Fione: (575) 393- District II 811 S. First St., A Phone: (575) 748- District III 1000 Rio Brazos I Phone: (505) 334- District IV 1220 S. St. Franci	State of New MexicoRECEIVED6161 Fax: (575) 393-0720Energy Minerals and Natural ResourcesMAY 13 2013urtesia, NM 88210Oil Conservation DivisionMAY 13 2013-1283 Fax: (575) 748-97201220 South St. Francis Dr.NMCCO ARTESIRoad, Aztec, NM 874101220 South St. Francis Dr.NMCCO ARTESI-6178 Fax: (505) 334-6170Santa Fe, NM 87505Santa Fe, NM 87505								Energy Minerals and Natural Reso Oil Conservation Division 1220 South St. Francis Dr.						Form C-101 Revised December 16, 2011 Permit
AP	PLICA'	TION F	<sup>1</sup> Oper Yates	PERMI rator Name a Petroleum ( 05 S. Fourth	ind Addi Corporat	ress	<b>LL, RE-</b>	ENTH	E <mark>R, D</mark>	EEPI	<u>EN, J</u>	PLUGB	<sup>2</sup> OGRID N	<b>)R</b> A Numbe 5575	ADD A ZONE
* Property Code						' Property Na	ime				30-0	<sup>3</sup> API Nu 2/5-		1/389 ck	
h	14341		1				Surface		tion		-7/-				
UL - Lot F	Section 16	Township 23S		Range 28E	Lo	t Idn	Feet from 2310		N/S Li N	ne		et From 2310	E/W Lin W	ne	County Eddy
		•				8	Pool In	forma	tion						
LOVING, DEL	AWARE, SO	UTH													40380
					1	Additi	ional W		orma						
	k Type N		10 1	Vell Type Oil			<sup>11</sup> Cable/Ro	tary		12	<sup>2</sup> Lease S	Гуре		<sup>13</sup> Grou	nd Level Elevation 3019'
<sup>14</sup> M	ultiple N			posed Depth 6300'			<sup>16</sup> Formatio Delawar			1	<sup>7</sup> Contra	actor			<sup>18</sup> Spud Date ASAP
Depth to Grou		l			nce from	nearest	fresh water w				-	Distance f	o nearest su	irface	
<b></b>			<b>.</b>	19	Prop	osed	Casing a	and Co	emen	t Prog	gram				
Туре	Hol	e Size	Casii	ng Size	C	asing We	eight/ft	Se	etting De	epth		Sacks of C	Cement	ment Estimated TC	
Surf	12	.25"	8.0	625"		24#			300'			. 200	0		0
Int1	7.8	375"	5	5.5"		15.5#	#		6300'		1300			0	

#### **Casing/Cement Program: Additional Comments**

Yates Petroleum Corporation proposes to drill/test the Delaware and intermediate formations. Approximately 300' of surface casing will be set/cement circulated to shut off gravel and cavings. If commercial, production casing will be run and cemented, will perforate and stimulate as needed for production.

MUD PROGRAM: 0-300' Fresh Water; 300'-6300' Brine

H2S Contingency Plan attached.

Previously Approved.

1

#### Proposed Blowout Prevention Program

Туре	Working Pressure	Test Pressure	Manufacturer
Double Ram	3000	3000	

of my knowledge and belief. I further certify that the drilling pit v		OIL CONSERVATION DIVISION					
NMOCD guidelines [], a general per OCD-approved glan [].	rmit [_], or an (attached) alternative	Approved By:					
Signature: Lou Ho,	les	T.C. Shapard					
Printed name: Lori Flores		Title: 000000gist					
Title: Land Regulatory Technician		Approved Date: 5/23/2013 Expiration Date: 5/23/2015					
E-mail Address: lorif@yatespetroleum.	com						
Date: 5/13/2013	Phone: 575-748-4448	Conditions of Approval Attached					

District I 1629 N. French Dr., Hobbs, NM 88240 Phone: (575) 393-6161 Fax: (575) 393-0720 District II

811 S. First St., Artesia, NM 88210 Phone: (575) 748-1283 Fax: (575) 748-9720 District III

1000 Rio Brazos Road, Aztec, NM 87410 Phone: (505) 334-6178 Fax: (505) 334-6170 District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505 Phone: (\$05) 476-3460 Fax: (505) 476-3462 State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

AMENDED REPORT

			WELL L	OCATI	ON AND ACF	REAGE DEDIC	LATION PLA	T				
	API Number	in no		<sup>2</sup> Pool Co	ode	<sup>3</sup> Pool Name						
_50-0K	5-41	389		40380		La	oving; Dela	ware;	South			
<sup>1</sup> Property C		<sup>5</sup> Property Name								<sup>6</sup> Well Number		
<del>025575</del>	-1258	Loving AIB State							11			
<sup>7</sup> OGRID N	lo.				<sup>8</sup> Operator	Name	-		s	<sup>9</sup> Elevation		
022575				YA	TES PETROLE	UM CORPORATIO	JN		3	3019 <b>'</b>		
					<sup>10</sup> Surface	Location						
UL or lot no.	Section	Township	p Rang	e Lot Ia	dn Feet from the	e North/South line	Feet from the	East/West line			County	
F	16	23S	28E		2310	North	2310	West		Eddy		
			<sup>11</sup> B	ottom H	ole Location I	f Different Fron	n Surface					
UL or lot no.	Section	Township	p Rang	e Lot I	dn Feet from the	e North/South line	Feet from the	East	t/West line		County	
	l					1		ł		1		
<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or	r Infill	<sup>14</sup> Consolidation	a Code 15	Order No.	· · · · · · · · · · · · · · · · · · ·	<u> </u>					
40	1											

