



## U. S. Chemical Safety and Hazard Investigation Board

### RECOMMENDATION STATUS CHANGE

### SUMMARY

<b>Report:</b>	Aghorn Operating Inc. Waterflood Station Hydrogen Sulfide Release
<b>Recommendation Number:</b>	2020-01-I-TX-R6
<b>Date Issued:</b>	May 21, 2021
<b>Recipient:</b>	Aghorn Operating Inc.
<b>New Status:</b>	Closed – Acceptable Action
<b>Date of Status Change:</b>	September 6, 2025

#### Recommendation Text:

*For all waterflood stations where the potential exists to expose workers or non-employees within the perimeter of the facility to H<sub>2</sub>S concentrations at or above 10 ppm, ensure that the H<sub>2</sub>S detection and alarm system designs employ multiple layers of alerts unique to H<sub>2</sub>S, such as with the use of both audible and visual mediums, so that workers and non-employees within the perimeter of the facility would be alerted to a significant release. The system design must meet manufacturer specifications, current codes, standards, and industry good practice guidance.*

#### Board Status Change Decision:

##### A. Rationale for Recommendation

On October 26, 2019, an Aghorn Operating Inc. (Aghorn) employee responded to a pump oil level alarm at Aghorn's Foster D waterflood station in Odessa, Texas. In response to the alarm the employee worked to isolate the pump. He closed the pump's discharge valve but only partially closed the pump's suction valve. At some point on the night of the incident, the pump automatically turned on and water containing hydrogen sulfide (H<sub>2</sub>S), a toxic gas, was discharged from the pump. The employee was fatally injured from his exposure to the H<sub>2</sub>S. Subsequently, the spouse of the employee gained access to the waterflood station and searched for her husband. During her search efforts, she was also exposed to the released H<sub>2</sub>S and was fatally injured.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) investigated the incident and found that the employee was not wearing his personal H<sub>2</sub>S detection device and there was no evidence that Aghorn management required the use of these devices. The CSB also found that at the time of the incident, Aghorn did not have any written Lockout/Tagout policies, procedures, or associated training. As a result of these findings, the CSB issued seven recommendations to Aghorn. This status change summary addresses CSB Recommendation No. 2020-01-I-TX-R6.

##### B. Response to the Recommendation

Aghorn installed an updated H<sub>2</sub>S detection and alarm system which meets manufacturer specifications and is regularly maintained in accordance with good industry practice. Aghorn

provided purchase receipts for their fully automated H2S monitoring and alarm systems that employs multiple layers of alerts unique to H2S and includes both audible and visual mediums so that workers and non-employees within the perimeter of the facility will be alerted to a significant release. The information and supporting documentation provided by Aghorn demonstrated an effective H2S monitoring and alarm system that addressed all of the requirements of the recommendation.

C. Board Analysis and Decision

Based upon the information above, the Board voted to change CSB Recommendation No. 2020-01-I-TX-R6 to: “Closed – Acceptable Action.”