

Washington River Protection Solutions
EVENT SUMMARY

Check PART 1 box to hide that section of the form. Check PART 2 box it will show that section.

PART 1 (hide)* **PART 2 (show)***

NOTE: This form provides timely notification to management and documents preliminary information of an event that may require a more formal investigation. Details may change upon further examination and analysis. The following is a current status of available information:

Project: Retrieval / Construction Date: Jun 13, 2023

Area/Building/Location: 200E/AP Farm/Valve Pit Approximate Time of Event: 0900 hours

AR Number: WRPS-AR-2023-1723 Responsible Manager: [REDACTED]

EIR Number: EIR-2023-043 Event Investigator: [REDACTED]

EVENT SUMMARY PART 1

Activity in Progress (What activity was under way, include procedures and work order numbers, as applicable):

Workers supporting Work Order (WO) #964939, "Encasement UT excavation restoration and backfill," near AP Valve Pit (APVP) to bring the excavation up to grade.

Personnel Involved (Job positions, number of personnel, identify any support organizations or subcontractors directly involved):

- 7 Laborers (American Electric)
- 1 Equipment Operator (American Electric)
- 1 Field Work Supervisor (American Electric).

What Happened (Provide a short discussion of what happened):

On 6/13/2023, at approximately 0900 hours, 1 worker experienced a Ventis® Pro5 personal ammonia monitor alarm reading 8 ppm while operating a soil compactor on the south side of APVP in support of Work Order #964939, "Encasement UT excavation restoration and backfill." There were 7 additional workers in the immediate area of the individual when the Ventis® Pro5 personal ammonia monitor alarmed. None of the other workers' Ventis® Pro5 personal ammonia monitors alarmed or indicated elevated ammonia concentrations.

The 8 workers reported no symptoms. All 8 workers declined to report to the onsite medical provider for precautionary medical surveillance.

Where Did It Happen (Description of work area and working conditions. Include information on weather conditions, PPE, Postings, etc.):

Workers had donned personal protective equipment (PPE) prior to entry: Level D PPE, their Ventis® Pro5 personal ammonia monitor, and full-faced air purifying respirator (FF-APR) standard Chemical Cartridge filter, single filter. They entered the AP farm radiological buffer area (RBA) area.

The workers were wearing Level D PPE since the area they were in was an RBA. At the time of the event one personal ammonia monitoring alarm read 8 ppm while operating a soil compactor on the south side of APVP. The monitor returned to 0 ppm right after it had been reading 8 ppm.

The Hanford Site Meteorological Station #6 and Data Fusion and Advisory System (DFAS) application, powered by SmartSite™, were utilized for outdoor weather details at the of the Ventis Pro personal ammonia monitor alarm. The Hanford Site Meteorological Station #6 and DFAS dashboard indicated the following weather conditions at 0900 hours on 06/13/2023:

- . Wind Speed: 10 miles per hour (mph)
- . Mixing Height: 700 meters feet above grade
- . Temperature: 84° F
- . Barometric Pressure: 29.10 inches Hg
- . Humidity: 26%.

Impact to Facility (Caused by the event or a description of known consequences):

Access was restricted to AP farm.

Immediate Actions Taken (List immediate actions taken to stabilize the scene or respond to the event):

- The Central Shift Manager (CSM) initiated TF-AOP-015 and restricted access to AP farm.
- The CSM offered precautionary medical surveillance to workers. Workers declined medical

Washington River Protection Solutions
EVENT SUMMARY (Continued)

Project: Retrieval / Construction

Date: Jun 13, 2023

Area/Building/Location: 200E/AP Farm/Valve Pit

Approximate Time of Event: 0900 hours

AR Number: WRPS-AR-2023-1723

Responsible Manager: [REDACTED]

EIR Number: EIR-2023-043

Event Investigator: [REDACTED]

Immediate Actions Taken (List immediate actions taken to stabilize the scene or respond to the event):

surveillance.

-The CSM requested Odor/Vapor Response cards from affected workers.

-Production Operations shift Industrial Hygiene Technician (IHT) initiated TF-AOP-015 response actions and monitoring taking DRI readings. The DRI instrument readings were below action levels.

-Event Investigation EIR-2023-043, "TF-AOP-015 AP Valve Pit," was initiated.

Notifications Already Made (Time and personnel notified):

[1005 hours]- The CSM initiated TF-AOP-015, "Response to Personal Ammonia Monitor Alarm," restricted access, provided radio announcement, and issued Shift Office Event Notification (SOEN), "TF-AOP-015 AP Valve Pit. Access restricted to AP Change Tent."

[1020 hours] - The CSM directed IHT to perform IHP-09001, "Response to Ammonia Monitor Alarm."

[1049 hours] - The CSM provided TF-AOP-015, Attachment 1- Initial Communication Template to email to distribution list DL WRPS Odor/Vapor Event Notification.

[1044 hours]- Initiated Event Investigation EIR-2023-043, "TF-AOP-015 at AP Valve Pit." POC: Nathaniel Pearson under instruction of Chad Haggerty. The CSM contacted the on-call DOE Facility Representative (FR) and informed them of the TF-AOP-015 event initiation.

[1232 hours] - Exited TF-AOP-015, "Response to Personal Ammonia Monitor Alarm." Response actions for the TF-AOP-015 event have been completed and the results are at or below background levels. Notified FR Mark Barkley.

[1259 hours] - The CSM provided TF-AOP-015, Attachment 2- Follow-up Event Summary to email to distribution list DL WRPS Odor/Vapor Event Notification.

This event does not merit an Event Investigation meeting

This event merits an Event Investigation meeting

Basis for Determination:

Information gathered from interviews and documentation reviews have provided sufficient information regarding this event.

Responsible Manager:

[REDACTED]

Print First and Last Name

[REDACTED]

Signature / Date

Date: 2023.06.14 11:57:25 -0700

CAS Manager:

[REDACTED]

Print First and Last Name

[REDACTED]

Signature / Date

EVENT SUMMARY PART 2

Key Elements of the Investigation (Key investigation points):

To summarize the conclusions of the Industrial Hygiene Event Investigation Report, IHIR-00071, "TF-AOP-015 Response to APVP," the Ventis Pro personal ammonia monitor alarm was likely not indicative of an employee chemical exposure event or changing Tank Farm conditions related to Tank Farm vapors and was determined likely resultant of exhaust emissions from a plate compactor.

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EVENT SUMMARY (Continued)

Project: Retrieval / Construction

Date: Jun 13, 2023

Area/Building/Location: 200E/AP Farm/Valve Pit

Approximate Time of Event: 0900 hours

AR Number: WRPS-AR-2023-1723

Responsible Manager: [REDACTED]

EIR Number: EIR-2023-043

Event Investigator: [REDACTED]

Key Elements of the Investigation (Key investigation points):

The following considerations support the IHIR-00071 conclusion:

(1) The individual whose Ventis Pro personal ammonia monitor alarmed was operating a gas powered plate compactor at the time. Once the worker noticed the alarm, and upon shutting off the plate compactor, the Ventis Pro alarm cleared. It was determined highly likely the exhaust emissions from the plate compactor interfered with the electrochemical ammonia sensor, the instrument electronics, or both.

(2) Five additional workers were within the immediate area of the individual when the Ventis Pro personal ammonia monitor alarmed. The other workers' Ventis Pro personal ammonia monitor did not alarm or indicate elevated ammonia concentrations. If the Ventis Pro personal ammonia alarm was resultant of changing Tank Farm conditions related to Tank Farm vapors, it is expected the Ventis Pro personal ammonia monitors of the additional workers within the immediate area would have also alarmed. Therefore, providing indication the cause of the personal ammonia alarm was unlikely to be resultant of Tank Farms exhauster emissions.