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

16					<sup>17</sup> OPERATOR CERTIFICATION
					I hereby certify that the information contained herein is true and complete
					to the best of my knowledge and belief, and that this organization either
					owns a working interest or unleased mineral interest in the land including
					the proposed bottom hole location or has a right to drill this well at this
		ò			location pursuant to a contract with an owner of such a mineral or working
		23.10	• •		interest, or to a voluntary pooling agreement or a compulsory pooling
		••			order herptofore entered by the division.
					Lori Flores 5/13/13
	V-3346	ł			Signature Date
		235740			
		1			Lori Flores
		1			Printed Name
		4			lorif@yatespetroleum.com
23/01	•		· .		E-mail Address
		[			
			······		*SURVEYOR CERTIFICATION
					1
				·	I hereby certify that the well location shown on this
					plat was plotted from field notes of actual surveys
					made by me or under my supervision, and that the
					same is true and correct to the best of my belief.
				· · · · · · · · · · · · · · · · · · ·	Date of Survey
					Signature and Seal of Professional Surveyor:
					Certificate Number

DISTRICT I 1625 N. French Dr., Hobbs, NM 88240 DISTRICT II

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DISTRICT II 1301 W. Grand Avanue, Artesia, Net 88210

DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV 1220 S. St. Francis Dr., Sonto Fo, NH 87505

#### State of New Mexico Energy, Minerals and Natural Resources Department

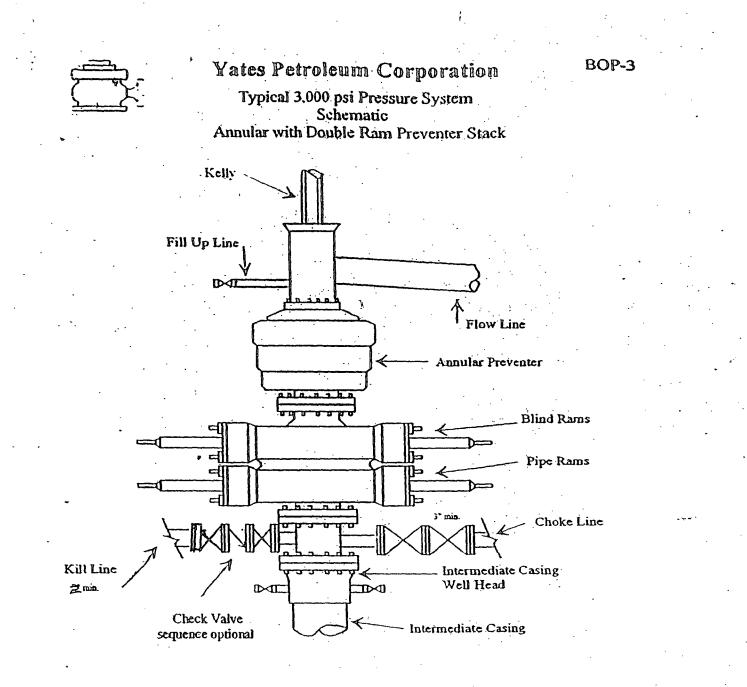
OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, New Mexico 87505 Form C-102 Revised October 12, 2005

Submit to Appropriate District Office State Loase - 4 Copies Fee Lease - 3 Copies

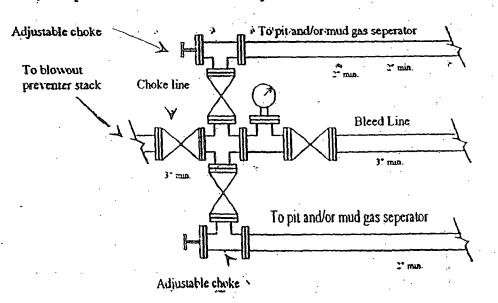
D AMENDED REPORT

#### WELL LOCATION AND ACREAGE DEDICATION PLAT

API 20-016	Number	21	110	Pool Code			Loving	Pool Name Delaware, S	outh	
Property C	) / /		<u> </u>	200	Propert	y Name		Delaware, 5	Well Nu	umber
125	21				LOVING				11	~
OGRID No	<u></u>				Operate	or Name	•	· · ·	Eleval	lion
025575				YATES P	ETROLEUM	COR	PORATION		3019	
					Surface	Loca	tion			
UL or lot No.	Section	Township	Range	Lot idn	Feet from	the	North/South line	Feet from the	East/West line	County
F	16	235	28E		2310		NORTH	2310	WEST	EDDY
· · · · · · · · · · · · · · · · · · ·			Bottom	Hole Loco	ation If D	iffere	nt From Surface			
UL or lot No.	Section	Township	Range	Lot idn	Feet from	the	North/South line	Feet from the	East/West line	County
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Dedicated Acres	Joint o	r Infill Co	onsolidation C	ode Or	der No.				i	x
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NO ALLO	WABLE W						IL ALL INTERESTS		ONSOLIDATED	
<b></b>			10N-51AN	UARU UNI	I HAS BE		PPROVED BY THE	DIVISION		
			4	1		ŀ		OPERATO	R CERTIFICA	TION
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								location pursuan	the proposed bottom . rt to a contract with	hole
	ł			1		1.		or to a voluntar	s mineral or working ry pooling agreement ing order heretofore	ora
		<u> </u>	 					the division.	ang order meretojore	entered by
			2310						111	
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	2310'			E.6154				Printed Nam	θ	
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									; that the well locat is plotted from field	
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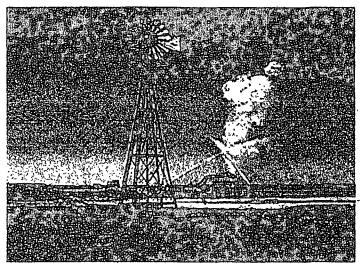
Typical 3,000 psi choke manifold assembly with at least these minimum features



# Yates Petroleum Corp.

Legals: Loving AIB State Well #11 2310' FNL & 2310' FWL Section 16 Lot F., Township 23 S. 28 E. Eddy County, N.M.

