

*WRPS Integrated Chemical Vapor Hazard Control
Program*

Monthly Report – May 2019

Published: June 20, 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 Department of Energy (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 and 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, and
- 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 report updated all the KPPs as described in the CVAP. WRPS’ 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 *CPPO Weekly Report* is now the *WRPS Integrated Chemical Vapor Hazard Control Program Monthly and/or Quarterly 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

May 2019 Update:

IH and the Office of River Protection (ORP) agreed to a new exposure assessment (EA) review process in January. No longer do EAs require ORP review prior to publication. Content-only reviews will be conducted post-publication, and any necessary edits will be incorporated in subsequent revisions. The *Exposure Assessment for SY Farm* has been completed and is awaiting IH Program management approval. The process of creating the *Exposure Assessment for AY/AZ Farm* is on schedule to be completed by the end of July

IH Training

May 2019 Summary:

IH reported that 78 percent of IH technicians (IHTs) had completed *ToxiRAE Pro Laboratory Preparation & Calibration Training* by the end of February and 100 percent by the end of March. Approximately 98 percent of IHTs completed *ToxiRAE Pro Field Use Training* for all on-the-job trainer/on-the-job-evaluator qualified IHTs by the end of May. During the week of May 20th, nine IH professionals attended the annual American Industrial Hygiene Conference and Expo in Minneapolis, Minnesota. The conference offered professional development courses for maintaining Certified Industrial Hygienist credentials, open forum discussions addressing a wide range of IH-related topics, and vendor demonstrations on emerging technology and products used in the field.

Health Process Plan (HPP) and Charter 71 (TFC-CHARTER-71)

May 2019 Update:

The following five HPP reports (also known as Charter 71 reports) were further developed by Pacific Northwest National Laboratory (PNNL) and WRPS during May 2019:

- ***Hanford Tank Farm Occupational Exposure and Risk Assessment Plan*** (PNNL-25791, Revision 1): Smart Plant review of this report was completed; it was released to WRPS as Revision 1.
- ***Proposed Risk-Based Approach for Nitrosamine Chemicals of Potential Concern*** (PNNL-26787): Smart Plant review of this report was completed; it was released to WRPS as Revision 0.

- **Proposed Occupational Exposure Limits for Furans** (PNNL-26775): This report was in the WRPS Smart Plant review process with PNNL preparing it for release as Revision 0.
- **Chemical Mixtures and Modeling Recommendations** (PNNL-7089): PNNL continued to develop the Chemicals of Potential Concern (COPC) Health Code Number (HCN) review of the HCN results. Preparations were made for review by the toxicology group, while data was being surveyed in preparation for developing an additional 28 HCNs.
- **Short-Duration Vapor Concentrations in Worker Breathing Zones in and near the Hanford Tank Farms: A Summary of Current Knowledge (RPP-RPT-61280) (BOLUS)**: Comments from external panel members and StoneTurn Consultants (STC) continued to be addressed. PNNL and WRPS personnel also continued to meet to jointly develop the Washington State Qualified Technical Professional response.

Chemical Worker Training

May 2019 Update:

The CTEH toxicologists have been moderating question and answer sessions at the conclusion of *Chemical Worker Training*, giving the course trainees an opportunity to get answers to their toxicology and health questions.

- **May 6, 2019:** Dr. Angie Perez introduced CTEH, explained their role in supporting the CPPO, and answered toxicology and health risk questions for approximately 40 minutes.

The Data Access and Visualization Tool (DAV)

May 2019 Update:

PNNL and IH kicked off the Internal DAV (I-DAV) project in November, which will add efficiencies to the process used to analyze EA data. I-DAV 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 EAs. Below are the May accomplishments:

- Completed quality assurance verification of data conditioning rules, and prepared the initial draft that documents the process and results;
- Initiated application of data conditioning rules to Site-Wide Industrial Hygiene Database (SWIHD) area, source, and headspace data;
- Began initial states of implementation of I-DAV for EA;
- Demonstrated analysis tools to STC; and
- Modified Tableau data conditioning tools based on WRPS IH feedback.

Integrated Sampling & Monitoring Strategy

May 2019 Update:

IH established the scope and purpose for the *IH 200 Areas Surveillance Strategy* and briefed ORP. Additionally, IH began drafting a sampling and monitoring strategy for the IH Program. Assignments were adjusted in January, and again in March, to accommodate personnel changes. A draft monitoring and sampling strategy document has been completed and will be in the final review and approval process in early June.

ToxiRAE¹ Implementation

2nd Quarter Summary: No further updates expected/completed

“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)

May 2019 Update:

The final RCA report is drafted and underwent initial review in May. Comments will be resolved and the report will be further reviewed in June 2019.

