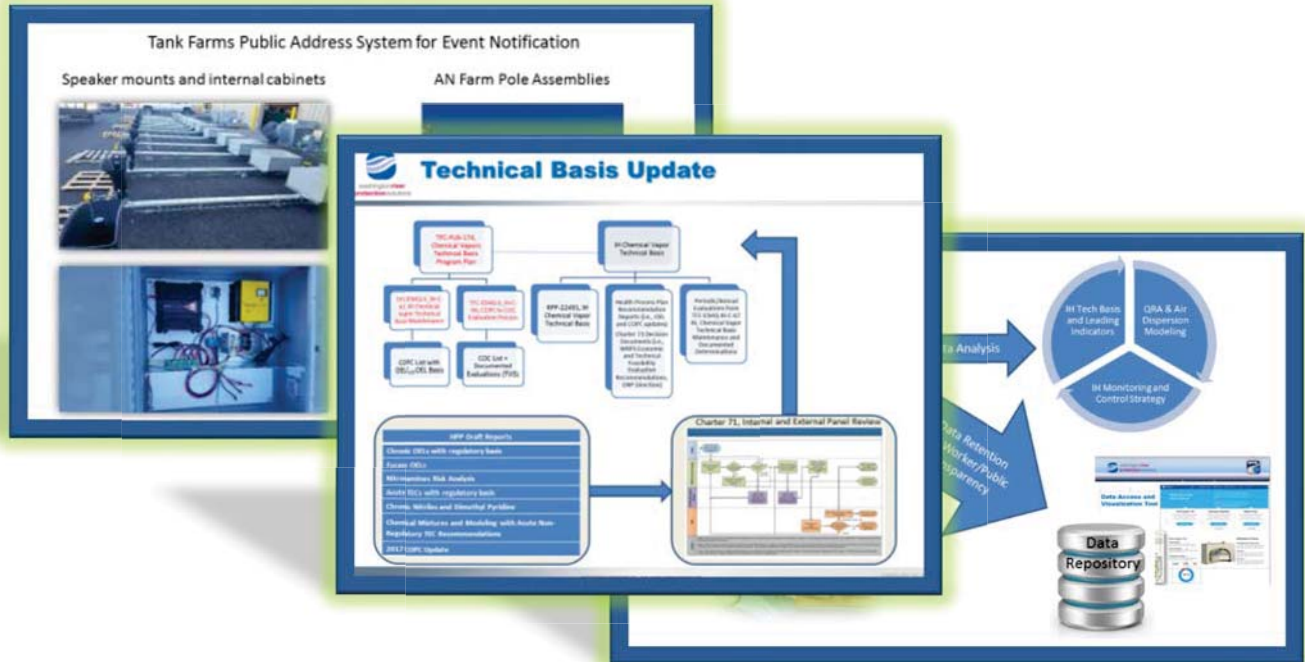




washington **river**
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Tank Farm FY17 goals for Chemical Vapors Management and Effectiveness near realization.

**Tank Operations Contract
 Chemical Protection Program Office Weekly Report
 September 21, 2017**

1. CHEMICAL PROTECTION PROGRAM OFFICE (CPPO) ACTIVITIES STATUS

The CPPO finalized the draft Comprehensive Vapors Actions status dashboard update process. The dashboard is designed to monitor the progress of the draft Comprehensive Vapors Action Plan (CVAP) Key Performance Parameters (KPP) 1 thru 7. The Dashboard is updated monthly.

CPPO began gathering documents, as requested by the EA-32 team, to support its upcoming scoping visit next week.

CPPO has taken the external assessment reports and gleaned the recommendations from each report as part of the Comprehensive Vapor Action Plan proposal process. The Recommendations Table (The Table), the compilation of actions and deliverables generated in response to the recommendations from the National Institute for Occupational Safety and Health (NIOSH), Tank Vapor Assessment Team (TVAT), Office of Inspector General (OIG), Office of Enterprise Assessments (EA-32), Vapors Expert Management Panel (VMEP) and Center for Toxicology and Environmental Health (CTEH), has been migrated into the CPPO action tracking/status database. The CPPO reviewed the intent of the recommendations and are working the actions as part of the vapors scope. They are also being added to the PER system by issues category for formal implementation and approval. The actions have been discussed with the knowledgeable project members and the Department of Energy (DOE).

