30-025-40434

DRILLING PROGRAM

SandRidge Exploration and Production, LLP
Elliott Federal #6
Surface Location: 660' FSL, 2170' FWL, Unit Letter N, Sec 1, T21S R37E, Lea County, New Mexico
Bottom Hole Location: same

1. **Geologic Name of Surface Formation:**
   Quaternary

2. **Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:**

a.	Ogallala	100'	Water
b.	Rustler	1478'	Barren
c.	Top of Salt	1480'	
d.	Base of Salt	2666'	
e.	Tansil	2667'	Barren
f.	Yates	2770'	Oil/Gas
g.	Seven Rivers	3000'	Barren
h.	Queen	3351'	Barren
i.	San Andres	4128'	Oil
j.	Glorieta	5425'	Oil
k.	Blinebry	5830'	Oil
l.	Tubb	6298'	Oil
m.	Drinkard	6527'	Oil
n.	Abo	6968'	Oil
o.	Total Depth	7900'	

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 8-5/8" casing @ 1525' and circulating cement back to the surface. The Abo intervals will be isolated by setting 4-1/2" casing to total depth and circulating cement to the surface.

3. **Casing Program:**

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
17	0-80'	14	0-80'	50#		
12 -1/4"	80-~~1525'~~	8-5/8"	0-~~1525'~~ 1545	24#	STC	J-55
7-7/8"	1525'-7900'	4-1/2"	0-7900'	11.6#	LTC	L-80

See COA

Design Parameter Factors:

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
8-5/8"	1.95	4.20	10.68
4-1/2"	1.55	1.85	2.31

Casing load assumptions for new 8-5/8" J-55 24# casing:

Collapse: Fluid inside casing is evacuated. A full column of 9 ppg fluid is present in the annulus.
Burst: Fluid in the annulus is evacuated and a full column of 9 ppg fluid is present in the casing.
Tension: All fluid inside wellbore is evacuated

Casing load assumptions for new 4 ½" L-80 11.6# casing:

Collapse: Fluid inside casing is evacuated. A full column of 10 ppg fluid is present in the annulus.
Burst: Surface treating pressures will not exceed 4200 psi exposure to the casing.
Tension: All fluid inside wellbore is evacuated

4. **Cement Program:**

a. 14" Conductor

Ready-mix concrete

b. 8 -5/8" Surface

Lead: 540 sacks (100% excess) Class C (65:35) Poz Cement ECONOCEM ™ System +3% lbm/sk Poly-E-Flake, 12.8 ppg, Yield: 1.86 ft^3/sk , Mixing Fluid: 9.94 gal/sk.

Tail: 270 sacks (100% excess) Class C Cement Halcem ™ System+ 2% Calcium Chloride+ 0.125 lbm/sk Poly-E-Flake, 14.8 ppg, Yield:1.35 ft^3/sk, Mixing Fluid 6.37 gal/sk. **TOC @ surface.**

c. 4 ½" Production

Lead: 500 sacks (25% excess) Class H (50:50) Poz EXTENDACEM ™ System + 5 #/sk Gilsonite, 12.2 ppg, Yield 2.26 ft^3/sk, Mixing fluid:12.07 gal/sk.

Tail: 890 sacks (25% excess)Class H (50:50) Poz Versacem ™ System + 0.3% Halad ®-9 + 3% Salt + 5 lbm/sk Gilsonite, 14.4 ppg, Yield: 1.25 ft^3/sk, Mixing fluid: 5.06 gal/sk. **TOC @ surface.**

Final volumes will be determined using caliper log and 25% excess.

5. **Pressure Control Equipment:**

BOP DESIGN: The BOP system used to drill the production hole will consist of an 11" 3M Double Ram and Annular preventer. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a 3M system prior to drilling out the surface casing shoe.

The pipe rams will be operated and checked each 24-hour period and each time the drill pipe is out of the hole. These tests will be logged into the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a Kelly cock, floor safety valve, choke lines, and choke manifold rated at 3000 psi WP.

6. **MUD PROGRAM SUMMARY:**

DEPTH	HOLE SIZE	CASING SIZE	MUD WT.	VISCOSITY	FLUID LOSS
0 - 1,525' 1545	12-1/4"	8-5/8"	8.6 – 9.4	31 – 33	NC
1,525'- 4,100'	7-7/8"	- - -	9.7-9.8	28 – 29	NC
4,100'' – 6,300	7-7/8"	- - -	9.8-9.9	30 – 31	15 – 10 cc
6,300' – TD	7- 7/8"	4-1/2"	9.9-10	32 – 38	10 – 6 cc

Interval Discussion:

INTERVAL	DAYS	WEIGHT	VISCOSITY	API FILTRATE	LCM	pH
0 – 1,525'	1	8.6 -9.4 lbs/gal	31 -33 sec/qt	NC	NC	As needed

Spud in with fresh water allowing native solids to build and maintain viscosity @ 31 – 33 sec./qt. Circulate through closed loop system. Utilize all available solids control equipment and dilution with fresh water to control viscosity, mud weight, and volume. Add 1 sack of Paper every other connection through this interval to help clean hole and/or more Paper as needed for seepage losses. Although lost circulation is not anticipated drilling this interval, ample supply of fibrous LCM will be on location. Approximately 100' from surface TD, mix 15 sacks of yellow starch @ 5 min./sx to help condition hole for running surface casing. Use pre-mix to build viscous PHPA pill and sweep the hole with +/- 10 Bbl. of same prior to tripping out to run 8-5/8" surface casing.

Materials to be Utilized: PHPA, Paper, Starch & Fibrous LCM if required

INTERVAL	DAYS	WEIGHT	VISCOSITY	API FILTRATE	LCM	pH
1,525' – 4,100'	1	9.7-9.8 lbs/gal	28 -29 sec/qt	NC	As needed	10.0 – 10.5

Drill below surface casing with 9.7-9.8 lb/gal Brine circulating closed loop system. Build viscous PHPA pills in pre-mix and use to sweep hole for additional cleaning as needed. Mix Paper as required to control seepage losses. Use Lime to control and maintain 10 – 10.5 pH throughout

this interval. Use all available solids control equipment and if needed, drip non-ionic PHPA below flow line to help maintain clear Brine. Severe lost circulation is not anticipated drilling this interval but sufficient fibrous material will be on location to combat same should it occur.

