

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: Waste Operations Services **2. Report Date:** 01/07/2025

3. Investigation Title: C-67 Response at 616

4. Investigation Report Number: EIR-2025-021

5. Responsible Manager: [REDACTED]

6. Event Investigator: [REDACTED]

7. Area / Building / Location: 616 Building [Waste Operations Services]/600 Area

8. Date and Approximate Time of Event: Date: 12/19/2024 **Time (military):** 1315 hours

9. Associated Action Request (AR) Number: WRPS-AR-2025-0631

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)

Workers had re-entered the 616 building after observing offloading of two Conex boxes from a semi-trailer in the yard north of the 616 Building [level 4 work activity].

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

- WRPS Supervisor of Operations - 3
- WRPS Health Physics Technician (HPT) - 1

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

On 12/19/2024 at approximately 1315 hours, three Supervisors of Operations and one HPT reported a stronger than normal odor described as "chlorine" and "bleach" when re-entering the 616 building after performing outside work.

At 1324 hours, the 616 Building Supervisor of Operations notified the Central Shift Manager (CSM) of the stronger than normal odor. Access to the 616 Building was restricted. The four workers who smelled the odor and the fifteen other occupants also located at the 616 building [who did not smell the odor] were evacuated to the staging area. All 19 workers reported experiencing no symptoms and declined a precautionary medical evaluation.

At 1334 hours, the CSM initiated response actions per TFC-OPS-OPER-C-67, *Response to Stronger than Normal Odors*.

At 1338 hours, the CSM initiated actions per Abnormal Operating Procedure, TF-AOP-001 *Relocation of Personnel*. 616 building personnel were relocated to Mobile Office (MO)-280.

At 1451 hours, the CSM contacted Hanford Mission Integration Solutions (HMIS) Utilities to ask if any chlorine cylinder work was occurring in the vicinity of the 616 building. Utilities confirmed there was no work occurring.

At 1502 hours, Industrial Hygiene Technicians (IHTs) performed Direct Reading Instrument (DRI) monitoring inside of the 616 building per Industrial Hygiene Sample Plan (IHSP), IHSP-POE-MULTI-TFCOPSOPERC67, *Industrial Hygiene Odor Evaluation*.

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At 1627 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 616 building.

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

- The odor event occurred inside the 616 Building [Waste Operations Services] located in the 600 Area of the Hanford site.
- At the time odors were reported at 616 building the workers were wearing Level D Personal Protective Equipment (PPE) and in a work location that is not posted as a radiological controlled area. 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 #21 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 #21 and DFAS dashboard indicated the following weather conditions at 1300 hours on 12/19/2024:
 - Wind Speed: 8 miles per hour (mph)
 - Wind Direction: 330° (out of North/Northwest)
 - Mixing Height: 300 feet above grade
 - Stability Class: D (neutral conditions)
 - Temperature: 68° F
 - Barometric Pressure: 29.42 inches mercury (Hg)
 - Relative Humidity: 60%

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

Due to access restriction at the 616 building an impact to operational capabilities occurred while response actions were performed.

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

- The workers were offered precautionary medical evaluation.
- The CSM initiated TFC-OPS-OPER-C-67, *Response to Stronger than Normal Odors*, response actions.
- The DOE Facility Representative was notified of the event.
- Access was restricted to the 616 building.
- The CSM made required TFC-OPS-OPER-C-67 notifications.
- The CSM initiated AOP TF-AOP-001, *Relocation of Personnel*, actions.
- Industrial Hygiene Technicians (IHTs) took readings outside of and throughout the 616 building per survey plan IHSP-POE-MULTI-TFCOOPSOPERC67, *Industrial Hygiene Odor Evaluation*.
- Event Investigation EIR-2025-021, *C-67 Response at 616*, 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-00111, TFC-OPS-OPER-C-67 *Response to Stronger than Normal Odors*, monitoring results did not exceed occupational exposure limits. IHTs performed DRI monitoring throughout of 616 building per IHSP, IHSP-POE-MULTI-TFCOOPSOPERC67, *Industrial Hygiene Odor Evaluation*. Monitoring was performed

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at the 616 Heating, Ventilation, and Air Conditioning system (HVAC) fresh air intake, in the 616-reception area, in the workers' desk area, and in the three waste storage bays.

At the HVAC fresh air intake, the reception area and the workers' desk area monitoring showed Nitrogen dioxide was above the action limit and Nitric oxide readings were above the detection limit, but below the action limit. All other constituents were less than detectable. The IH response team reported a faint chlorine odor in the reception area. In the three waste storage bays Nitrogen dioxide was above the action limit. Volatile Organic Compound (VOCs) and nitric oxide readings were above the detection limit, but below the action limit. All other constituents were less than detectable. All sensors on the DRI monitors passed the post-use function test except nitric oxide. Additional monitoring was performed before TFC-OPS-OPER-C-67 response actions could be completed. Later that day, in the areas where nitrogen dioxide was above the action limit a DRI QRAE 3 was used. The QRAE 3 is equipped to read directly for Chlorine gas. The QRAE 3 is not typically used for IHSP-POE-MULTI-TFCOPSOPERC67, *Industrial Hygiene Odor Evaluation*. Chlorine and nitrogen dioxide were less than detectable when monitoring with the QRAE3. The QRAE 3 monitor passed the post-use function test.

When performing initial monitoring, a DRI with a chlorine gas sensor was unavailable. Per Honeywell Technical Note TN-114, nitrogen dioxide electrochemical sensors have a negative 100% cross-sensitivity for chlorine gas. For example, if chlorine gas was present at 1.0 ppm, the nitrogen dioxide sensor would register this value as negative 1.0 ppm. However, the MultiRAE instrument used during the response displays all readings, whether negative or positive, as positive values. Therefore, IH proceeded with using a nitrogen dioxide sensor as a screening tool for chlorine gas with a 1:1 ratio. Figure 1 identifies the occupational exposure limits of the constituents under evaluation in the odor event. Figure 2 identifies the peak readings and the locations where they were recorded during the initial monitoring.

Constituent	PEL	TLV	STEL	Ceiling	Action Limit
Ammonia	50 ppm	25 ppm	35 ppm	-	12.0 ppm
VOC	N/A*	N/A*	N/A*	N/A*	2.0 ppm
NO ₂	-	0.2 ppm	-	5.0 ppm	0.1 ppm
CO*	50 ppm	25 ppm	-	-	12.0 ppm
NO*	25 ppm	25 ppm	-	-	12.5 ppm
SO ₂ *	5 ppm	-	0.25 ppm	-	0.1 ppm
Chlorine	-	0.5 ppm	1.0 ppm	1.0 ppm	0.25 ppm

Figure 1: Occupational Exposure Limits of the Constituents Under Evaluation

LOCATION	VOCs (10.6 eV)	VOCs (11.7 eV)	NH ₃	NO	NO ₂	CO	SO ₂
Parking lot	N/A	N/A	N/A	N/A	N/A	27.0 ppm	<0.1 ppm
Fresh Air Intake (Outdoor)	0.010 ppm	<0.010 ppm	<1.0 ppm	0.5 ppm	0.3 ppm	<1.0 ppm	<0.1 ppm
Administrative Area	0.020 ppm	0.022 ppm	<1.0 ppm	0.5 ppm	0.3 ppm	<1.0 ppm	<0.1 ppm
Kitchen/Bathrooms	0.020 ppm	0.032 ppm	<1.0 ppm	<0.5 ppm	0.3 ppm	<1.0 ppm	<0.1 ppm
Worker Desk Area	0.010 ppm	0.030 ppm	<1.0 ppm	0.5 ppm	0.2 ppm	<1.0 ppm	<0.1 ppm
First Waste Storage Bay	0.010 ppm	0.016 ppm	<1.0 ppm	0.5 ppm	0.2 ppm	<1.0 ppm	<0.1 ppm
Second Waste Storage Bay	0.010 ppm	0.016 ppm	<1.0 ppm	0.5 ppm	0.2 ppm	<1.0 ppm	<0.1 ppm
Third Waste Storage Bay	0.010 ppm	<0.010 ppm	<1.0 ppm	0.5 ppm	0.2 ppm	<1.0 ppm	<0.1 ppm

Figure 2: Peak Readings that were Recorded during Initial Monitoring

While setting up the data logging function on two MultiRAEs outside building 616 in the parking lot, one MultiRAE #003469 had a carbon monoxide spike of 29 Parts Per Million (PPM) but alarmed at 27 ppm which steadily dropped thereafter. This spike was not replicated on the other MultiRAE #003455. MultiRAE #003455 readings were less than detectable (<1.0 ppm) in the same area. IH surveyed the parking lot for running vehicles or equipment in the yard. No emission sources were identified, and the carbon monoxide readings on instrument MultiRAE #003469 continued to steadily decrease below the

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action limit. Subsequently, IH ruled that the MultiRAE #003469 carbon monoxide spike was likely due to a faulty sensor.

- In the hour proceeding the odor event, the four workers who reported smelling the odor had been observing offloading of two empty low level waste Conex boxes from a flatbed semi-trailer. The offloading consisted of using a heavy-duty forklift and moving the two Conex boxes to a staging area in the yards outside of the 616 Building. Shortly after the work outside was complete and the work crew entered the 616 Building and the stronger than normal odor was encountered.

According to the Odor/Vapor Response Cards (OVRs) the odor was first detected in the second waste storage bay, followed by the third bay near the entrances. The odor was most concentrated in front of the entrance to the worker desk area directly below the HVAC vent. The HVAC system at the 616 Building was upgraded in summer 2024 and the units were lowered from the roof-top on to the ground on the northeast side of the building. Workers frequently operate emissions generating equipment on the north parking lot behind the building, including the area where the fresh air intakes are located. If vehicles idle or operate for long periods of time, there is the potential for diesel exhaust to migrate inside the building. Signs stating "No engine idling within 25 feet" are posted on the HVAC units. The crew reported to the Waste Services IH that they never encroached on the 25-foot boundary. Additionally, the wind direction at the time was North/Northwest, indicating any emissions produced were blowing away from the fresh air intake.

As odor descriptors (as provided by American Industrial Hygiene Association (AIHA) "Odor Thresholds for Chemicals" 4th Edition [2024]) provided for nitrogen dioxide do not match "chlorine-like" it is unlikely that the odor was the result of nitrogen dioxide exposure. Additionally, a commensurate spike in other combustion compounds such as carbon monoxide, VOCs, Nitric Oxide, and Sulfur Dioxide was not observed during response actions. The OVRs indicates that occupants inside the building did not report detecting the odors. The outdoor work crew noticed them upon re-entering the building after ceasing to operate emissions generating equipment.

- While the odor source is unknown, IH acknowledges that the fresh air intakes being located on the ground next to the emissions generating equipment has the potential for diesel exhaust to migrate indoors. IH recommends operations evaluate the feasibility of either limiting emissions generating equipment in the northeast portion of the parking lot or shutting off the fresh-air intake when operating emissions generating equipment for a prolonged portion of time.

