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INCIDENT REPORT
December 18, 2019

INCIDENT NO. **191015-03**

INCIDENT DATE: October 15, 2019

LOCATION: Shore Terminals LLC (NuStar Energy LP Selby Terminal)
90 San Pablo Ave.
Crockett, CA 94525
Site ID No. 707599

FACILITY DESCRIPTION
Shore Terminals, also known as, NuStar Energy LP Selby Terminal is a bulk storage terminal that receives (from pipeline, rail, and ship), stores large tanks, and distributes transportation fuels (e.g., gasoline, diesel, aviation fuel) and ethanol. There are 24 tanks partitioned into four (4) tank farms (Attachment A).

INCIDENT SUMMARY
Shortly before 14:00, Contra Costa Health Services Hazardous Materials Programs (CCHSHMP) received a call from KCBS. They inquired about a report made by the public regarding an explosion and fire at a refinery near Interstate 80. At the time, I had not received a notification from any facility, except from the Phillips 66 Rodeo Refinery from that morning regarding live fire training occurring at the same time. A couple minutes later, I received a call from Phillips 66 reporting that there has been an explosion and fire at NuStar. Following that phone call, I received a call from Jay Prescott of the Shell Martinez Refinery inquiring about the visible black plume of smoke towards the west as seen by their refinery personnel. I immediately asked that Haz Mat Specialists Karine Abramians and Amanda Ackerman request as many Haz Mat Specialists (HMS) on the Contra Costa Health – Haz Mat Team to report to the office.

Because I have not heard anything yet from Selby, I contacted NuStar Pittsburg to ask if they were aware of the status of the Selby Terminal. It was the first time that they had heard about the explosion and fire. They told me they would try to contact someone from the facility. Within the first hour of the incident, I received a direct call from Selby Terminal's Stephan Rosen.

Per the facility's 72-hour report (Attachment B), the incident involved two (2) tanks containing less than 3,000 barrels (or 126,000 gallons) denatured ethanol tanks, Tanks 20107 and 20109. The fire at Tank 20107 erupted at approximately 13:48 shortly followed by the fire at Tank 20109. The cause of the ruptures of these tanks is currently unknown and under investigation.

Command and Firefighting Operations
The Incident Commander for the firefighting operations was Battalion Chief Dean Colombo of the Crockett-Carquinez Fire Protection District. The Incident Command Post was initially at or near the Selby facility but was eventually moved to the intersection of Cummings Skyway and San Pablo Avenue. Multiple local fire agencies (e.g., Contra Costa County Fire Protection District, Rodeo-Hercules Fire District, El Cerrito Fire Department) and the industrial fire agencies of the Petro-

Chemical Mutual Aid Organization (PMAO) provided personnel and apparatus to aid in the firefighting operations. These operations endured several setbacks with the fire continually flaring up. The cause of the flare-ups was believed to be impingement of product lines containing petroleum fuel in the vicinity of the fire. In addition to the tank fires, firefighting crews abated a grass fire on the hillside adjacent to the facility. Fire suppression efforts put out the tank fires at approximately 21:00.

HMS Xavier Bryant was dispatched to the Command Post at Cummings Skyway and San Pablo Avenue to represent CCHSHMP in the Unified Command and relayed pertinent information regarding the status of the fire and the fire suppression efforts to the Haz Mat Branch Operations Center (BOC) in Martinez. HMS Ellen Dempsey eventually took over Bryant's post in Unified Command earlier in the evening and, in addition, provided public information messaging to the news media.

Shelter-in-Place

The Community Warning System was activated at approximately 14:24 for a shelter-in-place order for the communities of Crockett and Rodeo and the northeast sliver of Hercules bordering Rodeo (Attachment C/D). In the event of a shelter-in-place order, the sirens sounded every 30 minutes at the designated zones. Two crews were dispatched from the Health to conduct community air monitoring in the downwind areas. The fire situation was constantly changing as there were multiple flare-ups of the fire during fire suppression operations and eventually incited a vegetation fire north of the facility. Air monitoring would continue as long as the fire was not extinguished and smoke continued to threaten the surrounding communities. When fire conditions at the facility had improved and the smoke from the fire had ostensibly diminished, the CCHSHMP air monitoring crews verified on the field that air quality readings have also improved. This led to the lifting of the shelter-in-place order at 21:39.

