

Washington River Protection Solutions
EVENT SUMMARY

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:

1. **Project:** Production Operations/EV Team 2. **Report Date:** 02/04/2025
3. **Investigation Title:** C-67 Response at 242-A
4. **Investigation Report Number:** EIR-2025-023
5. **Responsible Manager:** [REDACTED]
6. **Event Investigator:** [REDACTED]
7. **Area / Building / Location:** 200E/242-A Evaporator/242-A Condenser Room
8. **Date and Approximate Time of Event:** **Date:** 01/15/2025 **Time (military):** 0916 hours
9. **Associated Action Request (AR) Number:** WRPS-AR-2025-0946
10. **Associated Occurrence Report Number (if applicable):** N/A
11. **Event Investigation Meeting Held:** Yes [] or No [X] **Date:** N/A **Time (military):** N/A

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

Eleven workers smelled a natural gas-like odor while performing vessel vent ammonia monitoring per Work Order (WO) #1176017 [procedure TO-620-200, Vessel Vent Ammonia Monitor] and heat trace megger testing per WO #1098830 [procedure 5-EDS-863, Heat Trace Insulation Testing].

13. Personnel Involved: *(Job positions, number of personnel, identify any support organizations or subcontractors)*

- WRPS Electrician - 4
- WRPS Instrument Specialist (IS) - 2
- WRPS Radiological Control Technician (RCT) - 3
- WRPS Industrial Hygiene Technician (IHT) - 1
- WRPS Engineer - 1

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

On 1/15/2025 at approximately 0916 hours, two work crews reported smelling a stronger than normal odor described as "natural gas" while working on the third and fourth floors of the 242-A Evaporator Condenser Room. At 0932 hours, the 242-A Shift Manager reported the stronger than normal odor to the Central Shift Manager (CSM). At the time of when the odor event, four Electricians, and two RCTs were performing heat trace megger testing on the third floor. One RCT, one IHT, two ISs and an engineer were preparing to perform maintenance activities on the Ammonia Monitor located on the fourth floor.

At the time of the odor event an IHT was on the 4th floor of the Condenser Room performing monitoring for total Volatile Organic Compounds (VOCs) and Ammonia. No elevated readings were detected on their Direct Reading Instrument (DRI) equipment with a 10.6 eV photoionization detector (PID).

At 0942 hours, the CSM initiated response actions per TFC-OPS-OPER-C-67, *Response to Stronger than Normal Odors*. The CSM restricted access to the 242-A Condenser room.

At 1047 hours, the response team performed DRI monitoring inside of the 242-A Condenser Room per Industrial Hygiene Sample Plan (IHSP), IHSP-POE-MULTI-TFCOPSOPERC67, *Industrial Hygiene Odor Evaluation*.

At 1104 hours, TFC-OPS-OPER-C-67 response actions were completed. Response actions did not indicate further actions were necessary regarding worker safety and health occupational exposure limits. Access was restored to the 242-A Condenser Room.

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Ten of the eleven workers who smelled the odor reported no symptoms on their Odor Response Cards and declined reporting to the onsite medical provider for precautionary medical surveillance. One worker reported symptoms of light-headedness and was evaluated at the onsite medical provider. The worker was released back to work without restriction.

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

- The odor event occurred on the third and fourth floors of the 242-A Evaporator Condenser Room located in the 200 East Area of the Hanford site.
- At the time of the event workers were wearing Level D Personal Protective Equipment (PPE) and in radiological buffer area (RBA). The personnel were not in an area requiring the use of respiratory protection or personal ammonia monitor (e.g., Ventispro or ToxiRAE).
- The Hanford Site Meteorological Station #6 in the 200 East Area and Data Fusion and Advisory System (DFAS) application, powered by SmartSite, were utilized for outdoor weather details at the time odors were reported. The Hanford Site Meteorological Station #6 and DFAS dashboard indicated the following weather conditions at 0916 hours on 01/15/2025:
 - o Wind Speed and Direction: 2 miles per hour (mph) (wind out of the East)
 - o Mixing Height: 140 feet above grade
 - o Stability Class: E (neutral conditions)
 - o Barometric Pressure: 29.82 inches mercury (Hg)
 - o Relative Humidity: 95%

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

The 242-A Evaporator was in a shutdown mode and maintenance work activities were ongoing. Due to the access restriction in the 242-A Condenser Room work activities were paused until access could be restored.

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

- The CSM initiated TFC-OPS-OPER-C-67, Response to Stronger than Normal Odors, response actions.
- The workers were offered precautionary medical evaluation.
- Access was restricted to the 242-A Condenser Room.
- The DOE Facility Representative was notified of the event.
- The CSM made required TFC-OPS-OPER-C-67 notifications.
- Industrial Hygiene Technicians (IHTs) took readings in all accessible areas of the 242-A Condenser Room per survey plan IHSP-POE-MULTI-TFCOOPSOPERC67, *Industrial Hygiene Odor Evaluation*.
- Event Investigation EIR-2025-023, C-67 Response at 242-A, was initiated.

18. Compensatory Actions Taken:

None.

19. Remedial Actions Taken:

None.

20. Key Elements of the Investigation: *(Key investigation points)*

- To summarize the conclusion per Industrial Hygiene Event Investigation Report (IHIR), IHIR-00112, TFC-OPS-OPER-C-67 *Response to Stronger than Normal Odors*, monitoring results did not exceed occupational exposure limits and did not indicate further actions were necessary regarding worker safety and health. IHTs performed DRI monitoring in all accessible areas of the 242-A Condenser Room per IHSP, IHSP-POE-MULTITFCOOPSOPERC67,

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Industrial Hygiene Odor Evaluation. All sensors on the DRI monitors passed the post-use function test.

- o Direct Reading Results included:
 - Peak readings during response were at or below background
 - Ammonia: less than 1 Parts Per Million (ppm)
 - Volatile Organic Compounds (10.6 eV lamp): less than 0.010 ppm
 - Hydrogen Sulfide: less than 0.1 ppm
- During response actions a definitive source was not identified, however, interviews with workers and the 242-A Shift Operations Manager (SOM) did indicate that a likely source could be the breaching of fire systems piping. During the time of the event the only odor introduction or change in facility configuration identified was the fire system maintenance activity in the basement of the condenser room. According to the 242-A SOM, Fire Systems Maintenance workers noted that when opening piping an expected "sulfur-like" odor consistent with their scope of work (i.e. stagnant water) was present. During response actions the area around the open pipe was monitored with no detectable readings found nor obvious offensive odor present to responding personnel.

The Condenser Room is approximately 27 feet(ft) long by 24 ft wide (8.2 meters (m) long by 7.2 m wide) and 71 ft 6-in. (21.8 m) from the below-grade floor to the ceiling, with a total volume of approximately 46,008 cubic feet or 1,287.1 cubic meters (m³) (Ignoring volume displacement of internal structures). The normal ventilation supply and exhaust flow rates for the Condenser Room is approximately 9,470 cubic feet per minute (cfm) [4.4 7 m³ / second (sl J. This flow rate would result in approximately 12 to 12.5 air exchanges per hour. The flow rate could indicate how the eleven workers on the third and fourth floor encountered the stronger than normal odor.

- While the odor description is inconsistent with Tank Waste Chemical Vapors, due to the proximity to the Tank Farms and connected systems, monitoring for Tank Waste Chemical Vapors was performed. Ammonia is used as a sentinel Tank Waste Chemical Vapor for Chemicals of Potential Concern (COPC). Therefore, when monitoring for Tank Waste Chemical Vapors/COPCs, DRI equipped with an ammonia sensor is utilized at a minimum. Additional COPC monitoring was conducted concurrently with ammonia during the event response. As individual agents are not identified when monitoring for VOCs. When monitoring for Tank Waste VOC vapors, DRI equipped with a 10.6 eV PID is utilized to detect multiple VOC COPCs simultaneously.
- The response team monitored for hydrogen sulfide based on the odor descriptor of "natural gas." The American Industrial Hygiene Association (AIHA) Odor Threshold for Chemicals with Established Health Standards, 2nd Edition, lists hydrogen sulfide with the odor character "rotten eggs." Hydrogen sulfide gas has a distinct odor that is detectable at very low concentrations. The lower range of odor values for hydrogen sulfide is 0.00004 (ppm).

Ammonia gas has an offensive pungent, irritating odor that is detectable at very low concentrations. The lower range of odor values for ammonia is 0.043 ppm (AIHA, 2013). While odors may be readily perceived, concentrations are still well below levels of worker exposure concern. Hydrogen sulfide, ammonia, and VOCs gas production rate is a function of bacteria/organics concentrations, temperature, and dissolved oxygen.

The resolution of DRI equipped with hydrogen sulfide (0.1 ppm) and ammonia (1 ppm) sensors are comparatively inadequate as a detection tool at the concentrations perceived by the human olfactory sense. While the resolution of the DRI equipped with these sensors are insufficient to

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detect concentrations at the lower range of odor threshold values, they are sufficient to detect hydrogen sulfide and ammonia at concentrations that approach their established Occupational Exposure Limits (OEL).