Materials to be Utilized: PHPA, Paper, Lime, & Fibrous LCM if required

INTERVAL	DAYS	WEIGHT	VISCOSITY	API FILTRATE	LCM	pH
4,100'– 6,300'	1	9.8-9.9 lbs/gal	30 -31 sec/qt	15 -10 cc	As needed	10.0 – 10.5

At 4,100', reduce fluid loss to 15cc with addition of starch @ 6-8 mins./sk. Continue additions of Lime as needed to control pH. Further reduce fluid loss to 10cc by 6,300' with continued starch additions. Sweep hole as required with viscous PHPA sweeps from premix. Add Paper to sweeps as needed for seepage. Severe lost circulation is not anticipated while drilling this interval but sufficient quantities of fibrous LCM will be on location. Small amounts of Defoamer may be required while drilling this interval. Continue to use all available mechanical solids control and non-ionic PHPA dripped below shaker for additional solids control.

Materials to be Utilized: PHPA, Paper, Lime, Starch; Defoamer & Fibrous LCM if required

INTERVAL	DAYS	WEIGHT	VISCOSITY	API FILTRATE	LCM	pH
6,300'– Total Depth	**2**	9.9-10.0 lbs/gal	32 -38 sec/qt	10 - 6 cc	As needed	10.0 – 10.5

At 6,300' mud up to 32 -34 sec./qt. viscosity with Salt Gel. Continue additions of Lime to control pH. Maintain fluid loss at 10.0 cc with Starch until 6,900'. At 6,900', further reduce fluid loss to 6 cc with additional Starch prior to topping the ABO. Moderate loss of circulation is possible in this interval. Use Paper for seepage losses and fibrous LCM for more severe losses. At 7,600', raise viscosity to 38 sec./qt. with Salt Gel and maintain to TD. At TD, sweep hole with 5 Bbl. viscous PHPA pill and circulate completely out of hole prior to tripping.

Materials to be Utilized: PHPA, Paper, Lime, Salt Gel, Starch; Defoamer & Fibrous LCM if required. Mud products for weight addition and fluid loss control will be on location at all times.

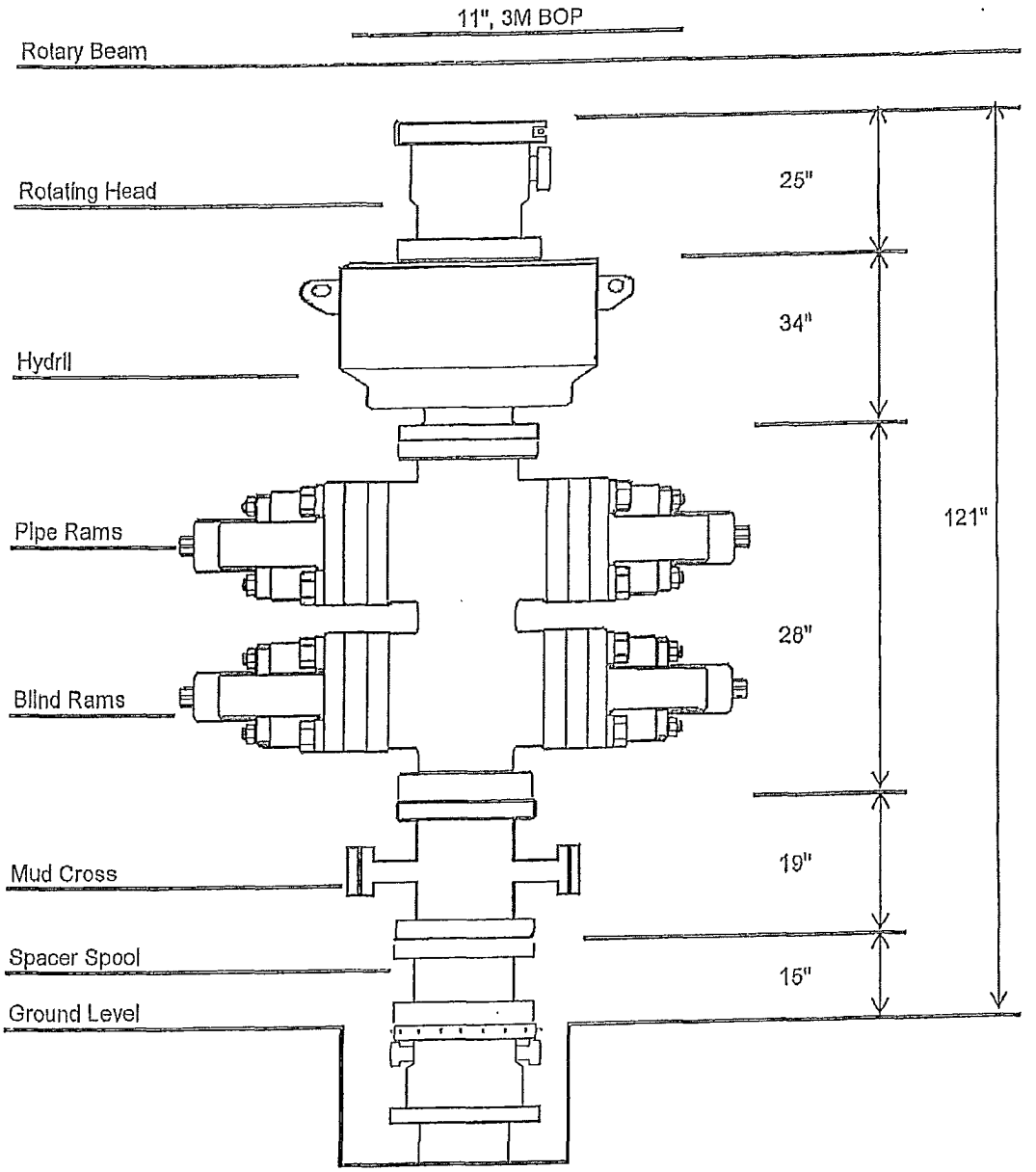
7. **Auxiliary Well Control and Monitoring Equipment:**
   a. A Kelly cock will be in the drill string at all times.
   b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
   c. Hydrogen Sulfide detection equipment will be in operation prior to spud and throughout the entire drilling process until total depth is reached. Breathing equipment will be on location prior to spud and until total depth is reached.

8. **Logging, Coring, and Testing Program:** See COA
   Gamma Ray / Neutron – Surface to TD
   Spectral Gamma Ray / Density / Resistivity – Surface casing to TD

9. **Potential Hazards:**
   No abnormal pressures or temperatures are expected. Estimated BHP 3,204 psi and estimated BHT 105 degrees. If H2S is encountered, the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. H2S monitoring equipment will be on location 24/7 during drilling operations.