(3) Two additional workers associated with this work evolution were within AP farm when the individuals Ventis Pro personal ammonia monitor alarmed. The other workers' Ventis Pro personal ammonia monitor did not alarm or indicate elevated ammonia concentrations. If the Ventis Pro personal ammonia alarm was resultant of changing Tank Farm conditions related to Tank Farm vapors, it is expected the Ventis Pro personal ammonia monitors of the additional workers within the area would have also alarmed. Therefore, providing indication the cause of the personal ammonia alarm was unlikely to be resultant of Tank Farms exhauster emissions.

(4) Evaluation of the weather details determined the cause of the odor source was unlikely to be resultant of Tank Farms exhauster emissions based on the wind direction, wind speed, mixing height, and stability class at the reported time of event (Refer to Attachment 1 for DFAS PEZ Model).

(5) Because nitric acid was utilized in nearly all production processes that generated tank waste, and the most common byproduct of those processes was reduction of nitrate ion to ammonia during the dissolution (oxidation) of irradiated fuel, ammonia is the most prevalent chemical of potential concern (COPC) found in all tanks. Therefore, ammonia is utilized as a sentinel indicator for Tank Waste Chemical Vapor COPCs, thus direct reading instruments (DRIs) equipped with an ammonia sensor are utilized at a minimum when monitoring for tank waste chemical vapors/COPCs. Field response DRI monitoring following initiation of TF-AOP-015 indicated a less than detectable ammonia concentration (< 1 ppm), which is below background levels. Providing additional indication the cause of the personal ammonia alarm was unlikely to be resultant of Tank Farms exhauster emissions.

(6) Memo WRPS-1904672.1, "TANK FARM EXHAUST STACK CONCENTRATION ALARM/ACTION LEVELS FOR AMMONIA," establishes ammonia concentration stack alarm/action set points for tank farm exhausters based on the predicated ammonia concentration at unspecified ground receptors utilizing the Quantitative Risk Assessment (QRA) model. The exhauster high level alarm was established at concentrations where the predicted ground receptor ammonia concentration of 2.5 ppm (or 10% of the established Occupational Exposure Limit for ammonia) could be observed.

The exhauster high level alarm conservatively established for A Complex (excluding A farm) is 460 ppm. According to the Vapor Monitoring and Detection System (VMDS), the ammonia concentration observed at the time of event occurrence was 14.186 ppm at the POR-127 exhauster and 25.928 ppm at the AN exhauster. The AP exhauster is not currently connected to VMDS, issues have been identified with the 702-AZ and AW exhauster VMDS, in addition to the POR-126 VMDS being "down" at the time of the event occurrence; therefore, readings are acquired once per calendar day in accordance with TF-OPS-IHT-037 when ammonia stack monitoring via VMDS is unavailable. The highest ammonia concentrations observed on 06/12/2023 and 06/13/2023 was 5.0 ppm at the AP Exhauster, 14 ppm at the 702-AZ Exhauster, 7 ppm at the AW exhauster, and 0 ppm at the POR-126. Conservatively utilizing the higher ammonia concentration observed in the AN exhauster, a predicted ground receptor ammonia

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EVENT SUMMARY (Continued)

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Approximate Time of Event: 0900 hours

AR Number: WRPS-AR-2023-1723

Responsible Manager: [REDACTED]

EIR Number: EIR-2023-043

Event Investigator: [REDACTED]

concentration of 0.141 ppm (or 0.56% of the established Occupational Exposure Limit for ammonia) would be expected if AN, AY/AZ, AX tank, or AW farm exhauster emissions were present.

The exhauster high level alarm conservatively established for A farm is 160 ppm. According to the Vapor Monitoring and Detection System (VMDS), the ammonia concentration observed at the time of event occurrence was 2.209 ppm at the POR-518 exhauster and 1.137 ppm at the POR-519 exhauster. Conservatively utilizing the higher ammonia concentration observed in the POR-519 exhauster, a predicted ground receptor ammonia concentration of 0.034 ppm (or 0.14% of the established Occupational Exposure Limit for ammonia) would be expected if A tank farm exhauster emissions were present.

Therefore, providing further indication the cause of the personal ammonia alarm was unlikely to be resultant of Tank Farms exhauster emissions.

(7) PI Vision was utilized to verify 241-AP Farm maintained negative tank pressures at the time of event occurrence, with pressures ranging from -2.70 inches water column (241-AP-102) to -0.76 inches water column (241-AP-107). Therefore, providing further indication the cause of the personal ammonia alarm was unlikely to be resultant of Tank Farms exhauster emissions.

Additional Compensatory/Remedial Measures (any additional measures taken if different from immediate actions):

None.

Lessons Learned or Information That the Work Force Needs Immediately:

None. Per TFC-OPS-OPER-C-28, "Operating Experience/Lessons Learned," this event did not meet the criteria requiring generation of a Lessons learned.

- An Event Investigation will be completed per [TFC-OPS-OPER-C-14](#)
- This event will be managed by another process, i.e., Operability Evaluation, Engineering Technical Evaluation, etc.
- This event does not require continuation of the Event Investigation process

Basis for Determination:

This event does not require continuation of the event investigation process under TFC-OPS-OPER-C-14, "Event Investigation Process". The facts, findings, and comprehensive account captured under this Event Summary and the Industrial Hygiene Event Investigation Report, IHIR-00071 form the basis that further investigation will provide no additional information or operational benefit.

Responsible Manager:

[REDACTED]

Print First and Last Name

[REDACTED]

Signature / Date

[REDACTED]

CAS Manager:

[REDACTED]

Print First and Last Name

[REDACTED]

Signature / Date

Digitally signed by [REDACTED]

Date: 2023.06.22 12:35:14 -07'00'

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT

Event Title: <p style="text-align: center;">TF-AOP-015 Response to APVP</p>	PER Number: <p style="text-align: center;">N/A</p> <hr/> IHIR Number: <p style="text-align: center;">IHIR-00071</p>
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Date: 06/13/2023	Time: 0853	Location: AP Valve pit located in AP-Farm
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Event Summary and Timeline:

Event Summary:

At approximately 0853 on July 13, 2023 a Personal Ammonia Monitor alarmed at 8 ppm ammonia inside of AP-Farm. At the time when the Personal Ammonia Monitor alarmed there were a total of eight workers near the AP Valve pit. The worker wearing the Personal Ammonia Monitor that alarmed was operating a gasoline powered plate compactor near the AP Valve pit and the alarm cleared once the equipment was shut down. The other seven workers reported they checked and verified their Personal Ammonia Monitors did not alarm. In addition to the eight workers near the AP Valve pit there were two Industrial Hygiene Technicians and two Health Physics Technicians providing support for the job who were not in the immediate vicinity. All individuals did not report the presence of any odors and all declined precautionary medical surveillance. Work crew exited the farm and did not return to in farm work until TF-AOP-015 was exited.

On the job personnel: Seven Laborers, One Operator
 Support personnel not in the immediate area: Two Industrial Hygiene Technicians, Two Health Physics Technicians
 Field Response Team: One Production Operations East shift Industrial Hygiene Technicians and One Production Operations East shift Health Physics Technicians

Field Response Timeline:

0853 Approximate Time of Event - Personal Ammonia Monitor Alarmed.

0855 Field Work Supervisor is notified by workers that a Personal Ammonia Monitor Alarmed and instructed workers to stop all work activities.

0900 Field Work Supervisor notifies Industrial Hygiene Technicians of alarming Personal Ammonia Monitor and has work crew exit the farm.