2. Mitigating Actions/Engineered Controls

AW Stack Extension

May 2019 Summary:

WRPS seeks to increase the AW stack's current height from 27 feet to 60 feet. As a result of issues identified during the permitting review, the schedule for completing the AW Stack extension was extended to FY 2019. Summarized below are the May 2019 accomplishments:

- **Permitting:** The alternative respiratory protection assessment (ARPA) document is in review. WRPS is collaborating with the Department of Ecology on getting an approved permit. Nothing more can be done until the permit is acquired.

ERRATA:

Since February 2019, the Monthly Reports have errantly included ARPA related-information as part of the update on AW Stack Extension Permitting. ARPA documentation and the permitting process are unrelated.

Also, WRPS is collaborating with both Department of Energy and Washington Department of Ecology on issuing an approved permit.

A Farm Exhausters

May 2019 Update:

The goals for FY 2019 are to complete the following: 1) the installation of the exhausters, exhauster valve manifold, and ventilation ducting; 2) the removal of two thermocouples; and 3) the testing of the exhausters and ventilation system. Below is



Figure 1. (Above)
Installation of Weldments
(Photo courtesy of Mark Allen)

a summary of what was accomplished in May:

- **Exhausters:** During May, excavation of the exhauster electrical trench for conduit installation continued. Work to connect electricals for the variable frequency drives (VFDs), the effluent monitoring cabinets, seal pots, and moisture separators had continued. Installation of the temporary access stairs from the grade to the exhauster slab and the installation of the moisture-separator shielding support structure have both been completed.

- **Exhauster Valve Manifold:** In May, the installation of the exhauster valve manifold was completed by grouting the final base plates, torquing all flanges, and installing final grating retaining clips. In **Figures 1 and 2**, ducting spool weldments are being installed to the valve manifold and the moisture separators.
- **Procurement/Fabrication:** In May, material requests for fabrication of the group plates, work-platforms, and spray rings were prepared.



Figures 2. (Right)
Installation of Weldments
(Photo courtesy of Mark Allen)

NUCON^{®2} Thermal Oxidation Vapor Abatement Unit (VAU)

May 2019 Update:

The current goals for FY 2019 are to start the detailed design of the next generation VAU and tank farm infrastructure, and to apply for environmental permits, as necessary. This is a collaborative effort between WRPS, Pacific Northwest National Laboratory (PNNL), TerraGraphics, and NUCON. Below is a summary of what was accomplished through May 2019:

- **TerraGraphics:**
 - Continued disposition of comments on the *Thermal Oxidation System (TOS) Infrastructure 60% Design* package
 - Initiated review of the *NUCON[®] VAU Skid 60% Design*
 - Continued selection of a blower for the new vacuum
- **NUCON[®]:**
 - Submitted *NUCON[®] VAU Skid 60% Design* for review and dispositioned review comments
 - Continued work on the shrouded probe sampler design
- **WRPS:**
 - Initiated review of submitted comments for the *NUCON[®] VAU Skid 60% Design*
 - Developed an out-year project plan with a schedule and cost estimate

Strobic^{®3} Air Tri-Stack³

April 2019 Update:

Strobic[®] testing was completed. WRPS and DOE-ORP will determine the next steps.

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

2nd Quarter Summary:

The goal for FY 2019 is to turn the AP Farm UV-FTIR over to Operations for ammonia monitoring. Below is a summary of the 2nd quarter accomplishments:

- **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 Integrated Document Management System (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 turning over the UV-FTIR to Operations.
- **Multi-Gas Only Turn-Over:** No update until the ammonia turn-over is complete.

Continuous Emissions Monitor Sampler

May 2019 Update:

As of May, all procurements for the continuous emissions monitor sampler modification remain in process. The sampling test bed fabrication is completed. In June, Avantech will host a demonstration of the CEM system capabilities for WRPS and DOE staff.

Stack Monitor Turn-Over/VMDS Upgrade

May 2019 Update:

The goal for FY 2019 is to turn the monitors over to Operations. Below are the accomplishments for May 2019:

- **Set-Point Calculation:** All set-point calculations have been approved for ammonia.
- **Operational Acceptance Test:** Operational Acceptance Testing (OAT) has been approved for ammonia and drafted for multi-gas for AX, AZ, AN, and AW Farms.
- **AX and AZ Farm Stack Monitors:** OATs for ammonia are in progress for AX-126, 127, and AZ-702.