10. **Anticipated Starting Date and Duration of Operations:**
    a. Location construction will begin after the BLM and NMOCD have approved the APD. Anticipated spud date will be as soon after approval as rig is available. Move in operations and drilling is expected to take 15 days.
    b. If production casing is run, an additional 30 days will be required to complete well and construct surface facilities and/or lay flow lines in order to place the well on production.

Lariat 17 BOP



Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
SandRidge Exploration and Production, LLC
Elliott Federal #6
660' FSL, 2170' FWL, Unit Letter N, Sec 1, T21S, R37E, Lea County, New Mexico

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.

2. Wear ring will be properly installed in head.

3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 3000 psi working pressure.

4. All fittings will be flanged.

5. A full bore safety valve tested to a minimum of 3000 psi WP with proper thread connections will be available on the rotary rig floor at all times.

6. All choke lines will be anchored to prevent movement.

7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.

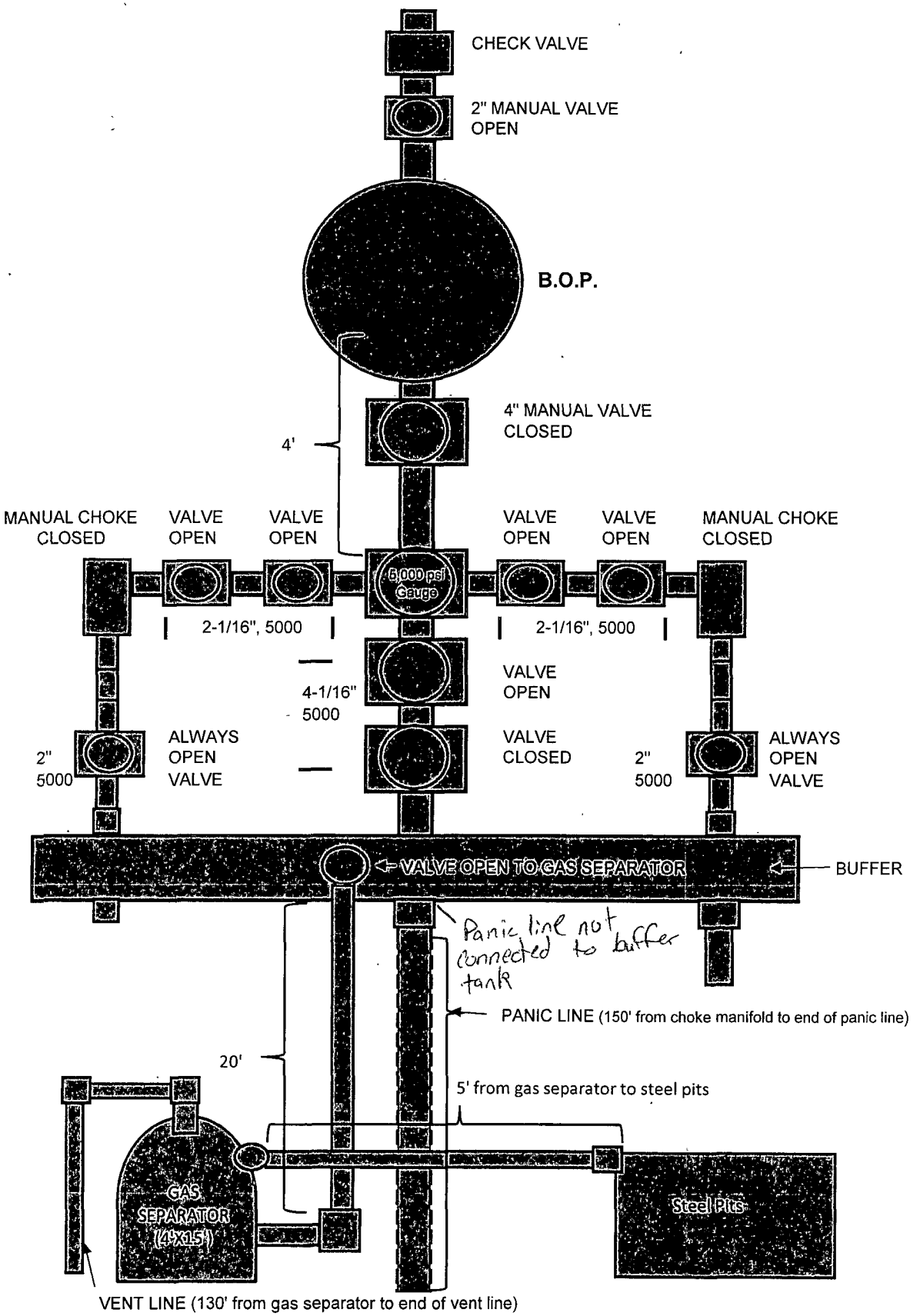
8. Will maintain a Kelly cock attached to the Kelly.

9. Hand wheels and wrenches will be properly installed and tested for safe operations.

10. Hydraulic floor control for blowout preventer will be location as near in proximity to the driller's controls as practical.

11. All BOP equipment will meet API standards and include a minimum 40-gallon accumulator having two independent means of power to initiate closing operations.

Lariat 17 choke Manifold



DESIGN PLAN

Above ground steel tanks will be utilized for the management of all fluids.

OPERATIONS AND MAINTENANCE PLAN

SandRidge E&P, LLC, will operate and maintain all above ground steel tanks in a prudent manner to prevent any spills. Operator will conduct daily visual tank inspection to locate any leak which might occur and potentially cause spoil or ground water contamination. NMOCD will be notified immediately of any significant volume(s) pursuant to NMOCD rule 19.15.29.