0903 Industrial Hygiene Technician contacted Projects field Industrial Hygienist and reported Personal Ammonia Monitor alarm of 8 ppm.

-Industrial Hygiene Technician stated that the individual who's Personal Ammonia Monitor alarmed ceased alarming after the plate compactor was shut down and that no other Personal Ammonia Monitors alarmed.

-Industrial Hygiene Technician stated that work crew had exited the area and was currently located in the 241-AP change trailer.

0910 Projects field Industrial Hygienist reported event to Projects Level 3 Safety and Health Manger and reviewed TF-AOP-015 "Response to Personal Ammonia Monitor Alarm" and TF-OPS-IHT-041 "Preparation and Field Use of the Ventis Pro5 Personal Ammonia Monitor" procedures.

0930 Projects field Industrial Hygienist and Projects Level 3 Safety and Health Manger contact Productions Operations East field Industrial Hygienist and Level 3 Safety and Health Manger regarding proper response to Personal Ammonia Monitor Alarm based on changes to TF-AOP-015 "Response to Personal Ammonia Monitor Alarm".

-Projects field Industrial Hygienist and Projects Level 3 Safety and Health Manger determine Shift Office needs to be notified.

Field Response Timeline is continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT(Continued)

Event Summary and Timeline:

Field Response (continued):

0953 Shift Office is notified by Projects field Industrial Hygienist and Projects Level 3 Safety and Health Manger.

Field Response Timeline is continued on next page.

1000 Productions Operations East Industrial Hygienist arrive at Central Shift Office

1001 Productions Operations East field Industrial Hygienist request Productions Operations East Shift Industrial Hygiene Technician support.

1003 Productions Operations East field Industrial Hygienist reviews Data Fusion & Advisor System: Weather Details & Plume Details Dashboards for current conditions.

- Stability Class: C, Slightly unstable conditions

- Wind Speed: 14.5 MPH.

- Wind Direction: 299 degrees

- Mixing Height: 800m

1005 Productions Operations East field Industrial Hygienist reviews Vapor Data Management System (VDMS) ammonia data for 0900.

- POR 518: 2.207 ppm

- POR 519: 1.127 ppm

- AN: 25.607 ppm

- AW: 0 ppm

- POR 126: Not Available

- POR 127: 5.417 ppm

- 702AZ 0 ppm

- AP: Not Available

1007 Production Operations East shift Industrial Hygiene Technicians arrive at Central Shift Office

1008 Production Operations East Industrial Hygienist briefed Production Operations East shift Industrial Hygiene Technicians.

1009 Shift Office Event Notification (SOEN): "TF-AOP-015 Response to Personal Ammonia Monitor Alarm for ventis pro alarm reading 8 ppm. Access to the area surrounding AP Valve Pit is restricted. CSM".

1017 Central Shift Manager, Production Operations East shift Industrial Hygiene Technicians and Production Operations East shift Health Physics Technicians are briefed on farm conditions.

1020 Project Industrial Hygiene Technicians deliver the Personal Ammonia Monitor that alarmed in AP-Farm arrives at the Central Shift Office. Responding personnel depart the Central Shift Office for AP-Farm.

- Production Operations East shift Industrial Hygiene Technicians monitor per IHP-09001 "Response to ammonia alarm".

- Respiratory Protection Equipment worn per RPF-AOP-015

1028 Additional Production Operations East Industrial Hygienist arrives at the Central Shift Office.

1030 Central Shift Manger contacts Field Work Supervisor to gather additional details.

1032 Production Operations East Industrial Hygienist verifies that peak ammonia reading for the alarming Personal Ammonia Monitor is 8 ppm.

1038 Production Operations East shift Industrial Hygiene Technicians report to the Central Shift Manager that all Direct Read Instrumentation values for Ammonia are below the detection limit and are exiting the farm.

Field Response Timeline is continued on next page.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT(Continued)

Field Response (continued):

1039 Central Shift Manager provides an update to the Facility Representative regarding the status of the TF-AOP-015. The Field Work Supervisor arrives at the Central Shift Office and is provided with Odor/Vapor Response Cards before departing the Central Shift Office.

1042 Central Shift Manager confirms with the Field Work Supervisor that all involved workers in AP-Farm declined precautionary medical surveillance.

1208 Odor/Vapor Response Cards are received by Central Shift Manager.

-No odors or symptoms reported by involved workers.

-Six out of the eight workers state most likely cause for the Personal Ammonia Monitor alarm was the exhaust from the plate compactor.

1244 Shift Office Event Notification (SOEN): "Response actions for the TF-AOP-015 event have been completed and the results are at or below background levels. Exiting TF-AOP-015. Access to AP Valve Pit is restored. CSM"

Sampling/Monitoring Results:

Field Response area readings:

-Ammonia less than detectable (<1 ppm)

Ventis Pro 005319 (Event Initiating Ventis Pro):

-Ammonia: Peak of 8 ppm Alarm Event @ 0853:40

*0853:02 - 0 ppm Ammonia

*0853:12 - 3 ppm Ammonia

*0853:20 - 4 ppm Ammonia

*0853:30 - 7 ppm Ammonia

*0853:40 - 8 ppm Ammonia

*0853:50 - 7 ppm Ammonia

*0854:00 - 6 ppm Ammonia

*0854:10 - 5 ppm Ammonia

*0854:20 - 4 ppm Ammonia

*0854:30 - 3 ppm Ammonia

*0854:40 - 3 ppm Ammonia

*0854:50 - 2 ppm Ammonia

*0855:00 - 2 ppm Ammonia

*0855:10 - 0 ppm Ammonia

Ventis Pro 005626 (Present at Initiating Event):

-Ammonia 0.00 ppm @ 0853

-Ammonia 0.00 ppm peak levels for morning work evolution.

Ventis Pro 004653 (Present at Initiating Event):

-Ammonia 0.00 ppm @ 0853

-Ammonia 0.00 ppm peak levels for morning work evolution.

Ventis Pro 005193 (Present at Initiating Event):

-Ammonia 0.00 ppm @ 0853

-Ammonia 0.00 ppm peak levels for morning work evolution.

Ventis Pro 004597 (Present at Initiating Event):

-Ammonia 0.00 ppm @ 0853

-Ammonia 0.00 ppm peak levels for morning work evolution.

Ventis Pro 004667 (Present at Initiating Event):

-Ammonia 0.00 ppm @ 0853

-Ammonia 0.00 ppm peak levels for morning work evolution.

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT(Continued)

Sampling/Monitoring Results:

Ventis Pro 005311 (Present at Initiating Event):

-Ammonia 0.00 ppm @ 0853

-Ammonia 0.00 ppm peak levels for morning work evolution.

*Showing Ammonia levels in approximately 10 second intervals leading up to the Personal Ammonia Monitor alarm event, which lasted approximately 40 seconds, to the Personal Ammonia Monitor recording 0.00 ppm after the alarm cleared.

SWIHD References:

Event Response Site Wide Industrial Hygiene Database Direct Reading Instrument Survey #23-03674
"TF-AOP-015 immediately S. of 241-AP Farm Valve Pit.

