

Mack Energy Corporation
PO Box 960
Artesia, NM 88211-0960

Hydrogen Sulfide (H₂S)
Contingency Plan

For

Bruins State #1
1980 FNL & 1980 FWL
Sec. 16 T17S R22E
Chaves County, NM

RECEIVED

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OCD-ARTESIA

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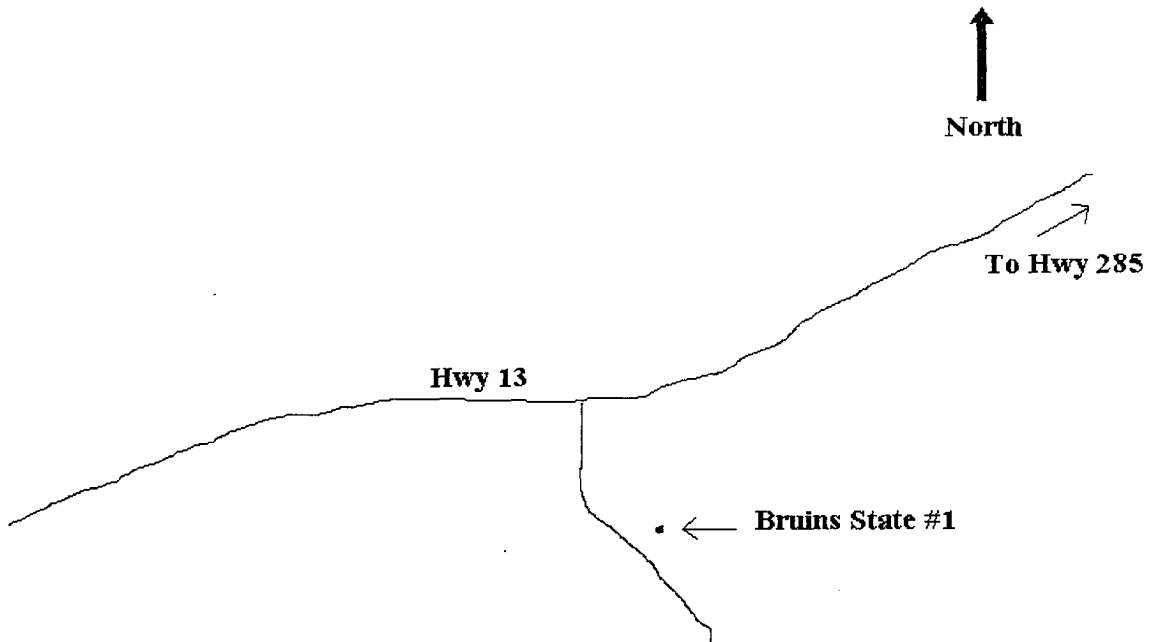
Preface

An effective and viable Contingency Plan is intended to provide prior planning and guidance in responding to emergency incidents. The primary considerations in its development are protection of personnel, the public, company and public property and the environment.

Although the plan addresses varied emergency situations that may occur, it recognizes that flexibility and the use of the organization's knowledge and experience is critical to safe resolution of emergency incidents. Response actions outlined in the plan provide a framework, which may be placed into operation with out confusion. These actions should promote quick and decisive actions during the critical initial period and immediately following an emergency. As the response progresses, additional guidelines and procedures may need to be implemented as the situation dictates. In addition, all emergency incidents must be properly reported per the Mack Energy Corp. incident policy, state and federal requirements, etc.