CLOSURE PLAN

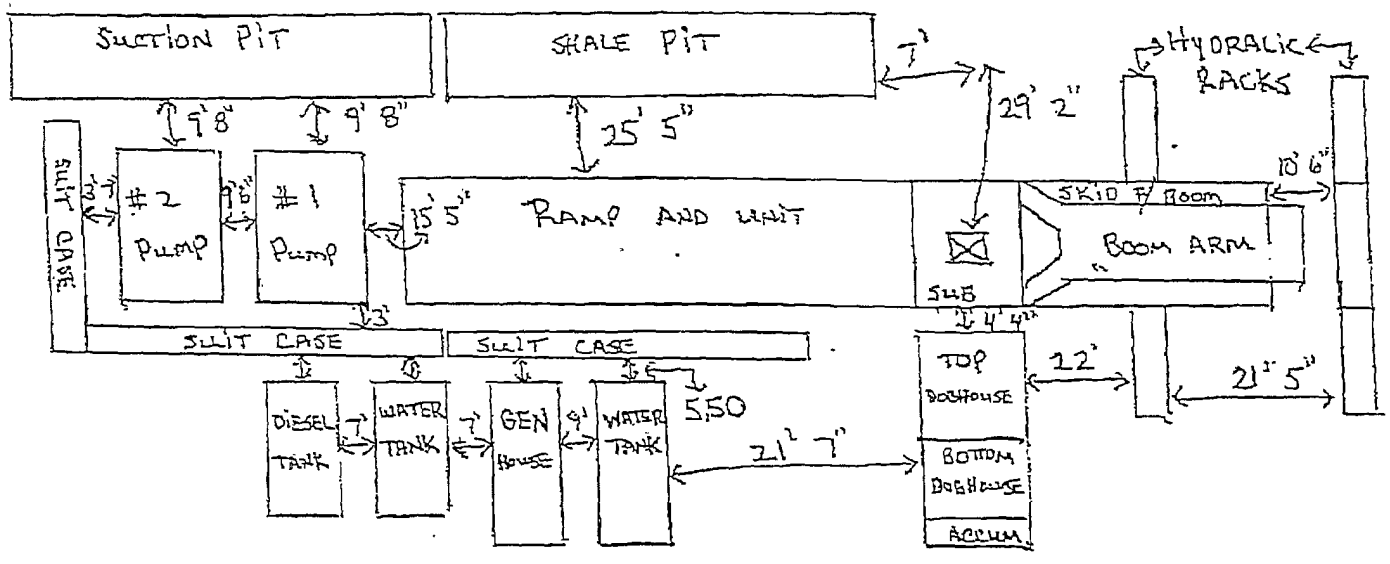
Solids and fluids will be removed from steel tanks and hauled off by trucking companies. They will be taken to the nearest approved public disposal: (See Form C-144EZ, Item 5.).

LARIAT SERVICES, INC.

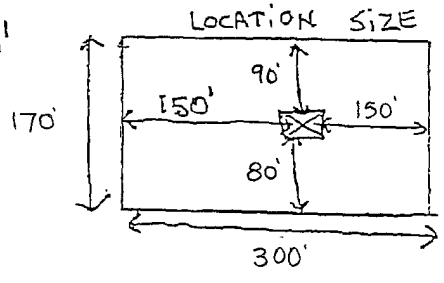
RIG #17

TYPICAL LOCATION FOOTPRINT

Reserve Pit should be added as needed



CENTER OF HOLE TO BACK OF STEEL PITS 40'
CENTER OF HOLE TO END OF ACCUMULATOR 61'
CENTER OF HOLE TO END OF UNIT RAMP 58'
CENTER OF HOLE TO BACK OF LAST PIPE RACK - 48'
CENTER OF HOLE TO END OF BOOM - 44'
CENTER OF HOLE TO END OF SKID FOR BOOM - 34'



LOCATION SIZE FOR CLOSED LOOP SYSTEM

Lariat Services, Inc. – Rig #17 Inventory

APPROXIMATE AGE:
Built 2005

POWERED DRAW WORKS:
Rt 400 Single Drum Drawworks Lebus Grooved for 1 1/8" Line 42" x 10" Brakes with 424-400,000# Tension Torque Brake.

Powered by 630 HP Series 60 Detroit Engine with an Allison 6061 Transmission to 500 HP Right Angle Gear Box.

MAST & SUBSTRUCTURE:
International Derrick Service 67' 500,000 GNC Mast Mounted on a 3 Axle Carrier with Boatskid 12' Substructure with Pipe Handling Boom Arm.

POWERED PUMPS:
(1) RSF-1000 Powered by Detroit Series 2000 Diesel Engine.
(1) EMSCO DB-550 Powered by Caterpillar 3406 Diesel Engine.

TOP HEAD DRIVE AND POWER UNIT:
Top Drive system XK250-24K Powered by Detroit Series 60 / 350 HP @ 1200 RPM with Sunstrawn Hydraulic Pump. Maximum Circulating Pressure 5000 PSI with Torque Capacity of 24,000 Ft. lbs. Max. RPM 150.

CROWN AND TRAVELING CARRIER FOR TOP HEAD DRIVE:
Crown is Designed for 8 Line String Up. Consisting of (8) 20" x 1 1/8" Sheaves. Banjo Sheaves are 1 1/8" X 250 Ton.

WELL CONTROL EQUIPMENT:
Koomey 8 Bottle 5 Station Accumulator.
5000 # Choke Manifold.
11" x 3000 # Double Shaffer B.O.P.

GENERATOR HOUSE:
10' x 48' Skid Mounted House.
(2) 380 KW Marathon Generators Powered by (2) Detroit Series 60 550 HP Diesel Engines.
Sullivan Paletek Rotary Screw Compressor.

MUD SYSTEM:
(2) 10' W x 5' H x 40' L with 10' Porch on Each End 400 BBL Each with (4) 5" x 6" Centrifugal Pumps with 50 HP, Electric motors, Linear Shale Shaker. (2) Cone Desander (12) Cone Desilter and Mud Hopper.

TOOLPUSHER'S HOUSE:
8' W x 40' L Idle Time Trailer.

TOP DOGHOUSE:
8' W x 20' L with 4' Porch.

BOTTOM DOG HOUSE:
25' L x 8' W with 5 Station Accumulator Mounted on Front.

WATER TANK:
8' W x 8' H x 40' L with Lubster Mounted on One End with (2) 2" X 3" Centrifugal Pumps with 20 HP Electric Motors. Water Tank 500 BBL Cap.

HANDLING TOOLS AND AUXILLARY EQUIPMENT:
OWI 1000 Hydraulic Wireline Machine.
U.S. Oil Tools.
Air Slips.
(2) Braden Hydraulic 3/8" Line Winches.

Lariat Services, Inc. – Rig #17 Inventory

(1) 450 Gallon Day Tank on Unit.
(1) 450 Gallon Hydraulic Tank.
(3) Suitcases (1) 32' x 3' x 1" – (1) 40' x 3' x 1" - (1) 34' x 3' x 2".
(1) Diesel Tank Skid Mounted 38' L x 7' (Tank is 6' x 6' x 14').
(1) Junk Box 5' x 8" x 20'.
(1) Auto-Drill Automatic Driller.
Type "D" Weight Indicator with E-80 Sensator.
Deadline Anchor Hercules Type HA 118T.
Crown Protection System.
(1) Pre-Mix Pit 7' W x 7' H x 28' L with 5" x 6" Mixing Pump 100 HP Electric Motor.
(1) 500 BBL Storage Tank.