Limit Type	Hydrogen Sulfide	Ammonia	VOCs
Odor Response Action Limit	0.5 ppm	12 ppm	2 ppm
ACGIH 8-hour TWA-TLV	1 ppm	25 ppm	--
ACGIH 15-minute STEL-TLV	5 ppm	35 ppm	--
OSHA 8-hour TWA-PEL	--	50 ppm	--
OSHA Ceiling-PEL	20 ppm	--	--
OSHA 10-minute Peak-PEL*	50 ppm	--	--
NIOSH IDLH	100 ppm	300 ppm	--

*Allowed for 10-minutes if there is no other exposure to hydrogen sulfide during the shift

Figure 1-Hydrogen Sulfide, Ammonia and VOCs Threshold Values

- The event response DRI results were less than detectable in the Affected Area for hydrogen sulfide, ammonia, and VOCs. Additional odor descriptors were provided after response actions were taken ("sewer", "burnt rubber"). It is noted that although these odor descriptors were not made known during the initial response, the additional descriptors did not prompt any deviation or additional response actions.
 - o Burnt rubber The odor character "burnt plastic or rubber" is associated with cresol, all isomers (AIHA, 2013). The main constituents to monitor for to detect cresol are Total VOCs and Particulates Not Otherwise Specified (PNOS). Therefore, when monitoring for the odor descriptor of "burnt plastic or rubber," DRI equipped with a 10.6 eV PID for VOCs should be utilized.
 - o Propane Butane and propane are associated with the odor character "Natural Gas" (AIHA, 2013). Propane is a colorless, odorless gas. The odor associated with propane is due to a foul-smelling odorant often added to propane for leak detection purposes. Typical propane odorant is sulfur-based, including mercaptan. The chemicals butyl mercaptan and dodecyl mercaptan are associated with the odor character "skunk." Methyl mercaptan is associated with the odor characters "rotten cabbage" and "garlic" (AIHA, 2013). Therefore, when monitoring for the odor descriptor of "propane," DRI equipped with an ammonia sensor and a hydrogen sulfide sensor should be utilized at a minimum
- In conclusion the DRI monitoring that was performed during response actions did not indicate further action was necessary to protect worker safety and health.

21. Positive Aspects Identified:

Personnel responded promptly to the event, implementing the applicable TFC-OPS-OPER-C-67 procedure and response actions.

22. Key Take Aways / Learning Opportunities:

None.

23. Event Investigation:

- 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.

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Responsible Manager Approval:

[Redacted]

Name (First, Middle Initial, Last)

[Redacted]

CAS Manager Approval:

[Redacted]

Name (First, Middle Initial, Last)

[Redacted]

Signature / Date

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

Event Title: TFC-OPS-OPER-C-67 Response 242-A Evaporator Condenser Room	IHIR Number: IHIR-00112
	IHEI Number: N/A

Date: 01/15/2025	Time: 0916	Location: 242-A Evaporator
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Event Summary and Timeline:

At approximately 0916 on January 15, 2025, workers located on the 3rd and 4th floors of the 242-A Evaporator Condenser Room experienced a "natural gas" odor. Workers exited the area, and the room was posted "Restricted Access." One worker reported "light headedness, dizziness, headache, nausea, clarity of mind" and was transported to the on-site occupational medical provider for evaluation. All other personnel declined precautionary medical evaluation. At the time of the event the following work was being conducted in the Condenser Room: (1) A crew from Fire Systems Maintenance were draining piping located in the basement level. Stagnant water odors were noted by the crew. (2) Electricians were performing heat trace megger testing on the third level. (3) Personnel were preparing to perform maintenance activities on the Ammonia Monitor located on the 4th floor.

Field Response Timeline:

NOTE: All electronic communication time stamps adjusted to match the clock utilized to record the timeline [Central Shift Office (CSO) clock] which runs approximately 2 minutes fast (e.g., electronic communication time of 0803 = CSO clock time of 0805).

- 0928 Two Production Operations (PO) Industrial Hygienists (IH) arrive at Central Shift Office (CSO). Review of the Data Fusion & Advisory System (DFAS) application, powered by SmartSite™, Weather Details dashboard current conditions at 0927:
- 140 ft mixing height,
 - Stability class E,
 - Wind 1.7 mph from 101°
- 0929 Vapor Monitoring Detection System (VMDS) exhauster ammonia readings on 01/15/2025 @ 0916:
- POR518 (241-A): 1.565 parts per million (ppm)
 - POR519 (241-A): 3.339 ppm
 - 241-AN: 0 ppm
 - 241-AW: 8.936 ppm
 - POR126 (241-AX): 0 ppm
 - POR127 (241-AX): N/A
 - 702AZ (241-AY/AZ): 21.163 ppm
 - 241-AP: 15.104 ppm
- 0931 Additional IH staff arrive at CSO.
- 0932 242-A Operations Facility Manager reports to Central Shift Manager (CSM) via phone. IHT was present on the 4th floor of the Condenser Room and saw no elevated readings on their instrument for total VOCs and Ammonia.
- 0932 Industrial Hygiene Technician (IHT) shift supervisor and acting PO IH Level 3 manager arrive at CSO.
- 0933 IHIR requested.
- 0934 PO IH requests weather from the weather station.
- 0935 PO IH consulted TOC-IH-58956
- 0935 242-A Shift Manager (SM) reports to CSM that one individual (engineer) with symptoms, "lightheaded", was sent to the onsite medical provider, Inomedic Health Applications (IHA), for evaluation.
- 0935 PO IH requests from CSM status of Odor/Vapor Response Cards (O/VRC) (s).
- 0936 CSM notifies DOE Facility Representative of event.
- 0942 Shift Office Event Notification (SOEN): "Responding per TFC-OPS-OPER-C-67 at 242-A in the Condenser Room. Access restricted to the Condenser Room. CSM"
- 0943 Environment Safety Health and Quality (ESHQ) management notified of event.

Note: Timeline continued on next page.

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INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Event Summary and Timeline:

Note: Timeline continued.

- 0943 CSM requests how many employees affected from the 242-A SM. Approximately 20-30 individuals.
- 0944 IH requests radiological support personnel for entry into the Radiological Buffer Area (RBA).
- 0945 CSM requests radiological support for response plan.
- 0947 IHTs report to the CSO.
- 0950 Radiological support arrives at CSO.
- 0955 Attachment A, sheet 1 of 2 signed.
- Response steps:
- Restrict access to the 242-A condenser room.
 - Perform monitoring as per IHSP-POE-MULTI-TFCOPSOPERC67:
 - o Ammonia(NH₃)-Action limit 12 ppm
 - o Volatile Organic Compounds (VOCs, 10.6eV PID)-Action Limit 2 ppm
 - o Hydrogen Sulfide (H₂S)-Action Limit 0.5 ppm
 - Monitor all accessible areas of the 242-A condenser room.
 - Radiological Work Permit (RWP): EVT-123
- 0955 IHT instruments reported as ready for deployment.
- 1000 Additional RCTs arrive.
- 1000 242-A SM reports to CSM confirmation of 11 workers including one symptomatic individual were working on the 3rd and 4th floors of the condenser room. An additional 9 workers [3 Hanford Mission Integration Solutions (HMIS), 6 Washington River Protection Solutions (WRPS)] were performing fire systems maintenance activities in the basement level.
- 1000 IH conducts briefing with IHTs and RCTs and gives instruction for monitoring, voluntary respiratory protection, and the RWP requirements are outlined by radiological control personnel.
- 1002 Direct Feed Low Activity Waste (DFLAW) Level 3 Manager arrives at CSO.
- 1004 Event response team en route to 242-A. (2 IHTs, 1 IH)
- 1008 DOE Facility Representative calls CSM for update of event.
- 1011 242-A SM calls CSM for update of event.
- 1015 IH arrived at 242-A with response team.
- 1021 CSM makes notification to Case Manager that symptomatic employee sent to IHA.
- 1022 CSM makes notification to symptomatic employees' Level 1 manager that employee was sent to IHA.
- 1037 Response team IH returns to CSO and reports observations. According to interview with 242-A SM: Three work crews were working in the condenser room at the time. Workers on the 4th floor had not begun maintenance work on the ammonia monitor, 3rd floor workers were performing heat trace megger testing (no chemical introduction for this scope), Fire Systems Maintenance had opened piping and were draining raw water around 0850 with a noticeable odor. Odor descriptor of "sulfur" is consistent with work on systems known to contain stagnant water. DRI readings did not indicate a source of the odor and the responding IHT who had been present during the event stated they no longer could smell the offending odor.
- 1037 IHTs performing post-use testing of Direct Reading Instrumentation (DRI).
- 1046 IHT instruments posted successfully.
- 1047 Attachment A, sheet 2 of 2 signed by CSM and IH.
- Odor Response Plan Notes:
- o Ammonia-Less than detectable (<1.0 ppm)
 - o Volatile Organic Compounds [10.6 electronvolt (eV) Photo-Ionization Detector (PID)] - Less than detectable (<0.010 ppm)
 - o Hydrogen Sulfide - Less than detectable (<0.1 ppm)
 - o No odors matching the provided descriptor were present in the affected area at the time of the field response actions.
- 1104 SOEN: "TFC-OPS-OPER-C-67 response at 242-A in the Condenser Room is complete. IHT monitoring results are at or below background levels. Access restored to the Condenser Room. CSM"
- 1123 One O/VRC submitted to the CSO.
- Odor descriptor(s): "I'm unsure, but others said smells like natural gas."
 - No symptoms
 - Source known/likely: N/A
- Note: Timeline continued on next page.