# <sup>66</sup>Contingency Plan<sup>99</sup>



 CALLAWAY SAFETY EQUIPMENT CO, INC.

 1020 W. Hwy. 80 East
 3229 Industrial Drive

 Odessa, Texas 79765
 Hobbs, New Mexico 88240

 (432) 561-5049
 (877) 422-6345
 (505) 392-2973

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#### H<sub>2</sub>S CONTINGENCY PLAN SECTION

#### Scope:

This contingency plan provides an organized plan of action for alerting and protecting the public within an area of exposure prior to an intentional release, or following the accidental release of a potentially hazardous volume of hydrogen sulfide. The plan establishes guidelines for all personnel whose work activity may involve exposure to Hydrogen Sulfide Gas (H<sub>2</sub>S).

#### Objective:

Prevent any and all accidents, and prevent the uncontrolled release of H<sub>2</sub>S into the atmosphere.

Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

Discussion of Plan:

Suspected Problem Zones:

*Implementation:* This plan, with all details, is to be fully implemented 1000' before drilling into the first sour zone.

**Emergency Response Procedure:** This section outlines the conditions and denotes steps to be taken in the event of an emergency.

*Emergency Equipment and Procedure:* This section outlines the safety and emergency equipment that will be required for the drilling of this well.

*Training Provisions:* This section outlines the training provisions that must be adhered to 1000' before drilling into the first sour zone.

*Emergency call lists:* Included are the telephone numbers of all persons that would need to be contacted, should an H2S emergency occur.

**Briefing:** This section deals with the briefing of all persons involved with the drilling of this well.

**Public Safety:** Public Safety Personnel will be made aware of the drilling of this well.

#### EMERGECY PROCEDURES SECTION

- I. In the event of any evidence of H<sub>2</sub>S level above 10 ppm, take the following steps immediately:
  - A. Secure breathing apparatus.
  - B. Order non-essential personnel out of the danger zone.
  - C. Take steps to determine if the  $H_2S$  level can be corrected or suppressed, and if so, proceed with normal operations.
- II. If uncontrollable conditions occur, proceed with the following:
  - A. Take steps to protect and/or remove any public downwind of the rig, including partial evacuation or isolation. Notify necessary public safety personnel and the N.M. Railroad Commission of the situation.
  - B. Remove all personnel to the Safe Briefing Area.
  - C. Notify public safety personnel for help with maintaining roadblocks and implementing evacuation.
  - D. Determine and proceed with the best possible plan to regain control of the well. Maintain tight security and safety measures.

#### III. Responsibility:

- A. The Company Approved Supervisor shall be responsible for the total implementation of the plan.
- B. The Company Approved Supervisor shall be in complete command during any emergency.
- C. The Company Approved Supervisor shall designate a back up Supervisor in the event that he/she is not available.

#### EMERGENCY PROCEDURE IMPLEMENTATION

#### I. Drilling or Tripping

- A. All Personnel
  - 1. When alarm sounds, don escape unit and report to upwind Safe Briefing Area.
  - 2. Check status of other personnel (buddy system).
  - 3. Secure breathing apparatus.
  - 4. Wait for orders from supervisor.
- **B.** Drilling Foreman
  - 1. Report to the upwind Safe Briefing Area.
  - 2. Don Breathing Apparatus and return to the point of release with the Tool Pusher or Driller (buddy system).
  - 3. Determine the concentration of H<sub>2</sub>S.
  - 4. Assess the situation and take appropriate control measures.
- C. Tool Pusher
  - 1. Report to the upwind Safe Briefing Area.
  - 2. Don breathing apparatus and return to the point of release with the Drilling Foreman or the Driller (buddy system).
  - 3. Determine the concentration.
  - 4. Assess the situation and take appropriate control measures.
- D. Driller
  - 1. Check the status of other personnel (in a rescue attempt, always use the buddy system).
  - 2. Assign the least essential person to notify the Drilling Foreman and Tool Pusher, in the event of their absence.

- 3. Assume the responsibility of the Drilling Foreman and the Tool Pusher until they arrive, in the event of their absence.
- E. Derrick Man and Floor Hands
  - 1. Remain in the upwind Safe Briefing Area until otherwise instructed by a supervisor.
- F. Mud Engineer
  - 1. Report to the upwind Safe Briefing Area.
  - 2. When instructed, begin check of mud for pH level and H<sub>2</sub>S level.
- G. Safety Personnel
  - 1. Don Breathing Apparatus.
  - 2. Check status of all personnel.
  - 3. Wait for instructions from Drilling Foreman or Tool Pusher.

#### II. Taking a Kick

- A. All personnel report to the upwind Safe Briefing Area.
- B. Follow standard BOP procedures.
- III. Open Hole Logging
  - A. All unnecessary personnel should leave the rig floor.
  - B. Drilling Foreman and Safety Personnel should monitor the conditions and make necessary safety equipment recommendations.