Additional Information:

At the time of the initiating event a total of eight workers, seven laborers and one operator, in addition to the two Industrial Hygiene Technicians and two Health Physics Technicians who were providing support were wearing Respiratory Protection Equipment in accordance with Management Directed Respiratory Protection Form "MDRPF-PLN-173". All workers were wearing FF-APR as well as ventis pros (Personal Ammonia Monitors). One Laborer was compacting soil with a gas powered plate compactor when that individuals Personal Ammonia Monitor (Ventis Pro 005319) began to alarm with a peak reading of 8 ppm. Data from the individuals ventis pro that alarmed indicates ammonia levels of 6 ppm or great for a 30 second duration. The laborer shut down the plate compactor and began to move away from the equipment at which point the Personal Ammonia Monitor ceased to alarm indicating levels below 6 ppm. No other workers Personal Ammonia Monitors alarmed. No odors or symptoms were reported by the work crew.

One Industrial Hygiene Technician and one Health Physics Technician responded to complete background sweeps of AP-Farm. The Industrial Hygiene Technician found ammonia readings of less than Detectable (< 1 ppm). The responding personnel wore Respiratory Protection Equipment in accordance with Management Directed Respiratory Protection Form "RPF-AOP-015". Both employees were wearing a FF-APR.

Weather details at the time of the initiating event were provided by the Hanford Weather Station and are shown below.

0900 (Hanford weather station 6):

- Mixing Height: 800 meters
- Stability Class: A, extremely unstable conditions
- Barometric Pressure and trend: 29.027 and decreasing
- Temperature - 83 degrees Fahrenheit
- Relative Humidity: 26
- Wind Speed and Direction: Northwest at 8 MPH.

Ammonia is used as sentinel Tank Waste Chemical Vapor for chemicals of potential concern (COPC) and Personal Ammonia Monitors are worn by workers in the Tank Farms to detect its presence. Eight workers were performing work in close proximity to each other when one of the individuals Personal Ammonia Monitor alarmed. If ammonia had been present it is expected that additional Personal Ammonia Monitors would have simultaneously alarmed. In fact all other Personal Ammonia Monitor recorded 0.00 ppm ammonia at the time the alarming Personal Ammonia Monitor (Ventis Pro 005319) was recording values greater than 6 ppm ammonia. It should be noted the individual whose Personal Ammonia Monitor alarmed was operating a gas powered plate compactor at the time. Once the worker noticed the alarm and upon shutting the equipment off the alarm was cleared and Personal Ammonia Monitor alarm ceased. Based on the above it is highly likely that exhaust emissions from the plate wacker interfered with the electrochemical ammonia sensor, the instrument electronics, or both.

Refer to IHIR-00071 Attachment A for Weather Data, and VDMS Data.

Recommendations/Conclusions:

Recommendations:

Washington River Protection Solutions
INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT(Continued)

Recommendations/Conclusions:

N/A

Conclusions:

Direct Reading Instrumentation monitoring performed during response actions did not indicate further action was necessary to protect worker safety and health. As a result TF-AOP-015 for AP-Farm valve pit was exited and the area was released from restricted access.

Other:

All involved workers were offered precautionary medical surveillance. All declined. See Event Investigation Report #2023-043 for additional information.

Industrial Hygienist:

Print First and Last Name

Signature / Date

Industrial Hygiene Level 2 Manager:

Print First and Last Name

Signature / Date

ODOR/VAPOR RESPONSE CARD - 241 AP FARM

1. Complete below information and map (Page 1).

- Date and time of event: 6-13-23 Ventis Pro alarm
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): 8 ppm
- Your name and the work you were performing:
[REDACTED] Compacting & Shoveling
- Other Work Underway? Describe:
Banking & Hauling gravel back & forth
- Location of event (mark area on map and wind direction):
AP Valve Pit
- Name(s) of others in or near the affected area:
[REDACTED]
- Was Industrial Hygiene present, who?
[REDACTED]
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe):
- Is source known/likely? Describe:
- Your symptoms? None
 - Headache
 - Dizziness
 - Nausea
 - Cough
 - Fatigue
 - Weakness
 - Sore Throat
 - Difficulty Breathing
 - Eye Irritation
 - Rash
 - Itch
 - Tingling
 - Numbness
 - Taste
 - Other (describe):

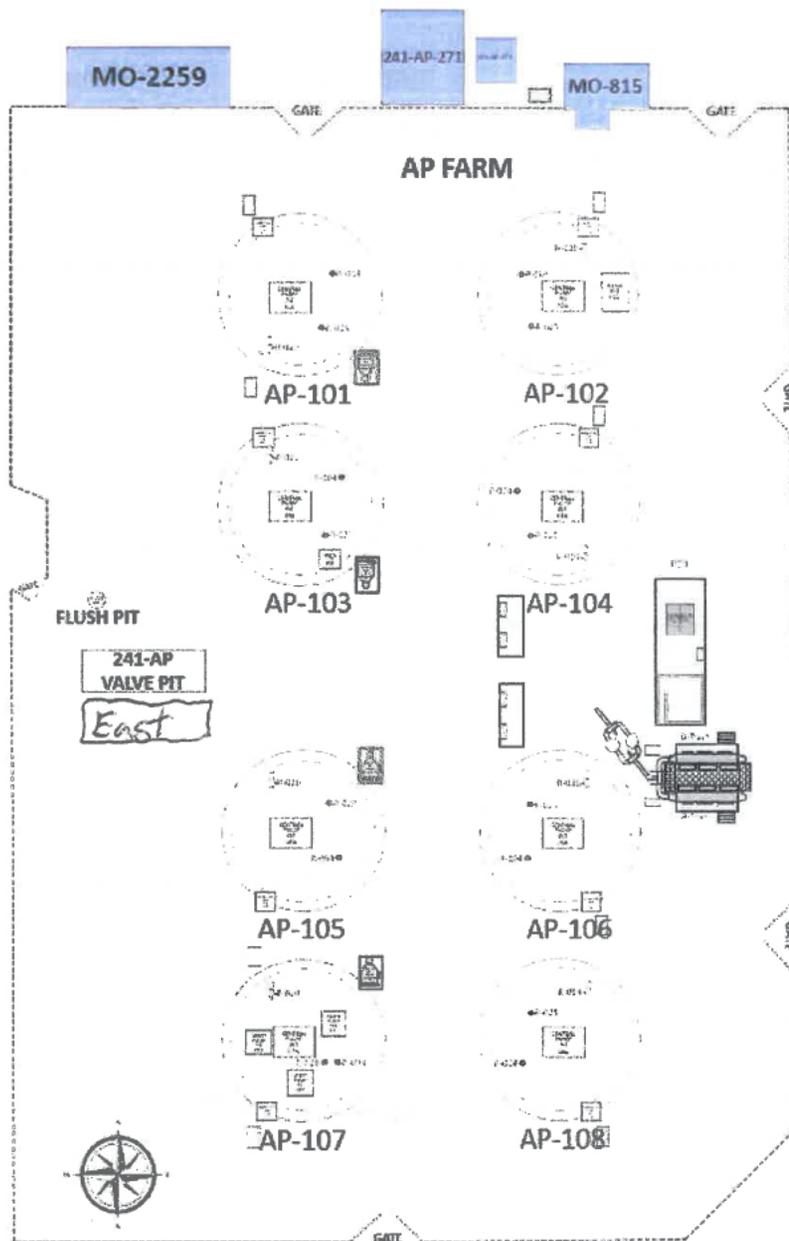
2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM. If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD - 241 AP FARM

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at [REDACTED]
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right;
 - b. Wind direction, speed and description, such as stable or gusty wind;
 - c. Environmental conditions, such as hot, cold, windy, rainy;
 - d. Other work or contractors in the area;
 - e. Anything else you think is relevant.
4. Provide the completed card to your Supervisor*, Industrial Hygiene*, Union Safety Representative* or the CSM.

* If received by Supervisor, IH, or Union Safety Representative, the Supervisor/IH/ Union-SR will ensure card it is provided to the CSM.