Haz Mat Operations

The Haz Mat Branch Operations Center (BOC) was activated at CCHSHMP's Martinez office at approximately 14:05. It would be the seat of decision-making of further Health Department actions based on the analysis of incoming air quality direct readings from the field monitoring units. Randy Sawyer served as the BOC Director. Personnel from the County Health Department were also present at the BOC, including Health Department Director Anna Roth; Health Officer Chris Farnitano; and Deputy Health Officers Rohan Radhakrishna and Erika Jenssen.

What was burning? In the early stages of CCHSHMP's response, it was not clear what the ruptured tanks had contained and what was actually burning. CCHSHMP went into the California Environmental Reporting System (CERS) to review Selby Terminal's chemical inventory. Based on the location of the fire observed on the live news footage, CCHSHMP was able to deduce the location of the tanks on fire on a facility map found in CERS – Tanks 20107 and 20109 (Attachment E).

With the knowledge of the (possible) identification numbers to the tanks, CCHSHMP correlated those numbers to the Aboveground Petroleum Storage Act (APSA) tank facility reporting and found that the tanks may contain ethanol. Based on how the fire looked with dark smoke (ethanol burns cleanly), and not having received yet any kind of contact from NuStar during the first hour of the fire erupting, CCHSHMP could not confirm that ethanol was what was in the tanks. Without any other information, CCHSHMP decided to use ethanol as the basis for its air monitoring until told otherwise.

Shortly thereafter, CCHSHMP received a call from Stephan Rosen, who is the environmental contact for Selby Terminal. While he could not officially confirm that the tanks contained ethanol, Rosen said that he believes that the tanks did contain ethanol as the inventory for those tanks rarely changed and have always been in ethanol service (since the transition away from MTBE as a fuel additive). It was learned later that evening that the fire did burn clean from the ethanol, but the dark smoke could be from a small fraction (up to 3%) of the "denatured" ethanol consists of gasoline, which is an ATF regulatory requirement. Additionally, the piping manifold in between the tanks may

have been impacted by the fire thereby causing the release of petroleum products from surrounding tanks that fed the fire.

Public health messaging. Community and Media Relations Specialist Karl Fischer arrived at the BOC earlier in the management of the incident to assist with messaging, especially for the press briefings, and also to communicate the latest information regarding the incident through the Health Department's social media venues. Communications Officer Will Harper was also present at the BOC during the latter half of the incident. Dr. Radhakrishna conducted several television and radio interviews. Televised press briefings were conducted at the Command Post by Contra Costa County Fire Protection District (Con Fire) Public Information Officer (PIO) Steve Hill, HMS Dempsey for the Health Department, and a representative of the Contra Costa County Sheriff's Department.

Other agency representatives. Zack Adinoff from the Contra Costa County Office of Emergency Services (OES) was at the HazMat BOC to monitor the incident. He assisted in communicating with neighboring Solano County regarding the possible smoke impact from the fire. Additionally, several Wardens and Oil Spill Prevention Specialists (OSPS) from California Department of Fish and Wildlife (DFW), Office of Spill Prevention & Response (OSPR) were present at the BOC.

Community Air Monitoring

Initially, after the call was made to activate the Haz Mat Team, two (2) air monitoring crews from CCHSHMP were immediately dispatched to the immediate areas adjacent to the facility and the neighboring communities. The monitoring equipment brought to the field included the DustTrak, QRae, and MX6 Ibrid (photoionization detector or PID). Nevertheless, the main pollutant of concerns was particulate matter. Other pollutant concerns were considered but they were not as concerning from a public health perspective; there was lack of knowledge of what petroleum products may been released from the flame-impinged piping at the facility; or the extent of field monitoring CCHSHMP could conduct was equipment-constrained.

Readings from the field crews were received by personnel at the BOC by group text or on the ChemResponder app. The transmitted readings were recorded onto a digital map maintained by CalARP engineers and HMSs. The map (Attachment help to visual where the readings were with respect to the shelter-in-place zones and the projected plume trajectory based on the environmental conditions at the time.

As smoke conditions improved, CCHSHMP final phase of community air monitoring is to verify the eventual lifting of the shelter-in-place. BOC personnel developed routes based on previous readings and shelter-in-place boundaries on which to collect data in Crockett and Rodeo that supports lifting of the shelter-in-place order. Predetermined routes assisted air monitoring crews on where to collect data to support the lifting of the shelter-in-place. Readings supported the "all clear" of the shelter-in-place, which the Health Officer concurred. This all-clear/lifting of the shelter-in-place order was communicated through the Community Warning System on 21:39 (Attachment C).