#### IV. Running Casing or Plugging

- A. Follow "Drilling or Tripping" procedures.
- B. Assure that all personnel have access to protective equipment.

#### SIMULATED BLOWOUT CONTROL DRILLS

All drills will be initiated by activating alarm devices (air horn). One long blast, on the air horn, for ACTUAL and SIMULATED Blowout Control Drills. This operation will be performed by the Drilling Foreman or Tool Pusher at least one time per week for each of the following conditions, with each crew:

Drill # 1 Bottom Drilling

Drill # 2 Tripping Drill Pipe

In each of these drills, the initial reaction time to shutting in the well shall be timed as well as the total time for the crew to complete its entire pit drill assignment. The times must be recorded on the IADC Driller's Log as "Blowout Control Drill".

Drill No.: Reaction Time to Shut-In: Total Time to Complete Assign	minutes, nment:	minutes,	seconds. seconds.
Total Time to Complete Assign	nment:	minutes,	seconds.

#### I. Drill Overviews

A. Drill No. 1- Bottom Drilling

1. Sound the alarm immediately.

2. Stop the rotary and hoist kelly joint above the rotary table.

3. Stop the circulatory pump.

4. Close the drill pipe rams.

- 5. Record casing and drill pipe shut-in pressures and pit volume increases.
- B. Drill No. 2 Tripping Drill Pipe
  - 1. Sound the alarm immediately.
  - 2. Position the upper tool joint just above the rotary table and set the slips.

- 3. Install a full opening valve or inside blowout preventor tool in order to close the drill pipe.
- 4. Close the drill pipe rams.
- 5. Record the shut-in annular pressure.

#### II. Crew Assignments

- A. Drill No. 1 Bottom Drilling
  - 1. Driller
    - a) Stop the rotary and holst kelly joint above the rotary table.
    - b) Stop the circulatory pump.
    - c) Check flow.
    - d) If flowing, sound the alarm immediately.
    - e) Record the shut-in drill pipe pressure.
    - f) Determine the mud weight increase needed or other courses of action.

#### 2. Derrickman

- a) Open choke line valve at BOP.
- b) Signal Floor Man # 1 at accumulator that choke line is open.
- c) Close choke and upstream valve after pipe tams have been closed.
- d) Read the shut-in annular pressure and report readings to Driller.
- 3. Floor Man # 1
  - a) Close the pipe rams after receiving the signal from the Derrickman.
  - b) Report to Driller for further instructions.
- 4. Floor Man # 2

b) Check for open fires and, if safe to do so, extinguish them.

c) Stop all welding operations.

d) Turn-off all non-explosion proof lights and instruments.

e) Report to Driller for further instructions.

5. Tool Pusher

a) Report to the rig floor.

b) Have a meeting with all crews.

c) Compile and summarize all information.

d) Calculate the proper kill weight.

e) Ensure that proper well procedures are put into action.

6. Operator Representative

a) Notify the Drilling Superintendent.

b) Determine if an emergency exists and if so, activate the contingency plan.

B. Drill No. 2 - Tripping Pipe

1. Driller

a) Sound the alarm immediately when mud volume increase has been detected.

b) Position the upper tool joint just above the rotary table and set slips.

c) Install a full opening valve or inside blowout preventor tool to close the drill pipe.

d) Check flow.

e) Record all data reported by the crew.

f) Determine the course of action.

#### 2. Derrickman

- a) Come down out of derrick.
- b) Notify Tool Pusher and Operator Representative.
- c) Check for open fires and, if safe to do so, extinguish them.

d) Stop all welding operations.

e) Report to Driller for further instructions.

- 3. Floor Man #1
  - a) Pick up full opening valve or inside blowout preventor tool and stab into tool joint above rotary table (with Floor Man # 2).
  - b) Tighten valve with back-up tongs.
  - c) Close pipe rams after signal from Floor Man #2.
  - d) Read accumulator pressure and check for possible high pressure fluid leaks in valves or piping.
  - e) Report to Driller for further instructions.
- 4. Floor Man # 2
  - a) Pick-up full opening valve or inside blowout preventor tool and stab into tool joint above rotary table (with Floor Man # 1).

b) Position back-up tongs on drill pipe.

- c) Open choke line valve at BOP.
- d) Signal Floor Man # 1 at accumulator that choke line is open.
- e) Close choke and upstream valve after pipe rams have been closed.
- f) Check for leaks on BOP stack and choke manifold.
- g) Read annular pressure.

h) Report readings to the Driller.

5. Tool Pusher

- a) Report to the rig floor.
- b) Have a meeting with all of the crews.
- c) Compile and summarize all information.
- d) See that proper well kill procedures are put into action.

6. Operator Representative

- a) Notify Drilling Superintendent
- b) Determine if an emergency exists, and if so, activate the contingency plan.

#### IGNITION PROCEDURES

#### **Responsibility:**

The decision to ignite the well is the responsibility of the DRILLING FOREMAN in concurrence with the STATE POLICE. In the event the Drilling Foreman is incapacitated, it becomes the responsibility of the RIG TOOL PUSHER. This decision should be made only as a last resort and in a situation where it is clear that:

- 1. Human life and property are endangered.
- 2. There is no hope of controlling the blowout under the prevailing conditions.

If time permits, notify the main office, but do not delay if human life is in danger. Initiate the first phase of the evacuation plan.