CPPO Oversight and Tracking

August Communications Metrics Data

CPPO Request and Production Metrics

Tables 1 and 2 represent the number of vapors-related information products requested from the CPPO, and those produced, in the month of August. The three month trend and the Fiscal year-to-date totals are also shown. In August, the CPPO produced 29 vapor-related information products; the increase was led predominantly by articles, summaries and message maps. Of the 86 products outstanding, 44 are in review status, with several data reports undergoing re-write due to revisions made in the instrument software library used in preparing the reports.

Table 1. CPPO Vapors Information Products Requested FY17

CPPO Vapors Information Products Completed FY-17	June	July	August	FY-to-Date Total
Data Report (Monitoring Data)	7	0	2	58
Presentations (includes CPPO Notebook and CVST)	6	4	5	42
CPPO Reports and Weekly Report	5	5	5	48
Information Requests	1	0	1	32
Articles, Summaries, and Message Maps	2	1	7	30
Surveys and Focus Groups	7	0	1	10
Website Requests/Site Updates	1	1	0	27
Videos	0	0	0	1
Monthly Totals	29	11	21	248

Table 2. CPPO Vapors Information Products Completed FY17

CPPO Vapors Information Products Requested FY-17	June	July	August	FY-to-Date Total
Data Report (Monitoring Data)	12	2	14	87
Presentations (includes CPPO Notebook)	4	4	5	44
CPPO Reports and Weekly Report	4	5	5	46
Information Requests	0	0	1	36
Articles, Summaries, and Message Maps	1	2	4	57
Surveys and Focus Groups	21	0	0	23
Website Requests/Site Updates	0	1	0	36
Videos	0	0	0	5
Monthly Totals	42	14	29	334

The CPPO Notebook

The CPPO Notebook is distributed on a weekly basis to aid managers in providing current vapor-related information to staff. Five Notebooks were released in August covering the following topics: the event notification (PA) system, an update on the Strobic Air system, an update on the CPPO sponsored LEAN Management event, an overview of Stoneturn Consultants presentation regarding the use of full-face air-purifying respirators at the Tank Farms, and the 242-A evaporator campaign - 06.

The CPPO asks that managers who use the notebook, notify the office via their email vote button. Notebook use is tallied. Since the Notebook is frequently used several weeks after distribution, the data regarding the utilization of individual editions may change over time. The August data to date shows that an average of 19 managers reported making use of the Notebook each week. Use of the CPPO Notebooks over the course of FY17 is shown in **Figure 1**. Since the beginning of FY17, the notebooks have been used 602 times. The Notebook material is provided in multiple formats and includes a subject matter expert (SME) narrated presentation, which is also posted to the intranet. The website traffic statistics identified 343 hits in August on the webpage hosting the narrated videos.