ODOR/VAPOR RESPONSE CARD - 241 AP FARM

1. Complete below information and map (Page 1).

- Date and time of event: 8:45 6/13/23
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): 8 ppm
- Your name and what you were performing: [Redacted] Backfill
- Other Work Underway? Describe: _____
- Location of event (mark area on map and wind direction): [Redacted]
- Name(s) of others in or near the affected area: [Redacted]
- Was Industrial Hygiene present, who? Did not smell anything.
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe): _____
- Is source known/likely? Describe: _____
- Your symptoms? None
 - Headache
 - Dizziness
 - Nausea
 - Cough
 - Fatigue
 - Weakness
 - Sore Throat
 - Difficulty Breathing
 - Eye Irritation
 - Rash
 - Itch
 - Tingling
 - Numbness
 - Taste
 - Other (describe): _____

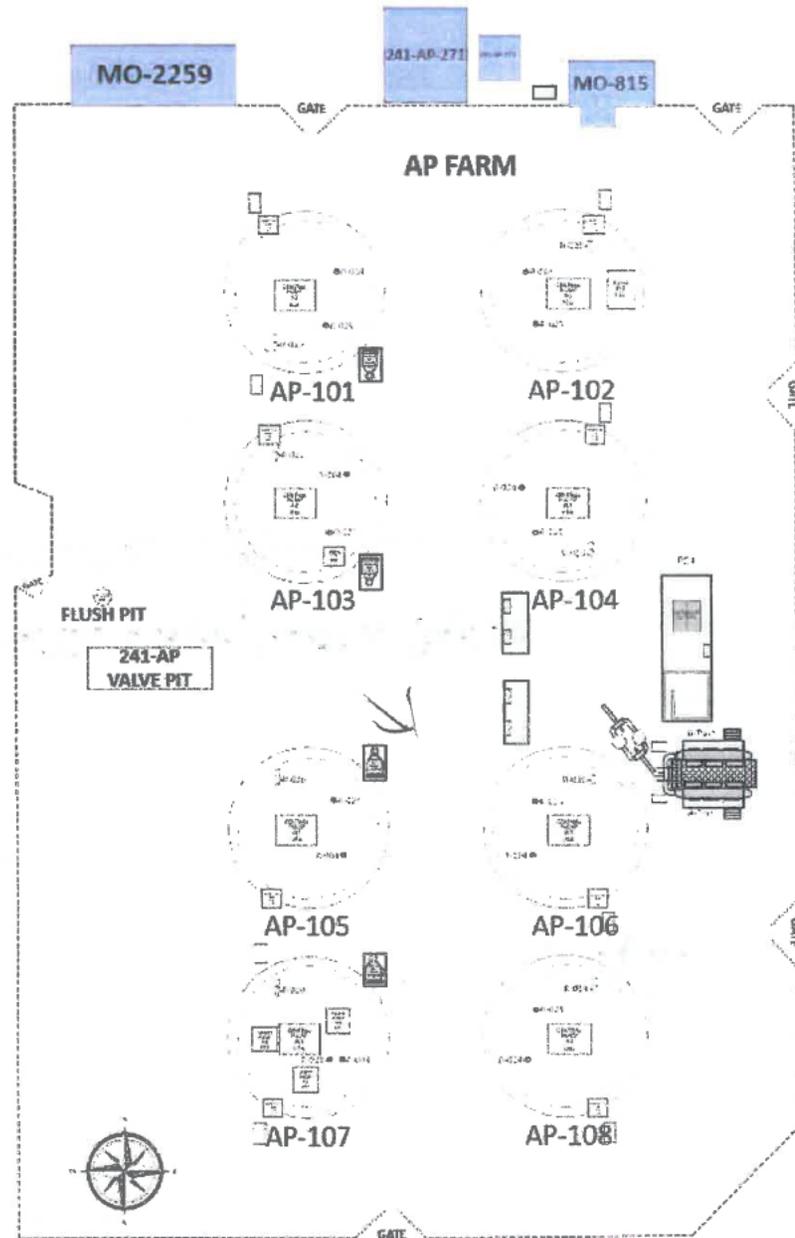
2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM. If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD - 241 AP FARM

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at [REDACTED]
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right;
 - b. Wind direction, speed and description, such as stable or gusty wind;
 - c. Environmental conditions, such as hot, cold, windy, rainy;
 - d. Other work or contractors in the area;
 - e. Anything else you think is relevant.
4. Provide the completed card to your Supervisor*, Industrial Hygiene*, Union Safety Representative* or the CSM.

* If received by Supervisor, IH, or Union Safety Representative, the Supervisor/IH/Union-SR will ensure card it is provided to the CSM.



ODOR/VAPOR RESPONSE CARD - 241 AP FARM

1. Complete below information and map (Page 1).

- Date and time of event: 6-13-23 8:45 Am
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): 8 ppm
- Your name and the work you were performing:
[Redacted] Spotting forklift
- Other Work Underway? Describe:
N/A
- Location of event (mark area on map and wind direction):
AP VP
- Name(s) of others in or near the affected area:
Laborer 13
- Was Industrial Hygiene present, who?
[Redacted]
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe):
- Is source known/likely? Describe:
Plate compactor
- Your symptoms? None
 - Headache
 - Dizziness
 - Nausea
 - Cough
 - Fatigue
 - Weakness
 - Sore Throat
 - Difficulty Breathing
 - Eye Irritation
 - Rash
 - Itch
 - Tingling
 - Numbness
 - Taste
 - Other (describe):

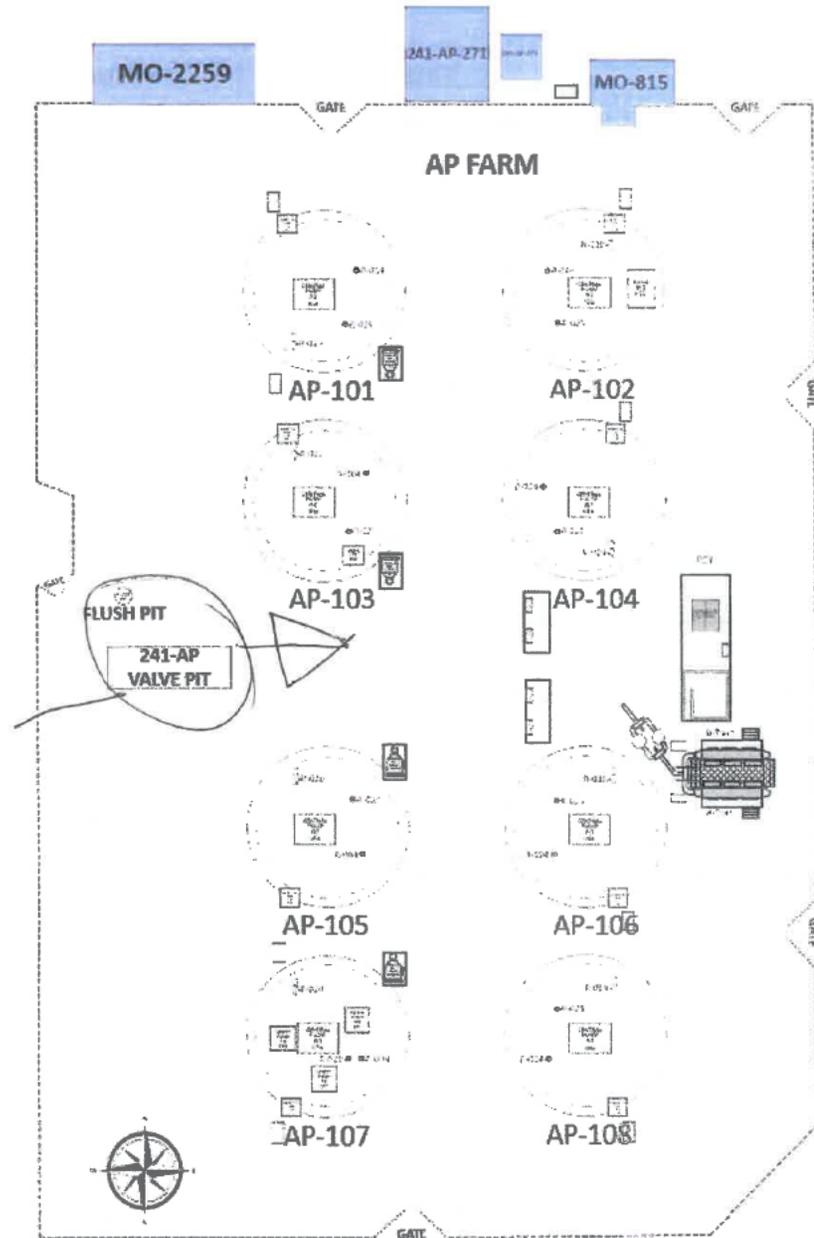
2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM. If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD - 241 AP FARM

