EVENT INVESTIGATION REPORT

AOP-015 Event Outside U Farm Change Trailer
Event Investigation Report 2018-039

U Farm (Odor Area in Red)

Event Investigation Team Lead

Responsible Manager

Date: 11/28/18

Date: 11/28/18
Executive Summary
At approximately 0850 on October 24, 2018, a team of craft personnel arrived outside of U Farm change trailer. They were preparing to enter the change trailer when six of the personnel smelled an odor described as a sweet onion smell. The field personnel decided to stop the work and the Field Work Supervisor (FWS) restricted access to the area. Field personnel notified the Central Shift Office (CSO), which made an AOP-015 entry. None of the field personnel exhibited any signs or symptoms and all declined evaluation by medical.

Investigation Summary
At 0700, Electrical craft personnel arrived for their morning briefing for work orders 351340 and 351341 U Farm MCC Clean and Inspect. The Field Work Supervisor (FWS) completed a pre-job brief then field personnel drove to outside the U-Farm change trailer. Just as all the field personnel exited their vehicles, one individual noticed the slight smell of sweet onions. Immediately after, five other personnel in the group smelled the same thing. The wind that morning was “dead calm” as described by one of the individuals. At Hanford Weather Station 40, which is located on the edge of the 200 West Area near U Farm, showed wind speeds below 3 miles per hour, confirming this assessment. The FWS decided to stop the work and instructed all personnel to leave the area. The personnel said that as they were returning to vehicles to leave the area, the smell grew in strength very rapidly. The FWS contacted the central shift office, and the CSO entered an AOP-015 for odors outside U Farm. The FWS then restricted access to the area around the U Farm change trailer.

All Craft personnel declined medical evaluation and none exhibited any signs or symptoms.

CSO sent out the Industrial Hygiene (IH) response team. All samples taken tested at less than detectable levels.

The Event Investigator conducted an informal interview with the six craft personnel and the FWS. All individuals that were in the area submitted completed Odor Response Cards and the Investigator received copies at that time.

Event Timeline

10/24/2018
0700   Pre-Job Brief conducted for U Farm work orders
0849   Field personnel arrive at U Farm outside of change Trailer
0850   One of the field personnel smells a “faint onion-onion like smell”, then promptly by five more.
0851   Field personnel call and inform the FWS of the smell. FWS stops the work and instructs all the field personnel to return to 271S.
0853   As the loading of the vehicles is completed, all the field personnel notice the smell has significantly built in strength
0900  Craft arrive back at 271S
0908  Central Shift Office (CSO) enters AOP-015 for odors outside of U Farm. Access to U Farm was restricted. On-Call FacRep notified.
0917  SOEN for AOP-015 issued
0938  Completed odor response cards delivered to Central Shift Office
1043  AOP-015 exited

<table>
<thead>
<tr>
<th>Event</th>
<th>SX Farm AOP-015 Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date/time of event</td>
<td>October 24, 2018 0850</td>
</tr>
<tr>
<td>Location</td>
<td>Outside U Farm Change Trailer</td>
</tr>
<tr>
<td>Odor</td>
<td>Sweet Onion</td>
</tr>
<tr>
<td>Symptoms</td>
<td>None</td>
</tr>
<tr>
<td>DRI results during event</td>
<td>Less than the Level of Detection (LOD) for ammonia (NH3) and Volatile Organic Compounds (VOCs) on sweep of reported odor location</td>
</tr>
<tr>
<td>IH investigative monitoring/sampling</td>
<td>Readings from bag samples were at or below background levels.</td>
</tr>
<tr>
<td>Possible source(s)</td>
<td>Fugitive Emissions from U Farm</td>
</tr>
</tbody>
</table>

Weather conditions on October 24, 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Wind Dir (From)</th>
<th>Wind Speed</th>
<th>Ave Temp</th>
<th>Bar</th>
<th>RH</th>
</tr>
</thead>
<tbody>
<tr>
<td>0830</td>
<td>126</td>
<td>2.3</td>
<td>47.1F</td>
<td>29.30</td>
<td>72.0</td>
</tr>
<tr>
<td>0845</td>
<td>004</td>
<td>1.6</td>
<td>48.3F</td>
<td>29.30</td>
<td>69.8</td>
</tr>
<tr>
<td>0900</td>
<td>047</td>
<td>2.3</td>
<td>50.2F</td>
<td>29.31</td>
<td>64.6</td>
</tr>
<tr>
<td>0915</td>
<td>193</td>
<td>2.5</td>
<td>51.2F</td>
<td>29.31</td>
<td>64.7</td>
</tr>
</tbody>
</table>

| Waste disturbing or tank work in adjacent area | No waste disturbing activities or tank work occurring in U Farm or adjacent areas. |