Chemical Protection Program Office Notebook Utilization Through August 31, 2017

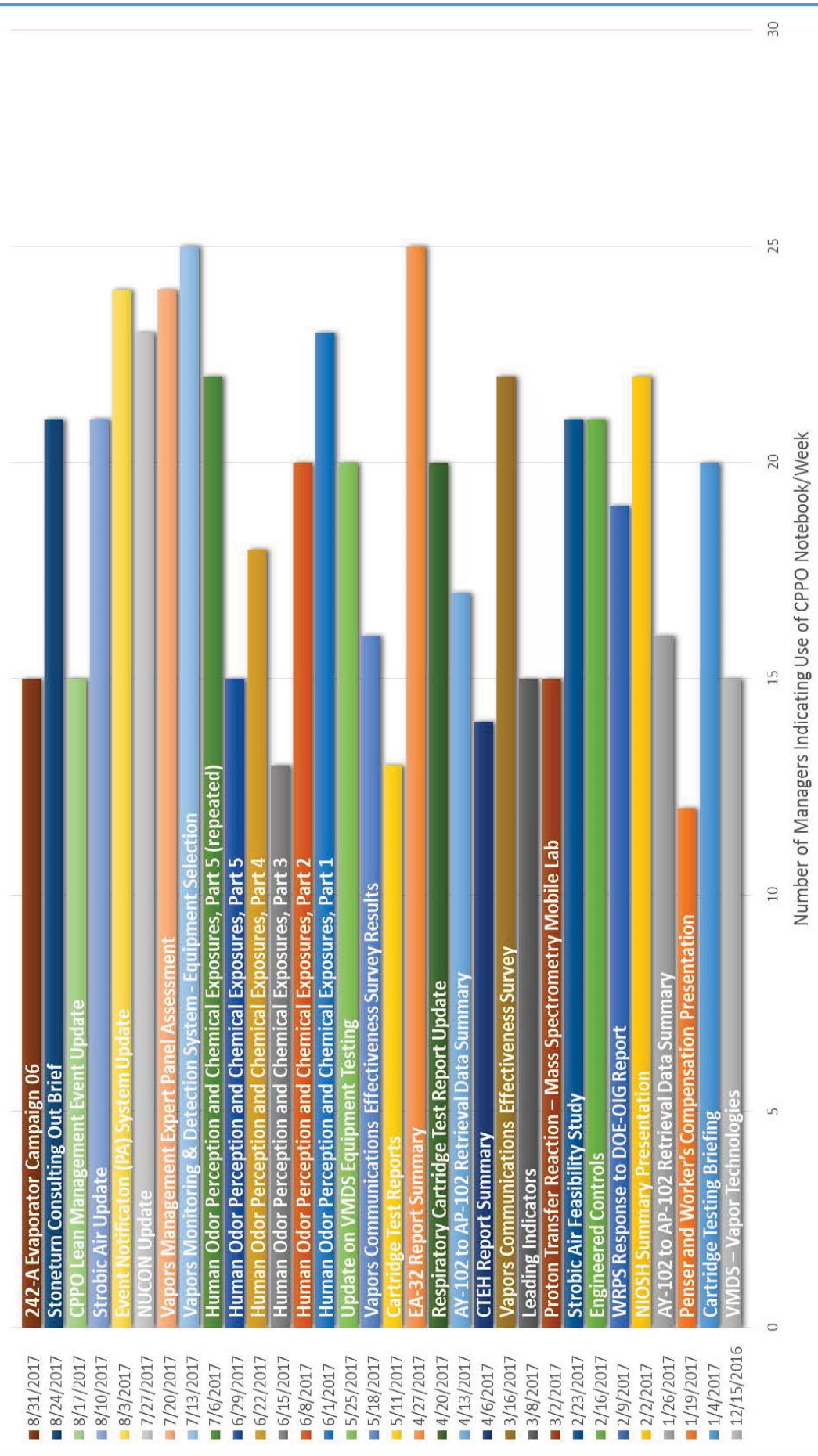


Figure 1. CPPO Notebook Use

WRPS Vapors Related Communications Distribution and Trend

The total number of documented WRPS vapors-related communications provided to the workforce is shown in **Table 3**. The data for August include 649 vapors-related communication activities. The increase this month was driven by growth in the utilization of the CPPO Notebook, the number of plan-of-the-day (POD) meetings, the number of items posted to the HanfordVapors.com website, and meetings/briefings with the workforce – primarily focused on IH control strategies.

Table 3. WRPS Vapors Information Distribution Avenue

WRPS Vapors Information Distribution Avenue	June	July	August	FY-to-Date Total
All Employee Email/Meetings & ESHQ Comm.	5	4	5	50
CPPO Notebook*	80	85	96	574
CPPO Report and Weekly Report	4	4	5	37
Fact Sheet & Information	0	0	0	3
Meeting - CVST *	2	2	1	16
Meeting - CVST Sub-team meeting *	0	4	4	36
Meeting - Hanford Advisory Board Briefing *	0	0	0	2
Meeting/Briefing*	3	12	57	139
Meeting -Morning/Pre-Shift Brief* [†]	390	347	414	1476
Presentation*	0	0	0	3
Safety Start	1	0	0	7
SOEN	7	0	0	16
Solution Article	2	3	4	35
Survey and Focus Group	0	0	0	2
Tours*	2	2	2	22
Website/Individual Inquiry	0	0	0	5
Vapors Weekly Update or Website Post	116	7	61	364
Video	0	0	0	1
Monthly Totals	612	470	649	2788

* Face-to-face communication †Morning/Pre-Shift Brief expanded to include field personnel interactions

The FY17 trend for providing vapors communications to the workforce shows the cumulative total by month, with 2788 items delivered through the end of August. The data suggests that at the current rate, WRPS is on track to deliver over 3,300 vapors-related communications by the end of the fiscal year - largely through briefings and face-to-face interactions with the workforce.

