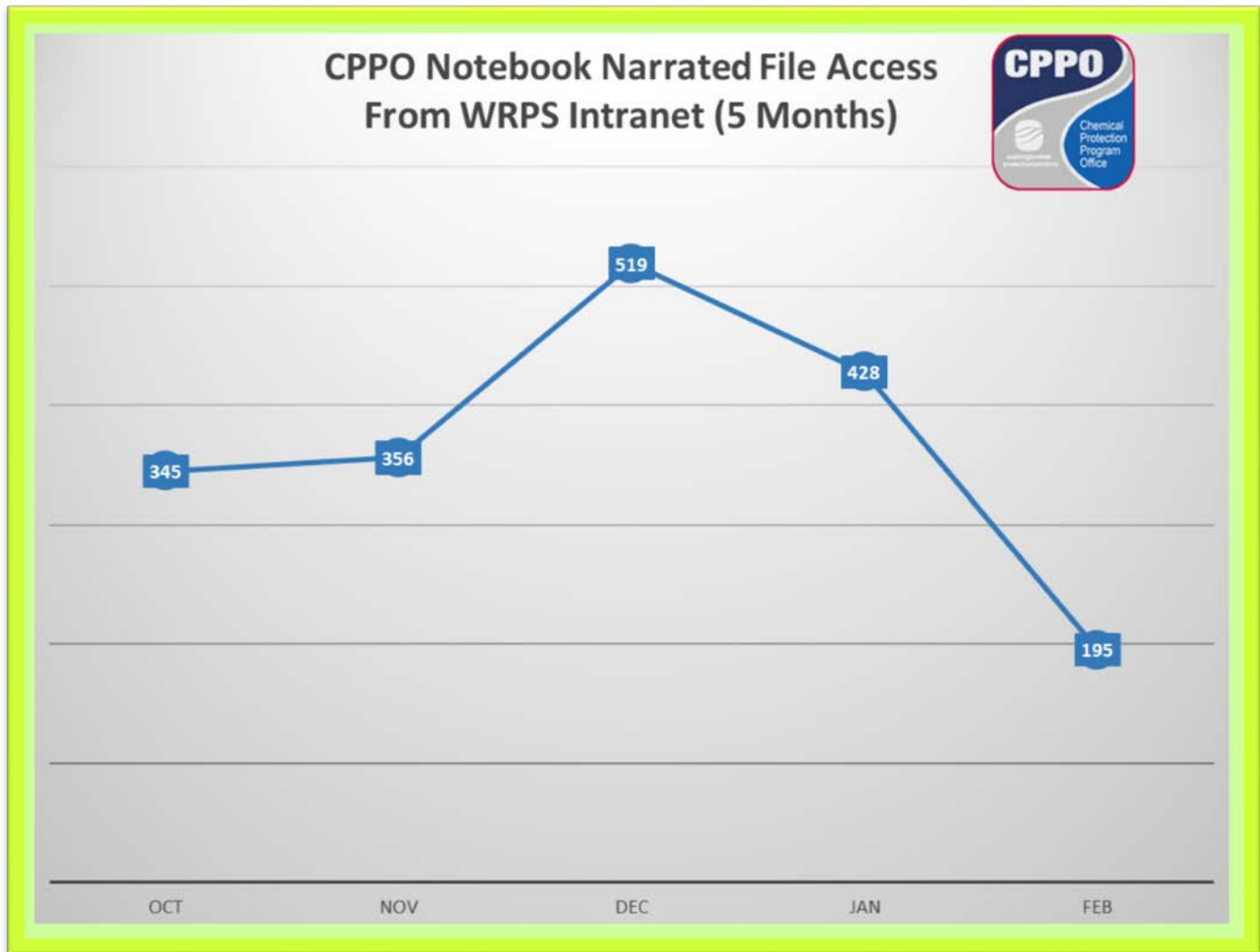


Figure 4. Narrated Files Accessed from the WRPS Intranet – FY 2019

CPPO Requests and Production Metrics

February 2019 Update:

The CPPO provides monitoring results, report summaries, presentations, and a monthly report on WRPS vapors activities to the workforce. The *Solutions* newsletter, the HanfordVapors.com website, the internal vapors website, and direct emails are the primary distribution paths for CPPO products. The vapor-related materials produced by the CPPO in February and the three month trend are shown in **Table 2**. In February, the CPPO produced and provided one monthly report, two *CPPO Notebooks*, and one worker engagement activity.