IHIR-000111 provided the following recommendations:

- IH concludes that the exact source of the odor is unknown. IHT monitoring did not indicate that chlorine gas was present inside the 616 Building at concentrations greater than the Occupational Safety and Health Administration (OSHA) or American Conference of Governmental Industrial Hygienists (ACGIH) regulatory limits.
- IH recommends that operations evaluate the feasibility of either limiting emissions generating equipment in the northeast portion of the parking lot or shutting off the fresh-air intake when operating emissions generating equipment for a prolonged portion of time.

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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.

Responsible Manager Approval:

[Redacted]

Name (First, Middle Initial, Last)

CAS Manager Approval:

[Redacted]

Name (First, Middle Initial, Last)

[Redacted]

[Redacted]

Signature / Date

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INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR)

Event Title: TFC-OPS-OPER-C-67 Response at 616		IHIR Number: IHIR-00111
		IHEI Number: N/A
Date: 12/19/2024	Time: 1315	Location: 616

Event Summary and Timeline:
 At approximately 1315 on 12/19/2024, workers reported smelling a "chlorine or bleach" odor upon re-entering the 616 building after performing outside work. Affected personnel were not in an area requiring the use of Respiratory Protection Equipment. No symptoms were reported, and all personnel declined precautionary medical surveillance.

Field Response Timeline:

- 1315 Workers enter 616 and smell chlorine/bleach-like odors after offloading Conex boxes in the yard north of the building.
- 1324 FWS calls CSO and reports odor event.
CSO initiates C-67 response.
- 1333 CSO sends SOEN, restricting access to 616.
- 1334 Facility representative informs CSO that 19 personnel were evacuated to staging area, with no medical evaluation requested or symptoms reported.
DFLAW IH arrives at CSO.
- 1335 PO IHT supervisor arrives at CSO.
- 1337 CSM briefs DFLAW IH.
- 1338 CSO requests OVRCS.
CSO is informed affected workers have been relocated to MO280.
PO IH arrives at CSO.
DFLAW S&H level 3 manager arrives at CSO.
DFLAW S&H level 3 manager contacts OFS S&H level 3 manager.
OFS S&H level 3 manager states two OFS IHTs will support response actions.
- 1340 OFS S&H level 3 manager contacts OFS IH and directs them to report to CSO.
- 1341 DFLAW S&H level 3 manager informs PO IHT supervisor that PO shift IHTs are not needed.
DFLAW IH checks DFAS, powered Smart Site™, for current weather details:
 - Mixing Height: 300 ft
 - Stability Class: D
 - Wind Speed and Direction: 319 degrees, 5.7 mph.
- 1342 CSO contacts FWS.
FWS states that workers were unloading LLW Conex boxes from PermaFix in the outdoor yard at the time of the event, and odor was not noticed until return into 616.
- 1344 DFLAW IH checks VMDS for what the ammonia concentrations were at 1315:
 - 518: 1.113 ppm
 - 519: 1.872 ppm
 - AN: 0 ppm
 - AW: 0 ppm
 - 126: 0 ppm
 - 127 0 ppm
 - 702: 14.603 ppm
 - AP: 0 ppm
 - SY: 8.0831 ppm
- 1346 CSM verifies the area has been restricted.
CSM initiates TF-AOP-001 "Relocation of Personnel" for personnel being relocated from 616 staging area to MO280.
- 1348 CSO sends OVRC forms to the 616 representative to distribute to 616 building occupants.
DFLAW IH reviews Hanford meteorological data from station 21 at the time of odor event:
 - Temperature: 68 degrees Fahrenheit
 - Wind Speed and Direction: 330 degrees, NNW at 8 mph.
 - Relative Humidity: 60%
 - Barometric Pressure: 29.42 inHg, decreasing.
- 1350 OFS IH and IHTs arrive at CSO.
OFS IH states shower filter maintenance may have occurred that day, and that pipefitters

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INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Event Summary and Timeline:

- occasionally will use bleach when cleaning the filter.
- 1352 CSO sends SOEN for TF-AOP-001.
- 1353 CSM notifies OFS level 1 manager.
- 1356 CSM notifies PO level 1 manager.
- 1403 CSM contacts 616 facility representative.
- 1405 CSM completes and sends TFC-OPS-OPER-C-67 Attachment B - Initial Communication Summary.
- 1406 Performance assurances contacts CSM to provide the EIR number and request an update.
- 1412 OFS IH contacts OFS S&H level 3 manager to initiate IHT instrument preparation at 2704HV. OFS S&H level 3 manager states that the ppBRAE at 2704HV is tagged out of commission. DFLAW S&H level 3 manager states that a ppBRAE is available at 272AW.
- 1413 DFLAW IH and CSM sign TFC-OPS-OPER-C-67 Attachment A - Response Plan page 1.
- 1415 CSM contacts 616 FWS to request an update on OVRC completion. 616 FWS states they are still in progress. CSM verifies with 616 FWS that it was a chlorine/bleach odor.
- 1416 DFLAW IH briefs IHTs on the IHSP and response plan. Both IHTs decline voluntary respiratory protection.
- 1418 OFS IH and IHTs depart from CSO to collect instrument and perform field response.
- 1431 CSM contacts ESHQ level 1 manager to provide an update on C-67 response actions.
- 1438 616 FWS notifies CSM that OVRC are complete and being sent.
- 1439 OFS IH arrives at 2704HV to collect instruments for field response from IHT and OFS S&H level 3 manager. Instrument preparation is delayed, as the NO₂ sensor is taking an extended period to pass the pre-function test.
- 1445 CSO receives eighteen OVRC. No symptoms are reported. Four workers at 616 report smelling a chlorine/bleach odor.
- 1448 616 operations supervisor states that the odor was spotty indoors, primarily at vents, as well as outside when wind blew from the west.
- 1450 OFS IH and IHTs arrive at 616 and begin response outdoors.
- 1451 CSM asks utilities whether any chlorine cylinder work was occurring in the vicinity. Utilities confirms there was not.
- 1452 While setting up the data logging function on the MultiRAEs outside 616, one MultiRAE has a CO spike of 29 ppm which steadily drops thereafter. This spike is not replicated on the other MultiRAE. OFS asked 616 FWS whether any equipment or vehicles are currently running. 616 FWS confirms there are not.
- 1455 Response team measures readings at 616 HVAC fresh air intakes:
- NO₂ readings above AL.
 - NO readings above detection limit, but below AL.
 - All other constituents less than detectable.
- OFS IH notifies PO IH of readings above AL and detection limit.
- 1458 DFLAW S&H level 3 manager notifies lead HAMTC safety representative of C-67 odor event.
- 1459 Response team enters 616. OFS IH reports faint chlorine odors in 616 reception area to PO IH.
- 1502 OFS IH reports peak readings in front administrative area to PO IH:
- NO₂ readings above AL.
 - NO readings above detection limit, but below AL.
 - All other constituents less than detectable.
- 1503 OFS H&S level 3 manager contacts OFS IH to request update. OFS IH informs OFS H&S level 3 manager that response team is inside 616, and NO₂ levels are above AL.
- 1507 OFS IH reports peak readings in worker desk area to PO IH:
- NO₂ readings above AL.
 - VOC readings above detection limit, but below AL.
 - All other constituents less than detectable.
- 1509 OFS IH reports peak readings in first waste storage bay to PO IH:
- NO₂ readings above AL.
 - VOC and NO readings above detection limit, but below AL.
 - All other constituents less than detectable.
- 1510 OFS IH reports faint chlorine odors in second waste storage bay to PO IH.
- 1512 OFS IH reports peak readings in second waste storage bay to PO IH:
- NO₂ readings above AL.

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INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Event Summary and Timeline:

- VOC and NO readings above detection limit, but below AL.
 - All other constituents less than detectable.
- 1515 OFS IH calls PO IH to discuss results with CSM and DFLAW S&H level 3 manager.
- 1516 OFS IH reports peak readings in third waste storage bay to PO IH:
- NO₂ readings above AL.
 - All other constituents less than detectable.
- 1517 Response team exits 616.
OFS IH briefs 616 FWS on monitoring results.
- 1518 IHTs depart from 616 to post their instruments.
OFS IH departs from 616 to return to CSO.
- 1526 OFS IH arrives at CSO.
- 1537 DFLAW IH collects chlorine Drager tubes to use for further monitoring but discovers they are expired.
- 1543 IHTs contact OFS IH and state that all sensors on their instruments passed the post-use function test, except NO.
IHTs state that the NO₂ took six minutes to pass the post-use function test.
- 1548 IHTs contact OFS IH and state that the NO sensor passed the post-use function test, although it took four minutes.
- 1600 CSO consensus is to perform additional monitoring, as NO₂ levels were above AL, and an instrument equipped to read directly for chlorine gas may now be available.
OFS S&H level 3 manager states that they have obtained a RAE system handheld gas detector with a chlorine gas sensor from HMIS.
IHTs prepare a third MultiRAE instrument at 2704HV.
DFLAW IH adds a chlorine gas AL to response plan.
CSO updates OFS level 1 manager on response actions.
- 1602 Waste services IH contacts OFS IH and informs them that a large forklift was in use today outside 616.
- 1604 616 FWS contacts CSM requesting an update on building access.
CSM states that additional monitoring will be conducted prior to restoring building access.
- 1615 OFS S&H level 3 manager and IHTs arrive at 616.
- 1620 OFS S&H level 3 manager reports faint odor inside building.
OFS S&H level 3 manager reports both chlorine and NO₂ were less than detectable.
OFS S&H level 3 manager and CSM discuss inability to perform a post-use function test on the chlorine sensor until Monday.
- 1622 CSM consults with the OFS level 1 manager on restoring building access, prior to the instrument passing the post-use function test.
- 1625 CSM consults with the ESHQ level 1 manager on restoring building access, prior to the instrument passing the post-use function test.
- 1627 CSM restores access to 616.
- 1649 616 FWS provides an update to CSM.
- 1650 CSM signs TFC-OPS-OPER-C-67 Attachment A - Response Plan page 2, completing C-67 response.

ACGIH American Conference of Governmental Industrial Hygienists
AL Action Limit
CO Carbon Monoxide
CSM Central Shift Manager
CSO Central Shift Office
DFAS Data Fusion Advisory System
DFLAW Direct Feed Low Activity Waste
DRI Direct Read Instrument
FWS Field Work Supervisor
ESHQ Environmental, Safety, Health & Quality
eV electron-volts
HMIS Hanford Mission Integration Solutions
IH Industrial Hygienist
IHA Inomedic Health Applications inc.
IHIR Industrial Hygiene Event Investigation Report
IHT Industrial Hygiene Technician
inHg Inches of Mercury
LLW Low Level Waste
mph miles per hour
NH₃ Ammonia

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INDUSTRIAL HYGIENE EVENT INVESTIGATION REPORT (IHIR) (Continued)

Event Summary and Timeline:

NO Nitric Oxide
 NO₂ Nitrogen Dioxide
 OEL Occupational Exposure Limit
 OFS Operations Field Support
 OSHA Occupational Safety and Health Administration
 OVRC Odor/Vapor Response Card
 PEL Permissible Exposure Limit
 PID Photoionization Detector
 PO Production Operations
 ppm parts per million
 S&H Safety and Health
 SO₂ Sulfur Dioxide
 STEL Short Term Exposure Limit
 SWIHD Site Wide Industrial Hygiene Database
 TLV Threshold Limit Value
 VOC Volatile Organic Compound

Sampling/Monitoring Results:

Workers reported smelling a chlorine/bleach-like smell inside 616. When performing initial monitoring, a DRI with a chlorine gas sensor was unavailable. Per Honeywell Technical Note TN-114, NO₂ electrochemical sensors have a negative 100% cross-sensitivity for chlorine gas. For example, if chlorine gas was present at 1.0 ppm, the NO₂ sensor would register this value as negative 1.0 ppm. However, the MultiRAE instrument used during the response displays all readings, whether negative or positive, as positive values. Therefore, IH proceeded with using a NO₂ sensor as a screening tool for chlorine gas with a 1:1 ratio.