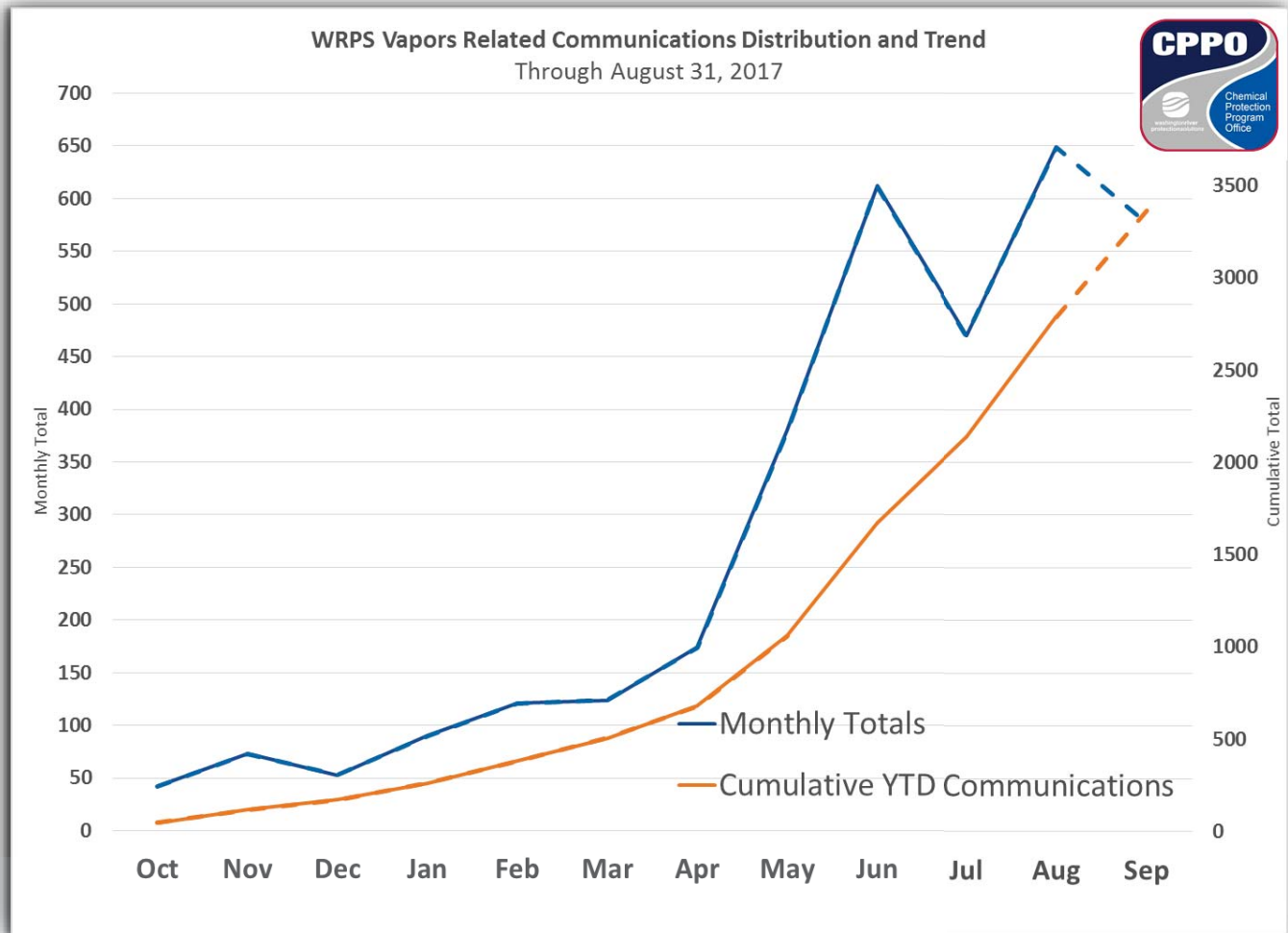


Figure 2. WRPS Vapors Information Distribution Avenue

2. COMPREHENSIVE VAPOR ACTION PLAN Key Performance Parameters

KPP 1. Engagement and Effective Measurement

Chemical Protection Engagement: Center for Toxicology and Environmental Health (CTEH)

The CPPPO engagement and mentoring initiatives featuring the team from CTEH continued their work in the field. Members of the CTEH team attended multiple Tank Farm (TF) Projects Pre-Job Meetings and Projects IH Team Meetings last week. Attended by Industrial Hygiene (IH) Technicians and Professionals, the IH Team Meeting discussions focused various IH related topics. The inquiries/topics of interest included nitrosamines, furans, and IH sampling plans. CTEH and WRPS IH personnel were available for vapors related questions during Projects Pre-Job meetings.

