

30-015-46626

District I  
1625 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: (505) 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

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JAN 21 2020

EMNRD-OCD ARTESIA

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

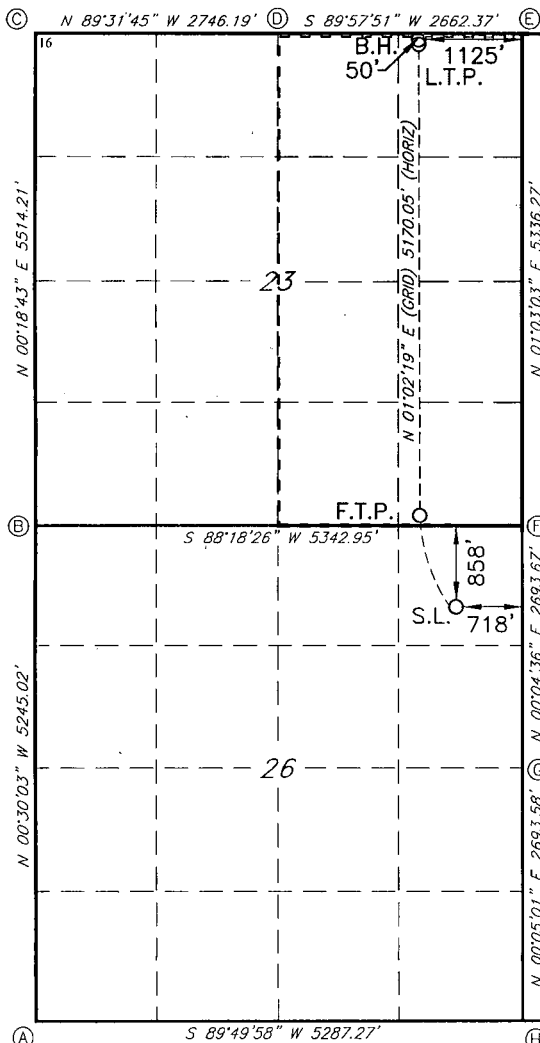
District Office

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number <b>30-015-46626</b>		2 Pool Code <b>97565</b>		3 Pool Name <b>N. French River; Florencia-Yeso</b>	
4 Property Code		5 Property Name <b>SHELBY 23</b>		6 Well Number <b>4H</b>	
7 GRID NO. <b>320947</b>		8 Operator Name <b>SPUR ENERGY PARTNERS LLC</b>		9 Elevation <b>3415'</b>	
10 Surface Location					
UL or lot no. <b>A</b>	Section <b>26</b>	Township <b>19S</b>	Range <b>25E</b>	Lot Idn <b>858</b>	Feet From the <b>718</b>
				North/South line <b>NORTH</b>	East/West line <b>EAST</b>
				Feet From the <b>718</b>	County <b>EDDY</b>
11 Bottom Hole Location If Different From Surface					
UL or lot no. <b>A</b>	Section <b>23</b>	Township <b>19S</b>	Range <b>25E</b>	Lot Idn <b>50</b>	Feet from the <b>1125</b>
				North/South line <b>NORTH</b>	East/West line <b>EAST</b>
				Feet from the <b>1125</b>	County <b>EDDY</b>
12 Dedicated Acres <b>320</b>	13 Joint or Infill	14 Consolidation Code	15 Order No.		