#### Instructions for Igniting the Well:

- 1. Two people are required for the actual igniting operation. Both men must wear self-contained breathing apparatus and must use a full body harness and attach a retrievable safety line to the D-Ring in the back. One man must monitor the atmosphere for explosive gases with the LEL monitor, while the Drilling Foreman is responsible for igniting the well.
- 2. The primary method to ignite is a 25mm flare gun with a range of approximately 500 feet.
- 3. Ignite from upwind and do not approach any closer than is warranted.
- 4. Select the ignition site best suited for protection and which offers an easy escape route.
- 5. Before igniting, check for the presence of combustible gases.
- 6. After igniting, continue emergency actions and procedures as before.
- 7. All unassigned personnel will limit their actions to those directed by the Drilling Foreman.

NOTE: After the well is ignited, burning Hydrogen Sulfide will convert to Sulfur Dioxide, which is also highly toxic. Do not assume the area is safe after the well is ignited.

#### EMERGENCY EQUIPMENT REQUIREMENTS

#### Lease Entrance Sign:

Should be located at the lease entrance with the following information:

#### CAUTION-POTENTIAL POISON GAS HYDROGEN SULFIDE NO ADMITTANCE WITHOUT AUTHORIZATION

#### **Respiratory Equipment:**

- Fresh air breathing equipment should be placed at the safe briefing areas and should include the following:
- Two SCBA's at each briefing area.
- Enough air line units to operate safely, anytime the H<sub>2</sub>S concentration reaches the IDLH level (100 PPM).
- Cascade system with enough breathing air hose and manifolds to reach the rig floor, the derrickman and the other operation areas.

#### Windsocks or Wind Streamers:

- A minimum of two 10" windsocks located at strategic locations so that they may be seen from any point on location.
- Wind streamers (if preferred) should be placed at various locations on the well site to ensure wind consciousness at all times. (Corners of location).

#### Hydrogen Sulfide Detector and Alarms:

- 1-Four channel H<sub>2</sub>S monitor with alarms.
- Four (4) sensors located as follows: #1 Rig Floor, #2 Bell Nipple, #3 Shale Shaker, #4 Mud Pits.
- Gastec or Draeger pump with tubes.
- Sensor test gas.

#### Well Condition Sign and Flags:

The Well Condition Sign w/flags should be placed a minimum of 150' before you enter the location. It should have three (3) color coded flags (green, yellow and red) that will be used to denote the following location conditions:

GREEN – Normal Operating Conditions YELLOW – Potential Danger RED – Danger, H2S Gas Present

#### Auxiliary Rescue Equipment:

- Stretcher
- 2-100' Rescue lines
- First Aid Kit properly stocked.

#### **Mud Inspection Equipment:**

Garret Gas Train or Hach Tester for inspection of Hydrogen Sulfide in the drilling mud system.

#### Fire Extinguishers:

Adequate fire extinguishers shall be located at strategic locations.

#### Blowout Preventor:

- The well shall have hydraulic BOP equipment for the anticipated BHP.
- The BOP should be tested upon installation.
- BOP, Choke Line and Kill Line will be tested as specified by Operator.

#### **Confined Space Monitor:**

There should be a portable multi-gas monitor with at least 3 sensors ( $O_2$ , LEL & H2S). This instrument should be used to test the atmosphere of any confined space before entering. It should also be used for atmospheric testing for LEL gas before beginning any type of Hot Work. Proper calibration documentation will need to be provided.

#### Communication Equipment:

 Proper communication equipment such as cell phones or 2 – way radios should be available at the rig.

- Radio communication shall be available for communication between the company man's trailer, rig floor and the tool pusher's trailer.
- Communication equipment shall be available on the vehicles.

#### **Special Control Equipment:**

- Hydraulic BOP equipment with remote control on the ground.
- Rotating head at the surface casing point.

#### **Evacuation Plan:**

- Evacuation routes should be established prior to spudding the well.
- Should be discussed with all rig personnel.

#### **Designated Areas:**

#### Parking and Visitor area:

- All vehicles are to be parked at a pre-determined safe distance from the wellhead.
- Designated smoking area.

#### Safe Briefing Areas:

- Two Safe Briefing Areas shall be designated on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds or they are at a 180 degree angle if wind directions tend to shift in the area.
- Personal protective equipment should be stored at both briefing areas or if a moveable cascade trailer is used, it should be kept upwind of existing winds. When wind is from the prevailing direction, both briefing areas should be accessible.

#### NOTE:

- Additional equipment will be available at the nearest Callaway Safety Office.
- Additional personal H<sub>2</sub>S monitors are available for all employees on location.

# Automatic Flare Igniters are recommended for installation on the rig.

#### CHECK LISTS

#### Status Check List

Note: Date each item as they are implemented. 1. Sign at location entrance. Two (2) wind socks (in required locations). 2. Wind Streamers (if required). 3. SCBA's on location for all rig personnel and mud loggers. 4. 5. Air packs, inspected and ready for use. 6. Spare bottles for each air pack (if required). 7. Cascade system for refilling air bottles. Cascade system and hose line hook up. 8. Choke manifold hooked-up and tested. 9. (Before drilling out surface casing.) 10. Remote Hydraulic BOP control (hooked-up and tested before drilling out surface casing). 11. BOP tested (before drilling out surface casing). Mud engineer on location with equipment to test 12. mud for H<sub>2</sub>S. 13. Safe Briefing Areas set-up. 14. Well Condition sign and flags on location and ready. 15. Hydrogen Sulfide detection system hooked-up & tested. 16. Hydrogen Sulfide alarm system hooked-up & tested. Stretcher on location at Safe Briefing Area. 17. 18. 2-100' Life Lines on location.