It was during the weekly HAMTC/CPPO meeting, attended by IH management, IHTs, IHPs, HAMTC safety representatives, CPPO, Operations, and Process Engineering, that the upcoming project involving the investigation of odors at the corner of 4th & Buffalo and its expansion to the A Farm corridor was further discussed. Attendants voiced their anticipation and curiosity about the pending Stoneturn Consultant's review of the cartridge testing.

Key Performance Parameter 1

Establish a comprehensive vapor management communication plan, engagement processes, and effectiveness measurements.

Chemical Protection Engagement: Communications

The *Vapor Communication Plan* is a requirement of KPP 1 and has received internal and Department of Energy – Office of River Protection (DOE-ORP) comments. Comments are being incorporated. Once comments are incorporated, ORP will be provided the document for an opportunity to review the revised plan.

Solutions, Issue 406, published September 11, 2017, reported, “WRPS has successfully completed its second 242-A Evaporator campaign of the year, freeing a total of approximately 525, 000 gallons of valuable double-shell tank space. The work was coordinated with the Chemical Vapors Solution Team and HAMTC leadership to develop a comprehensive industrial hygiene strategy for the campaigns. Area direct reading instrumentation readings in the general work areas during the campaign were well below action and occupational exposure limits.”

In addition, a September 11, 2017, all-employee email, *Message from Mark*, described the vapor control strategy, coordinated with the Chemical Vapor Solutions Team and HAMTC leadership for the 242-A Evaporator campaigns, as a “comprehensive industrial hygiene control strategy for the campaigns. Area Direct-reading instrumentation readings in the general work areas during the campaigns were well below action and occupational exposure limits.”

On September 14, 2017, WRPS Production Operations Manager sent an all-employee email on the “Upcoming weekend DST-to-DST waste transfers.” The email communicated that the industrial hygiene (IH) controls were “...reviewed by the Chemical Vapor Solutions Team (CVST) and HAMTC leadership and include:

- Backshift and weekend operations
- Readerboards will be placed informing personnel that a DST-to-DST transfer is in progress
- Supplemental AreaRAEs will be stationed, and enhanced IH monitoring/sampling will be performed during these waste transfers.”

On September 13, 2017, the full Chemical Vapor Solutions Team (CVST) met. Tank Vapor Representatives (TVR) were acknowledged by WRPS's Operating Officer, Rob Gregory. Topics of discussion included mediation, the 3rd Party Review (Stoneturn Consultants), CTEH Toxicologists, the IH Manual and the 242-A Evaporator Campaigns 06 and 07. CPPO Manager, Rebecca Sams, walked through the Vapors Tab on the internal website. Dr. Michael Lumpkin, echoing his CPPO Notebooks of September 7 and 14, presented on nitrosamines ([available here](#)).

Last week's CPPO Notebook was the second installment of the two part educational series on nitrosamines, created by Drs. Kind and Kuhlman from CTEH. This week's CPPO Notebook is *Acceptance Testing Process for the Vapor Monitoring & Detection System Full-Time Operation*.

Hanford Vapors Website Updates

- [CPPO Weekly Report - Sept. 14, 2017](#)

Chemical Protection Engagement: Data Access and Visualization Tool (DAV)

Last update 9/7/2017: The Data Access and Visualization (DAV) Tool is complete. The web-based data explorer application was built and deployed by Pacific Northwest National Laboratory (PNNL) to:

- Provide users with access to historical and current tank vapor sampling and monitoring results.
- Provide intuitive visualizations of relevant data and contextual information
- Avail the data to the user with little technical background, and allow the more technically sophisticated user to drill down to detailed content.

The pilot DAV tool will be introduced to the workforce through the CVST and the CPPO Notebook, and will be deployed to the HanfordVapors.com website.

3. KPPs 2 and 3. IH Technical Basis and IH Program

Develop New or Revised Chemicals of Potential Concern (COPC)/Occupational Exposure Limit (OEL)

Update: All *Industrial Hygiene Manual Procedures* slated for completion in FY17 have been received from the contractor with subject matter expert (SME) comments incorporated. ORP comments have also been incorporated. These documents have been submitted to the procedures group for final approval and formatting. A final draft of the *Industrial Hygiene Technical Basis* is currently being reviewed by ORP and the IH review group. Once finalized and approved, these documents will be implemented via the FY18 implementation plan.