Air Monitoring Results. Refer to Attachment F (a) for the air monitoring readings from the day of the fire. Attachment F (b-d) includes photos of the devices monitoring particulate matter, smoke plume observations, and a Google Map of location pins for evening air monitoring conduct by one of the units along I-80. Dr. Radhakrishna was critical to the analysis of the readings that were conveyed to the BOC. He helped the BOC to figure out which readings may necessitate immediate attention and action such as expansion of an existing shelter-in-place zone.

Findings. The field readings did show numerous pockets of elevated readings during the course of the fire and were all within the shelter-in-place zones. These elevated readings supported the maintenance of the existing zones. Through the duration of the incident, the BOC did not decide to shrink or expand the shelter-in-place zone boundaries.

After the incident, CCHSHMP was informed that BAAQMD took four (4) summa canister samples from different locations near the facility and along Cummings Skyway. The samples were analyzed for 22 compounds. The sampling results were reviewed by HMS Seth Heller. The analysis showed that none of the 22 compounds were at concerning levels at the time of the fire, at least the locations where the samples were collected.

Investigation

The "origin of cause" of the explosion/fire is currently being investigated by numerous agencies, with Contra Costa County Fire Protection District's (Con Fire) Fire Investigations Unit as the lead investigative agency. The other agencies also involved in the investigation are the Bay Area Air Quality Management District (BAAQMD), Bureau of Alcohol, Tobacco, and Firearms (ATF), CalOSHA, and CCHSHMP. The investigation has narrowed down the cause to several theories yet to be disclosed and findings are anticipated to be finalized in the coming weeks.

Lessons Learned

CCHSHMP's main duty was to conduct community air monitoring and to collect data to support the shelter-in-place order. CCHSHMP's air monitoring plan/program was implemented during this incident.

At least several major lessons were learned from CCHSHMP's response:

1. *Sending CCHSHMP representative immediately to Incident Command Post*
   There was miscommunication to which cities were included in the shelter-in-place order. The inaccurate information was communicated to the news media, which was how CCHSHMP first found out about the misinformation. Sending a CCHSHMP representative immediately to the Command Post and establishing the tone of CCHSHMP's direction within the response could have helped clarify some of the misinformation regarding the shelter-in-place order.
2. *Schools and Shelter-In-Place*
   This topic will be an ongoing topic as it appears that shelter-in-place and evacuation orders may be a planning gap for many local agencies, especially school districts. Per John Angell of the Crockett Carquinez School District, who his charged with safety and security, worried parents, limited egress points, traffic gridlock, and confusing messaging regarding the shelter-in-place, adversely impacted how the shelter-in-place order was implemented at the schools. Additionally, CCHSHMP saw for the first time the different problems that arise when a shelter-in-place order is called when it coincides with schools being in session.
3. *Modifications to Community Air Monitoring Program.*
   It was discussed amongst HMSs that modifications to the air monitoring program should be considered in light of how it was implemented during this incident. While the program was designed to be adaptable to the unique nuances of any incident that called for air monitoring, it could be that a little prescription (e.g., predetermined routes) may be needed at the beginning in order to give air monitoring crews a good start to their data collection. Once more information comes in, then a more incident-specific air monitoring plan can be developed and air monitoring crews can be directed to specific locations as needed. Additionally, HMSs discussed recording all field data including photos and transmit to the BOC over ChemResponder. Field information was recorded and transmitted over 2-3 venues, which makes it difficult to collate the incoming data on a common operating picture.

Post-Incident/After Action Review (AAR). CCHSHMP attended the After Action Review at the Crockett Community Center on November 14, 2019. Attendance of the AAR was restricted to

response and law enforcement personnel, including PMAO member agencies; no NuStar facility representatives were present. Each agency presented and discussed their plus-deltas for their part in the response. One of the major lessons learned from the response was the perennial lesson concerning communication gaps or lapses. Also, another lesson learned is that response agencies should be familiar with the Community Warning System and how it can be a powerful tool to effectively transmit messaging regarding public protective actions and hazardous conditions in different parts of the county.

TIMELINE

Refer to Attachment H for the BOC/CCHSHMP's response timeline. This does not capture the timeline of operations outside of the BOC (i.e., firefighting operations).

REPORT PREPARED BY:

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