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FASKEN OIL AND RANCH, LTD.

6101 Holiday Hill Road

Midland, Texas 79707

CONTINGENCY PLAN FOR HYDROGEN SULFIDE DISCHARGE

DRILLING OPERATIONS

APR 14 2014

CONTINGENCY PLAN FOR HYDROGEN SULFIDE DISCHARGE

DRILLING OPERATIONS

- I. **HYDROGEN SULFIDE PHYSICAL PROPERTIES AND TOXICITY** - Hydrogen sulfide is extremely toxic. The acceptable concentration for eight-hour exposure is 20 ppm, which is .002% by volume. Hydrogen sulfide is heavier than air (specific gravity - 1.192) and is colorless. It forms an explosive mixture with air between 4.3 and 46.0 volume percent. Toxicity data for hydrogen sulfide and various gasses are compared in the table below.

| Common Name | Chemical Formula | Sp. Gravity (Air =1) | Threshold Limit | Hazardous Limit | Lethal Conc. |
|------------------|------------------|----------------------|-----------------------|--------------------------------|--------------|
| Hydrogen Cyanide | HCN | 0.94 | 10 ppm | 150 ppm | 300 ppm |
| Hydrogen Sulfide | H ₂ S | 1.18 | 10 ppm * 20 ppm ** | 250 ppm/hr | 600 ppm |
| Sulfur Dioxide | SO ₂ | 2.21 | 5 ppm | -- | 1000 ppm |
| Chlorine | Cl ₂ | 2.45 | 1 ppm | 4 ppm/hr | 1000 ppm |
| Carbon Monoxide | CO | 0.97 | 50 ppm | 400 ppm/hr | 1000 ppm |
| Carbon Dioxide | CO ₂ | 1.52 | 5000 ppm | 5% | 10% |
| Methane | CH ₄ | 0.55 | 9% | Combustable above 5% in air | --- |

*Threshold Limit - concentration at which it is believed that all workers may be repeatedly exposed day after day without adverse effects, 10 ppm = 1972 ACGIH concentration (American Conference of Governmental Industrial Hygienist).

**Threshold Limit = 20 ppm - 1966 ANSI acceptable ceiling concentration for eight-hour exposure (based on a 40-hour week) per OSHA Rules and Regulations (Federal Register, Vol. 37, #202, Part II, dated October 18, 1972).

- II. **PHYSICAL EFFECTS OF HYDROGEN SULFIDE** - The physiological effects of hydrogen sulfide are summarized in the table below.

| <u>Percent Vol.</u> | <u>Concentration ppm</u> | <u>Physical Effects</u> |
|---------------------|------------------------------|--|
| 0.001 | 10 | obvious and unpleasant odor. |
| 0.002 | 20 | Safe for 8-hour exposure. |
| 0.01 | 100 | Kills smell in 3 to 15 minutes, may sting eyes and throat. |
| 0.02 | 200 | Kills smell shortly, stings eyes and throat. |
| 0.05 | 500 | Dizziness, breathing ceases in a few minutes, needs prompt artificial resuscitation. |
| 0.07 | 700 | Unconscious quickly, death will result if not rescued promptly. |
| 0.10 | 1000 | Unconscious at once, followed by death within minutes. |

- III. **ACCIDENTAL RELEASE OF HYDROGEN SULFIDE** - The possible release of hydrogen sulfide gas could result from leakage at either wellhead, flow lines, separators or drill string at this drilling location.

- A. In the event of an accidental release, the tool pusher, supervisor or agent of the operator in the vicinity at the time of the discharge will be in charge of all activities on the ground and shall be responsible for the following.
1. Notify all personnel, Company or outside, that are in the area to evacuate as soon as possible. This includes drilling rig crews, roustabout gangs, supervisory personnel, maintenance personnel, sales representatives, farm or ranch hands, visitors and all others that may be in the vicinity.
 2. Notify the County Sheriff's office, and the Department of Public Safety, and request their assistance to provide road blocks and direct traffic away from the drilling location. They should also be asked to assist in the evacuation of residents, if any, in affected area.
 3. Alert local Hospital and Fire Department in the event that medical services or ambulance assistance is needed.