Public Address System (PA)

May 2019 Update:

The goal of installing all the reader boards associated with the PA system in FY 2019 has been realized. The PA system was completed during the 2nd quarter, and in April, it was successfully turned over to Operations for formal readiness

procedures. The PA system will be integrated and fully operational in the Shift Office Event Notification (SOEN) system once readiness is formally declared.

SST Farm Automation

May 2019 Update:

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

- **T-Complex Field Construction:** The construction contract was awarded, and fabrication of components has started and will continue through June. Several items have long-lead procurement times, impacting the installation schedule, which will commence in July.

Full-Face Air Purifying Respirators (FFAPR) and Powered Air Purifying Respirators (PAPR)

2nd Quarter Summary:

As part of the overall research and implementation of the FFAPRs in Tank Farms, an IH SME attended a tour of the Mine Safety Applications (MSA) factory for respiratory cartridges in North Carolina in mid-January. FFAPRs were rolled out in AX, AY, and AZ Farms on February 21, 2019, and in AP and AW Farms on March 19, 2019. FFAPRs are now implemented for all RC1 and RC2 work activities in all actively ventilated tank farms (SY, AN, AX, AY, AZ, AP, and AW). Employees may voluntarily upgrade respiratory equipment to supplied air. 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

May 2019 Update:

May 8, 2019, CVST Meeting

📌 CVST Sub-team Meetings

May 2019 Update:

May 6, 2019, CVST Communications Sub-team meeting

May 20, 2019, CVST Communications Sub-team meeting

📌 HanfordVapors.com Metric

May 2019 Update:

The Hanford Vapors website logged over 1,800 views in May 2019, a decrease of 18 percent from the previous month. Total access to the site has dropped this FY from the previous year; however, since October the website continues to experience an average of 65 hits per day. Communications and Public Relations (C&PR) reported posting nine new items to the site in May.

Figure 3.

Hanford Vapors Website – Total Hits Per Month and Average Hits Per Day, May 2019



CPPO Notebook Metric

May 2019 Update:

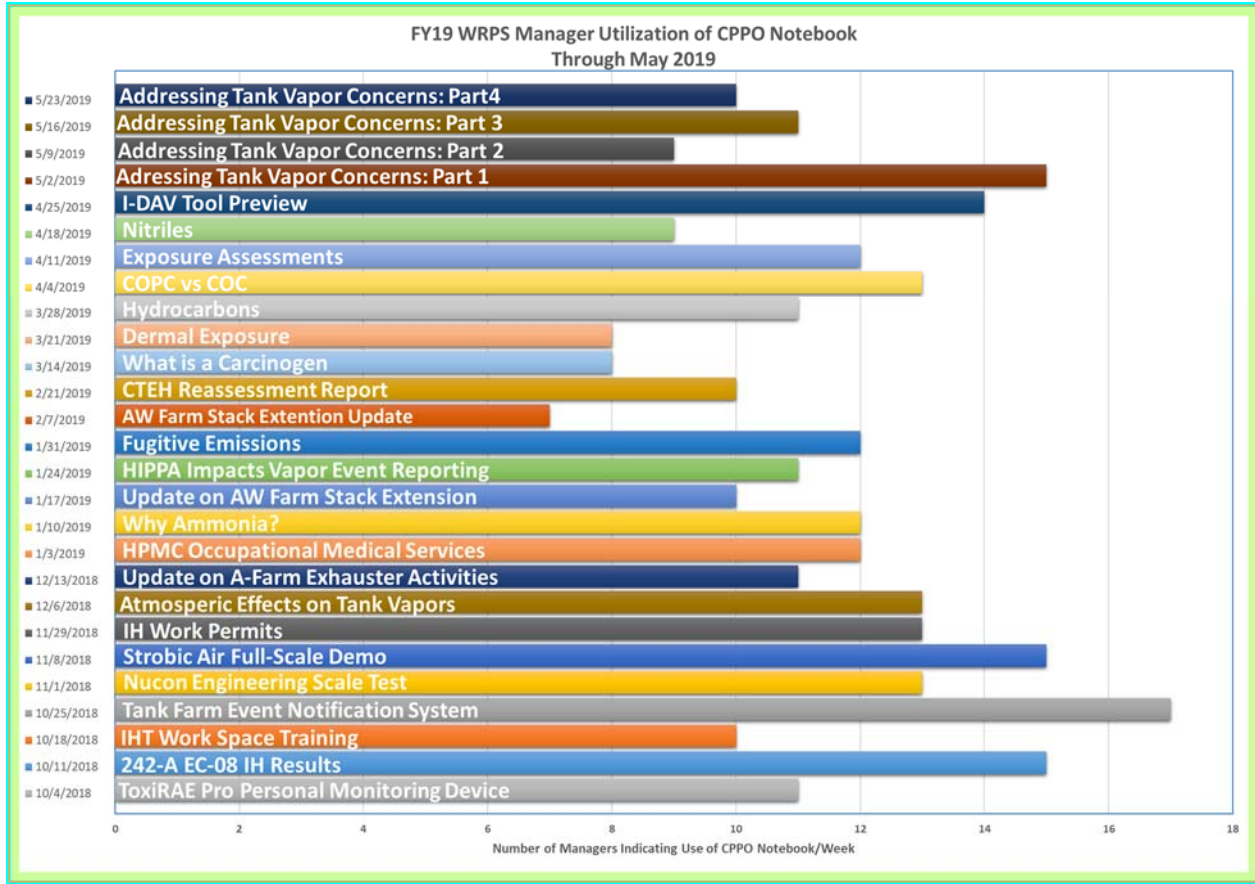
The CPPO Notebook is distributed on a weekly basis to aid managers in providing vapor-related information to staff on current topics of interest. A four-part series was released this month on actions that WRPS has taken to address tank vapor concerns. The series covered:

- An overview of vapors at the Hanford Tank Farms
- A detailed look at what has changed since the Comprehensive Vapors Action Plan was put in place
- A discussion of how WRPS's IH will transition from a management mandate to use self-contained breather apparatuses (SCBA) to a risk-based program, where PPE is appropriate for each task's hazards, and
- A look at how WRPS will continuously improve its knowledge and handling of vapors at the tank farms.

While the notebooks are now provided as part of the weekly Safety Startup, CPPO continues to provide the information directly to managers to share with the workforce. Use of the Notebook through this distribution route is monitored through an email tally of voting replies received from the managers who receive the notebook weekly via email. 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 May, to date, continue to show that an average of 11 managers report using the notebook each week since the beginning of the FY.

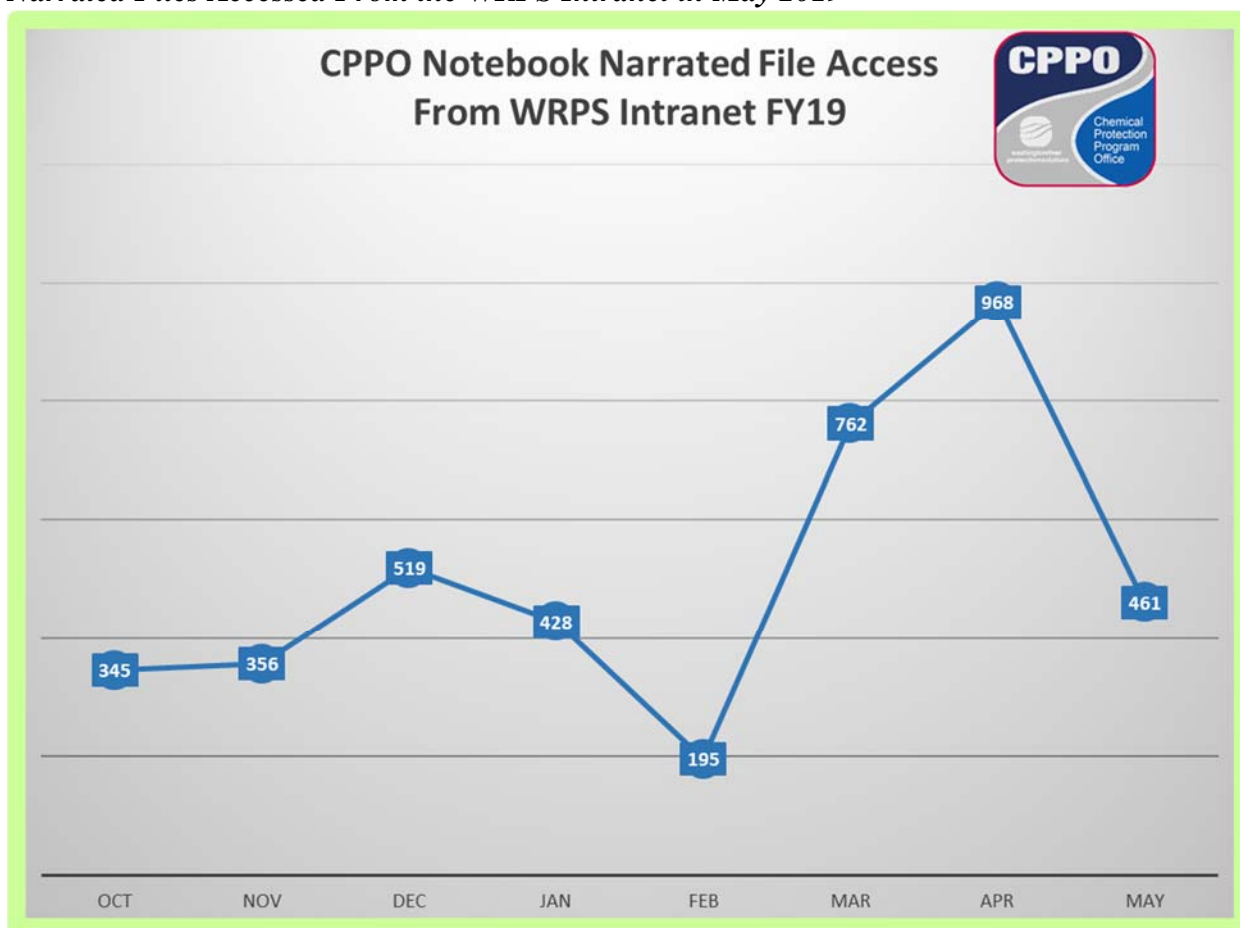
Utilization of the CPPO Notebooks by subject and transmission date is shown in **Figure 4**. Since the beginning of FY 2019, the data show WRPS managers reported utilizing the CPPO Notebooks to present vapors-related information to the workforce 312 times.