- 19. 1-20# Fire Extinguisher in safety trailer.
- 20. Confined Space Monitor on location and tested.
- 21. All rig crews and supervisor trained (as required).
- 22. Access restricted for unauthorized personnel.
- 23. Drills on H<sub>2</sub>S and well control procedures.
- 24. All outside service contractors advised of potential  $H_2S$  on the well.

25. NO SMOKING sign posted.

- 26. H<sub>2</sub>S Detector Pump w/tubes on location.
- 27. 25mm Flare Gun on location w/flares.
- 28. Automatic Flare Ignitor installed on rig.

#### **Procedural Check List**

Perform the following on each tour:

- 1. Check fire extinguishers to see that they have the proper charge.
- 2. Check Breathing equipment to insure that they have not been tampered with.
- Check pressure on the supply air bottles to make sure they are capable of recharging.
- 4. Make sure all of the Hydrogen Sulfide detection systems are operative.

Perform the following each week:

- 1. Check each piece of breathing equipment to make sure that they are fully charged and operational. This requires that the air cylinder be opened and the mask assembly be put on and tested to make sure that the regulators and masks are properly working. Negative and Positive pressure should be conducted on all masks.
- 2. BOP skills.
- 3. Check supply pressure on BOP accumulator stand-by source.
- 4. Check all breathing air mask assemblies to see that straps are loosened and turned back, ready to use.
- 5. Check pressure on cascade air cylinders to make sure they are fully charged and ready to use for refill purposes if necessary.
- 6. Check all cascade system regulators to make sure they work properly.
- 7. Perform breathing drills with on-site personnel.
- 8. Check the following supplies for availability:
  - Stretcher
  - Safety Belts and ropes.
  - Spare air bottles.
  - Spare oxygen bottles (if resuscitator required).
  - Gas Detector Pump and tubes.
  - Emergency telephone lists.

9. Test the Confined Space Monitor to verify the batteries are good.

#### **BRIEFING PROCEDURES**

The following scheduled briefings will be held to ensure the effective drilling and operation of this project:

#### Pre-Spud Meeting

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Date: Prior to spudding the well. Attendance: Drilling Supervisor Drilling Engineer Drilling Foreman Rig Tool Pushers Rig Drillers Mud Engineer All Safety Personnel Key Service Company Personnel

Purpose: Review and discuss the well program, step-by-step, to insure complete understanding of assignments and responsibilities.

#### EVACUATION PLAN

#### **General Plan**

The direct lines of action prepared by CALLAWAY SAFETY EQUIPMENT CO., INC., to protect the public from hazardous gas situations are as follows:

- 1. When the company approved supervisor (Drilling Foremen, Tool Pusher or Driller) determine that Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the Area Map.
- 2. Company safety personnel or designee will notify the appropriate local government agency that a hazardous condition exists and evacuation need to be implemented.
- 3. Company approved safety personnel that have been trained in the use of the proper emergency equipment will be utilized.
- 4. Law enforcement personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

NOTE: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

5. After the discharge of gas has been controlled, "Company" safety personnel will determine when the area is safe for re-entry.

#### See Emergency Action Plan

#### **Emergency Assistance Telephone List**

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PUBLIC SAFETY:		911 or
Eddy Co. Sheriff Department		(505) 887-7551
Fire Department		(505) 745-3611
Carlsbad Medical Center Hospital		(505) 887-4100
Life Flight:		
Arrow Care-Lubbock		(806) 744-5055
Southwest Air-Med E Vac.		(806) 242-6199
Lat:		
Long:		
New Mexico D.O.T.		(505) 827-5100
New Mexico State Police		(505) 888-3137
Bureau of Land Management		(505) 361-2822
U.S. Dept. of Labor		(505) 248-5302
New Mexico OCD		(505) 748-1283
New Mexico OCD/After Hours		(505) 748-1283
Yates Petroleum Corp.		
Yates Petroleum Corp.	Office	(505) 748-1471
Drilling Superintendent:	Office	(505) 748-421
Jim Krogman	Cell	(505) 365-8340
Assistant Superintendent:	Office	(505) 748-4221
Tim Bussell	Cell	(505) 365-5695
Callaway Safety Rep:	Office	(505) 746-2847
Jerry Caudill	Cell	(505) 369-6587
Lariat Services		
Lariat Services/Midland,Tx.	Office	(432) 561-5510
Drilling Rig#31	Rig	(432) 894-7041
		(,
Drilling Superintendent		
Billy Jenson	Cell	(432) 894-2789
Tool Pushers		
Billy Terry	Cell	(432) 557-6301