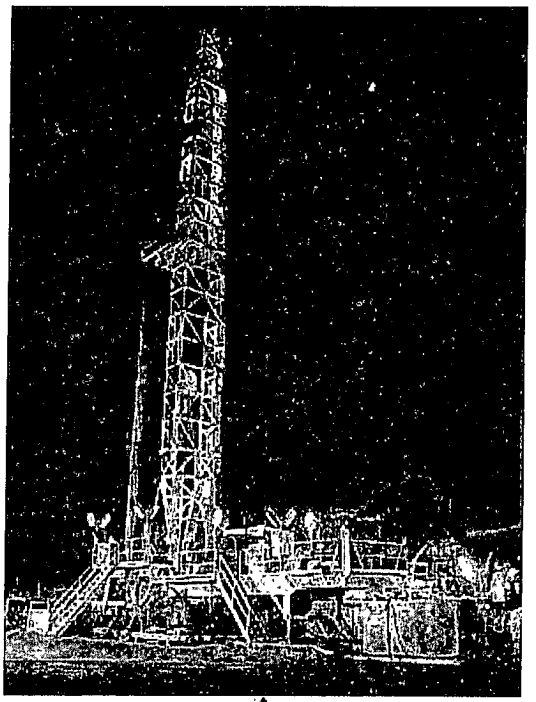
30-025-40434

Sandridge Energy

Legals:
Elliott Federal #6
Lariat 17
Lea County, NM
Section 1
T-21-S, R-37-E
Lat: N 32.502440
Long: W 103.117731

H_2S

"Contingency Plan"



SAFETY SOLUTIONS, LLC.

Safety Solutions, LLC **(432) 563-0400**
7907 Industrial **Midland, TX 79706**

Emergency Assistance Telephone List

PUBLIC SAFETY:	**911 or**
State Police	(575)392-5588
Lea County Sheriff's Department	(575) 396-3611
Fire Department:	
Eunice	(575) 394-3258
Ambulance: Hobbs	(575) 397-9262
Hospitals:	
Lea Regional	(575) 492-5000
Andrews Memorial	(432) 758-5811
Odessa Medical Center Hospital	(432) 640-4000
U.S. Dept. of Labor	(806) 743-7681
Air Med/ Care Star	(432) 687-2992
Highway Dept	(575) 637-7200
SERC	(505) 476-9628
LEPC	(575) 526-0795
NRC	(800) 424-8802

Sandridge	
Sandridge	Office (405)-429-5500

Company Drilling Manager:		
Nick Newland	Cell	(405) 761-5655

Drilling Engineer:		
Preston Wray	Cell	(405) 761-2541

Drilling Superintendent:		
Brian Ehrennberg	Cell	(432) 290-8454
Johnny Greene	Cell	(432) 464-4438

Lariat Drilling:	
Lariat Office	(432) 333-5252
Lariat 17: Rig Phone	(832) 200-7549

Safety Consultants:		
Safety Solutions, LLC	Office	(432) 563-0400
Cliff Strasner	Cell	(432) 894-9789
Craig Strasner	Cell	(432) 894-0341

Table of Contents

e. Physical Properties
f. Respirator Use
g. Emergency Rescue

H_2S 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_2S).

Objective:

Prevent any and all accidents, and prevent the uncontrolled release of H_2S into the atmosphere.

Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

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 list: Included are the telephone numbers of all persons that would need to be contacted, should an H_2S 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.

Check Lists: Status check lists and procedural check lists have been included to ensure adherence to the plan.

General Information: A general information section has been included to supply support information.

EMERGENCY PROCEDURES SECTION

I. In the event of any evidence of H_2S level above 10ppm, 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, the State Emergency Response Commission (SERC), the Local Emergency Planning Commission (LEPC), the National Response Center (NRC) and the New Mexico Oil Conservation Division 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 foreman shall be responsible for the total implementation of the plan.

   b. The company approved foreman shall be in complete command during any emergency.

   c. The company approved foreman 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*

i. When alarm sounds, don escape unit and report to upwind Safe Briefing Area.

ii. Check status of other personnel (buddy system).

iii. Secure breathing apparatus.

iv. Wait for orders from supervisor.

b. *Drilling Foreman*

i. Report to the upwind Safe Briefing Area.

ii. Don Breathing Apparatus and return to the point of release with the Tool Pusher or Driller (buddy system).

iii. Determine the concentration of H_2S.

iv. Assess the situation and take appropriate control measures.

c. *Tool Pusher*

i. Report to the upwind Safe Briefing Area.

ii. Don Breathing Apparatus and return to the point of release with the Drilling Foreman or the Driller (buddy system).

iii. Determine the concentration of H_2S.

iv. Assess the situation and take appropriate control measures.

d. *Driller*

i. Check the status of other personnel (in a rescue attempt, always use the buddy system).

ii. Will notify rig manager or tool pusher of situation on location at present time.

iii. 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*

i. Remain in the upwind Safe Briefing Area until otherwise instructed by a supervisor.

f. *Mud Engineer*

i. Report to the upwind Safe Briefing Area.

ii. When instructed, begin check of mud for pH level and H_2S level.

g. *Safety Personnel*

i. Don Breathing Apparatus.

ii. Check status of personnel.

iii. 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: minutes, seconds.
Total Time to Complete Assignment: minutes, seconds.

I. Drill Overviews

a. Drill No. 1 – Bottom Drilling

i. Sound the alarm immediately.

ii. Stop the rotary and hoist Kelly joint above the rotary table.

iii. Stop the circulatory pump.

iv. Close the drill pipe rams.

v. Record casing and drill pipe shut-in pressures and pit volume increases.

b. Drill No. 2 – Tripping Drill Pipe

i. Sound the alarm immediately.

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

iii. Install a full opening valve or inside blowout preventer tool in order to close the drill pipe.

iv. Close the drill pipe rams.

v. Record the shut-in annular pressure.