Table 2. CPPO Vapors Information Products FY 2019

CPPO Vapors Information and Engagement Activities FY19	December	January	February	FY-to-Date Total
Presentations (includes CPPO Notebook and CVST)	2	5	2	17
CPPO Reports and Monthly/Quarterly/Annual Report	1	1	1	5
Articles, Summaries, and Message Maps	0	1	0	7
Surveys, Focus Groups, and Recommended Actions	0	1	0	3
Website Requests/Site Updates	8	10	4	108
Videos	0	1	0	1
Field Visits	7	7	1	22
Chem. Worker Training Support	1	3	0	10
Monthly Totals	19	29	8	173

Table 3. WRPS Vapors Information Distribution Avenue – FY 2019

WRPS Vapors Information Distribution Avenue	December	January	February	FY-to-Date Total
All Employee Email/Meetings & ESHQ Comm.	4	9	6	28
CPPO Notebook*	24	54	12	171
CPPO Vapors Report	1	1	1	7
Fact Sheet & Information	0	0	0	0
Meeting - CVST *	0	1	0	3
Meeting - CVST Sub-team meeting *	2	1	0	4
Meeting - Hanford Advisory Board Briefing *	1	0	1	2
Meeting/Briefing*	6	8	0	19
Meeting -Morning/Pre-Shift Brief*	343	414	275	1814
Presentation*	0	0	0	0
Safety Start	1	4	2	11
SOEN	3	2	6	16
Solution Article	3	4	2	14
Survey and Focus Group	0	0	0	0
Tours*	0	0	0	0
Vapors Weekly Update or Website Post	8	10	4	109
Video	0	1	0	1
Monthly Totals	396	509	309	2199
* Face-to-face communication				

* signifies face-to-face communications

The number of documented WRPS vapors-related communications provided to the workforce in FY 2019 is shown in **Table 3**. The data for February is lower than the prior month. The adverse February weather resulted in multiple work closure and delays.