Key Performance Parameter 2

Maintain Industrial Hygiene Chemical Vapor Technical Basis and the chemicals of potential concern (COPC). Institutionalize a disciplined and rigorous process for updates to include new scientific findings and enhanced understandings of potential exposures.

Health Process Plan

Last update 9/7/2017: The project is broken down into seven tasks. Last week's accomplishment include:

- Task 1: Schedule: Complete.
- Task 2: Establish Tank Operations Assessment Team.
- Task 3: Establish an External Peer Review Health Panel.
- Task 4: Implement Routine Analysis and Screening Process for Updating COPCs.
- Task 5: Establish Acute/Transient and Chronic Exposure Action Levels.
 - Chronic OELs regulatory and furans reports have been updated.
 - For nitrosamine report, comments have been addressed but need to be reviewed prior to transmittal. Expect transmittal week of September 8.
 - Acute Regulatory Report internal review in progress, expect transmittal by September 11.
 - Nitriles: awaiting comments
- Task 6: Evaluate Computational Approaches for Predicting Exposure and Delivered Dose.
- Task 7: Database Implementation and Management.

Database Implementation and Management

In FY16, PNNL developed a database to review and update the COPC list and associated OELs.

Leading Indicators

Last update 9/7/2017: The accomplishments as of August 31 are:

- Investigated PTR-MS data for COPCs with no analysis on FY16 report due to lack of available data
- Continued developing macros to prepare PTR-MS data sets (current and future) to be used within R-code

Parity Implementation with Established Programs

Update: Chemical Worker Tier 1 training is complete. Its implementation as computer based training is forthcoming. Chemical Worker Tier 2 has been turned over to a subcontractor to code for computer based training. Mission Support Alliance (MSA) is planning on rolling out the new computer based trainings in October, 2017. Tier 3 training lesson plan is being completed with a pilot class scheduled for October 4, 2017. Comments from the pilot class will be

Key Performance Parameter 3

Maintain Industrial Hygiene Program and institutionalize vapor program requirements, best practices and program parity, and complete necessary training to support full implementation at the beginning of FY 2018.

incorporated into the lesson plan prior to final approval. The plan is to discontinue enhanced CHAT once the Tier 3 training is in service.

KPP 4. Engineering Controls

✦ Exhausters

Update: SY-Farm The exhauster system design is complete. The rest of the project has been deferred. **A-Farm** The exhauster factory acceptance test was completed. It should also be noted that the demisters arrived on-site the week of September 4. **AX-Farm:** Last week, completed final open action items needed to prepare the Exhauster Test Readiness Reports. The completion of these reports support a September 26 readiness date.

Key Performance Parameter 4
Complete engineering control concept demonstrations for Strobic Air Tri-Stack® and NUCON® International, Inc. thermal combustion in support of unrestricted work boundaries

✦ AW Stack Extension

Update: Last week saw continued efforts on the 30% design package. **In review:** After further review of the planned Strobic Air scope on the AW exhauster, WRPS and ORP agreed that designing a stack extension is more efficient than retro-fitting AW Stack to accommodate the Strobic Air Dilution Fan. To date, efforts have begun on the 30% design package. A mobile, skid-mounted Strobic Air dilution Fan will be procured for testing.

✦ Strobic Air Dilution Fan

Last update 9/7/2017: The draft statement-of-work (SOW) for Strobic to support the FAT is still being routed for approval.

✦ NUCON Thermal Oxidation Vapor Abatement Unit (VAU)

Last update 9/14/2017: The prototype Vapor Abatement Unit was received at the Hanford Site last week. **In review:** The following activities have occurred:

WRPS:

- Completed the bench-scale activities site selection report and awarded it to PNNL.
- Met with senior management to review COPCs planned for bench-scale testing.

TerraGraphics:

- Received comments on the Bench-Scale Design Report, which is being developed to support bench-scale activities. Comments are due the week of September 11, 2017.
- Participated in a walkdown with PNNL to define electrical upgrades needed to support bench-scale work and to finalize the site layout.

PNNL:

- Performed the following activities in support of the bench-scale tests:
 - Completed electrical service request and electrical design walkdowns for the site's power center.
 - Started Phase 1 Test Plan development.
 - Started selection of the COPCs to be tested.
 - Started vendor evaluation of simulant gas suppliers.
 - Started air permit calculations.
 - Completed project kick off meetings.
 - Submitted PNNL schedule for Phases 1, 2 and 3.