The following AL were set, to ensure compliance with the OELs listed below:

Constituent	PEL	TLV	STEL	Ceiling	Action Limit
Ammonia	50 ppm	25 ppm	35 ppm	-	12.0 ppm
VOC	N/A*	N/A*	N/A*	N/A*	2.0 ppm
NO ₂	-	0.2 ppm	-	5.0 ppm	0.1 ppm
CO*	50 ppm	25 ppm	-	-	12.0 ppm
NO*	25 ppm	25 ppm	-	-	12.5 ppm
SO ₂ *	5 ppm	-	0.25 ppm	-	0.1 ppm
Chlorine	-	0.5 ppm	1.0 ppm	1.0 ppm	0.25 ppm

*VOC regulatory limits vary, depending on the constituent itself. At the time of response, DFLAW IH and CSM opted to use to tank farms VOC AL (EH-09-001).

**Neither CO, NO, nor SO₂ were included on the initial response plan signed by DFLAW IH or CSM. However, upon OFS IH arrival at 2704HV, IHTs had performed a pre-use function test for all three constituents, and these readings are included in the accompanying SWIHD. OFS IH has retroactively added an AL for these constituents.

The following peak readings were recorded during initial monitoring (1455):

LOCATION	VOCs (10.6 eV)	VOCs (11.7 eV)	NH ₃	NO	NO ₂	CO	SO ₂
Parking lot	N/A	N/A	N/A	N/A	N/A	27.0 ppm	<0.1 ppm
Fresh Air Intake (Outdoor)	0.010 ppm	<0.010 ppm	<1.0 ppm	0.5 ppm	0.3 ppm	<1.0 ppm	<0.1 ppm
Administrative Area	0.020 ppm	0.022 ppm	<1.0 ppm	0.5 ppm	0.3 ppm	<1.0 ppm	<0.1 ppm
Kitchen/Bathrooms	0.020 ppm	0.032 ppm	<1.0 ppm	<0.5 ppm	0.3 ppm	<1.0 ppm	<0.1 ppm
Worker Desk Area	0.010 ppm	0.030 ppm	<1.0 ppm	0.5 ppm	0.2 ppm	<1.0 ppm	<0.1 ppm
First Waste Storage Bay	0.010 ppm	0.016 ppm	<1.0 ppm	0.5 ppm	0.2 ppm	<1.0 ppm	<0.1 ppm
Second Waste Storage Bay	0.010 ppm	0.016 ppm	<1.0 ppm	0.5 ppm	0.2 ppm	<1.0 ppm	<0.1 ppm
Third Waste Storage Bay	0.010 ppm	<0.010 ppm	<1.0 ppm	0.5 ppm	0.2 ppm	<1.0 ppm	<0.1 ppm

CO and NO₂ were both recorded above AL during the initial monitoring event.

Upon arrival at 616, OFS IH provided two MultiRAE DRIs and a ppbRAE to the IHTs. The instruments were configured as follows:

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Sampling/Monitoring Results:

Instrument	Sensor	Pre-Use Function Test Conducted?
DRI #003469	NO	Yes
	CO	No
	NH ₃	No
	NO ₂	Yes
	SO ₂	Yes
DRI #003455	CO	Yes
	LEL	No
	NH ₃	Yes
	O ₂	No
	PID (10.6 eV)	Yes
DRI #001479	PID (11.7 eV)	Yes

Before exiting the 616 parking lot to begin response actions, OFS IH directed both IHTs to start datalogging in five second increments. While still in the process of setting up data logging, DRI #003469 alarmed at 27.0 ppm CO. OFS IH asked whether this reading was replicated on instrument #003455, which had passed the pre-use function test for CO. All readings on DRI #003455 were less than detectable (<1.0 ppm). OFS IH surveyed the parking lot for running vehicles and asked the 616 FWS whether any vehicles or equipment were running in the yard. No emission sources were identified, and the CO readings on instrument #003469 continued to steadily decrease below the AL. Subsequently, OFS IH ruled that this was likely a faulty sensor and proceeded with incident response. CO readings remained below detection limits (<1.0 ppm) on DRI #003455 for the entire response at 616.

NO₂ readings were above the 0.1 ppm AL both outside 616 and inside 616. These readings were sustained and ranged from 0.2 ppm to 0.3 ppm. OFS IH communicated these elevated readings immediately to CSO, through PO IH, and allowed the field response to continue for investigative purposes. OFS IH, knowing that the 0.1 ppm AL is based on chronic exposure, reasoned the worker exposure would be maintained below the 0.2 ppm TLV, as it is an 8-hr time weighted average. The initial field response lasted approximately twenty-seven minutes (approximately 0.45 hours). At a peak concentration of 0.3 ppm NO₂, employee exposure can be estimated as follows:

$$TWA = \frac{\text{SUM}(C_i/T_i)}{8 \text{ hr}}$$

$$TWA = \frac{\text{SUM}(0.3 \text{ ppm}/0.45 \text{ hr})}{8 \text{ hr}}$$

$$TWA = 0.017 \text{ ppm}$$

The response time's projected exposure, as an 8-hr TWA, is 0.017 ppm NO₂. This is less than 10% of the ACGIH TLV, indicating exposure was maintained at an acceptable level. At no point during the response did NO₂ concentrations exceed the 5.0 ppm ceiling.

All other constituents were below the AL. All sensors passed the post-use function test.

Upon completion of the first sweep, OFS IH returned to CSO, where it was decided that an additional sweep would be required, as NO₂ levels were above the AL for both NO₂ and chlorine gas (as it was being used as an indicator). OFS S&H level 3 manager obtained a QRAE 3 with an electrochemical chlorine sensor from HMIS and directed a third MultiRAE (DRI #002371) be prepared, with only the NO₂ sensor receiving a pre-use function test. The QRAE 3'S pre-use function test was performed by HMIS workers prior to the OFS S&H level 3 manager receiving the device. On 12/23, OFS IH learned the pre-use function test did not span the entire 10.0 ppm source value, only reaching 8.0 ppm prior to termination of the pre use function check. This was noted in the referenced SWIHD survey. The response team again swept the building, with chlorine gas concentrations remaining below the detection limit for the entire duration. NO₂ had intermittent fluctuations at the detection limit (0.1 ppm) and was only briefly sustained at the AL inside the first waste storage bay.

NO₂ subsequently passed the post-use function test. The QRAE 3 was unable to receive a post-use function test until the following Monday (12/23). Again, the source value of the gas was 10.0

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

Sampling/Monitoring Results:

ppm, and the post-use test was terminated at 7.5 ppm. The low indicator could identify a potential low bias during field response. However, the NO₂ sensor served as a secondary validation that chlorine gas concentrations were not present at or above the AL.

SWIHD References:

SWIHD #24-09942 "TFC-OPS-OPER-C-67 Field Response Actions at 616"

Additional Information:

Respiratory protection equipment was not prescribed for the initiating event. Accordingly, at the time of the initiating event, the affected workers were not wearing respiratory protection equipment. Respiratory protection equipment was not required, nor worn, for the response actions.

Response actions are detailed below, on TFC-OPS-OPER-C-C-67 Attachment A pages 1 and 2:

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

Additional Information:

Attachment A – Response Plan



RESPONSE PLAN		Sheet 1 of 2
<p>DESCRIPTION OF EVENT (date & time, description of event, location, symptoms, etc.): At approximately 1315 on December 19th, 2024 19 workers experienced a stronger than normal “chlorine/bleach” odor while re-entering the 616 building after performing outside work. No symptoms were reported, and all workers declined precautionary medical evaluation.</p>		
<p>RESPONSE STEPS: <i>Attach additional pages as needed</i></p> <ul style="list-style-type: none"> • Restrict access to the 616 facility. • Perform monitoring as per IHSP-POE-MULTI-TFCOPSOPERC67: <ul style="list-style-type: none"> ○ Ammonia – Action Limit 12 ppm ○ Volatile Organic Compounds (10.6 eV PID) – Action Limit 2 ppm ○ Volatile Organic Compounds (11.7 eV PID) – Indication purposes only ○ Nitrogen Dioxide – Action Limit 0.1 ppm 		
<p>IH Sampling Plan # <u>IHSP-POE-MULTI-TFCOPSOPERC67</u></p> <p>Respiratory Protection Form # <u>N/A</u></p> <p>RWP # <u>N/A</u></p> <p>Other <u>N/A</u></p>		
REQUIRED APPROVAL SIGNATURES		
Industrial Hygiene:	<div style="background-color: black; width: 100%; height: 1.2em; margin-bottom: 2px;"></div> <div style="display: flex; justify-content: space-between; border-top: 1px solid black; padding-top: 2px;"> Signature Print (First & Last) Date </div>	/ <u>12/19/2024</u>
Shift Manager:	<div style="background-color: black; width: 100%; height: 1.2em; margin-bottom: 2px;"></div> <div style="display: flex; justify-content: space-between; border-top: 1px solid black; padding-top: 2px;"> Signature Print (First & Last) Date </div>	/ <u>12/19/2024</u>
ADDITIONAL SIGNATURES (as determined by Shift Manager or Safety & Health Rep; N/A if not applicable)		
RadCon:	<div style="display: flex; justify-content: space-between; border-top: 1px solid black; padding-top: 2px;"> N/A N/A N/A </div> <div style="display: flex; justify-content: space-between; border-top: 1px solid black; padding-top: 2px;"> Signature Print (First & Last) Date </div>	
Environmental:	<div style="display: flex; justify-content: space-between; border-top: 1px solid black; padding-top: 2px;"> N/A N/A N/A </div> <div style="display: flex; justify-content: space-between; border-top: 1px solid black; padding-top: 2px;"> Signature Print (First & Last) Date </div>	
Engineer:	<div style="display: flex; justify-content: space-between; border-top: 1px solid black; padding-top: 2px;"> N/A N/A N/A </div> <div style="display: flex; justify-content: space-between; border-top: 1px solid black; padding-top: 2px;"> Signature Print (First & Last) Date </div>	
Industrial Safety:	<div style="display: flex; justify-content: space-between; border-top: 1px solid black; padding-top: 2px;"> N/A N/A N/A </div> <div style="display: flex; justify-content: space-between; border-top: 1px solid black; padding-top: 2px;"> Signature Print (First & Last) Date </div>	

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

Additional Information:

Attachment A – Response Plan (cont.)