Compensatory Measures
- The FWS stopped work in the field and the IH response team sampled to area. The results of all the sampling less than detectable levels.
IH Response Team Sample Results

<table>
<thead>
<tr>
<th>Agent</th>
<th>Result</th>
<th>Action Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonia</td>
<td>0.000 ppm</td>
<td>12 ppm</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>0.000 ppm</td>
<td>12.5 ppm</td>
</tr>
<tr>
<td>Flammable Gas</td>
<td>0.000 %</td>
<td>25 %</td>
</tr>
<tr>
<td>Oxygen</td>
<td>20.900 %</td>
<td>23.5 %</td>
</tr>
<tr>
<td>Volatile Organic Compound</td>
<td>0.000 ppb</td>
<td>2 ppm</td>
</tr>
</tbody>
</table>

Preliminary Extent of Condition Review

- No extent of condition exists for this investigation.

Discussion of Potential Causes

- No potential causes can be determined

Discussion of Barriers That Could Have Impacted the Cause

- There were no barriers that could have impacted the cause

Recommendations/Proposed Corrective Actions

- No recommendations or proposed corrective actions.

Attachments:

1. Odor Response Card
2. Odor Response Card
3. Odor Response Card
4. Odor Response Card
5. Odor Response Card
6. Odor Response Card
7. Industrial Hygiene Investigation Report (IHIR)  
   (Page 5-16 Odor Response Cards Omitted)
AOP-015 Event Outside U Farm Change Trailer
WRPS-EIR-2018-039

Attachment 1 – Odor Response Card

1. Contact CSM, Complete below bulleted information and map.
   - Date and time odor was noticed: 8:50
   - Your name and the work you were performing: Blacked out
   - Location of odors (mark area on map and wind direction): No wind
   - Name(s) of others in or near the affected area: 272 WTR electricians and HPT’s
   - Was an IHT present?: No
   - Describe the odor:
     - Sweet
     - Sour
     - Musty
     - Earthy
     - Metallic
     - Smoky
     - Rotten
     - Onion
     - Cleaning Solution
     - Ammonia
     - Other: Blacked out
   - Possible Source: Electrical
   - Your symptoms (if any):
     - Headache
     - Dizziness/Light-Headed
     - Nausea
     - Cough
     - Fatigue/Drowsiness/Weakness
     - Sore/Burning Throat
     - Difficulty Breathing
     - Watery/Irritated Eyes/Trouble with Vision
     - Tingling/Numbness/Paralysis
     - Rash/Itching
   - Other: Not at this time

2. Send this card to the Central Shift Office.
Attachment 2 – Odor Response Card
Attachment 3- Odor Response Card
Attachment 4 - Odor Response Card
ODOR RESPONSE CARD - 241-U FARM

1. Contact CSM, Complete below bulleted information and map.

   - Date and time odor was noticed: **10/24/18 0950**
   - Your name and the work you were performing: [redacted]
   - Location of odors (mark area on map and wind direction): **Odors outside change trailer**
   - Name(s) of others in or near the affected area: **212-WW electrician = HPS**
   - Was an IHT present? **No**
   - Describe the odor: [Checkmarks] Sweet, Sour
   - Cleaning Solution, Ammonia, Other: [Checkmarks]
   - Possible Source: [space for input]
   - Other: [space for input]

2. Send this card to the Central Shift Office.

---

**Attachment 5- Odor Response Card**
ODOR RESPONSE CARD - 241-U FARM

1. Contact CSM, Complete below bulleted information and map.
   - Date and time odor was noticed: 10/24/18
   - Your name and the work you were performing: [Redacted]
   - Location of odors (mark area on map and wind direction): No Wind
   - Name(s) of others in or near the affected area: 272 WA Electrician & HPT
   - Was an HPT present? No
   - Describe the odor: Sweet, Sour, Musty, Earthy, Metallic, Smoky, Rotten Onion, Cleaning Solution, Ammonia, Other:
   - Possible Source: Tanks