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INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Event Summary and Timeline:

Note: Timeline continued.

1210 CSM call to response IH regarding arrival of O/VRCs to CSO.

- Odor descriptor(s): "Natural gas", "sewer", "propane combination", "Burnt rubber", "Gas"
- 1 reported symptom: "Headache", "Dizziness", "Nausea", and "Clarity of Mind"
- Source known/likely: "Fire protection lines/valves drain", "unknown", "Not sure", "N/A"

1453 Additional O/VRCs received and forwarded on to the event investigator.

- Odor descriptor(s): "burnt rubber"
- No symptoms.
- Source known/likely: "No", "N/A"

Sampling/Monitoring Results:

Direct Reading Instrument Monitoring Results:

- Monitoring was performed in Condenser Room.
- Peak readings during response were at or below background:
 - o Ammonia: less than 1 ppm
 - o Volatile Organic Compounds (10.6 eV lamp): less than 0.010 ppm
 - o Hydrogen Sulfide: less than 0.1 ppm

SWIHD References:

Event Response Site Wide Industrial Hygiene Database (SWIHD) Direct Reading Instrumentation (DRI) Survey:

- # 25-00284 "TFC-OPS-OPER-C-67 field response actions at 242A"

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INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Additional Information:

Respiratory Protection

Respiratory Protection Equipment was not prescribed for the Initiating Event. Accordingly, at the time of the Initiating Event, the Affected Personnel were not wearing Respiratory Protection Equipment. Respiratory Protection Equipment was not required, nor worn, for Response Actions.

Tank Waste Chemical Vapors

While the odor description is inconsistent with Tank Waste Chemical Vapors, due to the proximity to the Tank Farms and connected systems, monitoring for Tank Waste Chemical Vapors was performed:

Ammonia is used as a sentinel Tank Waste Chemical Vapor for chemicals of potential concern (COPC). Each Hanford production process had different feedstock chemicals and generated different waste streams. Hanford production processes were also separated temporally, with different processes being performed at different times in the history of Hanford production (1943 - 1986). Some chemicals are common to all processes/waste streams (e.g., nitric acid), while others are specific to particular processes and/or waste streams. Some in-tank waste treatment processes (e.g., neutralization and de-nitrification) used the same chemical feed stocks (e.g., sodium hydroxide solution) in most, if not all Tank Farms. The chemistry and radiochemistry of these compounds result in waste stream similarities across all tank farms. Because nitric acid was common to nearly all processes that generated tank waste, and the most common result of those processes was reduction of nitrate ion to ammonia during the dissolution (oxidation) of irradiated fuel, ammonia is the most common COPC and is found in all tanks. It is logical to choose ammonia for the sentinel as it is a byproduct of all production processes and found in all tanks.

Therefore, when monitoring for Tank Waste Chemical Vapors/COPCs, DRI equipped with an ammonia sensor is utilized at a minimum. Additional COPC monitoring was conducted concurrently with ammonia during the event response. The COPC with DRI monitoring capabilities readily available at the Tank Farms includes VOCs. As individual agents are not identified when monitoring for VOCs, an Action Limit was developed as an indicator of Tank Farm emissions (mixture of organic vapors) that could impact workers' health and conservatively set at 2 ppm*. When monitoring for Tank Waste VOC vapors, DRI equipped with a 10.6 eV photoionization detector (PID) is utilized to detect multiple VOC COPCs simultaneously.

*NOTE: The 2 ppm Action Limit is not applicable to chemical use.

Hydrogen Sulfide

Based on the odor descriptor "natural gas", monitoring for hydrogen sulfide vapors was performed:

- The American Industrial Hygiene Association (AIHA) Odor Threshold for Chemicals with Established Health Standards, 2nd Edition, lists hydrogen sulfide with the odor character "rotten eggs".
- Refer to TOC-IH-58956 for more detail on the monitoring strategy for response to odors.

The Hanford Site Tank Operations Contractor, Washington River Protections Solutions, LLC (WRPS), Chemical Vapor Solutions Team (CVST) chartered a Fugitive Emissions (FE) sub-team. The primary focus of the FE workscope was to identify odor sources around the Tank Farms work areas, characterizing the type and concentration of the odor constituents. The FE sub-team's investigations included characterizing how septic/sewer odors change odor profile across a gradient when diluted by ambient atmosphere with distance from a point source. The major components of sewer gases can include: hydrogen sulfide, carbon dioxide, methane, and ammonia. The FE sub-team's investigations found that close to the septic system (within approximately 20') the odor was described as sewer. Further away from septic system (within approximately 100') the odor was described as skunk. Even further away from septic system (within approximately 200') the odor was described as body odor. It should be noted that odors are a perception and can vary between individuals.

Hydrogen sulfide gas has an offensive distinct rotten egg odor that is detectable at very low concentrations. The lower range of odor values for hydrogen sulfide as 40 ppt (or 0.04 ppb or 0.00004 ppm). Ammonia gas has an offensive pungent, irritating odor that is detectable at very low concentrations. The lower range of odor values for ammonia as 43 ppb (or 0.043 ppm) (AIHA, 2013). While odors may be readily perceived, concentrations are still well below levels of worker exposure concern. Hydrogen sulfide, ammonia, and VOC gas production rate is a function of bacteria/organics concentrations, temperature, and dissolved oxygen.

Note: Additional Information continued on next page.

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INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Note: Additional Information continued.

The resolution of DRI equipped with hydrogen sulfide (0.1 ppm) and ammonia (1 ppm) sensors are comparatively inadequate as a detection tool at the concentrations perceived by the human olfactory sense. While the resolution of the DRI equipped with these sensors are insufficient to detect concentrations at the lower range of odor threshold values, they are sufficient to detect hydrogen sulfide and ammonia at concentrations that approach their established occupational exposure limits (OELs).

Limit Type	Hydrogen Sulfide	Ammonia	VOCs
Odor Response Action Limit	0.5 ppm	12 ppm	2 ppm
ACGIH 8-hour TWA-TLV	1 ppm	25 ppm	--
ACGIH 15-minute STEL-TLV	5 ppm	35 ppm	--
OSHA 8-hour TWA-PEL	--	50 ppm	--
OSHA Ceiling-PEL	20 ppm	--	--
OSHA 10-minute Peak-PEL*	50 ppm	--	--
NIOSH IDLH	100 ppm	300 ppm	--

*Allowed for 10-minutes if there is no other exposure to hydrogen sulfide during the shift

The event response DRI results were less than detectable in the Affected Area for hydrogen sulfide, ammonia, and VOCs.

Additional odor descriptors were provided after response actions were taken ("sewer", "burnt rubber"). It is noted that although these odor descriptors were not made known during the initial response, the additional descriptors did not prompt any deviation or additional response actions.

Burnt rubber

The odor character "burnt plastic or rubber" is associated with cresol, all isomers (AIHA, 2013). The main constituents to monitor for to detect cresol are Total VOCs and Particulates Not Otherwise Specified (PNOS). Therefore, when monitoring for the odor descriptor of "burnt plastic or rubber", DRI equipped with a 10.6 eV PID for VOCs should be utilized.

Propane

Butane and propane are associated with the odor character "Natural Gas" (AIHA, 2013). Propane is a colorless, odorless gas. The odor associated with propane is due to a foul-smelling odorant often added to propane for leak detection purposes. Typical propane odorant is sulfur-based, including mercaptan. The chemicals butyl mercaptan and dodecyl mercaptan are associated with the odor character "skunk". Methyl mercaptan is associated with the odor characters "rotten cabbage" and "garlic" (AIHA, 2013). Therefore, when monitoring for the odor descriptor of "propane", DRI equipped with DRI equipped with an ammonia sensor and a hydrogen sulfide sensor should be utilized at a minimum.

References

- American Conference of Governmental Industrial Hygienists (2016). TLVs® and BEIs® Based on the
- Documentation of the Threshold Limit Values for Chemicals Substances and Physical Agents & Biological Exposure Indices. Cincinnati, OH: Signature Publications.
- American Industrial Hygiene Association (2013). Odor Thresholds for Chemicals with Established Health Standards, 2nd Edition.