Figure 4.
May 2019 CPPO Notebook Use



The notebooks are also posted to the intranet, available to all WRPS staff to access at will. **Figure 5** shows monthly website traffic statistics for visits to the CPPO Multimedia Library since the beginning of the FY, accessing a variety of the CPPO Notebook audio files hosted on the WRPS intranet. This data suggest a larger reach than what is reported by the management distribution list. The May data are lower than the previous month, although more in alignment with what was observed the first quarter of the year.

Figure 5.
Narrated Files Accessed From the WRPS Intranet in May 2019



CPPO Requests and Production Metrics

May 2019 Update:

The CPPO summarizes complex, technical, vapors-related information for the workforce through a variety of mechanisms including a monthly report on WRPS vapors activities, the CPPO Notebooks, engagement activities, and other mechanisms.

The vapors-related materials CPPO produced over the course of May and the three-month trend is shown in **Table 1**. In addition to the CPPO Notebook and the CPPO Monthly Report that was distributed in May, new material was provided to the HanfordVapors.com website. CPPO continues to provide toxicological expertise to the workforce through Chemical Worker training question and answer sessions and site visits.

Table 1.

CPPO Vapors Information Products May 2019

CPPO Vapors Information and Engagement Activities FY19	March	April	May	FY-to-Date Total
Presentations (includes CPPO Notebook and CVST)	3	4	4	28
CPPO Reports and Monthly/Quarterly/Annual Report	1	1	1	8
Articles, Summaries, and Message Maps	0	0	2	9
Surveys, Focus Groups, and Recommended Actions	1	0	1	5
Website Requests/Site Updates	3	8	9	128
Videos	0	0	0	1
Field Visits	6	2	2	32
Chem. Worker Training Support	3	2	1	16
Monthly Totals	17	17	20	227

