

# Hydrogen Sulfide Drilling Operations Plan

#### Cuervo Federal 26H

Cimarex Energy Co. of Colorado UL: A, Sec. 14, 23S, 32E 30-025-42094



# RECEIVED

\*All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

Lea Co., NM

- A. Characteristics of H₂S
- B. Physical effects and hazards
- C. Principal and operation of H2S detectors, warning system and briefing areas.
- D. Evacuation procedure, routes and first aid.
- E. Proper use of safety equipment & life support systems
- F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

#### 2 H<sub>2</sub>S Detection and Alarm Systems:

- A. H2S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may play placed as deemed necessary.
- B. An audio alarm system will be installed on the derrick floor and in the top doghouse.

#### 3 Windsock and/or wind streamers:

- A. Windsock at mudpit area should be high enough to be visible.
- B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.

#### 4 Condition Flags and Signs

- A. Warning sign on access road to location.
- B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H₂S present in dangerous concentration). Only H2S trained and certified personnel admitted to location.

#### 5 Well control equipment:

A. See exhibit "E-1"

#### 6 Communication:

- A. While working under masks chalkboards will be used for communication.
- B. Hand signals will be used where chalk board is inappropriate.
- C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

#### 7 Drillstem Testing:

No DSTs r cores are planned at this time.

- 8 Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment.
- 9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

## H<sub>2</sub>S Contingency Plan

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#### **Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must:

- « Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- « Evacuate any public places encompassed by the 100 ppm ROE.
- « Be equipped with H₂S monitors and air packs in order to control the release.
- « Use the "buddy system" to ensure no injuries occur during the response.
- « Take precautions to avoid personal injury during this operation.
- « Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- « Have received training in the:
  - Detection of H₂S, and
  - · Measures for protection against the gas,
  - Equipment used for protection and emergency response.

#### **Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

#### Characteristics of H<sub>2</sub>S and SO<sub>2</sub>

Please see attached International Chemical Safety Cards.

### **Contacting Authorities**

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

# H₂S Contingency Plan Emergency Contacts

## Cuervo Federal 26H

Cimarex Energy Co. of Colorado UL: A, Sec. 14, 23S, 32E Lea Co., NM

Cimarex Energy Co. of Colorado		800-969-4789		
Co. Office and After-Hours Menu				
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Key Personnel Name	Title	Office		Mobile
Larry Seigrist	Drilling Manager	432-620-1934		580-243-8485
Doug McQuitty	THE CONTRACTOR OF THE CONTRACT			····
Scott Lucas	Drilling Superintendent  Drilling Superintendent	432-620-1933 432-620-1989		806-640-2605 432-894-5572
Roy Shirley	Construction Superintendent	432-020-1909		432-634-3372
Koy Simey	construction superintendent			432-034-2130
		T PROPER OF SWINN IN TARRES TO STRAIN AN ADMINISTRA		
<u>Artesia</u>		T MANAGES OR THROUGH AN ENGINEER OR MATERIAL THE PROPERTY OF METABLIC		
Ambulance		911		
State Police		575-746-2703		
City Police		575-746-2703		
Sheriff's Office		575-746-9888		
Fire Department	575-746-2701			
Local Emergency Planning Committee		575-746-2122		
New Mexico Oil Conservation Division		575-748-1283		
Carlsbad				
Ambulance		911		
State Police		575-885-3137		
City Police		575-885-2111		
Sheriff's Office		575-887-7551		
Fire Department		575-887-3798		
Local Emergency Planning Committee		575-887-6544	-	
US Bureau of Land Management		575-887-6544		
Santa Fe New Mexico Emergency Response Commission (Santa Fe)		505-476-9600		
		505-827-9126		
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs New Mexico State Emergency Operations Center		505-827-9126		
New Mexico State Efferg	ency Operations Center	303-470-3033		
<u>National</u>	·			
National Emergency Response Center (Washington, D.C.)		800-424-8802		
Medical				
Flight for Life - 4000 24th St.; Lubbock, TX		806-743-9911		
Aerocare - R3, Box 49F; Lubbock, TX		806-747-8923		
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM		505-842-4433		
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM		505-842-4949		
Other				
Other Boots & Coots IWC		800-256-9688	or	281-931-8884
Cudd Pressure Control		432-699-0139		432-563-3356
Halliburton		575-746-2757	or	432-303-3330
	<del></del>	575-746-3569		
B.J. Services		3/3-/40-3303		

# On-site performed on 10/29/13 with BLM (Jesse Rice) resulted in the following:

(2 well pad)

## Cuervo Federal #21

SHL: 334 FNL & 2575 FWL, Sec 14, T. 23 S., R. 32 E.