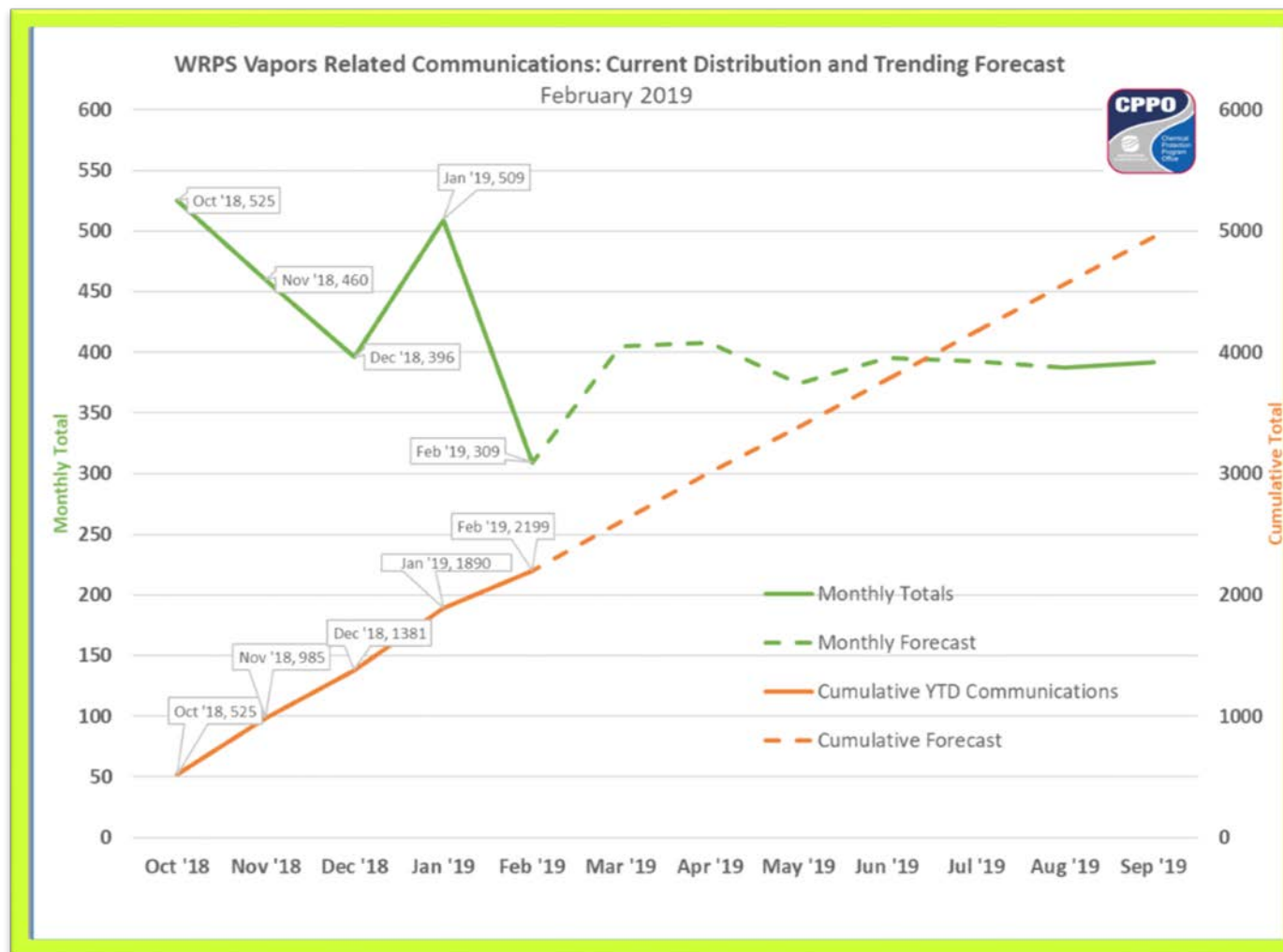


Figure 5 depicts the current distribution and trending forecast for FY 2019 WRPS vapors-related communications. At the current rate of distribution, WRPS is on track to deliver almost 5,000 vapors-related communications to the workforce by the end of FY 2019.

Figure 5. WRPS Vapor Related Communications Distribution/Trending Forecast Avenue – FY 2019

WRPS Vapors Communications

February 2019 Update:

February 4, 2019, 10:01 a.m. Shift Office Event Notification:

Subject: “Entered AOP-015 for odors between AY-2 and AY-1 change trailers exterior of AY Farm. Stay Clear of the area. CSM”

February 4, 2019, 3:09 p.m. Shift Office Event Notification:

Subject: “Initiated EIR-2019-006 [for] odors between AY-1 & AY-2 change trailers AOP-015. POC Thea Hall.”

February 5, 2019, 12:41 p.m. Shift Office Event Notification:

Subject: “Sample analysis for the TF-AOP-015 event has been completed and the results are below action levels. Exiting AOP-015. CSM”

February 5, 2019, Solutions, Issue 469:

Subject: *Solutions* reported that the CPPO published a *CPPO Notebook* titled “How the Health Insurance Portability and Accountability Act (HIPPA) impacts Vapor Event Reporting.”

February 6, 2019, Industrial Hygiene Communication:

Subject: “APR Restart with MSA Face Pieces and Cartridges – AN Farm.”

February 7, 2019, Industrial Hygiene Communication:

Subject: “Ensuring Proper Operation of [self-contained breathing apparatus] SCBA Equipment in Lower Temperatures.”