Weather Details

From the Hanford Meteorological Station.

01/15/2025 Station 6 @ 0916 (weather data at approximate time of Initiating Event):

- Wind Speed and Direction: E at 2 mph
- Mixing Height: 140 meters above grade
- Stability Class: E
- Relative Humidity: 95%
- Barometric Pressure and Trend: 29.82inHg (steady)

Recommendations/Conclusions:

Recommendations:

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, the area was released from restricted access and work was allowed to continue.

During response actions a definitive source was not identified, however, interviews with workers and the 242-A SM did indicate that a likely source could be the breaching of fire systems piping. During the time of the event the only odor introduction or change in facility configuration identified was the fire system maintenance activity in the basement of the condenser room. According to the 242-A SM, Fire Systems Maintenance workers noted that when opening piping an expected "sulfur-like" odor consistent with their scope of work (i.e. stagnant water) was present. During response actions the area around the open pipe was monitored with no detectable readings found nor obvious offensive odor present to responding personnel.

Others:

Ventilation

The Condenser Room is approximately 27 feet (ft) long by 24 ft wide (8.2 meters (m) long by 7.2 m wide) and 71 ft 6-in. (21.8 m) from the below-grade floor to the ceiling, with a total volume of approximately 46,008 cubic feet or 1,287.1 cubic meters (m³) (Ignoring volume displacement of internal structures). The normal ventilation supply and exhaust flow rates for the Condenser Room is approximately 9,470 cubic feet per minute (cfm) [4.47 m³/second (s)]. This flow rate would result in approximately 12 to 12.5 air exchanges per hour.

References

H-2-69272, *Architectural Elevations & Sections*

RPP-CALC-45215 Rev. 0, *Hazard Analysis of the Proposed K-1 Exhaust System Upgrades for the 242-A Evaporator Building*

TO-620-020, *Operate the 242-A Evaporator Ventilation System*, Rev. S-3

Associated Documents:

iCAS Number: N/A

EIR Number: [Redacted] 2025-023

Industrial Hygienist:

[Redacted] _____ [Redacted] _____
Print First and Last Name *Signature / Date*

Industrial Hygiene Level 3 Manager

[Redacted] _____ [Redacted] _____
Print First and Last Name *Signature / Date*

Industrial Hygiene Level 2 Manager:

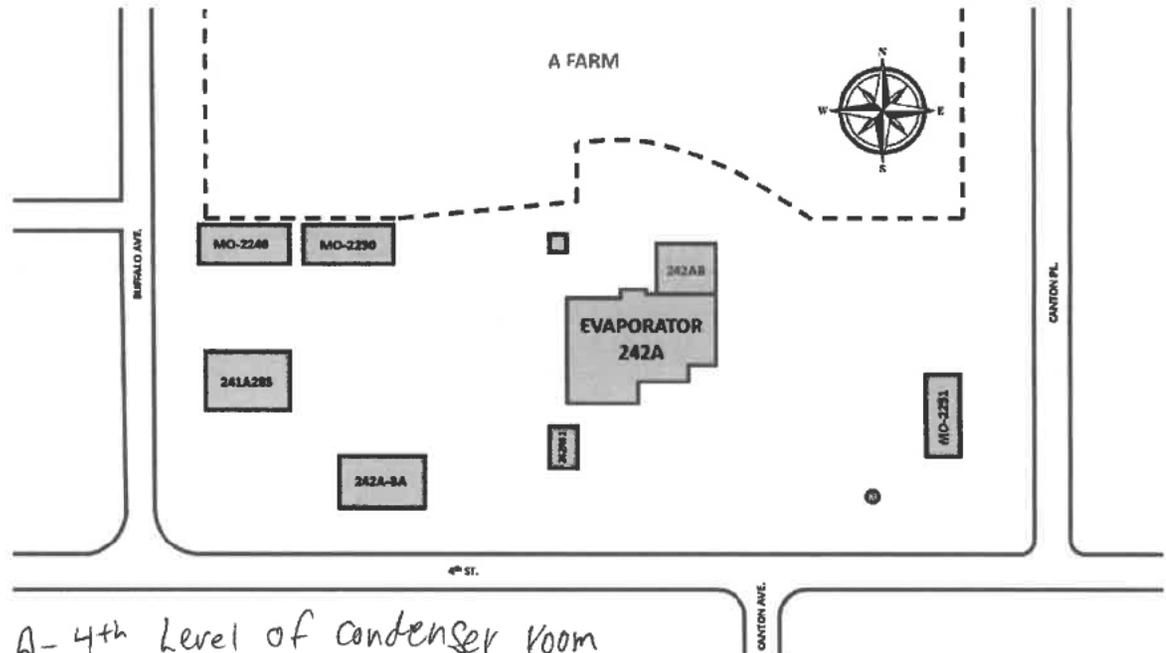
_____ _____
Print First and Last Name *Signature / Date*

ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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.



A - 4th Level of Condenser Room
B & C - Standard Conditions
D - Yes
E - N/A

ODOR/VAPOR RESPONSE CARD - 242 A

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

- Date and time of event: 01/15/2025/0907
- Check Applicable:
 - Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] IHT Monitoring for VOCs/NH3
- Other Work Underway? Describe:
Yes
- Location of event (mark area on map and wind direction):
242-A/ Evaporator
- Name(s) of others in or near the affected area:
[REDACTED]
- Was Industrial Hygiene present, who?
Yes, myself
- Describe the odor:
 - Sweet Sour Smoky Septic/Sewer Musty Rotten
 - Metallic Onion Earthy Ammonia Citrus Solvent
 - Other (describe): I'm unsure, but others said smells like natural gas
- Is source known/likely? Describe:
N/A
- Your symptoms? None
 - Headache Dizziness Nausea Cough Fatigue
 - Weakness Sore Throat Difficulty Breathing Eye Irritation Rash
 - Itch Tingling Numbness Taste
 - Other (describe): _____

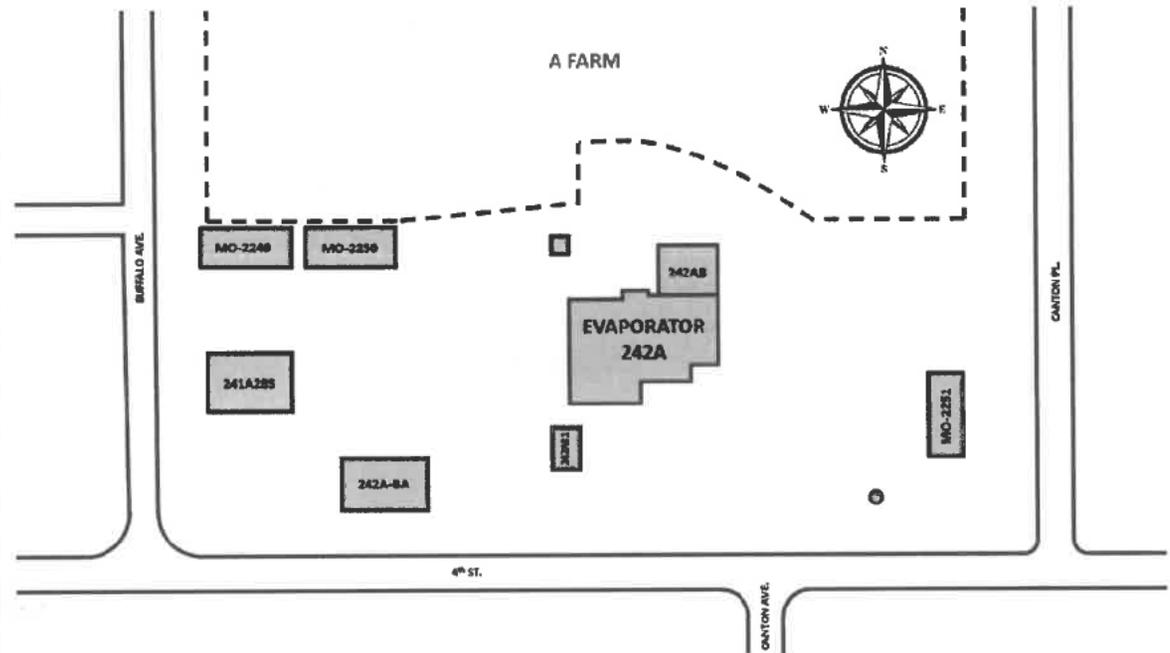
2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM. If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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 - 242 A