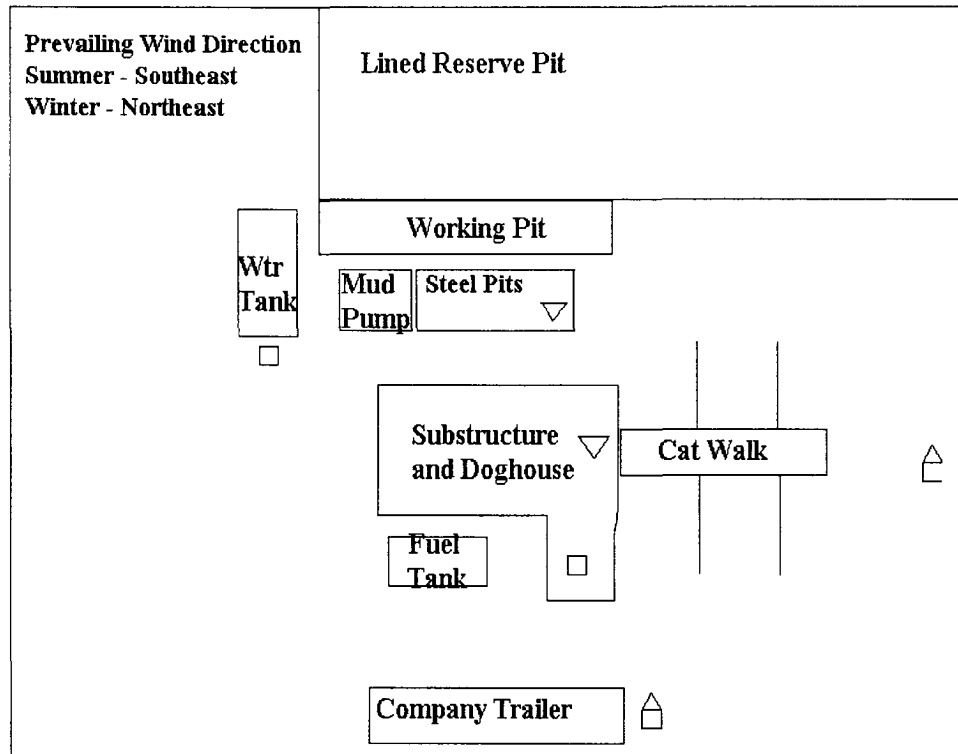
This Contingency Plan is intended for use on Mack Energy Corp. and the operations within their area of responsibility, such as drilling, completions, and operations.

Mack Energy Corp.
Bruins State #1



**Beginning at intersection of US Hwy
285 and State Hwy 13, turn west to a
point 1/10 mile past MM 16.
Then turn south 3/10 mile to loction.**

Mack Energy Corp.
Bruins State #1



- ▽ H2S Monitors with alarms at the bell nipple
- Wind Direction Indicators
- △ Safe Briefing areas with caution signs and breathing equipment min 150 feet from

Emergency Response Activation/General Responsibilities

Activation of the Emergency Action Plan

- A. In the event of any emergency situation, all personnel on location should first ensure that the following items are initiated. After that, they should refer to the appropriate specific Emergency Guidance sections on pages 5-10 in this document for further responsibilities:
 - 1. Notify the senior ranking contract representative on site.
 - 2. Notify Mack Energy Corp. representative in charge.
 - 3. Notify civil authorities if the Mack Energy Corp. representative cannot be contacted and the situation dictates.
 - 4. Perform rescue and first aid as required (without jeopardizing additional personnel).

General Responsibilities

Mack Energy Corp. Personnel

- A. Operations Specialist: The Drilling Superintendent or contract personnel serving in that capacity will serve as Operations Chief Officer for all emergency incidents:
 - 1. Notification to Mack Energy Supervisor of the incident occurrence.
 - 2. Notification to incident coordinator of the occurrence.
 - 3. Sole control of all tactical activities directed toward reducing the immediate hazard, establishing situational control and restoring the operations to a non-emergency state.
- B. The Mack Energy Supervisor Designated Incident Commander will serve as the overall Incident Commander for the drilling or critical well servicing emergency incident. The Incident Commander is responsible for:
 - 1. Coordinating with the Mack Energy Management team of the incident occurrence.
 - 2. Establishing and managing the overall incident command structure and response from inception through restoration of normal activities in the area.
- C. The Downhole Services Tech (or his designate) is responsible for reporting to the incident as soon as reasonably possible, to provide support to the response effort as required by the Mack Energy Supervisor.

Contract Drilling Personnel will immediately report to their assigned stations and perform their duties as outline in the appropriate Specific Emergency Guidance sections on pages 5-10 in this document.

Other Contractor Personnel will report to the safe briefing area to assist Mack Energy personnel and civil authorities as requested when it is safe to do so and if they have been adequately trained in their assigned duties.