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at [REDACTED]
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right;
 - b. Wind direction, speed and description, such as stable or gusty wind;
 - c. Environmental conditions, such as hot, cold, windy, rainy;
 - d. Other work or contractors in the area;
 - e. Anything else you think is relevant.
4. Provide the completed card to your Supervisor*, Industrial Hygiene*, Union Safety Representative* or the CSM.

* If received by Supervisor, IH, or Union Safety Representative, the Supervisor/IH/ Union-SR will ensure card it is provided to the CSM.



ODOR/VAPOR RESPONSE CARD - 241 AP FARM

1. Complete below information and map (Page 1).

- Date and time of event: 6-13-2023 ~ 0900
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): 8 ppm - Ammonia
- Your name and the work you were performing:
- Backfilling
- Other Work Underway? Describe:
n/a
- Location of event (mark area on map and wind direction):
AP Valve Pit
- Name(s) of others in or near the affected area:
- Was Industrial Hygiene present, who?
- Describe the odor.
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe): neutral - Did not smell anything
- Is source known/likely? Describe:
Plate-wacker was running in the area
- Your symptoms? None
 - Headache
 - Dizziness
 - Nausea
 - Cough
 - Fatigue
 - Weakness
 - Sore Throat
 - Difficulty Breathing
 - Eye Irritation
 - Rash
 - Itch
 - Tingling
 - Numbness
 - Taste
 - Other (describe):

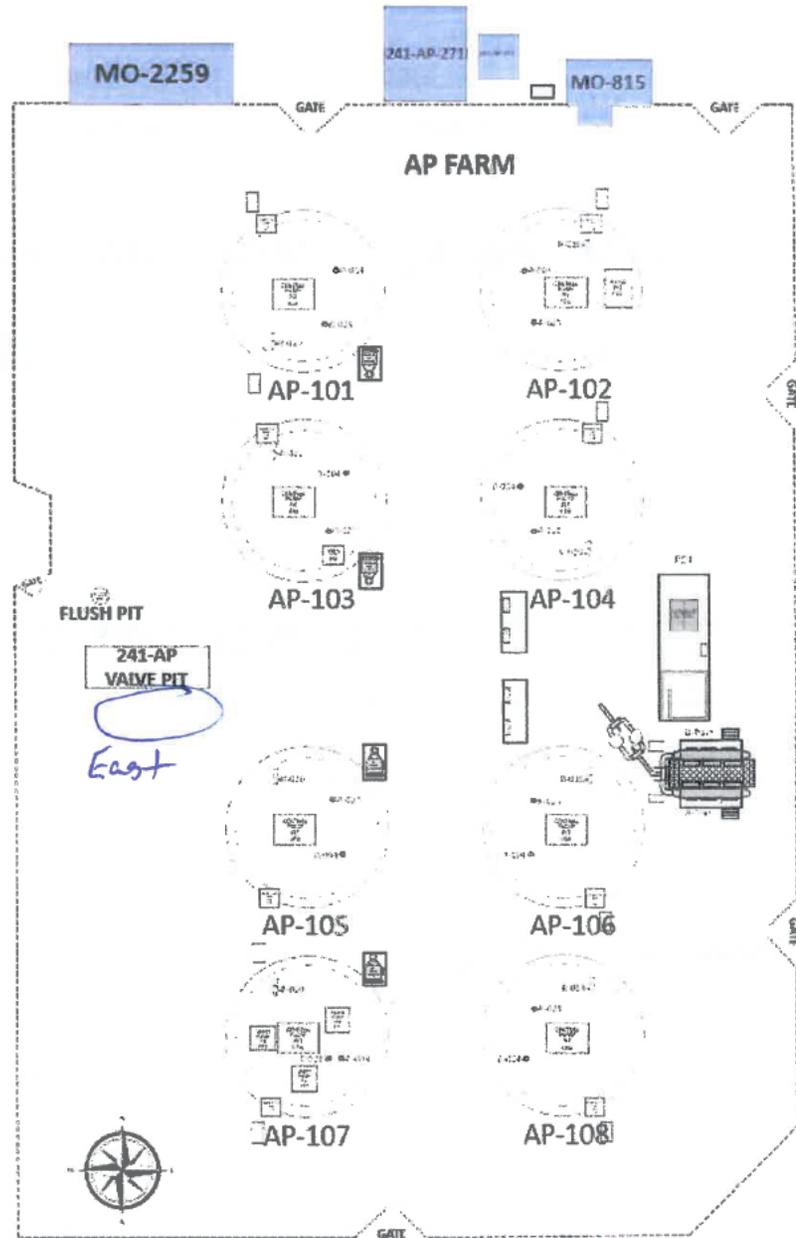
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ODOR/VAPOR RESPONSE CARD - 241 AP FARM

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at [REDACTED]
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right;
 - b. Wind direction, speed and description, such as stable or gusty wind;
 - c. Environmental conditions, such as hot, cold, windy, rainy;
 - d. Other work or contractors in the area;
 - e. Anything else you think is relevant.
4. Provide the completed card to your Supervisor*, Industrial Hygiene*, Union Safety Representative* or the CSM.

* If received by Supervisor, IH, or Union Safety Representative, the Supervisor/IH/ Union-SR will ensure card it is provided to the CSM.