4. Call the Operations Manager in the Midland Office and advise him of the nature and extent of the emergency situation.
 - B. Operations Manager or his assistant will notify the appropriate state and federal agencies that the contingency plan has been activated and what level and type of reaction has already been initiated.
 - C. Fasken's Senior Representative or employee on the scene will be in charge and shall initiate measures necessary to bring the gas flow under control securing whatever additional personnel and equipment are necessary to control the flow in the shortest time thereby reducing potential exposure of the general public to hydrogen sulfide.
- IV. **WEATHER CONDITIONS** - During adverse weather conditions such as drizzle, rain, fog, calm winds, and snow, hydrogen sulfide collects in low lying areas. These areas should be avoided, any personnel in such areas should be evacuated, and law enforcement personnel should be requested to keep people and traffic from entering. Should moderate, unidirectional winds be blowing hydrogen sulfide from the source of the discharge toward a populated area, residents and other personnel should be evacuated by law enforcement personnel who should then maintain an exclusion perimeter to avoid people from reentering the area until the emergency is over.
- V. **TERMINATION OF EMERGENCY AND FOLLOW-UP PROCEDURES** - Fasken's Senior Representative or employee on the scene, with the cooperation of the Senior Law Enforcement Officer in whose jurisdiction the emergency occurred, will declare the emergency terminated when there is no further danger to oilfield personnel or general public. This will occur only after a sufficient number of gas measurements in the vicinity have been made by a qualified technician showing that hydrogen sulfide concentration is below the 20 ppm threshold. In addition, the Operator's Senior Representative or employee will perform the following duties connected with the emergency:
- A. Notify all cooperating law enforcement agencies and emergency medial services that the emergency has been terminated.
 - B. Notify all evacuees that they may return safely to their residences or job sites.
 - C. Make an estimate of damages and/or expenses incurred in the control of the emergency, the evacuation of any persons and the destruction of property, if any, including domestic animals and livestock. He is to make an itemized list of all such damages and/or expenses along with their addresses, and any other specific information pertinent to the situation. He is to deliver this list to the Operations Manager as soon as possible.
 - D. **UNDER NO CIRCUMSTANCE** are damage estimates, names of affected personnel, if any, or any other information pertaining to the emergency to be given to the press. Public information regarding the emergency will be issued by headquarters office in Midland, Texas.
- VI. Copies of the Contingency Plan are available in Fasken's office in Midland, Texas.
- VII. This plan is subject to approval of the state and federal agencies and shall be revised as required.

Fasken Oil and Ranch, Ltd.

H2S Contingency Plan

Emergency Phone Numbers

Laguna "16" State No. 5H

Fasken Oil and Ranch, Ltd.

432 687-1777

Key Personnel

Tommy Taylor, Drilling Manager

432 556-2228

Cory Frederick, Drilling Engineer

432-288-0086

Deryl Briles, Drilling Foreman

432 556-4269

Jimmy Davis, Operations Manager

432 557-5668

Hobbs, Lea County, New Mexico

Ambulance

911

State Police

911 or 575 392-5580

Sheriff's Office

911 or 575 396-3611

Fire Department

911 or 575 397-9308

Local Emergency Planning Committee

575 393-2870

New Mexico Oil Conservation Division

575 393-6161

Carlsbad, Eddy County, New Mexico

Ambulance

911

State Police

911 or 575 885-3138

Sheriff's Department

911 or 575 887-7551

Fire Department

911 or 575 885-3125

Local Emergency Planning Committee

575 887-7553

Bureau of Land Management

575 887-6544

New Mexico Oil Conservation Division (Artesia)

575 748-1283

Statewide and National Emergency Numbers

| | |
|--|--------------|
| New Mexico Department of Homeland Security And Emergency Management | 505 476-9600 |
| New Mexico State Emergency Operations Center (24 Hour Number) | 505 476-9635 |
| National Emergency Response Center | 800 424-8802 |

Other Numbers for Emergency Response

| | |
|--|------------------------------|
| Boots & Coots IWC | 800 256-9688 or 281 931-8884 |
| Cudd Pressure Control | 432 563-3356 |
| MCH Care Star Flight Service (air ambulance) | 432 640-4000 |
| Aerocare (air ambulance) | 806 725-1111 |