

# Alberta

## Regulations for Oil and Gas Operations in H<sub>2</sub>S Areas

1. Are there any devices/alarms required of operators that have H<sub>2</sub>S on location, and if so, at what ppm H<sub>2</sub>S are they required to be set?

For critical sour drilling operations, H<sub>2</sub>S monitoring (audible and visual alarms) are required under AER Directive 36 and are required to alarm at 10ppm H<sub>2</sub>S or greater. AER EPEA approved facilities processing sour gas are required to have CEMS (Continuous Emissions Monitoring System) to measure SO<sub>2</sub> which is a measurement of H<sub>2</sub>S that is combusted (no direct H<sub>2</sub>S monitors). Alberta Occupational Health and Safety (OHS) Codes have requirements for continuous monitoring for explosives gases which would include H<sub>2</sub>S.

2. Are there any postings required of operators that have H<sub>2</sub>S on location, and if so, under what circumstances?

Yes, under the AER Oil and Gas Conservation Rules, a warning symbol for Poison Gas must be posted at the primary entrance to all oil and gas well/facilities where the H<sub>2</sub>S concentration exceeds .01 moles per kilomole (10 ppm).

3. How are facilities at which H<sub>2</sub>S is present tracked?

Oil and Gas Operators are required to identify when H<sub>2</sub>S is expected to be encountered through the AER Directive 056 Application process when applying for a well/facility license.

Field Inspectors can also document in the AER Field Inspection System (FIS) the levels of H<sub>2</sub>S a well/facility when conducting Inspections and requesting the H<sub>2</sub>S concentrations from the Licensee.

4. What level or levels of H<sub>2</sub>S are considered actionable and under what circumstances?

Any amount of H<sub>2</sub>S concentration resulting in odours that is encountered off-lease (generally off the energy site boundaries) from an oil and gas facility is actionable under AER Directive 60. Energy sites that are have an approved H<sub>2</sub>S concentration of greater than 1% are not allowed to vent any gas, all possible vent sources must be captured and flared.

5. Are any additional standards for rules implemented for H<sub>2</sub>S other than the following?
- ANSI- American Nation Standards Institute.
  - API – American Petroleum Institute.
  - EPA – Environmental Protection Agency.
  - Alberta Occupational Health and Safety Code,  
[https://open.alberta.ca/publications/2009\\_087](https://open.alberta.ca/publications/2009_087)
  - Canadian Centre for Occupational Health and Safety (Federal)  
[https://www.ccohs.ca/oshanswers/chemicals/chem\\_profiles/hydrogen\\_sulfide.htm](https://www.ccohs.ca/oshanswers/chemicals/chem_profiles/hydrogen_sulfide.htm)
6. Does your state have any specific H<sub>2</sub>S safety regulations? If so, please list them below.

Numerous technical requirements for managing H<sub>2</sub>S can be found in the following AER published requirements including, but not limited to Directive 71, Directive 60, Directive 13, Directive 20, Directive 36, Directive 37, Directive 51, Directive 58, Directive 77, Oil and Gas Conservation Rules, Pipeline Rules and the Oil Sands Conservation Rules.

7. What are the purposes of the H<sub>2</sub>S regulations?
- Public safety
  - Worker safety
  - Other: Environment (eg. hazardous to the aquatic environment, acute toxicity)

The AER's regulations are related to A and C, we do not have a mandate for Worker Safety.

### **Safety Procedures for Field Inspectors**

8. What type of training is required for Field Inspectors?

All Field inspectors are required to have H<sub>2</sub>S training every 3 years which is conducted by a third-party service provider with recognized authority. The course typically is 8hrs in length and includes components of H<sub>2</sub>S Properties, Hazard Assessment and Controls, Respiratory Protective Equipment (donning and doffing), Detection of H<sub>2</sub>S and Initial Response Strategies.

9. Are certifications required for Field Inspectors?

Yes

10. Do you have an H<sub>2</sub>S safety specialist, and if so, what is the specialist's level of expertise?

The AER does not have a specific H<sub>2</sub>S Safety Specialist. AER safety is governed by the AER Occupational Health and Safety Policy.

11. Do state inspectors check H<sub>2</sub>S levels, or do they require operators to check?

Inspectors do not physically conduct H<sub>2</sub>S concentration testing. If this information is required, the licensee is asked to conduct the test and submit lab analysis of the gas concentration.

12. If state inspectors check H<sub>2</sub>S levels, what are the required procedures/protocols for checking to determine H<sub>2</sub>S levels?

Inspectors do not physically conduct H<sub>2</sub>S concentration testing. We will request follow up from the approval holder based on any noticeable odour or detected release of H<sub>2</sub>S.

13. How often are readings required to be made? By whom? How/who keeps up with those readings?

The licensee is required to know the sour gas content and release rate of their wells, facilities, and pipelines. This is required to be submitted during the application process. An inspector may request recent gas analysis on a well/facility/pipeline when an inspection is conducted or when a situation warrants it.

14. Where are Field Inspectors most likely to check for H<sub>2</sub>S?

- a. Top of stock tanks
- b. Wellheads
- c. Gas streams
- d. Other: Field Inspectors generally adopt a hands-off procedure when conducting inspections due to safety concerns as H<sub>2</sub>S can potentially be encountered at every oil and gas site and Inspectors are not equipped with SCBA's.
- e. Not applicable

15. How do Field Inspectors respond to an H<sub>2</sub>S complaint? (Please include in the response information on any requirements about when the Field Inspector must be accompanied by another person.)

All sour gas (H<sub>2</sub>S) odour complaints require an investigation. Information is gathered regarding sour gas locations in the area of the complaint, and H<sub>2</sub>S concentrations. The inspector may initiate an immediate response by contacting licensees in the area to assess their locations, the inspector may immediately dispatch to the area to investigate, or a combination of both. Factors such as wind direction, H<sub>2</sub>S concentration etc, are considered and guide the inspector on their response to the complaint.

16. Are inspectors required to wear H<sub>2</sub>S monitors? If so, what type of equipment?

Yes, inspectors are required to wear a 4 head personal gas detector at all times on oil and gas locations. We are in the process of switch to the Honeywell BW Icon+ monitor