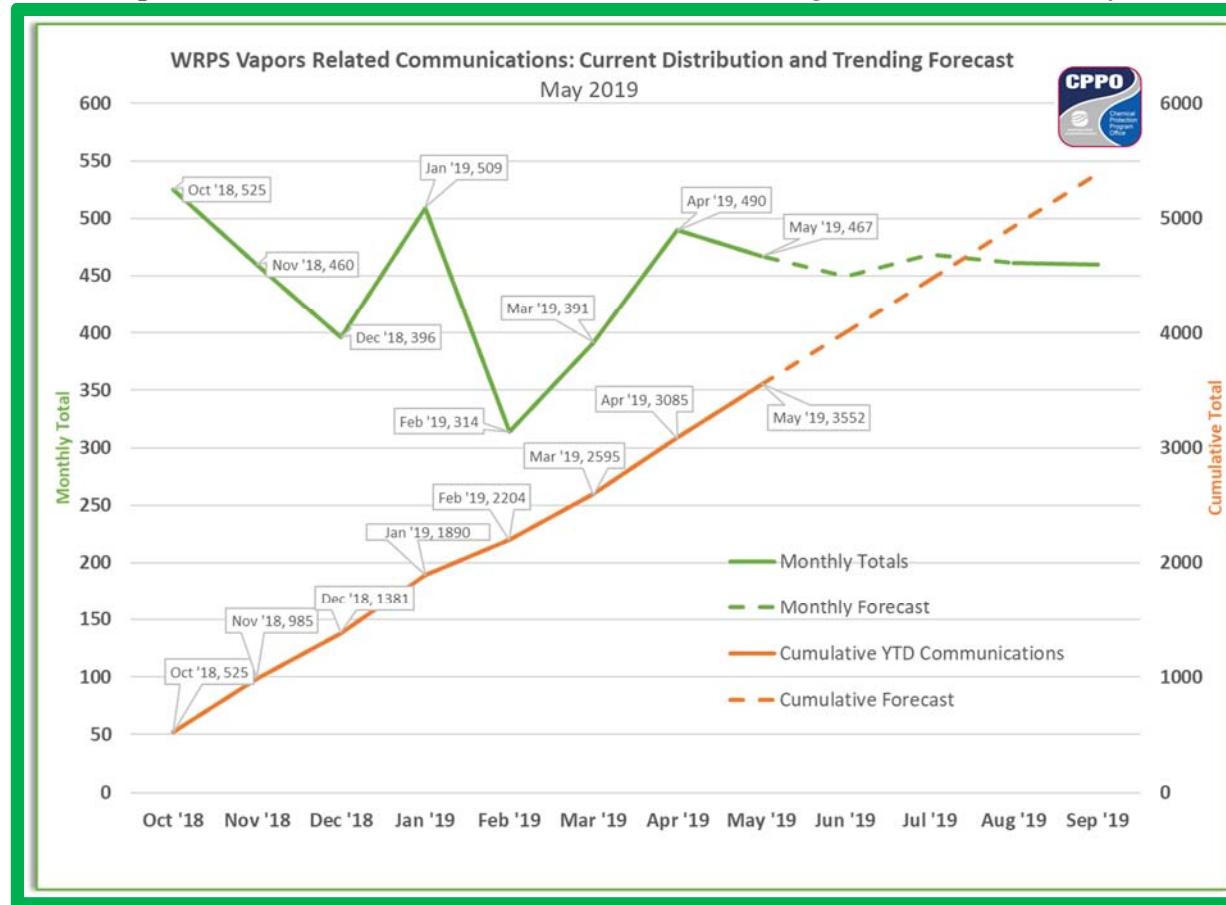
The total number of documented WRPS vapors-related communications provided to the workforce in FY 2019 to date is shown in **Table 2**. The data for May are slightly lower than the prior month. The majority of vapors-related communications occur through Plan-of-the-day (POD) meetings and CPPO Notebook presentations. May 2019 data include 467 documented vapors-related communications.

Table 2.
WRPS Vapors Information Distribution Avenue – May 2019

WRPS Vapors Information Distribution Avenue	March	April	May	FY-to-Date Total
All Employee Email/Meetings & ESHQ Comm.	0	0	1	29
CPPO Notebook*	27	48	45	299
CPPO Vapors Report	1	1	1	10
Fact Sheet & Information	0	0	0	0
Meeting - CVST *	1	1	1	6
Meeting - CVST Sub-team meeting *	1	1	2	8
Meeting - Hanford Advisory Board Briefing *	0	0	0	2
Meeting/Briefing*	0	0	0	19
Meeting -Morning/Pre-Shift Brief*	342	413	393	2962
Presentation*	0	1	1	2
Safety Start	3	2	4	20
SOEN	10	10	6	42
Solution Article	2	5	3	24
Survey and Focus Group	1	0	1	2
Tours*	0	0	0	0
Vapors Weekly Update or Website Post	3	8	9	129
Video	0	0	0	1
Monthly Totals	391	490	467	3555
* Face-to-face communication				

The forecast for delivery of WRPS vapors-related communications to the workforce in FY 2019, including monthly and cumulative estimates, is shown in **Figure 6**. The data trend indicates that at this rate, WRPS is still on track to deliver over 5,000 vapors-related communications to the workforce in FY 2019, largely through briefings and face-to-face interactions with the workforce.

Figure 6.
WRPS Vapor Related Communications Distribution/Trending Forecast Avenue May 2019



WRPS Vapors Communications

May 6, 2019, Solutions

Subject: CPPO Notebook, *Addressing Tank Farm Vapors at Hanford, Part 1, An Overview of Vapors Concerns at Hanford.*

May 9, 2019, ESH&O Communications

Subject: “Protection Equipment and Surfaces”

May 9, 2019, 6:56 p.m., Shift Office Event Notification:

Subject: “Entered AOP-015 for sulphur (*sic*) odor near T Farm. All personnel stay clear of T Farm until further notice. CSM.”

May 9, 2019, 8:01 p.m., Shift Office Event Notification:

Subject: “Exiting AOP-15 for sulphur odor near T Farm. Odor was near Hanford MET Tower in the 600 Area. CSM.”