February 20, 2019, Industrial Hygiene Communication:

Subject: Rob Cantwell, Manager ESH&Q, announced, “Tomorrow, February 21, MSA FFAPRs will be implemented for RC1 and RC2 activities in AX, AY, and AZ Farms.”

February 21, 2019, All-employee Email: a message from Rob Cantwell, Manager ESH&Q:

Subject: “Full implementation of ToxiRAE Pro Personal Ammonia Sensor.”

February 21, 2019, 4:21 p.m. Shift Office Event Notification:

Subject: “Issued Standing Order OP-18-007 REV 3, to expand ToxiRAE pilot program to AX, AY, AZ farms on weekends and backshifts. CSM”

February 21, 2019, All-employee Email: a message from Rob Cantwell, Manager ESH&Q:

Subject: “Full-Face Air-Purifying Respirators (FFAPR) update”

February 25, 2019, Solutions, Issue 470:

Subject: Solutions reported that the CPPO published a CPPO Notebook titled “Fugitive Emissions at Hanford Tank Farm” and another titled CTEH’s 2018 Reassessment Report” in February.


February 26, 2019, 3:55 p.m. Shift Office Event Notification:

Subject: “Issued Standing Order SO-OPS-18-007, Rev.4, ToxiRAE Use and Alarm Response, to expand ToxiRAE use to all actively ventilated farms on all shifts. CSM”

Engagement/Site Visits

February 2019 Update:

CPPO and CTEH have participated in 15 site visits with different WRPS teams since early FY 2018, educating the workforce about vapors-related communications and engagement efforts. This particular workforce engagement activity is an FY 2019 CPPO priority, and is reported on in the *Monthly Report*. CPPO and CTEH engaged the following groups in February:

-  Retrieval & Closure (R&C)/Projects Instrument Technicians & Electricians: February 6, 2019

AOP-15 Events

February 2019:

February 4, 2019, 10:01 a.m. Shift Office Event Notification:

Subject: “Entered AOP-015 for odors between AY-2 and AY-1 change trailers exterior of AY Farm. Stay Clear of the area. CSM”

February 4, 2019, 3:09 p.m. Shift Office Event Notification:

Subject: “Initiated EIR-2019-006 [for] odors between AY-1 & AY-2 change trailers AOP-015. POC Thea Hall.”





February 5, 2019, 12:41 p.m. Shift Office Event Notification:

Subject: “Sample analysis for the TF-AOP-015 event has been completed and the results are below action levels. Exiting AOP-015. CSM”




External Assessments Recommendation Status

February FY 2019:

The recommendations status columns in **Table 4** below are defined as follows:

-  **Complete** - The scope and deliverable(s) (i.e. final report or documentation) addressing the recommendation is complete and closed. CPPO validated the deliverable(s) as complete.
-  **Field Work Complete** - The scope addressing the recommendation is complete, but the final deliverable(s) is not complete (i.e. final report or documentation).
-  **In Progress** - The scope addressing the recommendation is in progress.
-  **Pending Validation** - Status of the scope addressing the recommendation and associated deliverable(s) is awaiting initial CPPO review.

CPPO validated that ninety-six (96) percent of the recommendations have been addressed by actions and/or deliverables that are either **Complete** or **Field Work Complete**. Of the 371 total recommendations:

-  **Eighty-four (84) percent** have been verified Complete and are considered closed.
-  **Twelve (12) percent** are verified as Field Work Complete and are awaiting final deliverables (i.e. documentation) to close.
-  **Four (4) percent** have ongoing actions and are In Progress.

The majority of the remaining recommendations that are **In Progress** are scheduled to be completed in FY 2019.