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

- Date and time of event: 0900 1/15/25
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): _____
- Your name and the work you were performing:
Calibrating Ammonia Monitor
- Other Work Underway? Describe:
Fire system work / HEAT TRACS work
- Location of event (mark area on map and wind direction):
Level 4 Condenser room
- Name(s) of others in or near the affected area:
ITS / IHT / Eng / RCT
- Was Industrial Hygiene present, who?
yes
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe):
NATURAL GAS like
- Is source known/likely? Describe:
N/A
- Your symptoms? None
 - Headache
 - Dizziness
 - Nausea
 - Cough
 - Fatigue
 - Weakness
 - Sore Throat
 - Difficulty Breathing
 - Eye Irritation
 - Rash
 - Itch
 - Tingling
 - Numbness
 - Taste
 - Other (describe): _____

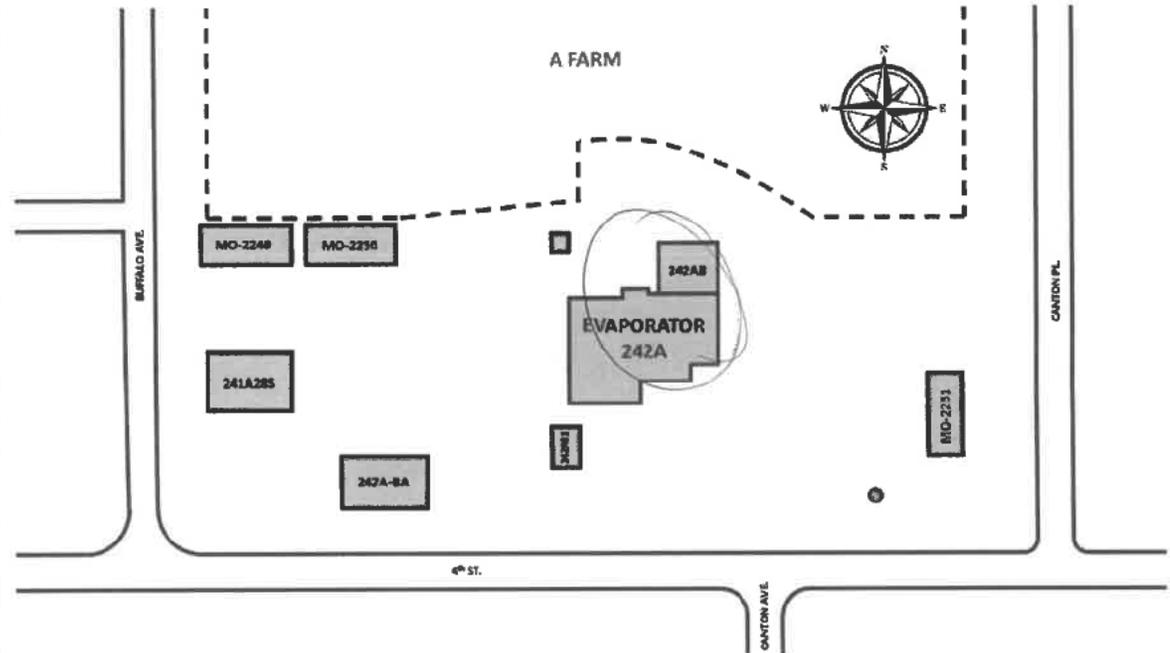
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ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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 - 242 A

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

- Date and time of event: 1/15/25 0900
- Check Applicable:
 - Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] AMMONIA MONITOR CALIBRATION
- Other Work Underway? Describe:
ELECTRICIANS 3RD FLOOR - FIRE SYSTEMS BASEMENT
- Location of event (mark area on map and wind direction):
242A CONDENSER ROOM 4TH FLOOR
- 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): NATURAL GAS
- 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): _____

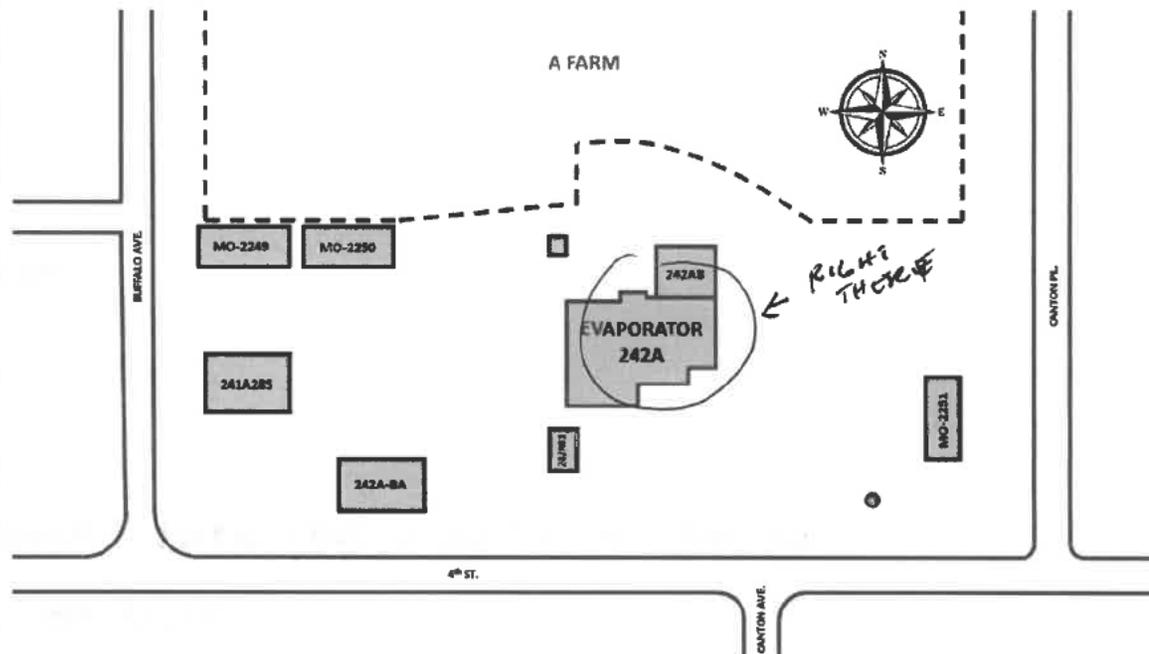
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ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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 - 242 A

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

- Date and time of event: 1/15/25 9:15 AM
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] AMMONIA MONITOR CALIBRATION
- Other Work Underway? Describe:

- Location of event (mark area on map and wind direction):
242A CONDENSER ROOM 4TH FLOOR
- 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): NATURAL GAS
- Is source known/likely? Describe:
NOT SURE
- Your symptoms? None
 Headache Dizziness Nausea Cough Fatigue
 Weakness Sore Throat Difficulty Breathing Eye Irritation Rash
 Itch Tingling Numbness Taste
 Other (describe): _____

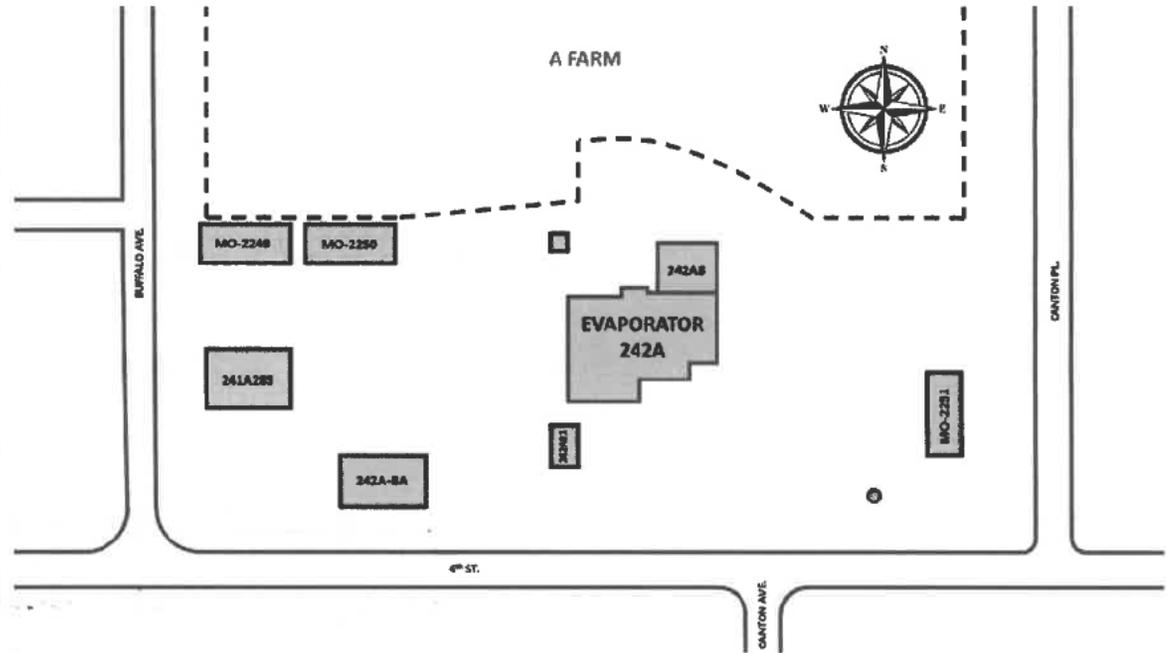
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If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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 - 242 A