Civil Authorities (Law Enforcement, Fire, and EMS) will be responsible for:

1. Notification to Mack Energy Supervisor of the incident occurrence.
2. Notification to incident coordinator of the occurrence.
3. Sole control of all tactical activities directed toward reducing the immediate hazard, establishing situational control and restoring the operations to a non-emergency state.
4. Initiate public evacuation plans as instructed by the Incident Commander.
5. Perform rescue or recovery activities with coordination from the Unified Command.
6. Provide medical assistance as dictated by the situation at hand.

H2S Release

The following procedures and responsibilities will be implemented on activation of the H2S siren and lights.

All Personnel:

1. In the event of any emergency situation, all personnel on location should first ensure that the following items are initiated. After that, they should refer to the appropriate specific Emergency Guidance sections on pages 5-10 in this document for further responsibilities:

Rig Manager/Tool Pusher:

1. Check that all personnel are accounted for and their condition.
2. Administer or arrange for first aid treatment, and/or call EMTs as needed.
3. Identify two people best suited to secure well and perform rescue, and instruct them to don SCBA.
4. Notify Contractor management and Mack Energy Representative.
5. Remain at the briefing area, assess and monitor personnel and overall situation for hazards or conditions that might warrant a change in the action plan.

Two People Responsible For Shut-in and Rescue:

1. Don SCBA and acquire tools to secure well and perform rescue, i.e., wrenches, retrieval ropes, etc.
2. Utilize the buddy system to secure well and perform rescue(s).
3. Return to the briefing area and stand by for further instructions.

All Other Personnel:

1. Isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE. First responder(s) must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

Mack Energy Representative:

1. Remain at the briefing area, assess and monitor personnel and overall situation for hazards or conditions that might warrant a change in the action plan.
2. Notify Police, Fire Department, or other local emergency services as required.

Training:

All responders must have training in the detection of H2S measures for protection against the gas, equipment used for protection and emergency response. Weekly drills by all crews will be conducted and recorded in the IADC daily log. Additionally, responders must be equipped with H2S monitors at all times.

Ignition of Gas Source:

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intention ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police shall be the Incident Command of any major release.

Characteristics of H₂S and SO₂:

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air = 1	10 ppm	100 ppm	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities:

Mack Energy personnel must liaison 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. The following call list of essential response plan must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER).

Well Control

The following procedures will be implemented when a loss of primary control is indicated. Indicators of loss of primary control are flow from the well; an increase in pit volume, or when the drilling fluid used to fill the hole on trips is less than the calculated pipe displacement volume. The emergency signal for well control procedures will be a single long blast of the rig air horn.

Kick While Drilling – Procedures and Responsibilities

Driller:

1. Stop the rotary and hoist the Kelly above the rotary table.
2. Stop the mud pump(s).
3. Check for flow.
4. If flowing, sound the alarm immediately.
5. Ensure that all crewmembers fill their responsibilities to secure the well.
6. Record drill pipe and casing shut-in pressures and pit volume increase and begin kill sheet.

Derrick man:

1. Go to BOP/choke manifold area.
2. Open choke line valve on BOP.
3. Signal to Floor man #1 that the choke line is open.
4. Close chokes after annular or pipe rams are closed.
5. Record shut-in casing pressure and pit volume increase.
6. Report readings and observations to Driller.
7. Verify actual mud weight in suction pit and report to Driller.
8. Be readily available as required for additional tasks.

Floor man #1:

1. Go to accumulator control station and await signal from Derrick man.
2. Close annular preventer and HCR on signal (if available, if not then close pipe rams).
3. Record accumulator pressures and check for leaks in the BOP or accumulator system.
4. Report to Driller, and be readily available as required for additional tasks.

Floor man #2:

1. Start water on motor exhausts.
2. Notify Contractor Tool Pusher or Rig Manager of well control situation.
3. Check location for ignition sources and extinguish or turn off, and stop any welding in progress.
4. Report to Driller, and be readily available as required for additional tasks.

