

Alabama

Regulations for Oil and Gas Operations in H₂S Areas

1. Are there any devices/alarms required of operators that have H₂S on location, and if so, at what ppm H₂S are they required to be set?

Yes.

Monitors and Alarms.

- 1) Unless otherwise approved by the Supervisor, each drilling, workover, testing, production or plant facility shall have a hydrogen sulfide monitoring system which activates visible alarms when the concentration of hydrogen sulfide exceeds ten (10) parts per million (ppm) in air and audible alarms when the concentration of hydrogen sulfide exceeds twenty (20) ppm in air. This system shall be capable of sensing a minimum of five (5) ppm in air.
 - As a minimum, hydrogen sulfide sensors for drilling and workover rigs shall be located at the rig floor, bell nipple, shale shaker, mud pits and offshore living quarters.
 - For drilling operations, this monitor and alarm system shall be on site and operational prior to penetrating the hydrogen sulfide bearing zone in accordance with the time specified in the contingency plan. Said equipment shall be on site and operational prior to commencing all other operations involving hydrogen sulfide.
- 2) The operator of each production well or plant facility shall install and maintain a monitor and alarm system at the well or plant site designed to detect the continuing escape of hydrogen sulfide.
- 3) The operator of each unplugged inactive well shall establish safety procedures, as approved by the Supervisor, which are designed to prevent the undetected continuing escape of hydrogen sulfide.
- 4) The operator of each production well, injection well, processing facility, or plant facility shall install and maintain in operable condition safety devices to include automatic shutdown devices designed to prevent the undetected continuing escape of hydrogen sulfide. Safety devices shall be maintained within industry standards.

2. Are there any postings required of operators that have H₂S on location, and if so, under what circumstances?

Yes.

Warning Signs and Security.

- 1) For aboveground and fixed surface facilities, as well as an offshore facility, the operator shall post, where permitted by law, clearly visible warning signs on public streets or roads inside the radius of exposure. In addition, for an offshore facility, the operator shall display clearly visible warning signs on at least two sides of the rig and at points of access to the rig or platform.
- 2) In populated areas such as towns and cities where the use of signs is not considered to be acceptable, an alternate warning plan may be approved upon written request to the Supervisor.
- 3) Unless otherwise approved by the Supervisor, unattended surface facilities shall be fenced and locked as a deterrent to public access when the radius of exposure is greater than fifty (50) feet and includes a public area or when the radius of exposure is equal to or greater than one-half (1/2) mile.
- 4) Unless otherwise approved by the Supervisor, unattended surface facilities shall have access to the site limited by a locked gate when the radius of exposure is greater than fifty (50) feet and does not include a public area.

Wind Direction Equipment. Wind direction equipment shall be installed at prominent locations on or near the drilling, workover, test, or plant facility to indicate the wind direction at all times and the safe upwind areas in the event hydrogen sulfide becomes present in the atmosphere.

Danger Signals. Danger signals consisting of signs and flags shall be displayed in a manner visible to all traffic approaching the facility. All signals shall be illuminated under conditions of limited visibility when in use. If illumination is not feasible, signals must be constructed of reflective material or covered with reflective paint so they will be readily visible from other light sources such as automobiles. Danger signals shall be displayed to indicate the following operational conditions and requirements:

- 1) The color green shall indicate possible danger, when the concentration of hydrogen sulfide is less than ten (10) parts per million (ppm) in air;
- 2) The color yellow shall indicate moderate danger, when the concentration of hydrogen sulfide reaches ten (10) ppm in air. If the concentration of hydrogen sulfide reaches twenty (20) ppm in air, breathing apparatuses shall be worn by all personnel and all non-essential personnel shall proceed to the safe briefing areas;
- 3) The color red shall indicate extreme danger, when the concentration of hydrogen sulfide reaches fifty (50) ppm in air. All non-essential personnel shall be evacuated, immediate notification shall be given to local civil authorities, and traffic in the immediate vicinity of the facility shall be diverted. The State Oil and Gas Board and other appropriate governmental agencies shall be notified as soon as possible when conditions of extreme danger exist.

3. How are facilities at which H₂S is present tracked?

A Form OGB-9 is required from an operator when a well is first drilled and tested, which reports the initial H₂S concentration for the well stream. Thereafter, a Form OGB-24 is required annually for sites with H₂S present in the well stream. This form reports H₂S content, max flow rate and a calculated radius of exposure.

4. What level or levels of H₂S are considered actionable and under what circumstances?

Any concentration of H₂S is considered actionable if released on location. Venting of gas is not allowed.

5. Are any additional standards for rules implemented for H₂S other than the following?
 - a. ANSI- American Nation Standards Institute.
 - b. API – American Petroleum Institute.
 - c. EPA – Environmental Protection Agency.

Yes. See [Monitoring H₂S to Meet New Exposure Standards—Occupational Health & Safety at ohsonline.com](#).

6. Does your state have any specific H₂S safety regulations? If so, please list them below.

Rule 400-1-9-.02, Operations Involving Hydrogen Sulfide (onshore) and Rule 400-2-8-.02 Operations Involving Hydrogen Sulfide (offshore) of the State Oil and Gas Board of Alabama Administration Code. The two rules are similar with minor variations appropriate to onshore and offshore facilities. Both are attached to the end of this survey.

7. What are the purposes of the H₂S regulations?

- a. Public safety
- b. Worker safety
- c. Animal/Wildlife safety
- d. Pipeline Corrosion prevention (varies by individual Special Field Rules)
- e. Environmental protection (including air quality)

Safety Procedures for Field Inspectors

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

Annual H₂S training and SCBA (self-contained breathing apparatus) fit testing.

9. Are certifications required for Field Inspectors?

H2S training and SCBA fit testing which is accompanied by a medical questionnaire to make sure the inspector is good enough physical condition to wear the breathing apparatus in the event of an evacuation.

10. Do you have an, and if so, what is the specialist's level of expertise?

Yes. Trained in all aspects of H2S health and safety.

11. Do state inspectors check, or do they require operators to check?

Operators are required to check and monitor H2S levels.

12. If state inspectors check H2S levels, what are the required procedures/protocols for checking to determine H2S levels?

NA

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

The operator of a facility or operation determines how often H2S samples are to be taken and is responsible to keep up with those readings. The operator files an annual Form OGB-24, which reports the latest H2S sample concentration for our regulatory tracking.

14. Where are Field Inspectors most likely to check for H2S?

- a. Top of stock tanks
- b. Wellheads
- c. Gas streams
- d. Other: _____
- e. Not applicable

Field agents routinely carry a personal H2S detector while inspecting locations. No field agent is allowed on top of a tank in operation. They also do not sample any gas stream—that's the operator's responsibility.

15. How do Field Inspectors respond to an H2S complaint? (Please include in the response information on any requirements about when the Field Inspector must be accompanied by another person.)

The operator is immediately contacted to investigate the complaint initially for evaluation/shut in action. After the site is secured, the field agent will meet the operator's representative on site for inspection and documentation of event. Anytime H2S is expected to be present the buddy system is required. No one is allowed on site alone if H2S is expected to be present.

16. Are inspectors required to wear H₂S monitors? If so, what type of equipment?

Yes. Field agents are required to wear personal H₂S monitors anytime H₂S may be present. AOGB field agents use 24-month disposable BW H₂S monitors and have a Scott escape pack in case of an emergency.