   - Your symptoms (if any): Headache, Dizziness/Light-Headed, Nausea, Cough
   - Fatigue/Crowdness/Weakness, Sore/Burning Throat, Difficulty Breathing
   - Watery/ Irritated Eyes/Trouble with Vision, Tingling/Numbness/Paralysis, Rash/Vomiting
   - Other:

2. Send this card to the Central Shift Office.

Attachment 6- Odor Response Card
1. Event Summary (including number of workers involved and activity in progress):

At approximately 0850 on Wednesday the 24th of October, 2018, 6 workers outside of U Farm due West of MO257 reported smelling "sweet, onion, fast food smell". No symptoms were reported. At the time of the odor event, the workers were performing or supporting the performance of electrical panel cleaning and inspections.

- Was an IHT Present during initiating event? [ ] Yes [X] No

IH Monitoring/ Sample Survey Reports:
18-09567: "AOP-015 Response U Farm Parking Lot"

Weather Conditions at Time of Event:

- Weather station: 7
- Wind Direction and Speed: N 1mph
- Barometric Pressure (steady/rising/falling): 29.29 inHg steady
- Temperature (°F): 46
- Humidity: 82%
Field Response Timeline:

0917: SOEN: “Entered AOP-015 for odors reported outside of U Farm, access to U Farm form 16th St. is restricted. CSM”

0921: AN Field IH, COMS Field IH, EV Field IH, AYAZ Field IH, ETF Field IH, PO Shift IHT Supervisor arrive at CSO

0921: CSM briefs AN Field IH, COMS Field IH, EV Field IH, AYAZ Field IH, ETF Field IH, PO Shift IHT Supervisor:
- 6 persons, no symptoms, all decline medical
- Outside of U farm
- Sweet onion smell
- Suspect tank waste

0922: PO Shift IHT1 and PO Shift IHT2 arrive at CSO

0928: AN Field IH briefs PO Shift IHT1:
- AN Field IH briefs PO Shift IHT with physical copy of IHP-09001 and directs implementation as per TF-AOP-015 3.1.12.1
- AN Field IH Directs PO Shift IHT to acquire Respiratory Protection Equipment form RPF TF-AOP-015 Task 2 as per TF-AOP-015 3.1.12.3

0929: PO Shift IHTs depart CSO to retrieve instrumentation and RPE.

0932: CSM asks AN Field IH to contact ST Field IH and inquire about presence of personal sample pumps on affected personnel. AN Field IH contacts ST Field IH by telephone and is informed that personal sample pumps were not present at time of event initiation

0934: PO Shift IHT Supervisor calls COMS Field IH to inquire about possible additional IHT support. COMS Field IH declines additional support

0938: Odor Response Cards are delivered to CSO

0956: PO Shift IHT1 briefs COMS Field IH on response action status:
- NH3 and VOC readings <DL
- Workers were present in the restricted area and were told to leave
- Persons present did not report any odors

1000: COMS Field IH briefs CSM on response action results

1020: CSM calls AN Field IH to confirm that TF-AOP-015 4.12 “Exit Criteria” have been met

1043: SOEN: “Sample analysis for the TF-AOP-015 event has been completed and the results are at or below background levels. Exiting TF-AOP-015. CSM”
2. GCMS Sample Results:

N/A¹

¹Bag samples were not collected for this AOP 015 investigation. As no source was identified and direct monitoring measurements for NH3 and VOC were less than the instrument’s level of detection (DL). Sample Plan IHP-09001 R6 permits the responding industrial hygienist to collect bag samples at their direction. In this case the industrial hygienist did not give direction to collect bag samples.
3. Additional Information:
   - Odor Response Cards received:
4. **Summary of Employee Reported Information (e.g., symptoms)**
   
   No symptoms were reported, all employees declined medical evaluation.

5. **Recommendations/Conclusions:**
   
   Identification of Source of the Concern: [ ] Yes [X] No
   
   No recommendations at this time.

6. **Other:**
   
   N/A

---

**S&H Program Management:**

---

*Attachment 7 – IHIR page 17*