RESPONSE PLAN **Sheet 2 of 2**

Odor Response Plan Notes (monitoring data, results of actions taken, etc. Use more sheets as necessary)

First response:

- Response Team included 1 Industrial Hygienists and 2 Industrial Hygiene Technicians.
- Direct Reading Instrumentation results:
 - Administrative Area:
 - Ammonia – Less than detectable (<1.0 ppm) (Action Limit – 12 ppm)
 - Volatile Organic Compounds (10.6 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – 2 ppm)
 - Volatile Organic Compounds (11.7 eV PID) – 0.020 ppm (Action Limit – N/A for indication purposes only)
 - Nitrogen Dioxide – 0.3 ppm (Action Limit – 0.1 ppm)
 - Faint “chlorine-like” odors present.
 - Worker desk area:
 - Ammonia – Less than detectable (<1.0 ppm) (Action Limit – 12 ppm)
 - Volatile Organic Compounds (10.6 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – 2 ppm)
 - Volatile Organic Compounds (11.7 eV PID) – 0.030 ppm (Action Limit – N/A for indication purposes only)
 - Nitrogen Dioxide – 0.2 ppm (Action Limit – 0.1 ppm)
 - No odors present.
 - First waste storage area:
 - Ammonia – Less than detectable (<1.0 ppm) (Action Limit – 12 ppm)
 - Volatile Organic Compounds (10.6 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – 2 ppm)
 - Volatile Organic Compounds (11.7 eV PID) – 0.010 ppm (Action Limit – N/A for indication purposes only)
 - Nitrogen Dioxide – 0.2 ppm (Action Limit – 0.1 ppm)
 - No odors present.
 - Second waste storage area:
 - Ammonia – Less than detectable (<1.0 ppm) (Action Limit – 12 ppm)
 - Volatile Organic Compounds (10.6 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – 2 ppm)
 - Volatile Organic Compounds (11.7 eV PID) – 0.010 ppm (Action Limit – N/A for indication purposes only)
 - Nitrogen Dioxide – 0.2 ppm (Action Limit – 0.1 ppm)
 - Faint “chlorine-like” odors present.
 - Third waste storage area:
 - Ammonia – Less than detectable (<1.0 ppm) (Action Limit – 12 ppm)
 - Volatile Organic Compounds (10.6 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – 2 ppm)
 - Volatile Organic Compounds (11.7 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – N/A for indication purposes only)
 - Nitrogen Dioxide – 0.2 ppm (Action Limit – 0.1 ppm)
 - No odors present.
- Direct Reading Instrumentation passed post-use-function-test at 1548 12/19/2024.

Follow up response utilizing Chlorine gas monitor:

- Initial response utilized Nitrogen Dioxide sensor for indication of presence of Chlorine Gas as per RAE Systems Technical Note TN-114 the MultiRAE Nitrogen Dioxide sensor cross sensitivity with Chlorine Gas provides an approximately 1:1 sensor response. A Chlorine Gas equipped RAE Systems instrument was acquired to provide additional sensor resolution for Chlorine Gas (Limit of Detection 0.05 ppm [Chlorine Gas sensor] vs. 0.1 ppm [Nitrogen Dioxide sensor]) and an additional field response was performed. As odor descriptors (as provided by AIHA “Odor Thresholds for Chemicals” 4th Edition [2024]) provided for Nitrogen Dioxide do not match “chlorine-like” it is unlikely that the odor was the result of Nitrogen Dioxide exposure, therefore Chlorine Gas or other Chlorinated compound is the expected odorant.
- Response Team included 1 Industrial Hygiene Manager and 1 Industrial Hygiene Technician.
- Direct Reading Instrumentation results:
 - Chlorine Gas – Less than detectable (<0.05 ppm) (Action Limit – 0.25 ppm)
 - Nitrogen Dioxide – 0.1 ppm (Action Limit – 0.1 ppm)
 - Faint “chlorine-like” odors present.
- Direct Reading Instrumentation post-use-function-test was not performed. Instrument was borrowed from Hanford Mission Integration Solutions and personnel with access to standard gas had left the Hanford Site before access could be provided to perform post-use-function test.

RESPONSE PLAN COMPLETED:

Industrial Hygiene:	<div style="background-color: black; width: 100%; height: 20px; margin-bottom: 5px;"></div> Signature _____	/ 12/19/2024 Date	
Shift Manager:	<div style="background-color: black; width: 100%; height: 20px; margin-bottom: 5px;"></div> Signature _____	/ 12/19/2024 Date	

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

Additional Information:

The 616 HVAC system was upgraded in the summer of 2024. The units were lowered from the roof-top, onto the ground on the northeast side of the building. Workers frequently operate emissions generating equipment on the north lot behind the building, including the area where the fresh air intakes are located. If vehicles idle or operate for long periods of time, there is the potential for diesel exhaust to migrate inside the building. Signs stating "No engine idling within 25 feet" are posted on the HVAC units.

Per discussion with the Waste Services IH, the 616 work crew had been unloading two Conex boxes from a flatbed semi-trailer with a diesel forklift in the hour preceding the odor event. The crew reported to the Waste Services IH that they never encroached on the 25-foot boundary. Additionally, the wind direction at the time was NNW, indicating any emissions produced were blowing away from the fresh air intake.

As odor descriptors (as provided by AIHA "Odor Thresholds for Chemicals" 4th Edition [2024]) provided for NO₂ do not match "chlorine-like" it is unlikely that the odor was the result of NO₂ exposure. Additionally, a commensurate spike in other combustion compounds (i.e., CO, VOCs, NO, SO₂) was not observed during response actions. A review of the OVRC indicates that occupants inside the building did not report detecting the odors; rather, the outdoor work crew noticed them upon re-entering the building after ceasing to operate emissions generating equipment.

Per discussion with the pipefitter's FWS, shower filter maintenance was not performed the day of the odor event. Subsequently, bleach was not introduced in the second waste storage bay for this purpose.

While the odor source is unknown, IH acknowledges that the fresh air intakes being located on the ground next to the emissions generating equipment has the potential for diesel exhaust to migrate indoors. IH recommends operations evaluate the feasibility of either limiting emissions generating equipment in the northeast portion of the lot or shutting off the fresh-air intake when operating emissions generating equipment for a prolonged portion of time.

Recommendations/Conclusions:

IH concludes that the exact source of the odors is unknown. IHT monitoring did not indicate that chlorine gas was present inside 616 at concentrations greater than the OSHA or ACGIH regulatory limits.

IH recommends that operations evaluate the feasibility of either limiting emissions generating equipment in the northeast portion of the lot or shutting off the fresh-air intake when operating emissions generating equipment for a prolonged portion of time.

Others:

- None of the affected workers reported symptoms, and all declined precautionary medical surveillance.

Associated Documents:

iCAS Number: N/A

EIR Number: 2025-021

Industrial Hygienist:

Print First and Last Name

Signature / Date

Industrial Hygiene Level 3 Manager

Print First and Last Name

Signature / Date

Industrial Hygiene Level 2 Manager:

Print First and Last Name

Signature / Date

Attachment D – Records Submittal Checklist

Records Submittal Checklist	Number of times completed	N/A (✓)
Attachments		
Attachment A Response Plan	1	
Attachment B Initial Communication Summary (Printed copy of electronic version)	1	
Attachment C Follow-Up Event Summary (Printed copy of electronic version)	1	
<p>FWS/OE/Shift Manager SEND the completed records to the Central Shift Office for records retention.</p> <p>  / 12/19/24 Signature Print (First and Last) Date FWS/OE/Shift Manager </p>		

Attachment A – Response Plan

RESPONSE PLAN		Sheet 1 of 2
<p>DESCRIPTION OF EVENT (date & time, description of event, location, symptoms, etc.): At approximately 1315 on December 19th, 2024 19 workers experienced a stronger than normal “chlorine/bleach” odor while re-entering the 616 building after performing outside work. No symptoms were reported, and all workers declined precautionary medical evaluation.</p>		
<p>RESPONSE STEPS: <i>Attach additional pages as needed</i></p> <ul style="list-style-type: none"> • Restrict access to the 616 facility. • Perform monitoring as per IHSP-POE-MULTI-TFCOPSOPERC67: <ul style="list-style-type: none"> ○ Ammonia – Action Limit 12 ppm ○ Volatile Organic Compounds (10.6 eV PID) – Action Limit 2 ppm ○ Volatile Organic Compounds (11.7 eV PID) – Indication purposes only ○ Nitrogen Dioxide – Action Limit 0.1 ppm 		
<p>IH Sampling Plan # <u>IHSP-POE-MULTI-TFCOPSOPERC67</u></p> <p>Respiratory Protection Form # <u>N/A</u></p> <p>RWP # <u>N/A</u></p> <p>Other <u>N/A</u></p>		
REQUIRED APPROVAL SIGNATURES		
Industrial Hygiene:		/ <u>12/19/2024</u> Date
Shift Manager:		/ <u>12/19/2024</u> Date
ADDITIONAL SIGNATURES (as determined by Shift Manager or Safety & Health Rep; N/A if not applicable)		
RadCon:	<u>N/A</u> / <u>N/A</u> / <u>N/A</u> Signature Print (First & Last) Date	
Environmental:	<u>N/A</u> / <u>N/A</u> / <u>N/A</u> Signature Print (First & Last) Date	
Engineer:	<u>N/A</u> / <u>N/A</u> / <u>N/A</u> Signature Print (First & Last) Date	
Industrial Safety:	<u>N/A</u> / <u>N/A</u> / <u>N/A</u> Signature Print (First & Last) Date	

Attachment A – Response Plan (cont.)

RESPONSE PLAN **Sheet 2 of 2**

Odor Response Plan Notes (monitoring data, results of actions taken, etc. Use more sheets as necessary)

First response:

- Response Team included 1 Industrial Hygienists and 2 Industrial Hygiene Technicians.
- Direct Reading Instrumentation results:
 - Administrative Area:
 - Ammonia – Less than detectable (<1.0 ppm) (Action Limit – 12 ppm)
 - Volatile Organic Compounds (10.6 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – 2 ppm)
 - Volatile Organic Compounds (11.7 eV PID) – 0.020 ppm (Action Limit – N/A for indication purposes only)
 - Nitrogen Dioxide – 0.3 ppm (Action Limit – 0.1 ppm)
 - Faint “chlorine-like” odors present.
 - Worker desk area:
 - Ammonia – Less than detectable (<1.0 ppm) (Action Limit – 12 ppm)
 - Volatile Organic Compounds (10.6 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – 2 ppm)
 - Volatile Organic Compounds (11.7 eV PID) – 0.030 ppm (Action Limit – N/A for indication purposes only)
 - Nitrogen Dioxide – 0.2 ppm (Action Limit – 0.1 ppm)
 - No odors present.
 - First waste storage area:
 - Ammonia – Less than detectable (<1.0 ppm) (Action Limit – 12 ppm)
 - Volatile Organic Compounds (10.6 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – 2 ppm)
 - Volatile Organic Compounds (11.7 eV PID) – 0.010 ppm (Action Limit – N/A for indication purposes only)
 - Nitrogen Dioxide – 0.2 ppm (Action Limit – 0.1 ppm)
 - No odors present.
 - Second waste storage area:
 - Ammonia – Less than detectable (<1.0 ppm) (Action Limit – 12 ppm)
 - Volatile Organic Compounds (10.6 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – 2 ppm)
 - Volatile Organic Compounds (11.7 eV PID) – 0.010 ppm (Action Limit – N/A for indication purposes only)
 - Nitrogen Dioxide – 0.2 ppm (Action Limit – 0.1 ppm)
 - Faint “chlorine-like” odors present.
 - Third waste storage area:
 - Ammonia – Less than detectable (<1.0 ppm) (Action Limit – 12 ppm)
 - Volatile Organic Compounds (10.6 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – 2 ppm)
 - Volatile Organic Compounds (11.7 eV PID) – Less than detectable (<0.010 ppm) (Action Limit – N/A for indication purposes only)
 - Nitrogen Dioxide – 0.2 ppm (Action Limit – 0.1 ppm)
 - No odors present.
- Direct Reading Instrumentation passed post-use-function-test at 1548 12/19/2024.