May 9, 2019, 8:07 p.m., Shift Office Event Notification:

Subject: “Based on location where odors were reported (600 Area near 622R Met Tower), there are not entry restrictions for any tank farm facilities. CSM”

May 13, 2019, Solutions

Subject: CPPO Notebook, *Addressing Tank Farm Vapors at Hanford, Part 2, What has Changed?*

May 20, 2019, Solutions

Subject: CPPO Notebook, *Addressing Tank Farm Vapors at Hanford, Part 3, How Does WRPS Transition to a Risk-based Program?*

May 21, 2019, 9:17 a.m., Shift Event Notification:

Subject: “Entered AOP-15 for odor near A Farm. All personnel stay clear of A Farm until further notice. CSM”

May 21, 2019, 10:38 a.m., Shift Event Notification:

Subject: “Response actions for TF-AOP-015 event have been completed and the results are at or below background levels. Exiting TF-AOP-015. CSM”

May 21, 2019, 3:20 p.m., Shift Event Notification:

Subject: “Initiated EIR-2019-023, AOP-015 Event South of 241-A Farm Change Trailers. POC: Becky White. CSM”

Engagement/Site Visits

CPPO SMEs routinely engage with groups of workers on a face-to-face basis to provide vapors-related information and to answer their questions.

- **May 2, 2019:** Dr. Angie Perez and Mr. Kirk Riedner attended a POD meeting. Dr. Perez was introduced as a resource for toxicological questions.
- **May 2, 2019:** Dr. Angie Perez and Mr. Kirk Riedner attended a pre-job meeting. Dr. Perez engaged the group with questions about the soil particulate sampling.
- **May 6, 2019:** **Dr. Angie Perez** attended Chemical Worker Training. She was introduced to the class and took their questions.

Focus Groups/Surveys

May 2019 Update:

In May, CPPO received 103 worker responses to the 2019 Vapors Information Survey, a 36% response rate. Preliminary data analysis was completed this month, which shows continued improvement in the effectiveness of the vapors-related information provided to the workforce. The report is currently being drafted and will be delivered before the end of the FY.

AOP-15 Events

May 9, 2019, 6:56 p.m., Shift Office Event Notification:

Subject: “Entered AOP-015 for sulphur (*sic*) odor near T Farm. All personnel stay clear of T Farm until further notice. CSM.”

May 9, 2019, 8:01 p.m., Shift Office Event Notification:

Subject: “Exiting AOP-15 for sulphur odor near T Farm. Odor was near Hanford MET Tower in the 600 Area. CSM.”

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External Assessments Recommendation Status

May 2019 Update:

The recommendations status columns in **Table 3** 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 has validated that 97% of the recommendations have been addressed by actions/deliverables that are either **Complete** or **Field Work Complete**. Of the 371 total recommendations:

- 92% have been verified **Complete** and are considered closed.
- 5% are verified as **Field Work Complete** and are awaiting final deliverables (i.e. documentation) to close.
- 3% have ongoing actions and are **In Progress**.
- The majority of the remaining recommendations that are **In Progress** are scheduled to be **Complete** in FY 2019 and FY 2020.

Table 3.
External Assessments Recommendations Status Table

Report	As of May 30, 2019				
	Total	Validated Complete	Field Work Complete	In Progress	Pending
TVAT	117	103	8	6	0
OIG	3	3	0	0	0
NIOSH	54	52	1	1	0
EA-32	31	28	2	1	0
CTEH	24	24	0	0	0
VMEP I, II	67	63	3	1	0
Other	75	70	4	1	0
Total	371	343	18	10	0