II. Crew Assignments

a. Drill No. 1 – Bottom Drilling

i. Driller

1. Stop the rotary and hoist Kelly joint above the rotary table.
2. Stop the circulatory pump.
3. Check Flow.
4. If flowing, sound the alarm immediately
5. Record the shit-in drill pipe pressure
6. Determine the mud weight increase needed or other courses of action.

ii. Derrickman

1. Open choke line valve at BOP.
2. Signal Floor Man #1 at accumulator that choke line is open.
3. Close choke and upstream valve after pipe tam have been closed.
4. Read the shut-in annular pressure and report readings to Driller.

iii. Floor Man #1

1. Close the pipe rams after receiving the signal from the Derrickman.
2. Report to Driller for further instructions.

iv. Floor Man #2

1. Notify the Tool Pusher and Operator representative of the H_2S alarms.
2. Check for open fires and, if safe to do so, extinguish them.
3. Stop all welding operations.
4. Turn-off all non-explosions proof lights and instruments.
5. Report to Driller for further instructions.

v. Tool Pusher

1. Report to the rig floor.
2. Have a meeting with all crews.

3. Compile and summarize all information.

4. Calculate the proper kill weight.

5. Ensure that proper well procedures are put into action.

vi. Operator Representative

1. Notify the Drilling Superintendent.

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

b. Drill No. 2 – Tripping Pipe

i. Driller

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

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

3. Install a full opening valve or inside blowout preventer tool to close the drill pipe.

4. Check flow.

5. Record all data reported by the crew.

6. Determine the course of action.

ii. Derrickman

1. Come down out of derrick.

2. Notify Tool Pusher and Operator Representative.

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

4. Stop all welding operations.

5. Report to Driller for further instructions.

iii. Floor Man #1

1. Pick up full opening valve or inside blowout preventer tool and stab into tool joint above rotary table (with Floor Man #2).

2. Tighten valve with back-up tongs.

3. Close pipe rams after signal from Floor Man #2.

4. Read accumulator pressure and check for possible high pressure fluid leaks in valves or piping.

5. Report to Driller for further instructions.

iv. Floor Man #2

1. Pick-up full opening valve or inside blowout preventer tool and stab into tool joint above rotary table (with Floor Man #1).

2. Position back-up tongs on drill pipe.

3. Open choke line valve at BOP.

4. Signal Floor Man #1 at accumulator that choke line is open.

5. Close choke and upstream valve after pipe rams have been closed.

6. Check for leaks on BOP stack and choke manifold.

7. Read annular pressure.

8. Report readings to the Driller.

v. Tool Pusher

1. Report to the rig floor.

2. Have a meeting with all of the crews.

3. Compile and summarize all information.

4. See that proper well kill procedures are put into action.

vi. Operator Representative

1. Notify Drilling Superintendent

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

TRAINING PROGRAM

When working in an area where Hydrogen Sulfide (H_2S) might be encountered, definite training requirements must be carried out. The Company Supervisor will ensure that all personnel, at the well site, have had adequate training in the following:

1. Hazards and characteristics of Hydrogen Sulfide.
2. Physicals effects of Hydrogen Sulfide on the human body.
3. Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
4. H_2S detection, Emergency alarm and sensor location.
5. Emergency rescue.
6. Resuscitators.
7. First aid and artificial resuscitation.
8. The effects of Hydrogen Sulfide on metals.
9. Location safety.

Service company personnel and visiting personnel must be notified if the zone contains H_2S, and each service company must provide adequate training and equipment for their employees before they arrive at the well site. All training and drill attendance will be documented on a sign-in sheet listing the day, date, time, instructor, training or drill and name and signature of all those in attendance.

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_2S 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_2S 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, H_2S 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 Preventer:

- 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 H_2S). 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.*

EVACUATION PLAN

General Plan

The direct lines of action prepared by SAFETY SOLUTIONS, LLC to protect the public from hazardous gas situations are as follows:

1. When the company approved supervisor (Drilling Foreman, 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 needs 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

MAPS AND PLATS
(Maps & Plats Attached)

Affected Notification List

(Within a 65' 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 continuous 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.

Sandridge 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

Toxic Effects of H_2S 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 gases are compared below in Table 1. Toxicity table for H_2S and physical effects are shown in Table 2.

Table 1
Permissible Exposure Limits of Various Gases

Common Name	Symbol	Sp. Gravity	TLV	STEL	IDLH
Hydrogen Cyanide	HCN	.94	4.7 ppm	C	
Hydrogen Sulfide	H_2S	1.192	10 ppm	15 ppm	100 ppm
Sulfide Dioxide	SO_2	2.21	2 ppm	5 ppm	
Chlorine	CL	2.45	.5 ppm	1 ppm	
Carbon Monoxide	CO	.97	25 ppm	200 ppm	
Carbon Dioxide	CO_2	1.52	5000 ppm	30,000 ppm	
Methane	CH_4	.55	4.7% LEL	14% UEL	

Definitions

A. TLV – Threshold Limit Value is the concentration employees may be exposed 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_2S 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 based on an TWA.

TABLE 2

Toxicity Table of H_2S

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 burn eyes and throat.
.05	500	Dizziness, cessation of breathing begins **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.

PHYSICAL PROPERTIES OF H_2S

The properties of all gases 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. In fact that makes this 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_2), another hazardous gas that irritates the eyes and lungs.

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.

PHYSICAL PROPERTIES OF Sulfur Dioxide (SO_2)

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

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

Sulfur Dioxide 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

Sulfur Dioxide is colorless so it is invisible. This fact simply means that you can't rely on your eyes to detect its presence. In fact that makes this gas extremely dangerous to be around.

ODOR – Burnt match, choking

Sulfur Dioxide has a distinctive offensive smell, similar to "burnt match".

VAPOR DENSITY – SPECIFIC GRAVITY OF 2.26

Sulfur Dioxide 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 SO_2 is known to exist, protect yourself. Whenever possible, work in an area upwind and keep to higher ground.

EXPLOSIVE LIMITS – Not applicable

Sulfur dioxide is the result of burning hydrogen sulfide. LEL or UEL is not applicable.

FLAMMABILITY

LEL or UEL is not applicable.