Callaway Safety Equipment	Odessa (432) 561-5049
	Artesia (505) 746-2847

#### MAPS AND PLATS (Maps & Plats Attached)

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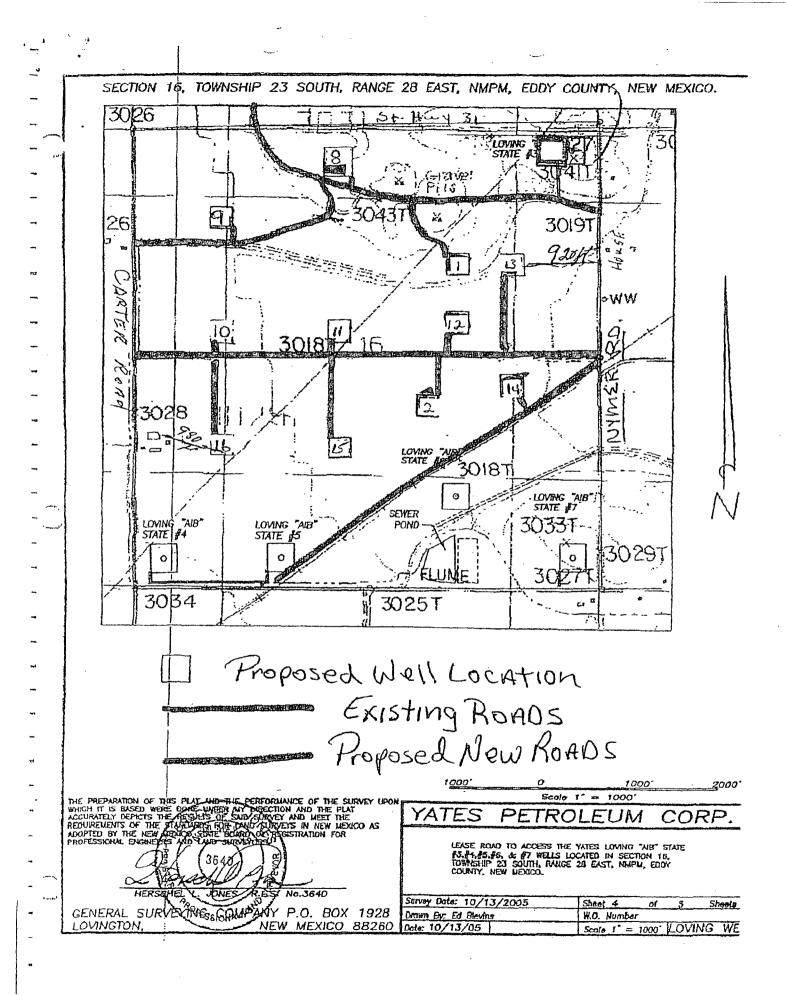
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#### **Affected Notification List**

## (within a <u>3000</u>, radius of exposure @100ppm)

The geologic zones that will be encountered during drilling are known to contain hazardous quantities of  $H_2S$ . The accompanying map illustrates the affected areas of the community. The residents within this radius will be notified via a hand delivered written notice describing the activities, potential hazards, conditions of evacuation, evacuation drill siren alarms and other precautionary measures.

Evacuee Description: Residents: THERE ARE NO RESIDENTS WITHIN 3000' ROE.

Notification Process:

A continuos siren audible to all residence will be activated, signaling evacuation of previously notified and informed residents.

**Evacuation Plan:** 

All evacuees will migrate lateral to the wind direction.

The Oil Company will identify all home bound or highly susceptible individuals and make special evacuation preparations, interfacing with the local and emergency medical service as necessary.

# **GENERAL INFORMATION**

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#### Toxic Effects of H<sub>2</sub>S Poisoning

Hydrogen Sulfide is extremely toxic. The acceptable ceiling concentration for eight-hour exposure is 10 PPM, which is .001% by volume. Hydrogen Sulfide is heavier than air (specific gravity-1.192) and is colorless and transparent. Hydrogen Sulfide is almost as toxic as Hydrogen Cyanide and is 5-6 times more toxic than Carbon Monoxide. Occupational exposure limits for Hydrogen sulfide and other gasses are compared below in Table I. Toxicity table for H<sub>2</sub>S and physical effects are shown in Table II.

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
J					
Hydrogen Cyanide	HCN	.94	4.7 ppm	С	
Hydrogen Sulfide	H₂S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO <sub>2</sub>	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	со	0.97	25 ppm	200 ppm	
Carbon Dioxide	CO2	1.52	5000 ppm	30,000 ppm	
Vethane	CH₄	0.55	4.7% LEL	14% UEL	
			`		

 Table 1

 Permissible Exposure Limits of Various Gasses

#### Definitions

- A. TLV Threshold Limit Value is the concentration employees may be exposed to based on a TWA (time weighted average) for eight (8) hours in one day for 40 hours in one (1) week. This is set by ACGIH (American Conference of Governmental Hygienists and regulated by OSHA.
- B. STEL Short Term Exposure Limit is the 15 minute average concentration an employee may be exposed to providing that the highest exposure never exceeds the OEL (Occupational Exposure Limit). The OEL for H<sub>2</sub>S is 19 PPM.
- C. IDLH Immediately Dangerous to Life and Health is the concentration that has been determined by the ACGIH to cause serious health problems or death if exposed to this level. The IDLH for  $H_2S$  is 100 PPM.

D. TWA – Time Weighted Average is the average concentration of any chemical or gas for an eight (8) hour period. This is the concentration that any employee may be exposed to based on an TWA.

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	TABLE II       Toxicity Table of H <sub>2</sub> S						
Percent %	PPM	Physical Effects					
,0001	1	Can smell less than 1 ppm.					
.001	10	TLV for 8 hours of exposure					
.0015	15	STEL for 15 minutes of exposure					
.01	100	Immediately Dangerous to Life & Health Kills sense of smell in 3 to 5 minutes.					
.02	200	Kills sense of smell quickly, may bum eyes and throat.					
.05	500	Dizziness, cessation of breathing begin in a few minutes.					
.07	700	Unconscious quickly, death will result if not rescued promptly.					
.10	1000	Death will result unless rescued promptly. Artificial resuscitation may be necessary.					

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#### PHYSICAL PROPERTIES OF H<sub>2</sub>S

The properties of all gasses are usually described in the context of seven major categories:

COLOR ODOR VAPOR DENSITY EXPLOSIVE LIMITS FLAMMABILITY SOLUBILITY (IN WATER) BOILING POINT

Hydrogen Sulfide is no exception. Information from these categories should be considered in order to provide a fairly complete picture of the properties of the gas.