Follow up response utilizing Chlorine gas monitor:

- Initial response utilized Nitrogen Dioxide sensor for indication of presence of Chlorine Gas as per RAE Systems Technical Note TN-114 the MultiRAE Nitrogen Dioxide sensor cross sensitivity with Chlorine Gas provides an approximately 1:1 sensor response. A Chlorine Gas equipped RAE Systems instrument was acquired to provide additional sensor resolution for Chlorine Gas (Limit of Detection 0.05 ppm [Chlorine Gas sensor] vs. 0.1 ppm [Nitrogen Dioxide sensor]) and an additional field response was performed. As odor descriptors (as provided by AIHA “Odor Thresholds for Chemicals” 4th Edition [2024]) provided for Nitrogen Dioxide do not match “chlorine-like” it is unlikely that the odor was the result of Nitrogen Dioxide exposure, therefore Chlorine Gas or other Chlorinated compound is the expected odorant.
- Response Team included 1 Industrial Hygiene Manager and 1 Industrial Hygiene Technician.
- Direct Reading Instrumentation results:
 - Chlorine Gas – Less than detectable (<0.05 ppm) (Action Limit – 0.25 ppm)
 - Nitrogen Dioxide – 0.1 ppm (Action Limit – 0.1 ppm)
 - Faint “chlorine-like” odors present.
- Direct Reading Instrumentation post-use-function-test was not performed. Instrument was borrowed from Hanford Mission Integration Solutions and personnel with access to standard gas had left the Hanford Site before access could be provided to perform post-use-function test.

RESPONSE PLAN COMPLETED:

Industrial Hygiene:		/ 12/19/2024 Date
Shift Manager:		/ 12/19/2024 Date

Attachment B – Initial Communication Summary

The following is an example of detail to provide in the electronic form of Communication Template.

19 Hanford workers have declined precautionary medical evaluation after reporting stronger than normal odors at 616 building. None of the workers reported symptoms.

The employees were reentering the building after performing work in the 616 outdoor yard when upon reentry to the 616 building they reported odors and were not in an area that requires use of respiratory protection.

Workers were instructed to leave the building and report to the staging area. Access to the building has been restricted.

NOTE - This communication template is to be completed as soon as enough information is available.

Central Shift Manager  /  12/19/24
Signature Print (First and Last) Date

Attachment C – Follow-up Event Summary

The following is example of detail to provide in the electronic form of Follow-Up Event Summary.

TF-OPS-OPER-C-67 Follow-Up Event Summary		
Date: 12/19/24	Time: 1324	Location: 616
Number of Workers Involved: 19	Sampling Results #: 24-09942	
Event Summary		
<p>At approximately 1324 hours 4 workers smelled a chlorine/bleach odor upon reentry into the 616 building after performing work outside. All 19 (4 smelled odors / 15 did not smell odors) personnel in the 616 building were evacuated to the staging area.</p> <p>At the time the odors were reported, the individuals were not working in an area requiring use of supplied-air respiratory protection. All workers were instructed to leave the building. Access to the building was restricted.</p> <p>IHTs responded to the area and took DRI readings. Final DRI instrument readings were below action levels.</p> <p>An event investigation has been initiated.</p>		
Return to Work Status		
Number of workers returned to work without restriction	N/A	
Number of workers returned to work with restriction	N/A	
Number of workers referred for further evaluation	N/A	
NOTE - Complete once event is stabilized and all details are known.		
Central Shift Manager	/	/
 Signature	 Print (First and Last)	12/19/24 Date

ODOR/VAPOR RESPONSE CARD

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

- Date and time of event: 12/19/24 @ 1330
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] — RECEIVING RAD-CONTAINERS CONEX FROM PERMAFIX
- Other Work Underway? Describe:
FORKLIFT OPERATION
- Location of event (mark area on map and wind direction):
N/A
- Name(s) of others in or near the affected area:
[REDACTED]
- 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): <u>N/A</u>					
- Is source known/likely? Describe:

- 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): _____				

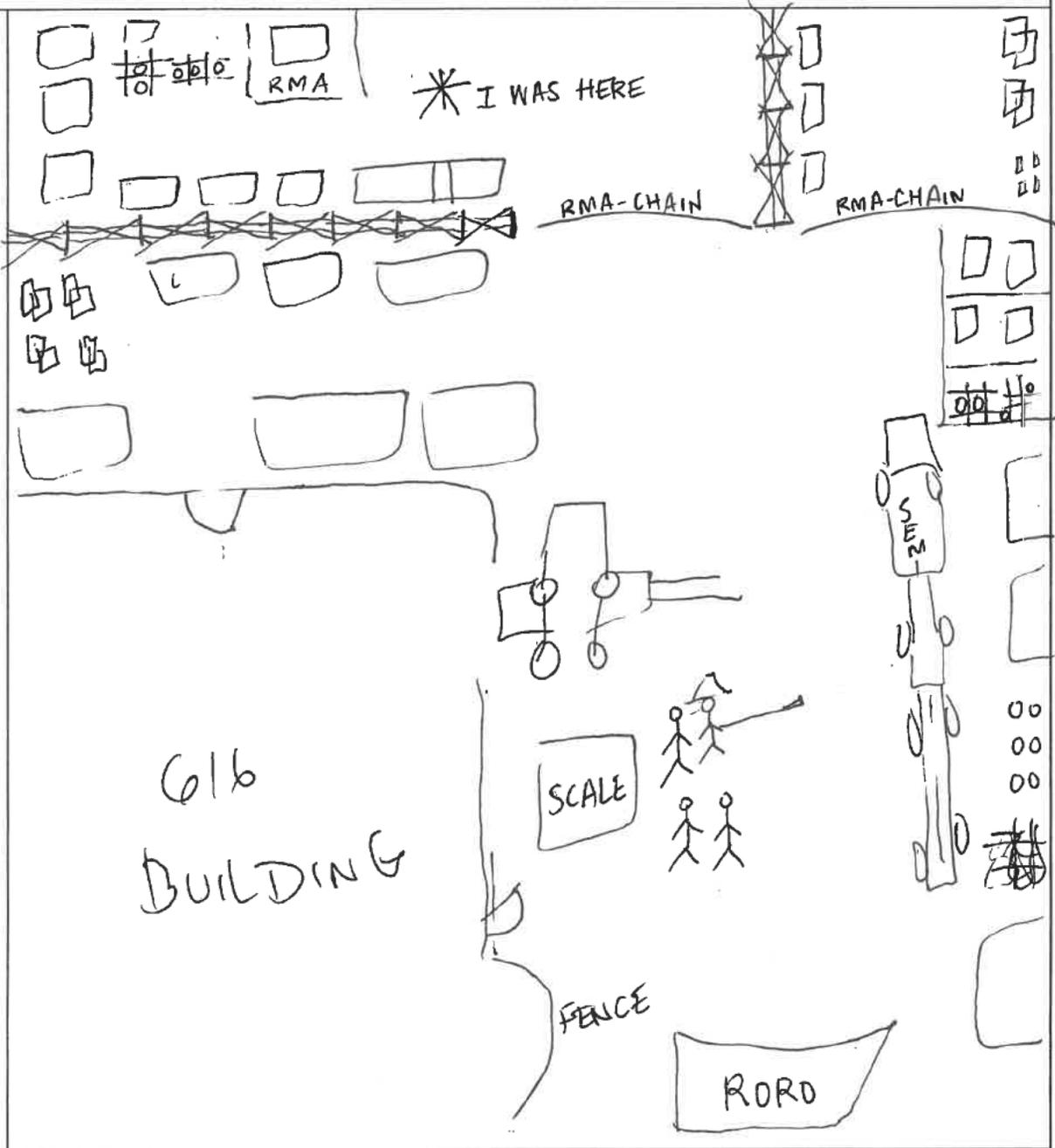
2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM. If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD

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

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

- Date and time of event: 12-19-24 13:30
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED]
- Other Work Underway? Describe:
boss work
- Location of event (mark area on map and wind direction):
616
- Name(s) of others in or near the affected area:
? N/A
- Was Industrial Hygiene present, who?
Didn't smell it.
- 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:
? N/A
- 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

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.

RMA 059

RMA
→

616 Bldg

ODOR/VAPOR RESPONSE CARD

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

- Date and time of event: December 19, 2024 @ 1330
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] - HPT - offloading Permafrix Conex boxes.
- Other Work Underway? Describe:
None.
- Location of event (mark area on map and wind direction):
Cell
- Name(s) of others in or near the affected area:
Employees of UAW - Teamster, driver.
- Was Industrial Hygiene present, who?
No.
- 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

 Other (describe):
Did not smell.
- Is source known/likely? Describe:
Unknown.
- 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	