ODOR/VAPOR RESPONSE CARD - 241 AP FARM

1. Complete below information and map (Page 1).

- Date and time of event: 6-13-23 845 AM
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): 8-ppm
- Your name and the work you were performing:
[REDACTED] Back Fill valve Pit
- Other Work Underway? Describe:
N/A
- Location of event (mark area on map and wind direction):
AP- VALVE PIT
- Name(s) of others in or near the affected area:
[REDACTED]
- Was Industrial Hygiene present who?
[REDACTED]
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe): Did not smell anything
- Is source known/likely? Describe:
Yes, BOMAG compacter
- Your symptoms? None
 - Headache
 - Dizziness
 - Nausea
 - Cough
 - Fatigue
 - Weakness
 - Sore Throat
 - Difficulty Breathing
 - Eye Irritation
 - Rash
 - Itch
 - Tingling
 - Numbness
 - Taste
 - Other (describe):

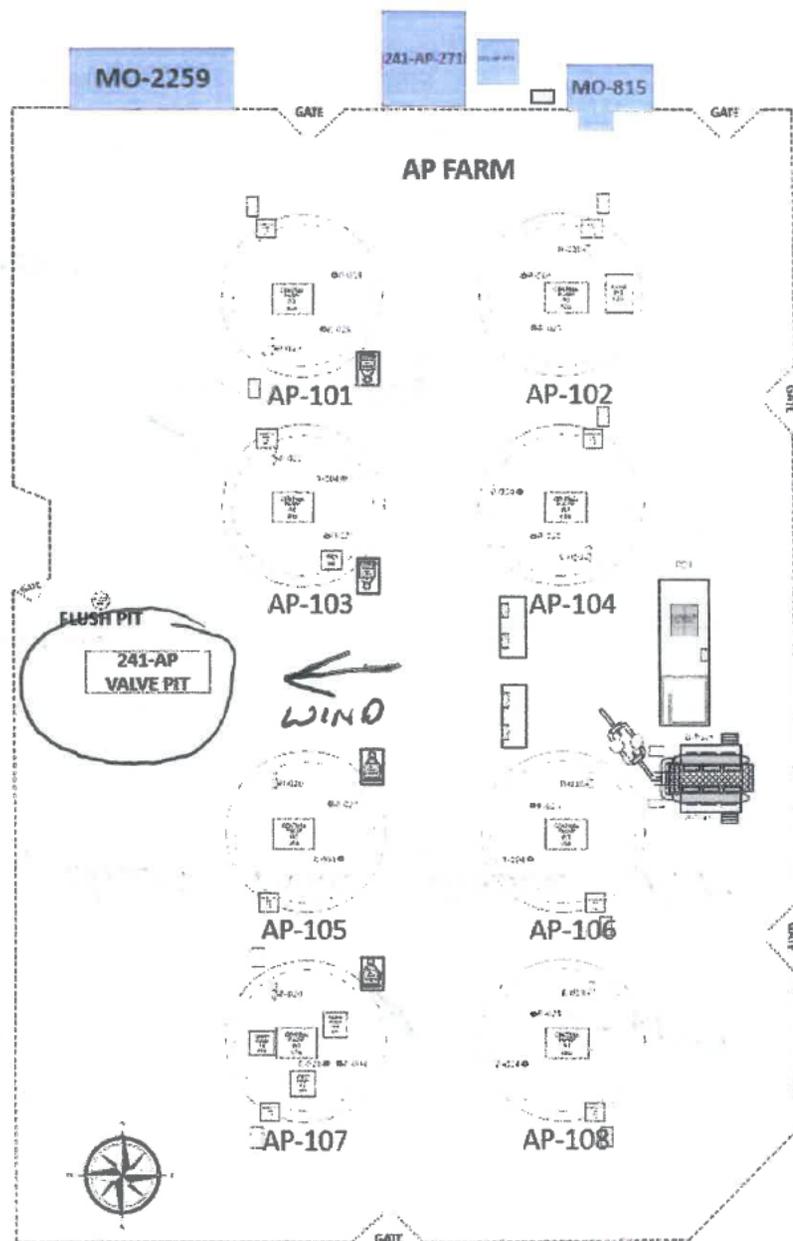
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ODOR/VAPOR RESPONSE CARD - 241 AP FARM

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at [REDACTED]
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right;
 - b. Wind direction, speed and description, such as stable or gusty wind;
 - c. Environmental conditions, such as hot, cold, windy, rainy;
 - d. Other work or contractors in the area;
 - e. Anything else you think is relevant.
4. Provide the completed card to your Supervisor*, Industrial Hygiene*, Union Safety Representative* or the CSM.

* If received by Supervisor, IH, or Union Safety Representative, the Supervisor/IH/ Union-SR will ensure card it is provided to the CSM.



ODOR/VAPOR RESPONSE CARD - 241 AP FARM

1. Complete below information and map (Page 1).

- Date and time of event: 6/13/23 - 8:49
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): no odor
- Your name and the work you were performing: [REDACTED] BACK FILL
- Other Work Underway? Describe: no odor
- Location of event (mark area on map and wind direction): AP FARM APVP
- Name(s) of others in or near the affected area: [REDACTED]
- Was industrial hygiene present, who? I smelt nothing [REDACTED]
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe):
- Is source known/likely? Describe: NONE Bo mag compactor
- Your symptoms? None
 - Headache
 - Dizziness
 - Nausea
 - Cough
 - Fatigue
 - Weakness
 - Sore Throat
 - Difficulty Breathing
 - Eye Irritation
 - Rash
 - Itch
 - Tingling
 - Numbness
 - Taste
 - Other (describe):

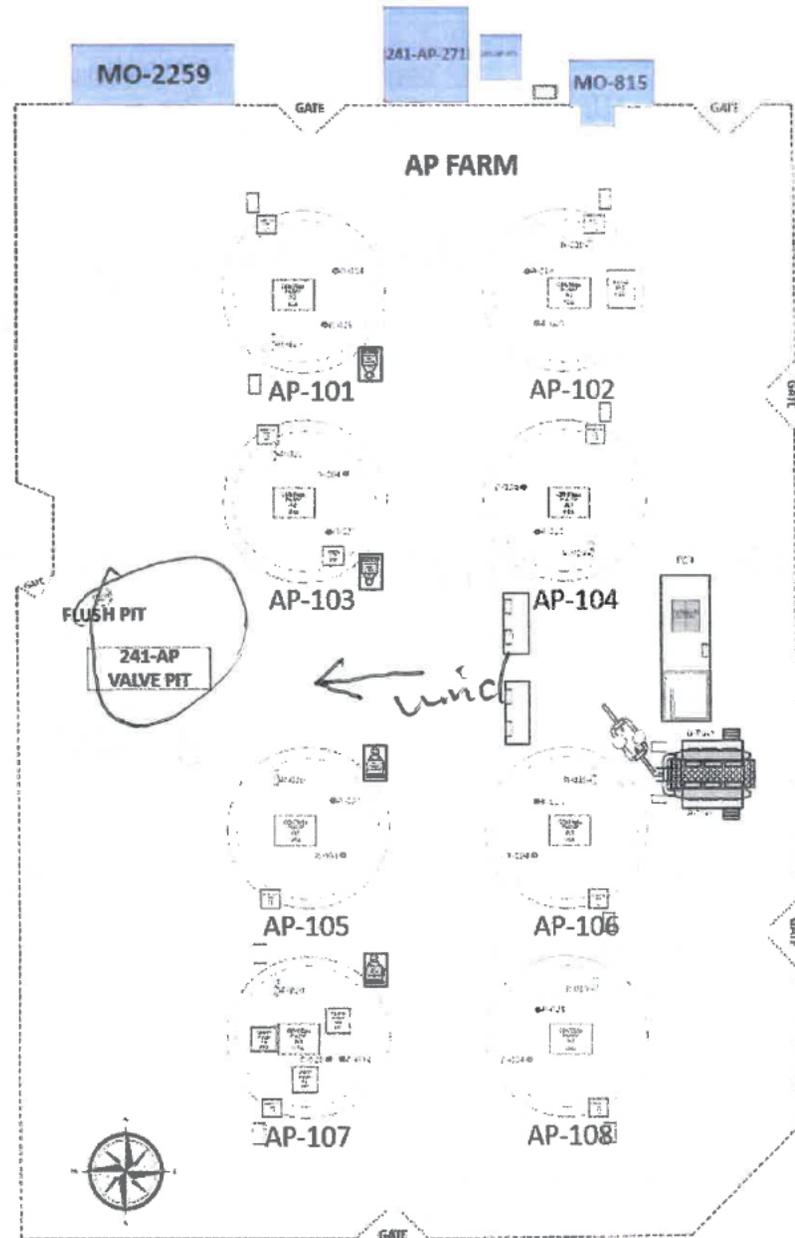
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ODOR/VAPOR RESPONSE CARD - 241 AP FARM

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at [REDACTED]
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right;
 - b. Wind direction, speed and description, such as stable or gusty wind;
 - c. Environmental conditions, such as hot, cold, windy, rainy;
 - d. Other work or contractors in the area;
 - e. Anything else you think is relevant.
4. Provide the completed card to your Supervisor*, Industrial Hygiene*, Union Safety Representative* or the CSM.