Table 4. External Assessments Recommendations Status Table






Report	As of February 28, 2019				
	Total	Validated Complete	Field Work Complete	In Progress	Pending
TVAT	117	100	10	7	0
OIG	3	3	0	0	0
NIOSH	54	43	9	2	0
EA-32	31	26	3	2	0
CTEH	24	23	1	0	0
VMEP I, II	67	60	6	1	0
Other	75	57	16	2	0
Total	371	312	45	14	0

External Assessments Recommendations Status

CVAP Corrective Actions Tracking Metric

February 2019 Update:

The CPPO tracks vapor-related Problem Evaluation Requests (PER), with the goal of communicating PER resolution status. The performance data in **Figure 6** below are defined as follows:

-  **Current Due** – Current corrective actions due for the month
-  **Number of Completed** – Number of corrective actions completed for the month
-  **Running Total Due** – Total cumulative actions scheduled to be completed
-  **Total Remaining** – Total cumulative actions remaining to be completed
-  **Cumulative Schedule Performance** – Total cumulative actions to be completed to the Running Total Due

The 128 CVAP actions are captured in the PERs listed in **Figure 6** below, including the 3 Office of Inspector General (OIG) actions captured in WRPS-PER-2016-2433 thru 2435 and 4 Office of River Protection (ORP) Facility Representative Surveillance (17173-TF) actions captured in WRPS-PER-2018-0551 thru 0554. Sixty-three TVAT actions were completed during Phase I (FY2016) and the OIG actions were completed in FY 2017; the completions are documented in the Electronic Suspense Tracking and Routing System (E-STARS). The remaining TVAT actions have been rolled into the CVAP. The remaining recommendations from National Institute of Occupational Safety and Health (NIOSH), EA-32, CTEH, and the VMEP were added to the PER system and corrective actions launched. **Figure 6**, following a couple corrective action due date extensions, depicts the status of the CVAP total corrective actions and shows that 5 actions were completed in February, for a total of 7 ahead of schedule. In addition, of the remaining open actions, approximately 35% are scheduled to be completed in the 2nd Quarter of FY 2019.

