



## U. S. Chemical Safety and Hazard Investigation Board RECOMMENDATION STATUS CHANGE SUMMARY

<b>Report:</b>	Aghorn Operating Inc. Waterflood Station H2S 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>	Open – Awaiting Response or Evaluation/Approval of Response
<b>Date of Status Change:</b>	

### Recommendation Text:

*For all waterflood stations where the potential exists to expose workers or non-employees within the perimeter of the facility to H2S concentrations at or above 10 ppm, ensure that the H2S detection and alarm system designs employ multiple layers of alerts unique to H2S, 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 (H2S), a toxic gas, was discharged from the pump. The employee was fatally injured from his exposure to the H2S. 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 H2S 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 H2S 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. Additionally, the CSB found that Aghorn's H2S detection and alarm systems were not properly maintained or configured to protect their workers from the exposure to H2S. 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.