BHL: 330 FSL & 2200 FEL

## Cuervo Federal #22

SHL: 334 FNL & 2555 FWL, Sec 14, T. 23 S., R. 32 E.

BHL: 330 FSL & 2200 FWL

Could not fit wells with the #24 due to power lines on 3 sides. Moved 500 ft. east to miss power lines and rancher water pipeline.

V-Door East. Frac pad Northwest corner (West). Top soil south. Interim reclamation: All sides. Access road from the Northeast corner to north. Pipelines, to east to the Cuervo #20 battery.

## Cuervo Federal #24 (Single Well)

SHL: 430 FNL & 2055 FWL, Sec 14, T. 23 S., R. 32 E.

BHL: 330 FSL & 1335 FWL

Locations fell too close to power lines to the north, west and east. Moved 100 ft. south and turned short side to west to make it fit.

V-Door North. Top soil south. Frac pad Southwest corner (South). Interim reclamation: All sides. Access road from Northeast corner, north. Gas lift/Production line to the east, following east/west lease road to the battery at the Cuervo #20.

# Cuervo Federal #23 (Single well pad)

SHL: 330 FNL & 375 FWL, Sec 14, T. 23 S., R. 32 E.

BHL: 330 FSL & 440 FWL

OK where staked. V-Door West. Frac pad Southeast corner (South). Top soil west. Access road & pipeline, east. Pipeline to follow proposed & existing road to Cuervo #20 battery. Interim reclamation: All sides.

## (2 well pad)

## Cuervo Federal #25

SHL: 360 FNL & 895 FEL, Sec 14, T. 23 S., R. 32 E.

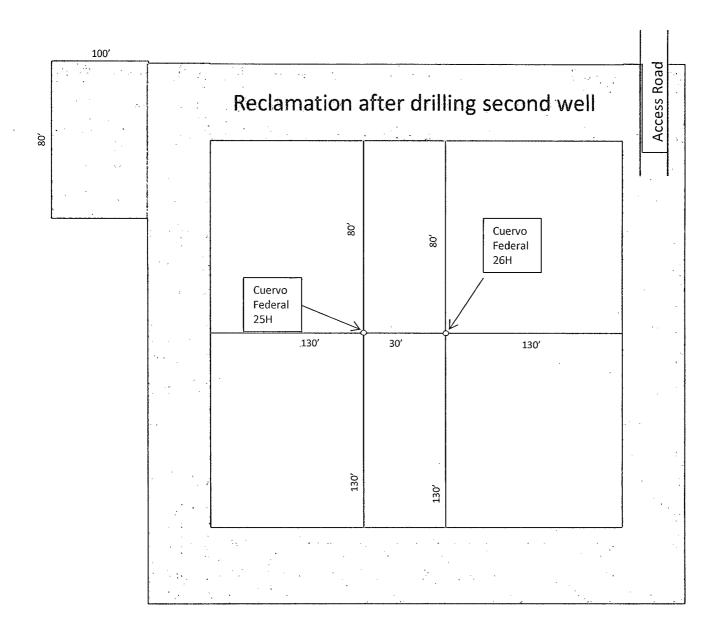
BHL: 330 FSL & 1325 FEL

## Cuervo Federal #26

SHL: 360 FNL & 865 FEL, Sec 14, T. 23 S., R. 32 E.

BHL: 330 FSL & 440 FEL

Locations fell too close to power line to the north. Moved 30 ft. south. V-Door East. Frac pad Northwest corner (West). Top soil south. Interim reclamation: All sides. Access road northeast corner, north. Pipeline, east, to Cuervo #20 battery.



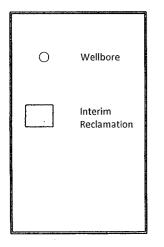




Exhibit D-1
Interim Reclamation Diagram
Cuervo Federal 26H
Cimarex Energy Co. of Colorado
14-23S-32E
SHL 372 FNL & 835 FEL
BHL 330 FSL & 440 FEL
Lea County, NM