KPP 5. Administrative Controls and Monitoring

✦ Permanent Installation of Vapor Monitoring and Detection System (VMDS) Equipment in A and AP Farms

Update: The events of last week include the following:

- The viability assessment for the open path Fourier transform infrared spectroscopy (OP-FTIR) is complete.
- The Pilot-Scale Phase 2 Report was completed and submitted for review.
- Design efforts for the turnover of the UV-FTIR stack monitor AP Farm were initiated. WRPS personnel met with ARES Corporation to review the scope and schedule for design activities.

Key Performance Parameter 5

Define unrestricted work boundaries and implement monitoring on active stack ventilation and unrestricted work boundaries in the A farms to provide defense-in-depth.

✦ Stack and Boundary Monitors

Update: Formal reviews of the AW, AN, and AZ preliminary stack designs continued last week. Approval of the final design packages are on schedule in support of the performance milestone.

✦ Establishing Safe Unrestricted Boundaries

Last update 8/24/2017: Quantitative Risk Assessments for A, AP, and AW-Farms are in review. Comment resolution is in its very early stages.

✦ Public Address System

Update: All speaker installations were completed for A, AX, AY, AZ, AW and AN Farms during the week. In addition, the CentrAlert-Guardian units were installed in their designated locations. Functional testing is scheduled to start the week of September 18, 2017, to support completion of the performance milestone.

KPP 6. Tank Operations Stewardship

Pilot SST Stewardship Program

Update: Remote Monitoring Equipment: A schedule for the design, procurement and installation of TY Farm automation activities was presented in the CVAP Field Execution Schedule (FES) meeting. The schedule currently has design completed in November 2017, with final installation occurring in January 2018. **FY LEAN 2015 Report/Work Location Evaluations:** Efforts continue on a draft SOW to procure engineering services.

Key Performance Parameter 6

Institutionalize a tank operations stewardship program that minimizes required tank farm personnel entries; and establishes parameters for locating ancillary personnel and offices.

KPP 7. Hierarchy of Controls

Cartridge Testing and SCBA Alternatives

Last update 8/31/2017: Cartridge testing at AX Farm was conducted August 25-26. This will complete the cartridge testing at AX farm. No further testing is planned for the rest of FY 2017.

Mobile Laboratory

Last update 9/14/2017: Continued compiling data from recently completed background sampling. This data is being used, along with other background and waste disturbing data collected throughout the year, to prepare a report summarizing mobile lab activities performed during the year.

Key Performance Parameter 7

Provide options to promote the hierarchy of controls for chemical vapor respiratory protection beyond current use self-contained breathing apparatus.

Personal Vapor Monitor

Last update 9/14/2017: The C2Sense Personal Ammonia Monitoring System continues to evolve. Data collection began last week using the recently completed prototype device. This data is being used to support an upcoming prototype test at the RJ Lee facilities in Pasco, Washington.

KPP 8. Medical Support

The scope of KPP-8 is to support RL medical program enhancements in conjunction with other Hanford Site organizations.

Key Performance Parameter 8

Support medical program enhancements in conjunction with responsible Hanford Site organizations and establish update to WRPS process/procedures.

4. Vapors Mitigation Program Plan - Top Risks -CPPO Weekly Update

Last update 8/24/2017: The subset of the Vapors Mitigation Risk Register this week is shown in **Table 4**.

Table 4. Vapors Mitigation Risk Register

CVAP ID Number	Current Status	Handling Actions	Current Risk Level
023 Internal Reviews take longer than anticipated.	Internal reviews are due Sept 17, leaving no float for delays and large amount of work for reviewers.	1. Assign expediter to the project to speed process - complete	High
009 Resources not available when required.	Lack of design and engineering resources are causing delays in VMDS System Integration, 242-A Stack Extension.	1. Identify key technical resources up front and secure availability. 2. Utilize resource loaded schedule where appropriate. 3. Coordinate work planning to streamline resource utilization.	Medium
004 Integration with other key projects more complex than expected.	Integration of field work for VMDS implementation and associated execution concerns for SY, A-Farm, and AW stack upgrades. Installation and turnover of PA system to tank farm operations.	1. Identify key program interfaces early. (Ongoing) 2. Engage with program/project managers early. (Ongoing) 3. Maintain weekly communication and IPT meetings. 4. Incorporate instrumentation (stack monitor) installation into future design of equipment.	Medium