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

- Date and time of event: 1-15-25 0900
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] RCT for Heat trace Megger testing
- Other Work Underway? Describe:
Ammonia monitor testing & FSM adjusting sprinklers
- Location of event (mark area on map and wind direction):
242-A Condenser room (was on 3rd floor)
- Name(s) of others in or near the affected area:
[REDACTED]
- Was Industrial Hygiene present, who?
yes
- Describe the odor:
 Sweet Sour Smoky Septic/Sewer Musty Rotten
 Metallic Onion Earthy Ammonia Citrus Solvent
 Other (describe): sewer water gas propane combination
- Is source known/likely? Describe:
or known
- Your symptoms? None
 Headache Dizziness Nausea Cough Fatigue
 Weakness Sore Throat Difficulty Breathing Eye Irritation Rash
 Itch Tingling Numbness Taste
 Other (describe): _____

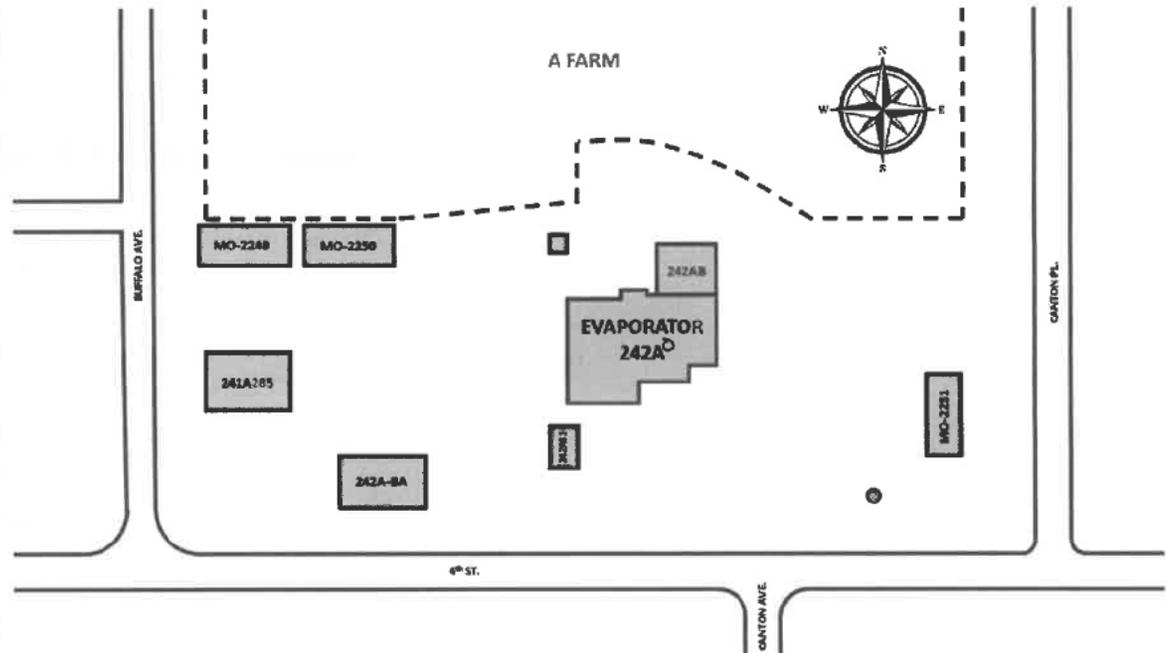
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If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
3. Complete both pages of this form and include as many details as possible, including:
 - a. Approximate location, see map at right; *Condenser Room 4th*
 - b. Wind direction, speed and description, such as stable or gusty wind; *N/A*
 - c. Environmental conditions, such as hot, cold, windy, rainy; *N/A*
 - d. Other work or contractors in the area; *Basement & 3rd Floor work*
 - 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 - 242 A

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

- Date and time of event: 1/15/2025 9:30 AM
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] Replace Ammonia Monitor CPU (engineer)
- Other Work Underway? Describe:
Flush Fire protection water lines. V.V record sampler
- Location of event (mark area on map and wind direction):
242A Condenser Room 4th Floor
- Name(s) of others in or near the affected area:
[REDACTED]
- Was Industrial Hygiene present, who?
~~Allyson~~ Allyson Yes, [REDACTED]
- 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 checked="" type="checkbox"/> Other (describe): <u>Natural Gas</u>					
- Is source known/likely? Describe:
Fire protection lines / valves drain
- Your symptoms? None

<input checked="" type="checkbox"/> Headache	<input checked="" type="checkbox"/> Dizziness	<input checked="" 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 checked="" type="checkbox"/> Other (describe): <u>clarity of mind</u>				

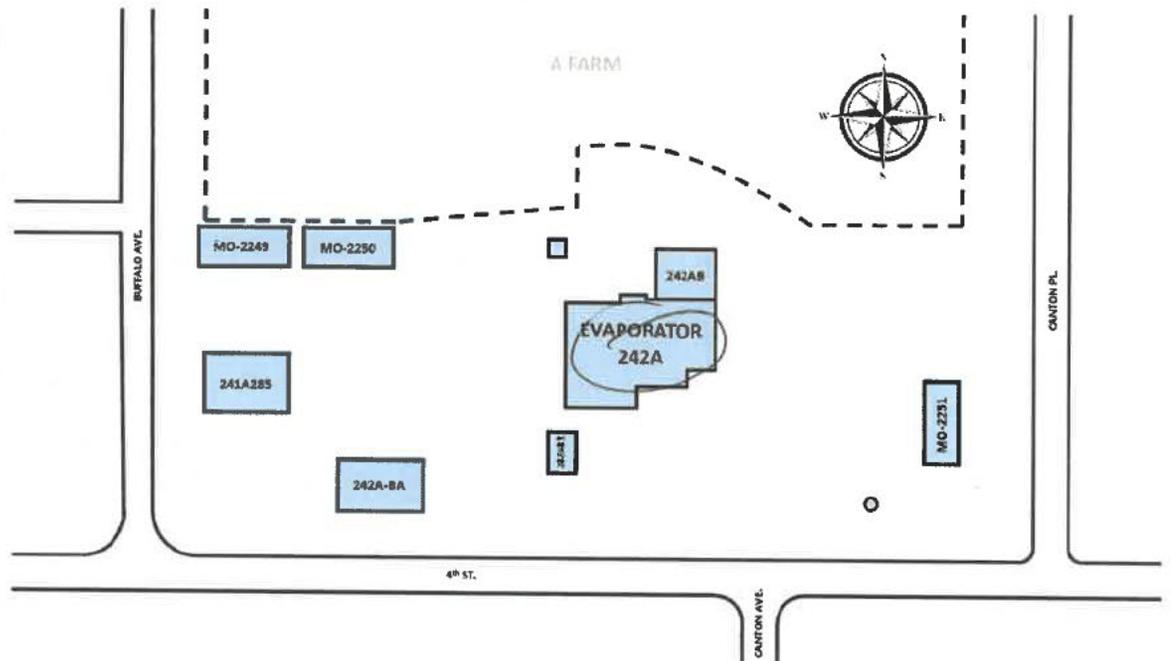
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If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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 - 242 A

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

- Date and time of event: 1-15-25 0930
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
Supporting electricians on 3rd level of condenser room
- Other Work Underway? Describe:
IT & other group above & below our group
- Location of event (mark area on map and wind direction):
Level 3 condenser room / Evaporator
- Name(s) of others in or near the affected area:
- Was Industrial Hygiene present, who?
Yes
- 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 checked="" type="checkbox"/> Other (describe): <u>Burnt rubber</u>					
- Is source known/likely? Describe:
NO
- 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):				