Floor man #3:

1. Stand-by with Driller, and be readily available as required for additional tasks.

Tool Pusher/Rig Manager:

1. Notify Mack Energy Representative and report to rig floor.
2. Review and verify all pertinent information.
3. Communicate information to Mack Energy Representative, and confer on an action plan.
4. Finalize well control worksheets, calculations and preparatory work for action plan.
5. Initiate and ensure the action plan is carried out.
6. Communicate any changes in well or site conditions, or any indications that the action plan needs to be revised to the Mack Energy Representative.

Mack Energy Representative:

1. Notify Police, Fire Department, or other local emergency services as required.

Kick While Tripping – Procedures and Responsibilities

Driller:

1. Sound the alarm immediately when pipe displacement volume is less than 75% of calculated.
2. Position the upper tool joint just above rotary table and set slips.
3. Check for flow.
4. Ensure that all crewmembers fill their responsibilities to secure the well.
5. Record drill pipe and casing shut-in pressures and pit volume increase, and begin kill sheets.

Derrick man: (same as while drilling)

Floor man #1:

1. Install full opening valve (with help from Floor man #2) in top drill string connection.
2. Tighten valve with make up tongs.
3. Go to accumulator control station and await signal from Derrick man.
4. Close annular preventer and HCR valve on signal (if available, if not then close pipe rams).
5. Record accumulator pressures and check for leaks in the BOP and accumulator system.
6. Report to Driller, and be readily available as required for additional tasks.

Floor man #2:

1. Assist installing full opening valve in drill string.
2. Position back-up tongs for valve make-up.
3. Start water on motor exhausts.
4. Notify Contractor Tool Pusher or Rig Manager of well control situation.
5. Check location for ignition sources and extinguish or turn off, and stop any welding in progress.
6. Report to Driller, and be readily available as required for additional tasks.

Floor man #3, Rig Manager/Tool Pusher, and Mack Energy Representative: (same as while drilling)

Public Relations

Mack Energy recognizes that the news media have a legitimate interest in incidents at Mack Energy facilities that could affect the public. It is to the company's benefit to cooperate with the news media when incidents occur because these media are our best liaison with the public.

Mack Energy objective is to see that all reports of any emergency are factual and represent the company's position fairly and accurately. Cooperation with news media representatives is the most reliable guarantee that this objective will be met.

All contract and Mack employees are instructed NOT to make any statement to the media concerning the emergency incident. If a media representative contacts any employee, they should refer them to the designated Mack Energy Supervisor for any information concerning the incident.

Mack Energy Corporation Personnel

Drilling/Completions Supervisors

Tony Hall

Office- 505-748-1288

Home- 505-746-4107

Cell- 505-746-7916

Tommy Fletcher

Office- 505-748-1288

Home- 505-748-2859

Cell- 505-746-7854

Luis Hernandez

Office- 505-748-1288

Home- 505-746-1532

Cell- 505-746-7126

Emergency Notification Numbers

Public Authorities		
New Mexico State Police	Artesia	505/746-2704
New Mexico State Police	Roswell	505/622-7200
New Mexico State Police	Hobbs	505/392-5588
Eddy County Sheriff's Office	Artesia	505/746-2704
Chaves County Sheriff's Office	Roswell	505/624-6500
Lea County Sheriff's Office	Hobbs	505/393-2515
Local Emergency Planning Center	Eddy County	505/887-9511
Local Emergency Planning Center	Lea County	505/397-9231
New Mexico Oil & Gas Commission	Artesia	505/748-1283
New Mexico Oil & Gas Commission	Hobbs	505/393-6161
New Mexico Emergency Response Center	Hobbs	505/827-9222

Emergency Services		
Fire Fighting, Rescue & Ambulance	Artesia	911
Fire Fighting, Rescue & Ambulance	Roswell	911
Fire Fighting, Rescue & Ambulance	Hobbs	911
Flight For Life	Lubbock	806/743-9911
Aerocare	Lubbock	806/747-8923
Med Flight Air Ambulance	Albuquerque	505/842-4433

Other Emergency Services		
Boots and Coots		1/800-256-9688
Cudd Pressure Control	Midland	432/699-0139
B.J. Services	Artesia	505/746-3569
Halliburton	Artesia	505/746-2757