 Other (describe): _____

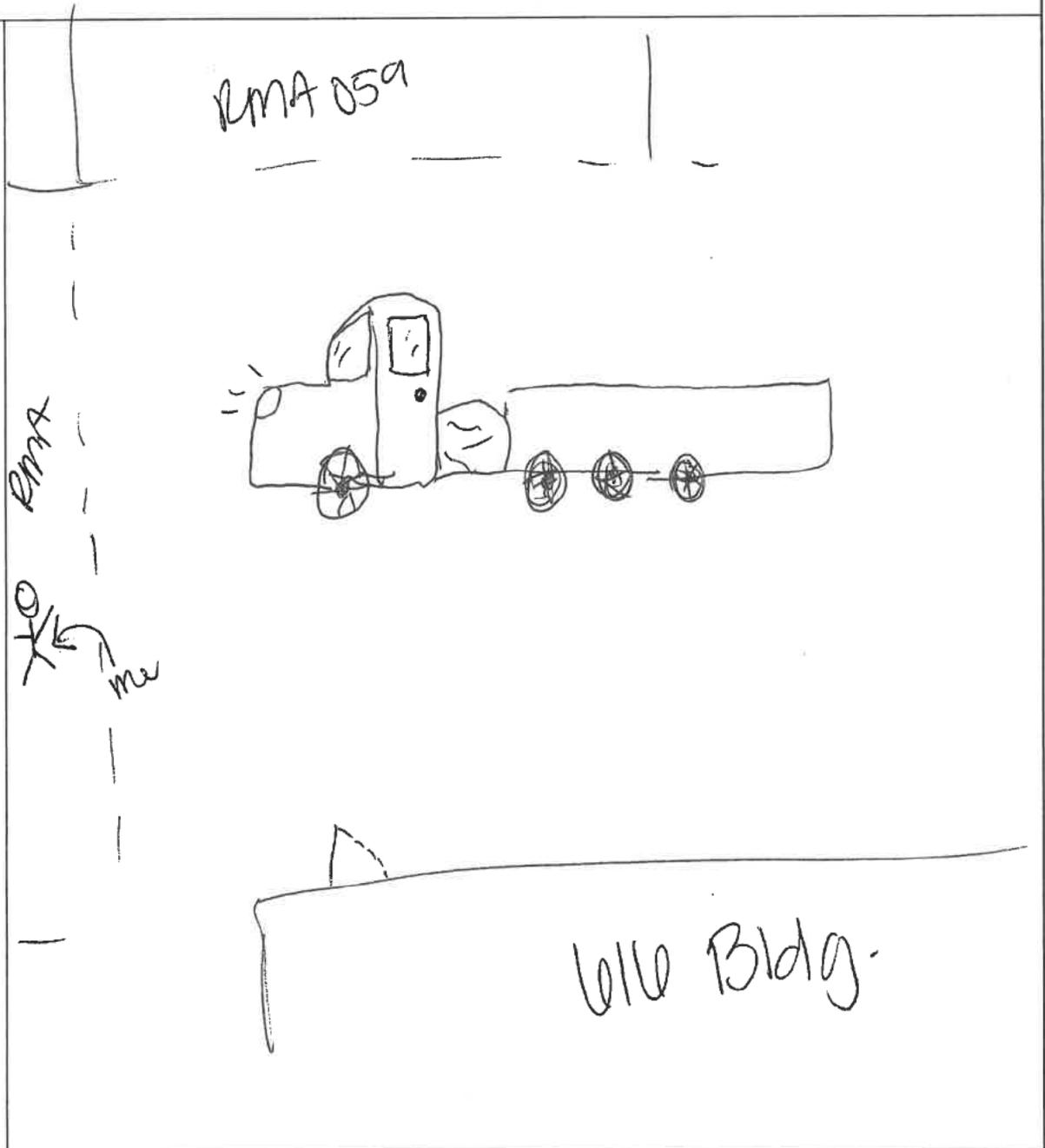
2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM. If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD

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

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

- Date and time of event: 12/19/2024 13:30
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] Janitor on Break in lunch room
- Other Work Underway? Describe: N/A
- Location of event (mark area on map and wind direction):
616
- Name(s) of others in or near the affected area:
N/A
- Was Industrial Hygiene present, who?
N/A
- Describe the odor: Didn't directly smell anything

<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: N/A
- 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):				

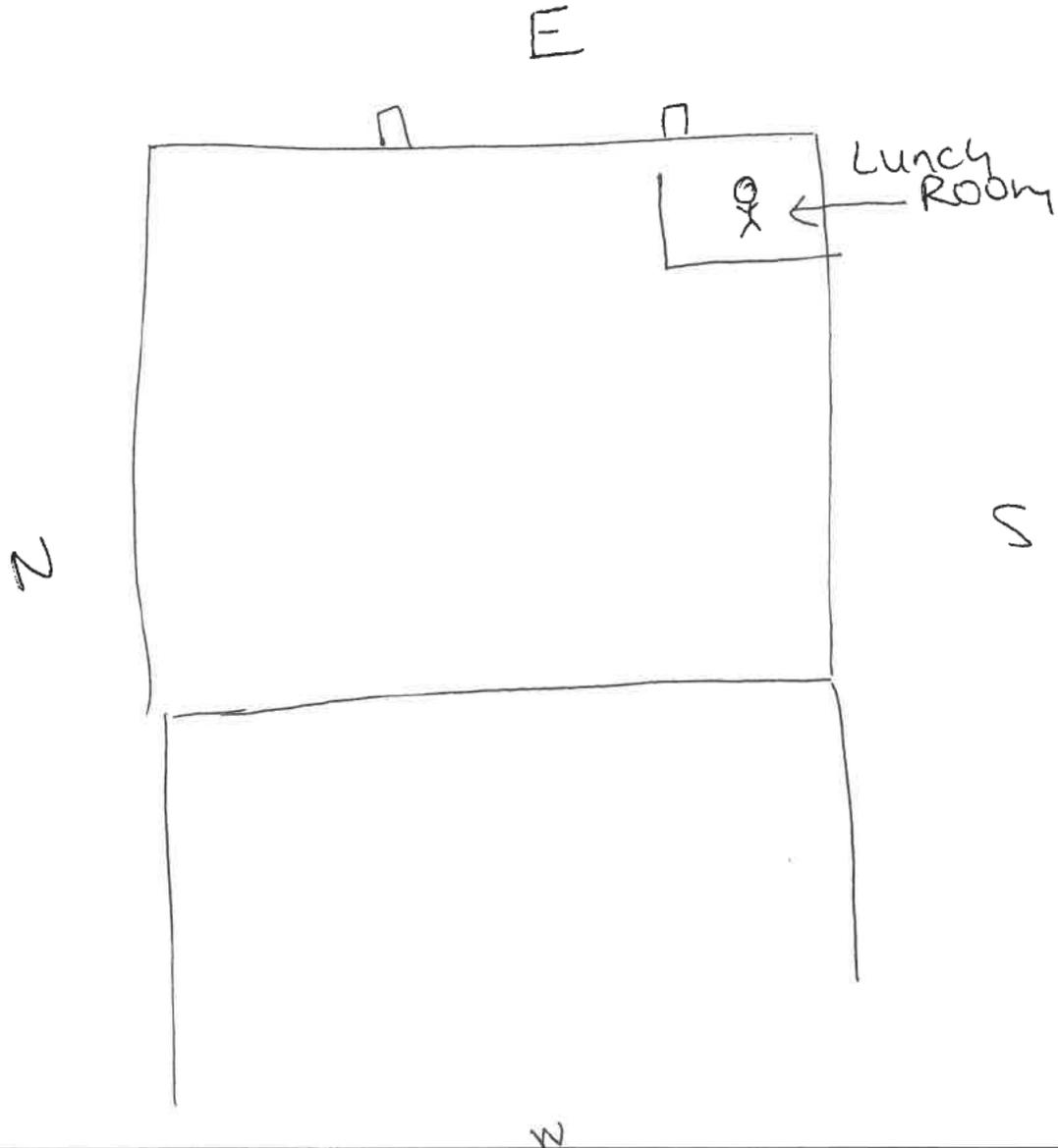
2. Provide this completed card (Page 1 & 2) to Supervisor, Industrial Hygiene, your Union Safety Representative or the CSM. If received by Supervisor/IH/U-SR, Supervisor/IH/U-SR will ensure card is provided to the CSM.

ODOR/VAPOR RESPONSE CARD

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

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

- Date and time of event: 12/19/24 1330
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): I did not smell anything
- Your name and the work you were performing:
(Marking and labeling)
- Other Work Underway? Describe: N/A
- Location of event (mark area on map and wind direction):
Unknown
- Name(s) of others in or near the affected area:
Unknown
- Was Industrial Hygiene present, who?
No
- 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:
Unknown
- 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.

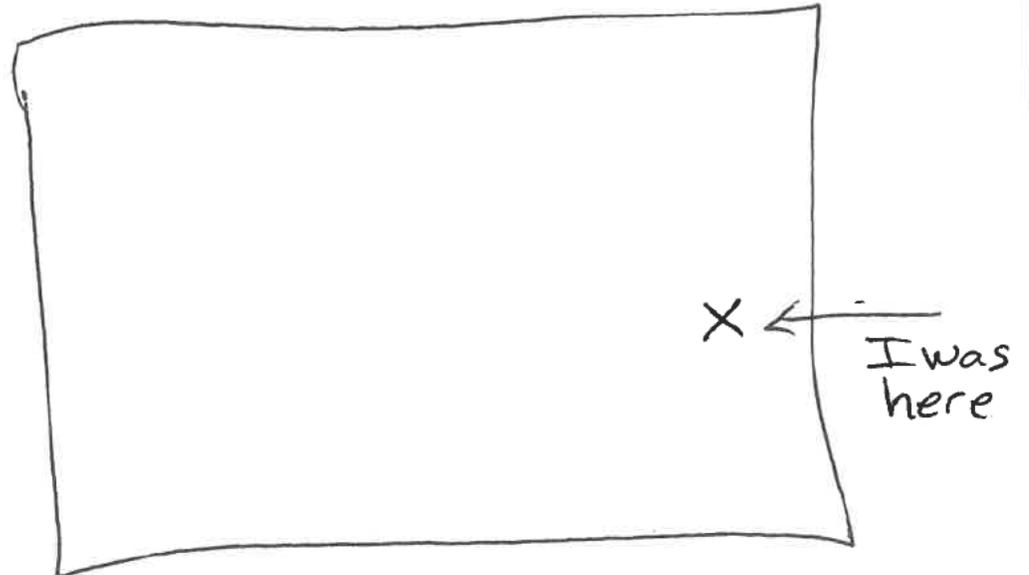
ODOR/VAPOR RESPONSE CARD

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.

6016



ODOR/VAPOR RESPONSE CARD

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

• Date and time of event: 12-19-24 1330

• Check Applicable:

Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____

• Your name and the work you were performing:

[REDACTED] → Survey conex in RMA-059 Lw Storage area

• Other Work Underway? Describe:

I don't know

• Location of event (mark area on map and wind direction):

616 Building

• Name(s) of others in or near the affected area:

HPT, NCOs, Teamster in RMA

• Was Industrial Hygiene present, who?

No

• Describe the odor:

Sweet Sour Smoky Septic/Sewer Musty Rotten
 Metallic Onion Earthy Ammonia Citrus Solvent

Other (describe):

Did not smell odor.