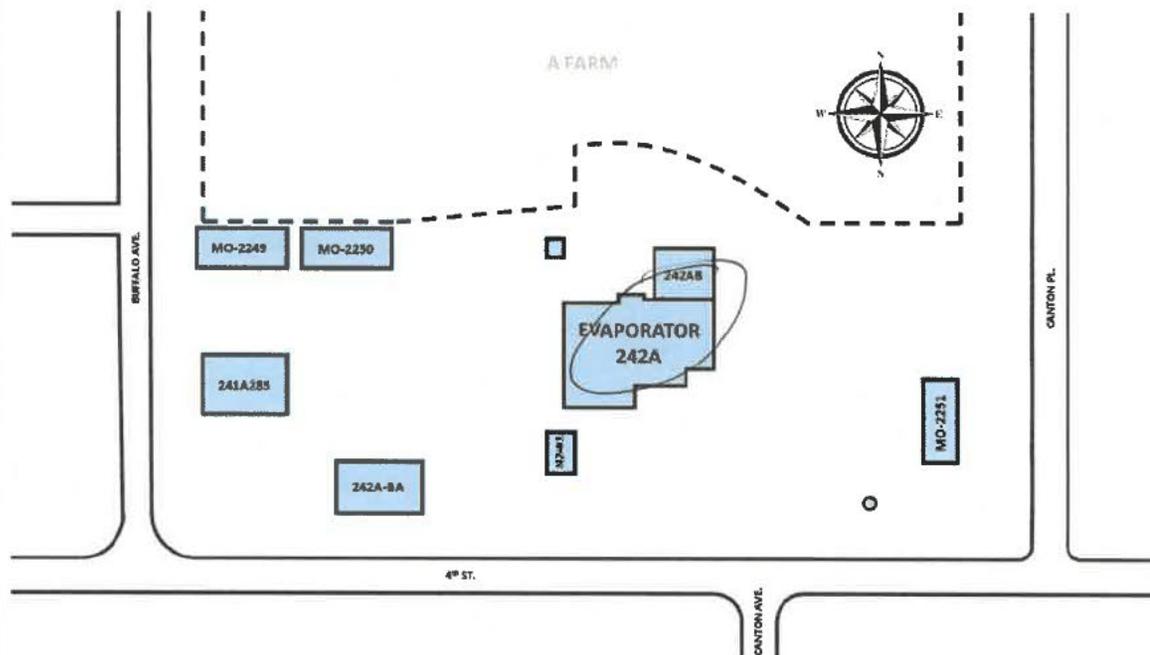
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ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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 - 242 A

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

- Date and time of event: 1/15/25 09:30 AM
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] Heat trace meggering
- Other Work Underway? Describe: _____
- Location of event (mark area on map and wind direction):
242 A Condenser Room 3rd Floor
- Name(s) of others in or near the affected area:
no
- Was Industrial Hygiene present, who? _____
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe): Gas
- 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): _____

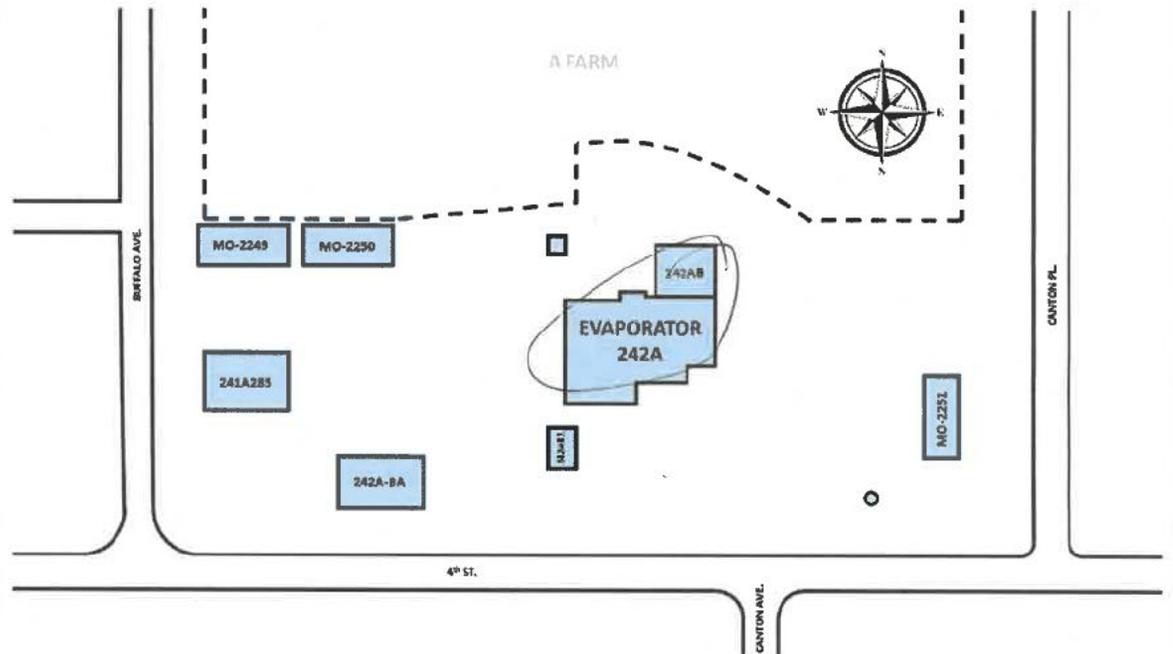
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ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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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ODOR/VAPOR RESPONSE CARD - 242 A

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

- Date and time of event: 1/15/25 0930 am
- Check Applicable:
 - Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] Heat trace meggering
- Other Work Underway? Describe:

- Location of event (mark area on map and wind direction):
242A Condenser Room 3rd floor
- Name(s) of others in or near the affected area:
[REDACTED]
- Was Industrial Hygiene present, who?
No
- Describe the odor:
 - Sweet Sour Smoky Septic/Sewer Musty Rotten
 - Metallic Onion Earthy Ammonia Citrus Solvent
 - Other (describe): Gas smell
- 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): _____

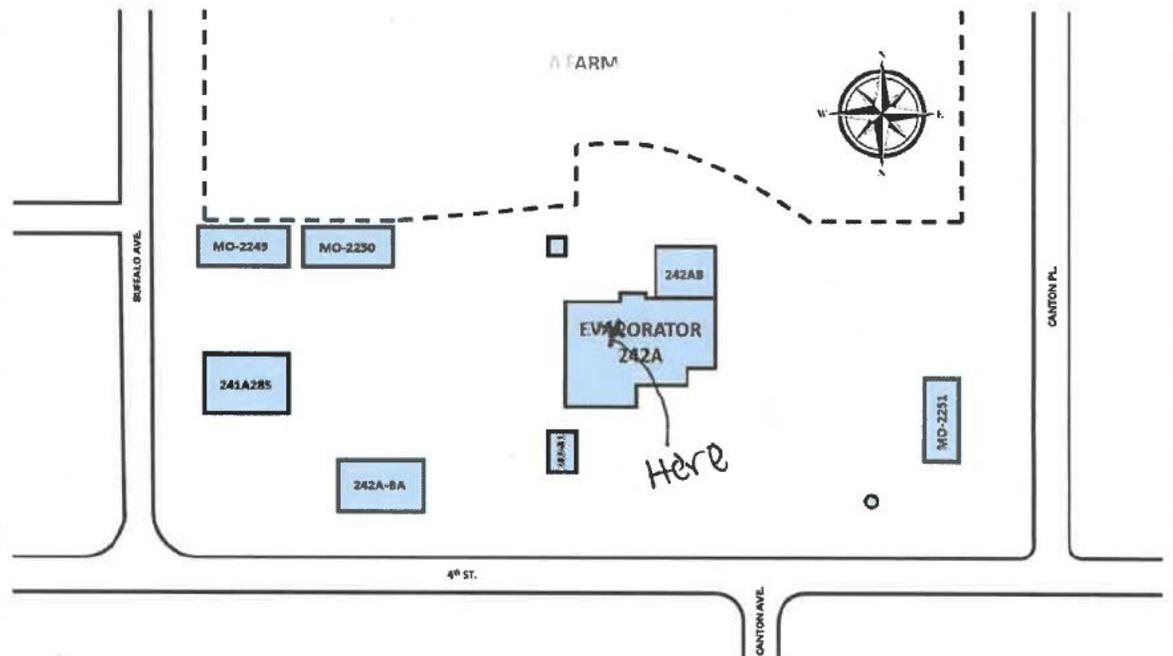
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ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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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ODOR/VAPOR RESPONSE CARD - 242 A

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

- Date and time of event: 1-15-25 0930
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): _____
- Your name and the work you were performing:
Heat trace meggering
- Other Work Underway? Describe:

- Location of event (mark area on map and wind direction):
242 A condenser room 3rd floor
- Name(s) of others in or near the affected area:
- Was Industrial Hygiene present, who?
no
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe): _____
- Is source known/likely? Describe:
gassy smell
- Your symptoms? None
 - Headache
 - Dizziness
 - Nausea
 - Cough
 - Fatigue
 - Weakness
 - Sore Throat
 - Difficulty Breathing
 - Eye Irritation
 - Rash
 - Itch
 - Tingling
 - Numbness
 - Taste
 - Other (describe): _____