* If received by Supervisor, IH, or Union Safety Representative, the Supervisor/IH/ Union-SR will ensure card it is provided to the CSM.



ODOR/VAPOR RESPONSE CARD - 241 AP FARM

1. Complete below information and map (Page 1).

- Date and time of event: 6.13.23 8:45
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): AA 8ppm (David Larson's)
- Your name and the work you were performing:
[REDACTED] excavation
- Other Work Underway? Describe:

- Location of event (mark area on map and wind direction):
Ap Valvepit
- Name(s) of others in or near the affected area:
[REDACTED]
- Was Industrial Hygiene present, who?
[REDACTED]
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe): _____
- Is source known/likely? Describe:
Exhaust of Compactor
- Your symptoms? None
 - Headache
 - Dizziness
 - Nausea
 - Cough
 - Fatigue
 - Weakness
 - Sore Throat
 - Difficulty Breathing
 - Eye Irritation
 - Rash
 - Itch
 - Tingling
 - Numbness
 - Taste
 - Other (describe): _____

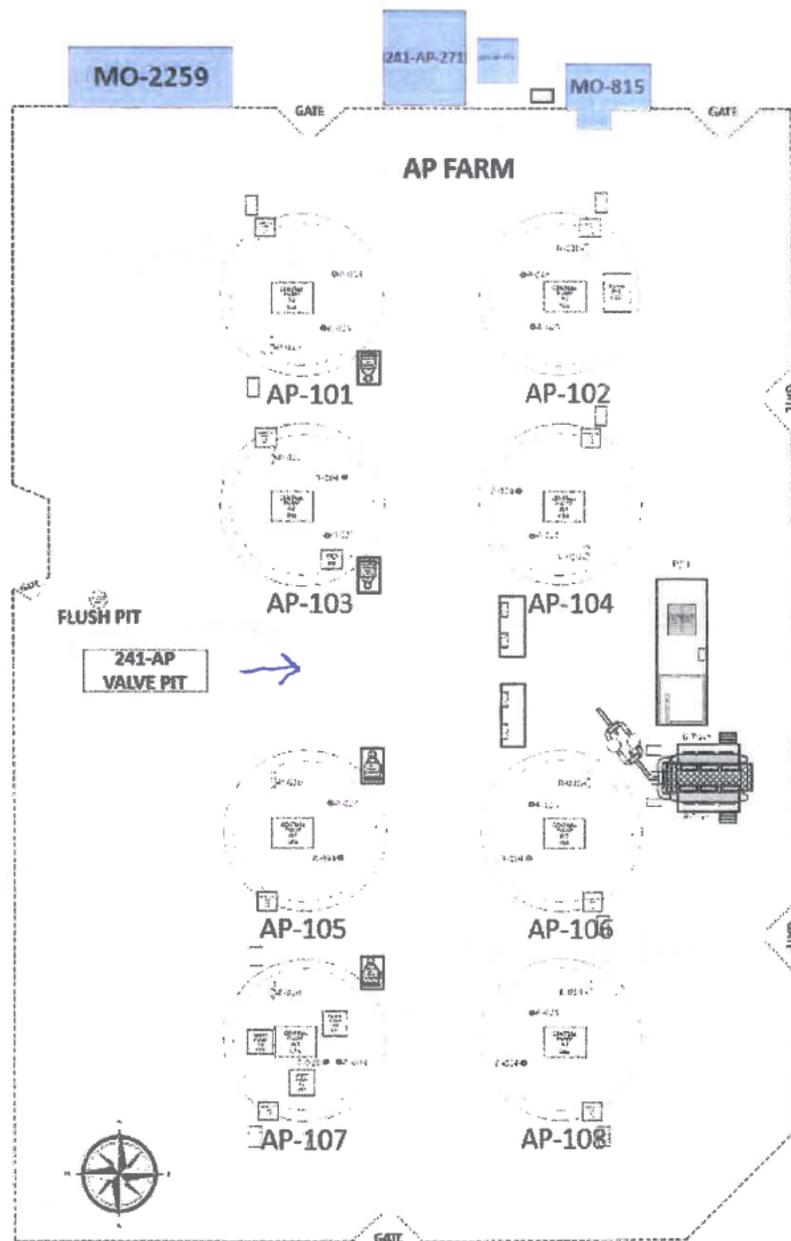
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ODOR/VAPOR RESPONSE CARD - 241 AP FARM

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at [REDACTED]
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right;
 - b. Wind direction, speed and description, such as stable or gusty wind;
 - c. Environmental conditions, such as hot, cold, windy, rainy;
 - d. Other work or contractors in the area;
 - e. Anything else you think is relevant.
4. Provide the completed card to your Supervisor*, Industrial Hygiene*, Union Safety Representative* or the CSM.

* If received by Supervisor, IH, or Union Safety Representative, the Supervisor/IH/Union-SR will ensure card it is provided to the CSM.



ODOR/VAPOR RESPONSE CARD - 241 AP FARM

1. Complete below information and map (Page 1).

- Date and time of event: 6-13-03 8:45 AM
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): 8 (ppm)
- Your name and the work you were performing:

[Redacted] operator
- Other Work Underway? Describe:

N/A
- Location of event (mark area on map and wind direction):

AP Farm East
- Name(s) of others in or near the affected area:

no one ^{6/13/03} Labors
- Was Industrial Hygiene present, who?

N/A
- Describe the odor:

<input type="checkbox"/> Sweet	<input type="checkbox"/> Sour	<input type="checkbox"/> Smoky	<input type="checkbox"/> Septic/Sewer	<input type="checkbox"/> Musty	<input type="checkbox"/> Rotten
<input type="checkbox"/> Metallic	<input type="checkbox"/> Onion	<input type="checkbox"/> Earthy	<input type="checkbox"/> Ammonia	<input type="checkbox"/> Citrus	<input type="checkbox"/> Solvent
<input type="checkbox"/> Other (describe):					
- Is source known/likely? Describe:

they think the cause is exhaust from compactor
- Your symptoms? None

<input type="checkbox"/> Headache	<input type="checkbox"/> Dizziness	<input type="checkbox"/> Nausea	<input type="checkbox"/> Cough	<input type="checkbox"/> Fatigue
<input type="checkbox"/> Weakness	<input type="checkbox"/> Sore Throat	<input type="checkbox"/> Difficulty Breathing	<input type="checkbox"/> Eye Irritation	<input type="checkbox"/> Rash
<input type="checkbox"/> Itch	<input type="checkbox"/> Tingling	<input type="checkbox"/> Numbness	<input type="checkbox"/> Taste	
<input type="checkbox"/> Other (describe):				

2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM. If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD - 241 AP FARM

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at [REDACTED]
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right;
 - b. Wind direction, speed and description, such as stable or gusty wind;
 - c. Environmental conditions, such as (hot), cold, windy, rainy;
 - d. Other work or contractors in the area;
 - e. Anything else you think is relevant.
4. Provide the completed card to your Supervisor*, Industrial Hygiene*, Union Safety Representative* or the CSM.

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