#### COLOR - TRANSPARENT

Hydrogen Sulfide is colorless so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence. a fact that makes the gas extremely dangerous to be around.

#### ODOR – ROTTEN EGGS

Hydrogen Sulfide has a distinctive offensive smell, similar to "rotten eggs". For this reason it earned its common name "sour gas". However,  $H_2S$ , even in low concentrations, is so toxic that it attacks and quickly impairs a victim's sense of smell, so it could be fatal to rely on your nose as a detection device.

#### VAPOR DENSITY – SPECIFIC GRAVITY OF 1.192

Hydrogen Sulfide is heavier than air so it tends to settle in low-lying areas like pits, cellars or tanks. If you find yourself in a location where  $H_2S$  is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

#### EXPLOSIVE LIMITS – 4.3% TO 46%

Mixed with the right proportion of air or oxygen,  $H_2S$  will ignite and burn or explode, producing another alarming element of danger besides poisoning.

#### **FLAMMABILITY**

Hydrogen Sulfide will burn readily with a distinctive clear blue flame, producing Sulfur Dioxide (SO<sub>2</sub>), another hazardous gas that irritates the eyes and lungs.

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#### SOLUBILITY - 4 TO 1 RATIO WITH WATER

Hydrogen Sulfide can be dissolved in liquids, which means that it can be present in any container or vessel used to carry or hold well fluids including oil, water, emulsion and sludge. The solubility of  $H_2S$  is dependent on temperature and pressure, but if conditions are right, simply agitating a fluid containing  $H_2S$  may release the gas into the air.

#### **BOILING POINT – (-76 degrees Fahrenheit)**

Liquefied Hydrogen Sulfide boils at a very low temperature, so it is usually found as a gas.

#### **RESPIRATOR USE**

The Occupational Safety and Health Administration (OSHA) regulates the use of respiratory protection to protect the health of employees. OSHA's requirements are written in the Code of Federal Regulations, Title 29, Part 1910, Section 134, Respiratory Protection. This regulation requires that all employees who might be required to wear respirators, shall complete a OSHA mandated medical evaluation questionnaire. The employee then should be fit tested prior to wearing any respirator while being exposed to hazardous gasses.

Written procedures shall be prepared covering safe use of respirators in dangerous atmospheric situations, which might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

Respirators shall be inspected prior to and after each use to make sure that the respirator has been properly cleaned, disinfected and that the respirator works properly. The unit should be fully charged prior to being used.

Anyone who may use respirators shall be properly trained in how to properly seal the face piece. They shall wear respirators in normal air and then in a test atmosphere. (Note: Such items as facial hair (beard or sideburns) and eyeglass temple pieces will not allow a proper seal.) Anyone that may be expected to wear respirators should have these items removed before entering a toxic atmosphere. A special mask must be obtained for anyone who must wear eyeglasses. Contact lenses should not be allowed.

Respirators shall be worn during the following conditions:

- A. Any employee who works near the top or on the top of any tank unless tests reveal less than 20 ppm of H2S.
- B. When breaking out any line where H2S can reasonably be expected.
- C. When sampling air in areas where H2S may be present.
- D. When working in areas where the concentration of H2S exceeds the Threshold Limit Value for H2S (10 ppm).
- E. At any time where there is a doubt as to the H2S level in the area to be entered.

#### **EMERGENCY RESCUE PROCEDURES**

#### DO NOT PANIC!!!

#### **Remain Calm - THINK**

- 1. Before attempting any rescue you must first get out of the hazardous area yourself. Go to a safe briefing area.
- 2. Sound an alarm and activate the 911 system.

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- 3. Put on breathing apparatus. At least two persons should do this, when available use the buddy system.
- 4. Rescue the victim and return them to a safe briefing area.
- 5. Perform an initial assessment and begin proper First Aid/CPR procedures.
- 6. Keep the victim lying down with a blanket or coat, etc..., under the shoulders to keep airway open. Conserve body heat and do not leave unattended.
- 7. If the eyes are affected by H2S, wash them thoroughly with potable water. For slight irritation, cold compresses are helpful.
- 8. In case a person has only minor exposure and does not lose consciousness totally, it's best if he doesn't return to work until the following day.
- 9. Any personnel overcome by H2S should always be examined by medical personnel. They should always be transported to a hospital or doctor.

### Yates Petroleum Corporation Closed Loop System

#### Equipment Design Plan

Closed Loop System will consist of:

1 – double panel shale shaker

1 – (minimum ) Centrifuge, certain wells and flow rates may require 2 centrifuges

On certain wells, the Centrifuge will be replaced by a Clackco Settling Tank System

1 – minimum centrifugal pump to transfer fluids

2-500 bbl. FW Tanks

1 – 500 bbl. BW Tank

1 - half round frac tank - 250 bbl. capacity as necessary to catch cement / excess mud returns generated during a cement job.

1 Set of rail cars / catch bins

Certain wells will use an ASC Auger Tank

#### **Operation Plan**

All equipment will be inspected at least hourly by rig personnel and daily by contractors' personnel.

Any spills / leaks will be reported to YPC, NMOCD, and cleaned up without delay.

#### Closure Plan

Drilling with Closed Loop System, haul off bins will be taken to Gandy Marley, Lea Land Farm, CRI or Sundance Services Inc.

# Permit Conditions of Approval

30-0 15 - 41389 API:

OCD Reviewer	Condition	]
CSHAPARD	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	