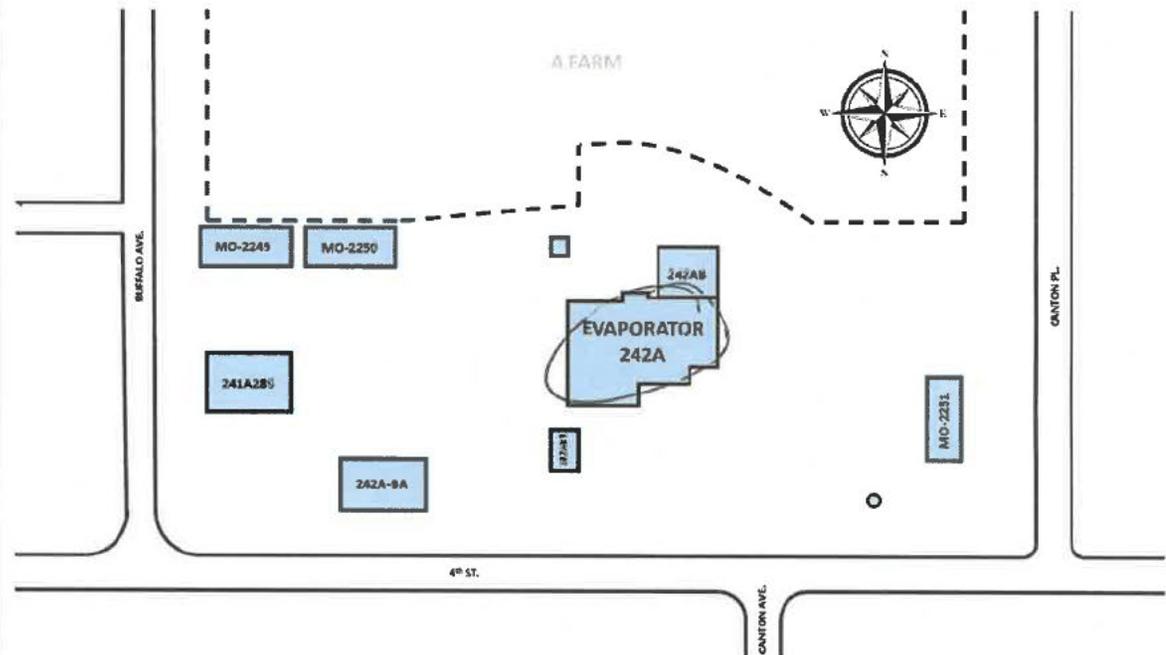
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ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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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ODOR/VAPOR RESPONSE CARD - 242 A

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

- Date and time of event: 1.15.25 0930
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): _____
- Your name and the work you were performing: [REDACTED] heat trace meggering
- Other Work Underway? Describe: _____
- Location of event (mark area on map and wind direction): 2U2A condenser room floor 3
- Name(s) of others in or near the affected area: [REDACTED]
- Was Industrial Hygiene present, who? NO
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe): Asksly
- 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): _____

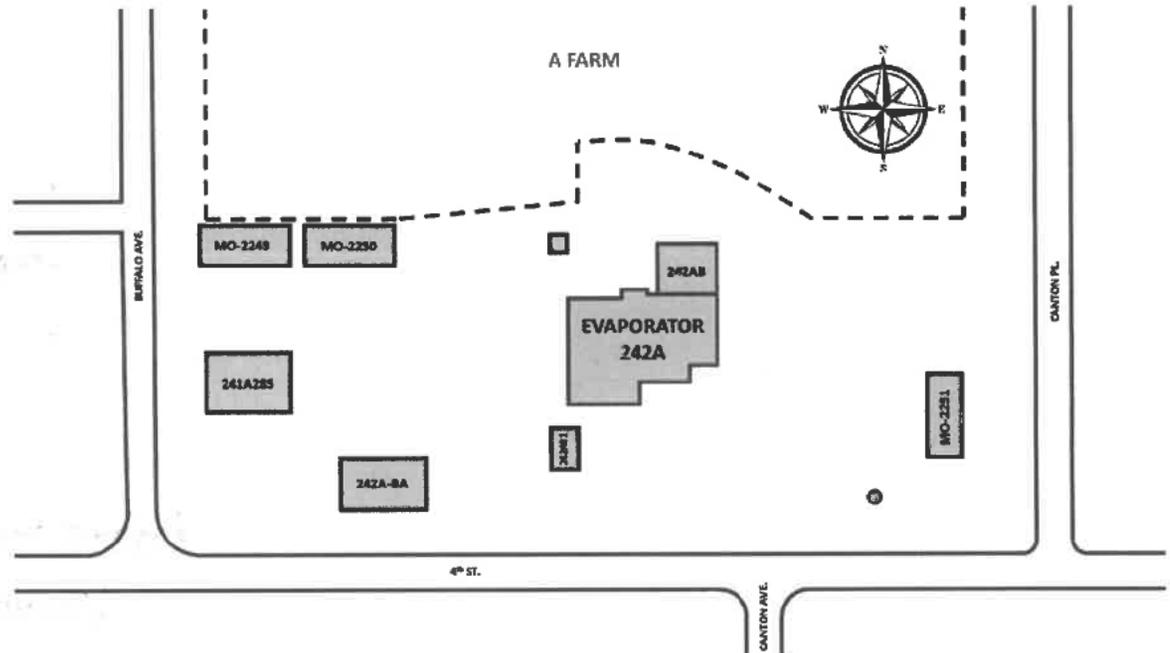
2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM. If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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 - 242 A

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

- Date and time of event: 1/15/25 0909
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] Draining fire system lines, supporting work.
- Other Work Underway? Describe:
yes, work being performed on Ammonia monitor and heat trace on 4th floor.
- Location of event (mark area on map and wind direction):
242-A Condenser basement,
- Name(s) of others in or near the affected area:
[REDACTED]
- Was Industrial Hygiene present, who?
No
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe): burnt rubber
- Is source known/likely? Describe: NO
- Your symptoms? None
 - Headache
 - Dizziness
 - Nausea
 - Cough
 - Fatigue
 - Weakness
 - Sore Throat
 - Difficulty Breathing
 - Eye Irritation
 - Rash
 - Itch
 - Tingling
 - Numbness
 - Taste
 - Other (describe): _____

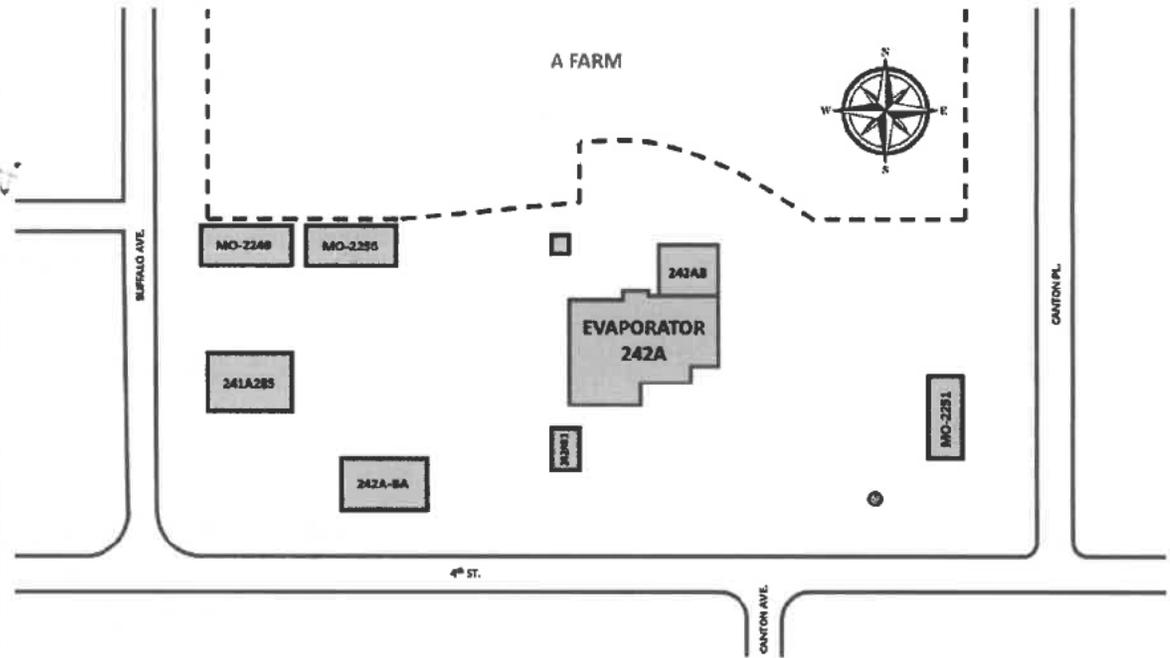
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ODOR/VAPOR RESPONSE CARD - 242 A

Instructions:

1. Notify Immediate Supervisor.
2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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 - 242 A

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

- Date and time of event: 1/15/2025 0909
- Check Applicable:
 - Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- [REDACTED] you were performing: observancy job.
- Other Work Underway? Describe: Ammonia Monitor + Heat trace on 4th Floor.
- Location of event (mark area on map and wind direction): 242-A, Condenser Room Basement
- Name(s) of others in or near the affected area: [REDACTED]
- Was Industrial Hygiene present, who? NO
- Describe the odor:
 - Sweet Sour Smoky Septic/Sewer Musty Rotten
 - Metallic Onion Earthy Ammonia Citrus Solvent
 - Other (describe): Burnt Rubber
- Is source known/likely? Describe: N/A
- 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.