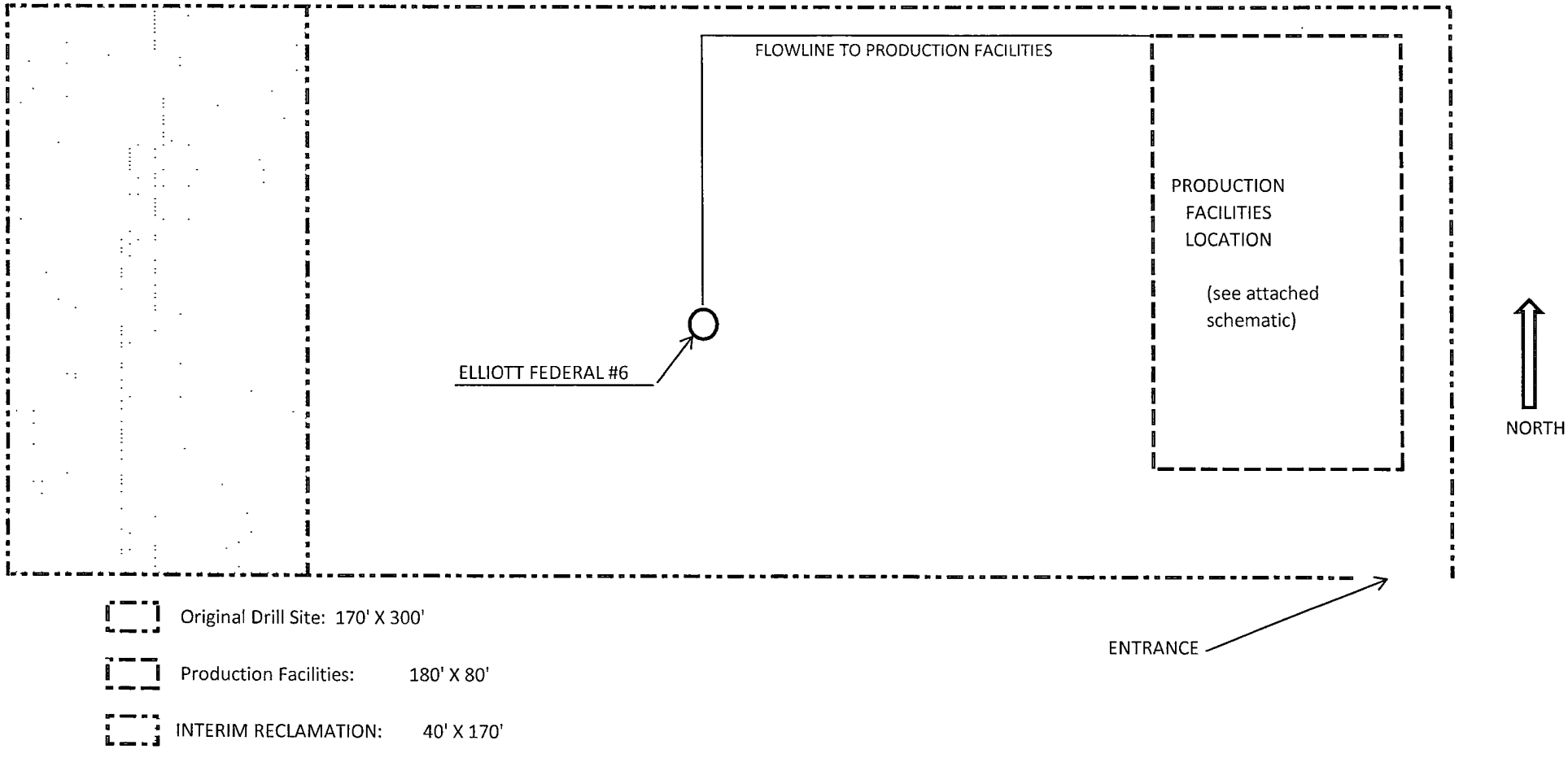
SOLUBILITY

Highly soluble - forms Sulfuric Acid with water.

BOILING POINT – 14°F (-10°C)

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

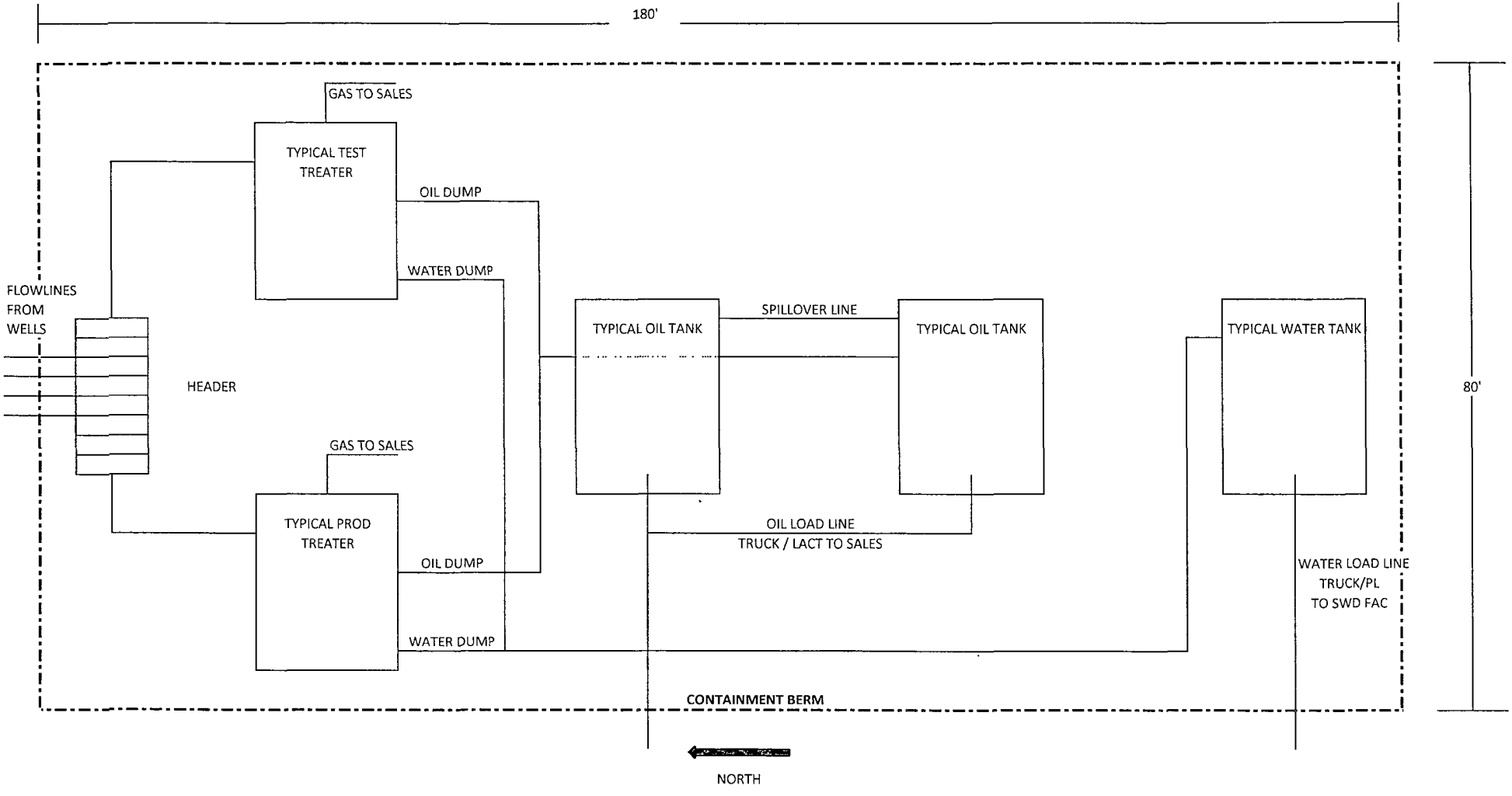
SANDRIDGE ENERGY COMPANY
ELLIOTT FEDERAL #6 [LAT=32.502440 N, LONG=103.117731 W]
SECTION 1 - T21S - R37E, LEA COUNTY, NEW MEXICO
PRODUCTION FACILITY LAYOUT