External Assessments Recommendations Status

CVAP Corrective Actions Tracking Metric

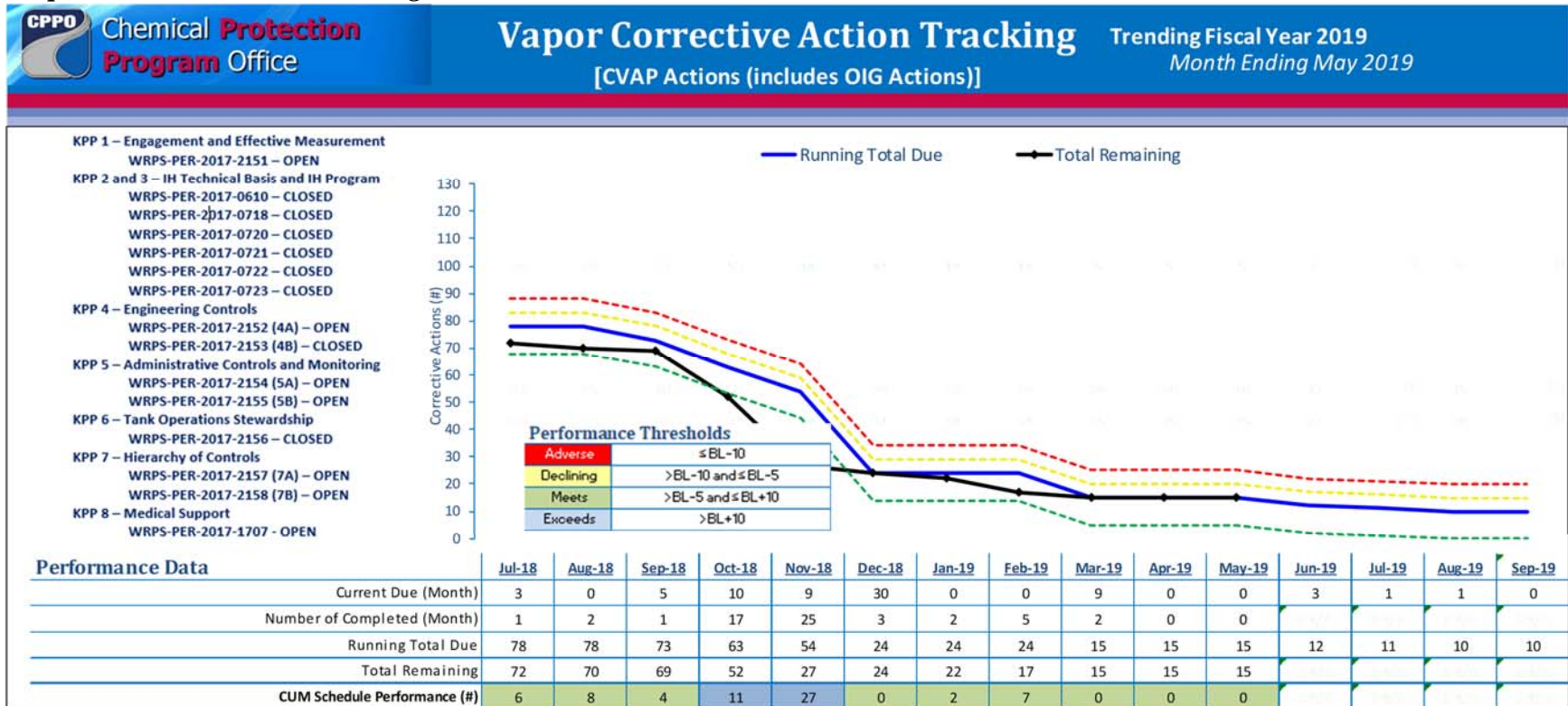
May 2019 Update:

The CPPO tracks vapor-related PERs, with the goal of communicating PER resolution status. The performance data in **Figure 7** 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 draft CVAP actions are captured in the PERs listed in **Figure 7** below, including the three OIG actions captured in WRPS-PER-2016-2433 thru 2435, and four ORP Facility Representative Surveillance (17173-TF) actions captured in WRPS-PER-2018-0551 thru 0554. 63 TVAT actions were completed during Phase I (FY 2016), and the OIG actions were completed in FY 2017. Their 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 NIOSH, EA-32, CTEH and the VMEP were added to the PER system and corrective actions launched. **Figure 7**, depicts the status of the CVAP total corrective actions and shows that no actions were due or completed in May; and, therefore, overall action closures are right on schedule. In addition, out of the original 128 E-STARS actions, which were identified at the beginning of FY 2016, 15 open actions remain with five actions due in FY 2019, nine actions due the 1st Quarter of FY 2020, and one action due in FY 2021.

Figure 7.
Vapor Corrective Action Tracking



4. Sampling and Monitoring

Mobile Lab

May 2019 Update:

In May, the Mobile Laboratory performed daily area monitoring in the A-Corridor and around TY, TX, and U Farms. The Mobile Lab also performed monitoring in support of the AZ-102 to AN-106 waste transfer that started May 31st and was completed June 1st.

Cartridge Test Reports

2nd Quarter Summary: No further updates expected/completed

Cartridge testing, to support efforts for the switch to 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.

Respiratory Protection Equipment and Surfaces: Monthly Routine Testing

2nd Quarter Summary: No 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, February, and March 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.

- 1- RAE Systems by Honeywell, San Jose, California.
- 2 - NUCON is a registered trademark of Nucon International, Inc., Columbus, Ohio.
- 3 - Strobic Air Tri-Stack is a registered trademark of Strobic Air Corporation, Bensalem, Pennsylvania.