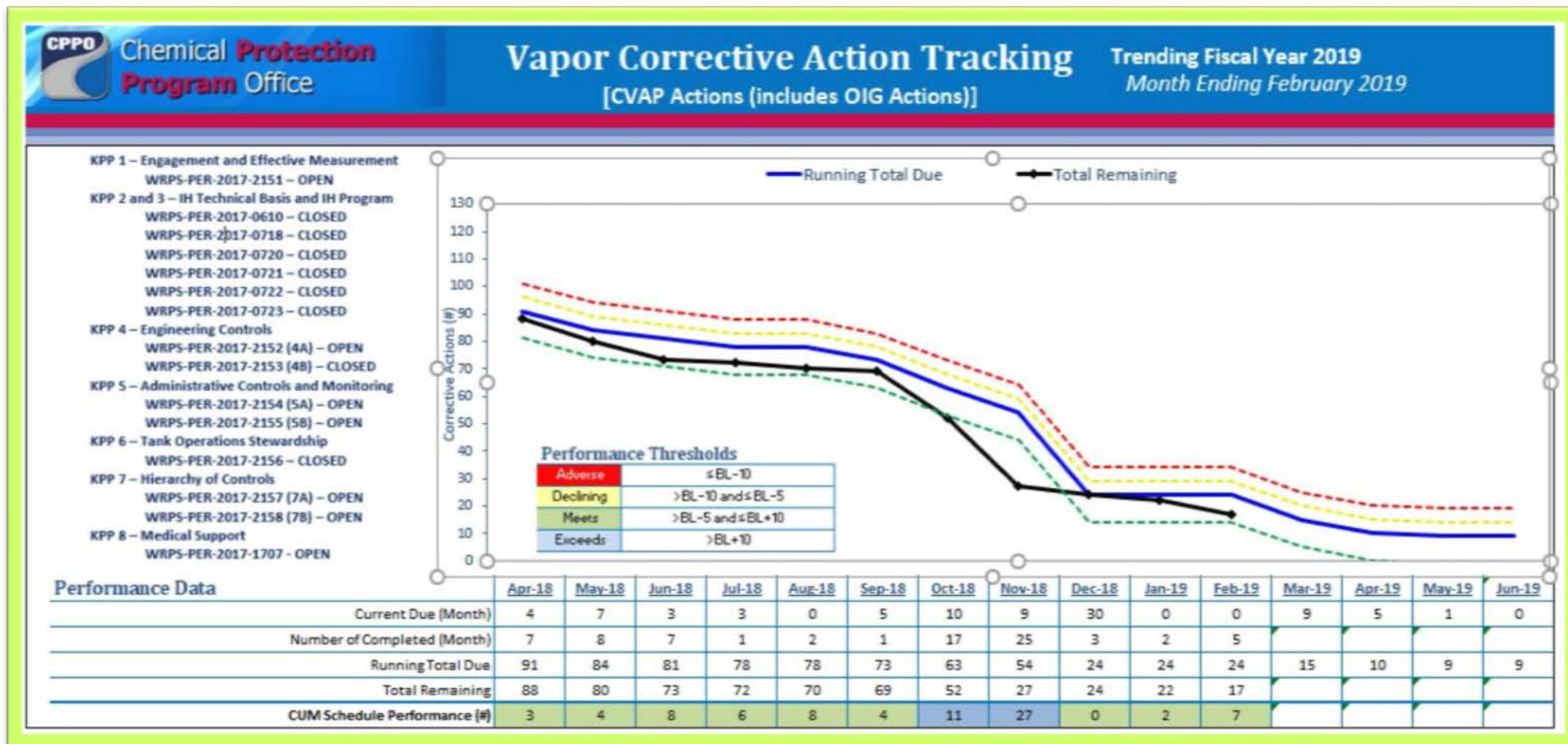


Figure 6. Vapor Corrective Action Tracking

4. Sampling and Monitoring

Mobile Lab

February 2019 Update:

The mobile lab completed the *Winter Background Study* on February 19, 2019. The lab participated in fugitive emissions sampling performed at a large, on-site sewer system near 244-AR.

Cartridge Test Reports

No Update

1st Quarter Summary:

Cartridge testing, to support efforts for the switch to full-face air purifying respirator (FFAPR) in the farms, was completed during FY 2018. The results of the testing were presented to the third party reviewers, STC, for review and comment. The review allowed the implementation of FFAPR in the double shell farms with the tested cartridges. The cartridge testing effort in the 1st Quarter of FY 2019 focused on issuing the AX Exhauster report, titled, *Analysis of Air-Purifying Respirator (APR) and Powered Air-Purifying Respirator (PAPR) Cartridge Performance Testing on a Hanford AX Tank Farm Exhauster*, and were numbered PNNL-27860 Vol. 1 and Vol. 2. Following the issue of the AX Exhauster report, efforts focused on processing the data from BY-108 (PAPR) and BY-110 (APR) field testing. The results were included in a draft report that is in the 30 day review process. The AP Exhauster data is still being processed.

Respiratory Protection Equipment and Surfaces: **Monthly Routine Testing**

No Update

January 2019 Update:

WRPS has a routine monthly testing program to evaluate randomly-selected Respiratory Protective Equipment (RPE) and surfaces for chemicals and bacteria. This program involves IH wipe sampling on 60 randomly-selected RPE (face pieces and regulators) for chemical and bacterial presence from the three main Mask Issue and Sanitizing Stations (2704 HV, 278 AW, and MO 2256). Samples for chemical content are analyzed at ALS Labs in Salt Lake City Utah. Samples for bacterial content are analyzed at TriCities Labs, Kennewick, WA.

Analytical results from January 2019's testing indicated that there were no instances of chemical disinfectant contamination on any of the RPE tested. Likewise, the results of bacterial testing on RPE and Mask Issue Station surfaces continue to indicate that they are considered

exceptionally well-sanitized. Please note that there are no known federal standards or guidelines for “clearance” levels of either chemical (anions) or bacteria on RPE and related surfaces. Results are available on the WRPS Respiratory Protection Intranet.

¹NUCON is a registered trademark of Nucon International, Inc., Columbus, Ohio.

²RAE Systems by Honeywell, San Jose, California.