SANDRIDGE ENERGY COMPANY

TYPICAL WELL PRODUCTION TANK BATTERY

ELLIOT FEDERAL #6



Prepared by: Terry L. Reeves

13 JUN 2011

SURFACE USE PLAN

SandRidge Exploration and Production, LLC

Elliott Federal #6

660' FSL, 2170' FWL, Unit Letter N, Sec 1, T21S, R37E, Lea County, New Mexico

1. **Existing Roads**:
   a. The well site and elevation plat for the proposed well are reflected on the well site layout, Form C-102. The well was staked by John West Engineering.
   b. All roads into the location are depicted on the surveyor plats.
   c. Directions to Location: From the intersection St. Hwy #18 and St. Hwy #207, go south on Hwy #18 approximately 1.3 miles. Turn left and go east approximately 0.4miles to the existing Apache Corporation East Blinebry Drinkard Unit #8 well pad. This location stake is appx 193' east of the existing well head.
   d. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.
   e. If existing road is shared with other operators, SandRidge will share in its cost to maintain the road as required by the BLM.

2. **New or Reconstructed Access Roads**: No new roads will be constructed.

3. **Location of Existing Wells**:
   One-mile Radius Plat shows all existing and proposed wells within a one-mile radius of this proposed location. See attached.

4. **Location of Existing and/or Proposed Production Facilities**:
   a. In the event the well is found productive, the Elliott Federal #6 tank battery will be utilized and the necessary production equipment will be installed at the well site.
   b. If necessary, the well will be operated by means of an electric prime mover.
   c. If the well is productive, rehabilitation plans are as follows:
      i. A closed-loop system will be utilized.
      ii. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as practical to the original state.

5. **Location and Types of Water Supply:**
   This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck.

6. **Construction Materials:**
   The caliche utilized for the drilling pad will be from minerals that are located onsite or will be used onsite. If minerals are not available onsite, then an established mineral pit will be used to build the location.

7. **Methods of Handling Waste Material:**
   a. Drill cuttings will be disposed of in a closed loop system and hauled to CRI Holdings.
   b. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary landfill.
   c. The supplier will pick up salts remaining after completion of well, including broken sacks.
   d. A Porto-john will be provided for the rig crews. This equipment will be properly maintained during well operations and will be removed when all operation are complete.
   e. Remaining drilling fluids will be sent to a closed-loop system. Water produced during completion will be put into a closed-loop system. Oil and condensate produced will be put into a storage tank and sold.
   f. Disposal of fluids to be transported by the following companies:
      1. Parabo Disposal Facility
      2. Controlled Recovery, Inc.

8. **Ancillary Facilities:** No campsite or other facilities will be constructed as a result of this well.

9. **Well Site Layout:**
   a. The rig layout diagram shows the proposed well site layout with dimensions of the pad layout.
   b. A closed-loop system will be utilized.
   c. If a pit or closed-loop system will be utilized, SandRidge will comply with the NMOCD requirements 19.15.17. and submit form C-144 CLEZ to the appropriate NMOCD District Office. An unapproved copy of the pit permit is provided within this APD.
   d. *Topsoil Stockpiling:*
      Standard practice is topsoil will be pushed to the high side of the location to prevent water from running across location to control erosion. If a cutout is done and there are two or three high sides, we will use those there.

10. **Plans for Surface Reclamation**
    At the conclusion of oil and gas operations, Sandridge Exploration and Production, LLC, will restore the lands to original conditions as nearly as practical in accordance with BLM standards.

11. **Surface Ownership**
    a. The surface is owned by Mr. Paige McNeill. Known address is McNeill Ranch, POB 1058, Hobbs NM 88241. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas.
    b. Roads and surface location will be restored as directed by the BLM.

12. **Other Information:**
    a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, sagebrush, yucca and miscellaneous weeds. No wildlife was observed, but it is likely that deer, rabbits, coyotes, and rodents traverse the area.
    b. There is no permanent or live water in the general proximity of the location.
    c. There are no dwellings within 2 miles of well location.
    d. A Cultural Resources Examination has been completed by Southern New Mexico Archaeological Services, Inc. and forwarded to the BLM office in Carlsbad, New Mexico.

13. **Bond Coverage:**
    a. Nationwide Lease Bond #B005997, written with U.S. Specialty Insurance Co.
    b. Statewide Bond #B006211, written with U.S. Specialty Insurance Co. and specific to Lea and Eddy Counties.

OPERATOR'S REPRESENTATIVE:

SandRidge Exploration and Production, LLC, representatives responsible for ensuring compliance of the surface use plan are listed below:

Greg Rowe
Operations Manager
123 Robert S. Kerr Ave.
OKC OK 73102-6406

(405) 429-6192 (office)

Raul Rodriguez
Completions Superintendent
1101 E. Pool Rd.
Odessa TX 79766

(432) 290-1392 (Cell)

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in the APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I or SandRidge Exploration and Production, LLC, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

I hereby also certify that I, or SandRidge Exploration and Production, LLC, have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this 20 day of Oct., 2011
Printed Name: Linda Guthrie
Signed Name: Linda Guthrie
Position Title: Regulatory Manager
Address: 123 Robert S. Kerr Ave., OKC OK 73102-6406
Telephone: (405) 429-6085