• 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

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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~~RMN~~

RMN

TN

614

Building

ODOR/VAPOR RESPONSE CARD

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

- Date and time of event: 12/19/21 1330
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing: [REDACTED] - Dispatch
- Other Work Underway? Describe: N/A
- Location of event (mark area on map and wind direction): 616
- Name(s) of others in or near the affected area: N/A
- Was Industrial Hygiene present, who? N/A
- Describe the odor:
 Sweet Sour Smoky Septic/Sewer Musty Rotten
 Metallic Onion Earthy Ammonia Citrus Solvent
 Other (describe): I was not near odor
- 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): _____

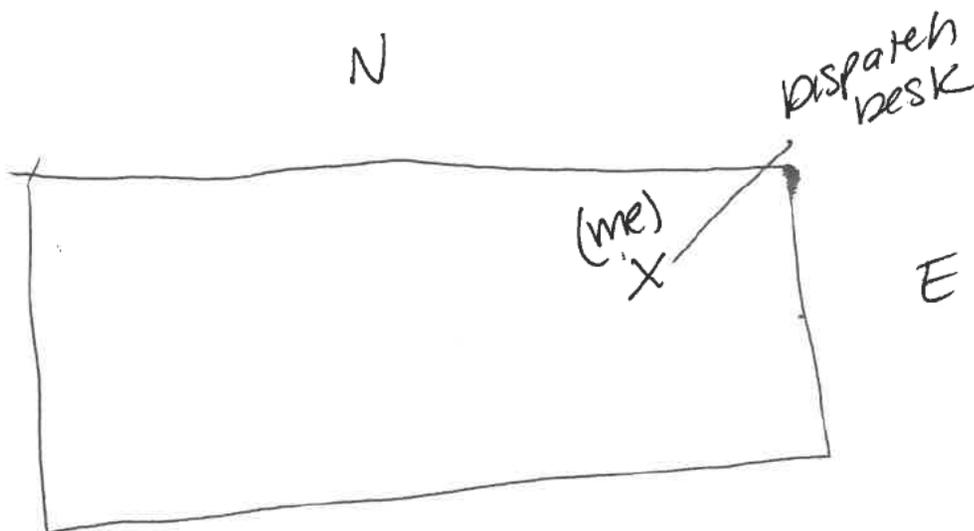
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ODOR/VAPOR RESPONSE CARD

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

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

- Date and time of event: 12-19-24 1330
- Check Applicable:
 - Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe):
I didnt smell nothing
- Your name and the work you were performing:
[REDACTED] marking and labeling
- Other Work Underway? Describe:
Putting cones away
- Location of event (mark area on map and wind direction):
616
- Name(s) of others in or near the affected area:
N/A
- 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:
- Your symptoms? None
 - Headache Dizziness Nausea Cough Fatigue
 - Weakness Sore Throat Difficulty Breathing Eye Irritation Rash
 - Itch Tingling Numbness Taste
 - Other (describe):

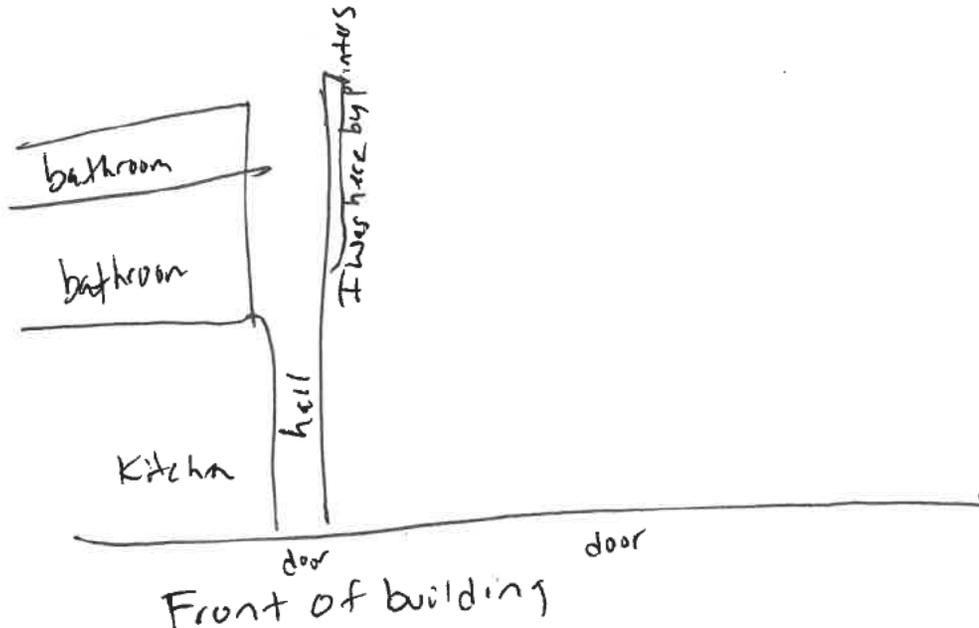
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ODOR/VAPOR RESPONSE CARD

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.
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ODOR/VAPOR RESPONSE CARD

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

- Date and time of event: 13:30 pm
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): _____
- Your name and the work you were performing:
Marking and ~~Labeling~~ Labeling
- Other Work Underway? Describe:
Dispatch and fork lift operations
- Location of event (mark area on map and wind direction):
616 building
- Name(s) of others in or near the affected area:
N/A
- Was Industrial Hygiene present, who?
Wasnt present at the time of the event
- Describe the odor:
 - Sweet
 - Sour
 - Smoky
 - Septic/Sewer
 - Musty
 - Rotten
 - Metallic
 - Onion
 - Earthy
 - Ammonia
 - Citrus
 - Solvent
 - Other (describe): N/A
- 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): _____

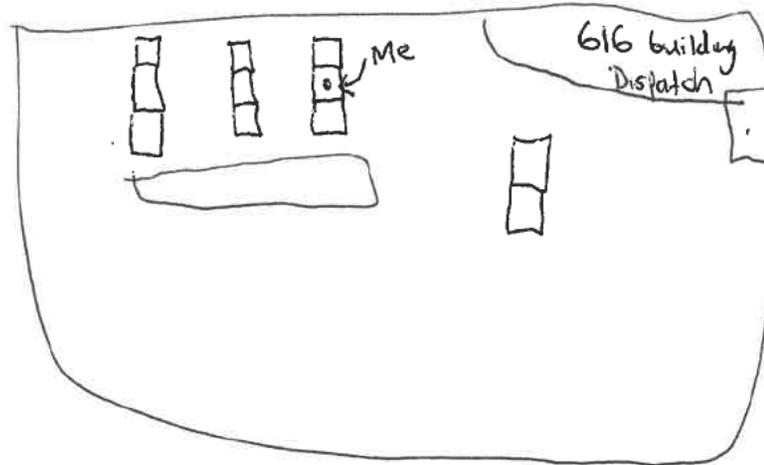
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ODOR/VAPOR RESPONSE CARD

Instructions:

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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

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

- Date and time of event: 12/19/24
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): _____
- Your name and the work you were performing:  I was at my desk
- Other Work Underway? Describe: NR
- Location of event (mark area on map and wind direction): U16
- Name(s) of others in or near the affected area: NO ONE
- 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: NO
- 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

Instructions:

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2. Contact Central Shift Manager (CSM), at (509) 373-2689.
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 - 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;
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ODOR/VAPOR RESPONSE CARD

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

• Date and time of event: 12-19-24 / 1330

• Check Applicable:

Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe):

• Your name and the work you were performing:

PROCESSES REVIEW / 

• Other Work Underway? Describe:

• Location of event (mark area on map and wind direction):

616

• Name(s) of others in or near the affected area:

NOT SURE

• Was Industrial Hygiene present, who?

NO

• 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:

I MYSELF DID NOT SMELL ANYTHING

• 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): <u>I'M COUGH</u> | | | | |

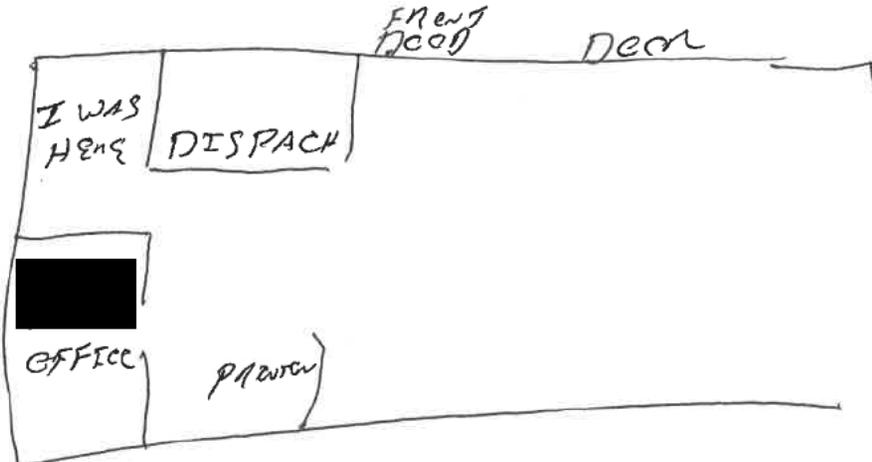
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ODOR/VAPOR RESPONSE CARD

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

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

- Date and time of event: 12/19/24 1330
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): _____
- Your name and the work you were performing: off loading Conex Outside / 
- Other Work Underway? Describe: N/A
- Location of event (mark area on map and wind direction): Inside 616
- Name(s) of others in or near the affected area: N/A I was outside
- Was Industrial Hygiene present, who? _____
- 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

Instructions:

1. Notify Immediate Supervisor. *yes*
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

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

- Date and time of event: 12-19-24 1330
- Check Applicable:
 - Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED]
- Other Work Underway? Describe:
616 General
- Location of event (mark area on map and wind direction):
616
- Name(s) of others in or near the affected area:
N/A
- 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:
No
- Your symptoms? None
 - Headache Dizziness Nausea Cough Fatigue
 - Weakness Sore Throat Difficulty Breathing Eye Irritation Rash
 - Itch Tingling Numbness Taste
 - Other (describe): _____

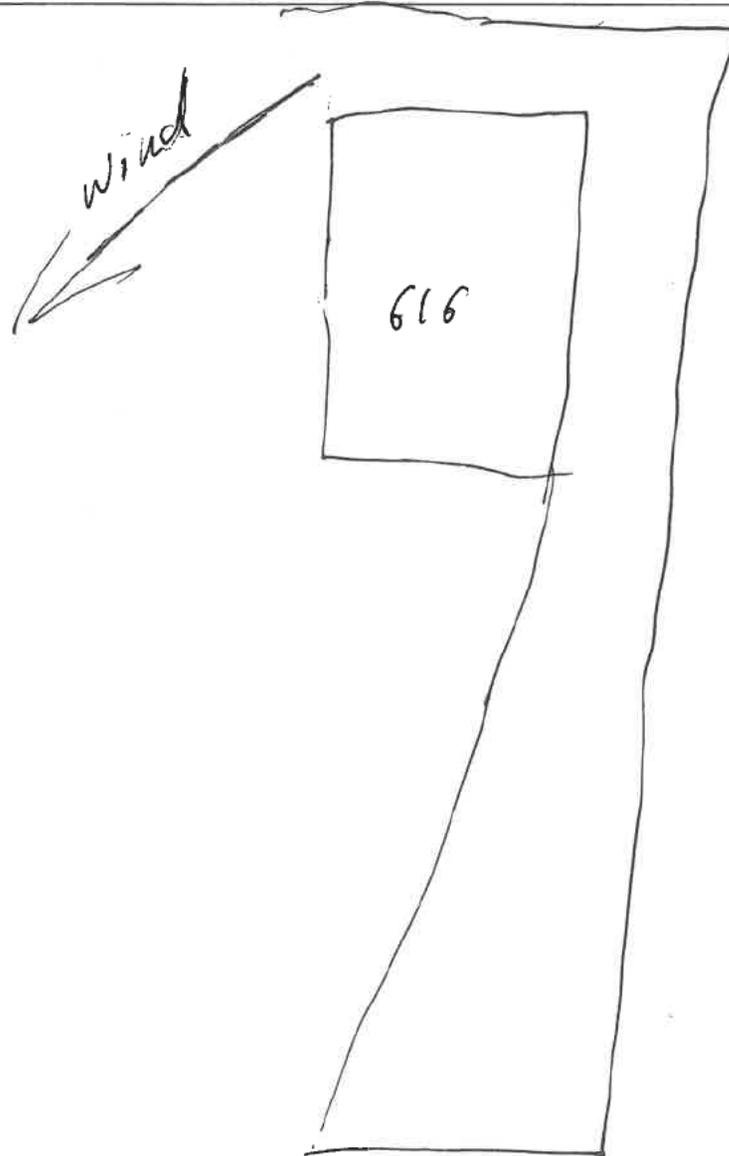
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ODOR/VAPOR RESPONSE CARD

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 - 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.
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ODOR/VAPOR RESPONSE CARD

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

- Date and time of event: 12-19-2024 1330
- Check Applicable:
 - Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
Driving Forklift unloading Connex outside of building
- Other Work Underway? Describe: _____
- Location of event (mark area on map and wind direction):
Cell
- 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): _____
- 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

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ODOR/VAPOR RESPONSE CARD

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

- Date and time of event: 12/19/24 1330
- Check Applicable:
 - Odor
 - Ammonia Alarm (6 ppm)
 - Ammonia Alarm (12 ppm)
 - Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] Observing offload of 2 empty boxes from Perma fix + walked in lake building
- Other Work Underway? Describe:
Normal file processing + CBTS.
- Location of event (mark area on map and wind direction):
inside lake building bay(s)
- 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): Chlorine or bleach
- Is source known/likely? Describe:
unknown
- 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

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

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

- Date and time of event: 12/19/24 1330
- Check Applicable:
 Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing:
[REDACTED] a witnessing offload of Conex boxes
- Other Work Underway? Describe: N/A
- Location of event (mark area on map and wind direction):
BLDG. 616
- 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): Chlorine
- 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): _____

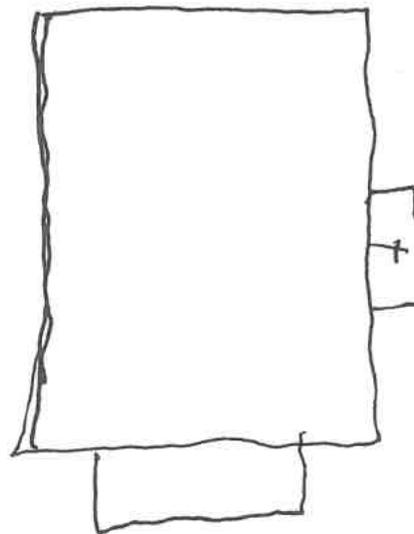
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Cold
Wind
↓



ODOR/VAPOR RESPONSE CARD

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

• Date and time of event: 12/19/24 1330

• Check Applicable:

Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____

• Your name and the work you were performing:

[Redacted] - Observation Trainer

• Other Work Underway? Describe:

Sanex Box offloading from Semi-Trailer

• Location of event (mark area on map and wind direction):

616 Yard (North of 616)

• 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): Chlorine

• 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): _____

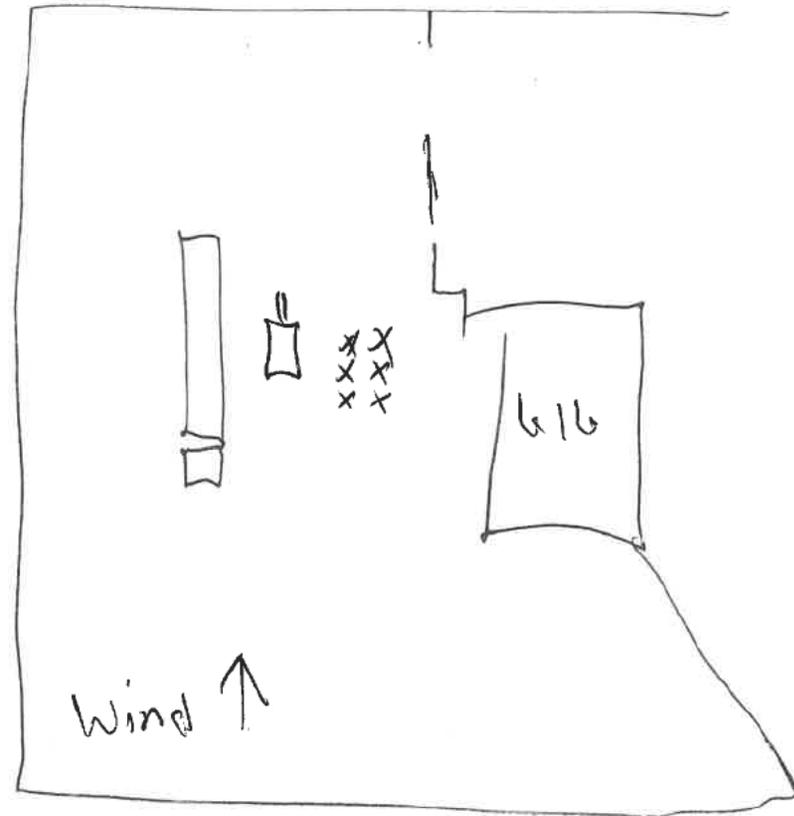
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ODOR/VAPOR RESPONSE CARD

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

- Date and time of event: 12-19-24 1340
- Check Applicable:
 - Odor Ammonia Alarm (6 ppm) Ammonia Alarm (12 ppm) Alarm (other - describe): _____
- Your name and the work you were performing: [REDACTED] Vehicle survey (RadCon)
- Other Work Underway? Describe: _____
- Location of event (mark area on map and wind direction): 616
- Name(s) of others in or near the affected area: [REDACTED]
- Was Industrial Hygiene present, who? NO
- 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 checked="" type="checkbox"/> Ammonia	<input type="checkbox"/> Citrus	<input type="checkbox"/> Solvent
<input type="checkbox"/> Other (describe): _____					
- 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): _____				

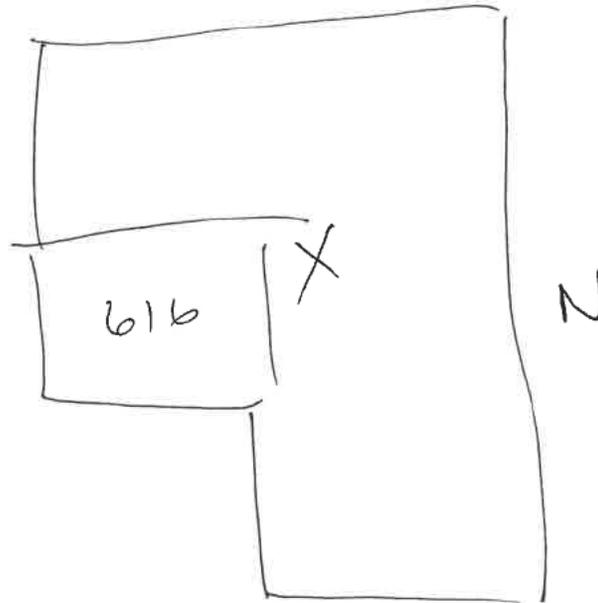
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1341 IHT @ CSO

1335 IHT Sup @ CSO

1337 SM briefs IHT

1338 request OVRCs, no 250 checks location complete sent to

1338 IHT #2 & SAH L3 @ CSO

1338 SAH L3 → Fac SAH L3

→ 2 FAC IHTs will support

1341 SAH L3 → PO shift IHT sup

PO shift IHTs not needed

1341 DFAS current

Stability Class D, S-T mph

319° 300ft

1342 CSO → FWS, work @ time of event unloading Uvald Conex from Permatix, odor noted upon return to building

1344 VMDS @ 1315

SI8	1.113	ppm
SI9	1.972	ppm
AN	0	ppm
AN	0	ppm
126	0	ppm
127	0	ppm
702	14.603	ppm
AP	0	ppm
SY	8.0831	ppm

616 Building

1324 call

SOEN B31

Fac rep 1334

19 personnel evacuated to staging area, no medical or symptoms currently chlorine/bleachy odor

1346 CSM verifies access restriction, notifies that ADP-001 will be entered

1348 OVRC blank forms leave CSO

1348 Met Data Station 21 @ BIS

46°F NNW @ 8 mph (335°)
60% RH 29.42 ↓

1350 Fac IHT @ CSO + 2 IHTS

- shower filter maintenance may have occurred today

1352 SOEN for ADP-001

1353 CSM → L1 Operations/Field Support notification

1356 CSM → POE L1 notification

1403 CSM → Fac Prep

1405 Attachment B Sent

1406 PA → CSM, EIR # + updated

1412 Fac IHT checking on instrument prep's
ppb line will come from 200E

1413 Attachment A 1/2 signed

1415 CSM requests OVRC update
- Verifies chlorine bleach

1416 IHT #2 briefs
- RPF, IHTsp.

1418 Responding IHTs & IHTs leave CSO to collect instruments

1431 CSM → SAH L1 CG7 update

1438 FWS → CSM OVRC are enroute

1439 response team @ 2704 HV

1445 OVRC @ CSO

- reviewed by CSM & IHT
- no symptoms, odor chlorine bleach
4 people smelled odor
18 OVRC received

1448 Ops Sup, odor spilly indoors @ vents. Some odor detected outside wind from west

1450 response team @ 616
- starting outdoors

1452 CSM → utilities, was any chlorine cylinder work occurring? → no.

1452 CO spike 29 ppm, down to 7 and dropping. no engines running
→ that sensor not bumped

1457 NO fluctuating 0 to 0.5 ppm
fluctuating

1458 SAH L3 notification to lead

HAMTC safety rep
1459 entered building chlorine odor present, not strong

1515 resp. IHT → IHT #1 (speaker phone)
discussing results w/ CSM & SAH L3

1517 response team leaving 616

SWR HD # 24-09942

EIR # 2025-021

IHT # 000111

1518 IHTs en route to post

1526 response IHT @ CSO

1537 chlorine Dräger tubes (exp.)

1543 IHT → IHT #3 post

all passed but NO, NO2 took 6 min

1548 No posted, 4 min.

1600 response team @ 2704 HV preparing instruments added Cl₂ action limits instrument.

1600 CSM → L1 Ops/Field support update

1602 Waste Serv. IHT → IHT #3, large filter life was in use today

1604 FWS → CSM update, access positions @ 616.

1615 FAC SAH L3 → SAH L3 response team @ 616.

1620 < det Cl, NO₂ faint odor (indoor), discussing post

1622 CSM → L1 Ops/Field support consult
1625 CSM → SAH L1 consult for access w/o post.

1627 speaker phone, employees given access to enter.

1652 Attachment A 2/2 signed

1649 FWS → CSM