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



**GEODETIC DATA**  
NAD 83 GRID - NM EAST

**SURFACE LOCATION**  
N: 595369.7 - E: 505674.1  
LAT: 32.6366667° N  
LONG: 104.4491887° W

**FIRST TAKE POINT**  
100' FSL 1125' & FEL (Sec. 23)  
N: 596315.7 - E: 505271.1  
LAT: 32.6392659° N  
LONG: 104.4505011° W

**LAST TAKE POINT**  
100' FNL 1125' & FEL (Sec. 23)  
N: 601482.3 - E: 505364.8  
LAT: 32.6534677° N  
LONG: 104.4502153° W

**BOTTOM HOLE**  
N: 601532.3 - E: 505365.7  
LAT: 32.6536052° N  
LONG: 104.4502125° W

**CORNER DATA**  
NAD 83 GRID - NM EAST

A: FOUND 1/2" REBAR  
N: 590847.7 - E: 501100.1

B: FOUND 1/2" REBAR  
N: 596091.2 - E: 501054.3

C: FOUND 600D NAIL  
N: 601603.9 - E: 501084.3

D: FOUND SPIKE NAIL  
N: 601581.4 - E: 503829.7

E: FOUND 1/2" REBAR  
N: 601583.0 - E: 506491.4

F: FOUND 5/8" REBAR  
N: 596249.0 - E: 506393.5

G: FOUND YPC "PS 12641"  
N: 593556.0 - E: 506389.9

H: FOUND YPC "PS 12641"  
N: 590863.1 - E: 506386.0

## 17 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 location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Shah Chapman* 11/9/2020  
Signature Date

*Shah Chapman*  
Printed Name

*shchapman@spurcorp.com*  
E-mail Address

## 18 SURVEYOR CERTIFICATION

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.

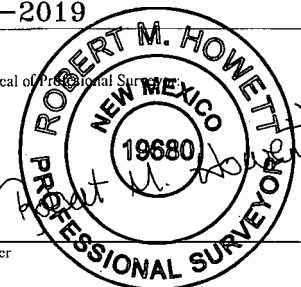
12-11-2019

Date of Survey

Signature and Seal of Professional Surveyor

19680

Certificate Number



RRC-Job No: LS19121146

1/29/20 165

Intent ☒ As Drilled ☐

API #

Operator Name:	Property Name:	Well Number
SPUR ENERGY PARTNERS LLC	SHELBY 23	4H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
A	26	19S	25E		863	NORTH	988	EAST	EDDY
Latitude					Longitude			NAD	
32.63665					-104.450066			NAD83	

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
P	23	19S	25E		100	SOUTH	1125	EAST	EDDY
Latitude					Longitude			NAD	
32.6392659					-104.4505011			NAD83	

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
A	23	19S	25E		100	NORTH	1125	EAST	EDDY
Latitude					Longitude			NAD	
32.6534677					-104.4502153			NAD83	

Is this well the defining well for the Horizontal Spacing Unit?

☒

Is this well an infill well?

☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number

KZ 06/29/2018

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1625 N. French Dr., Hobbs, NM 88240  
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811 S. First St., Artesia, NM 88210  
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1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit Original  
to Appropriate  
District Office

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EMNRD OCD ARTESIA

### GAS CAPTURE PLAN

Date: 01/07/2020

☒ Original

Operator & OGRID No.: SPUR ENERGY PARTNERS LLC (328947)

☐ Amended - Reason for Amendment:

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

#### Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages		Expected MCF/D	Flared or Vented	Comments
SHELBY 23 2H	30-015-Pending	B-26-19S-25E	1246' FNL 1961' FEL		600 mcf/day	Flared	Will flare until gathering line tie-in
SHELBY 23 3H	30-015-Pending	B-26-19S-25E	1235' FNL 1944' FEL		600 mcf/day	Flared	Will flare until gathering line tie-in
SHELBY 23 4H	30-015-Pending	A-26-19S-25E	858' FNL 718' FEL		600 mcf/day	Flared	Will flare until gathering line tie-in
SHELBY 23 5H	30-015-Pending	A-26-19S-25E	847' FNL 702' FEL		600 mcf/day	Flared	Will flare until gathering line tie-in
SHELBY 23 6H	30-015-Pending	A-26-19S-25E	836' FNL 685' FEL		600 mcf/day	Flared	Will flare until gathering line tie-in

#### Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated DCP Operating Company, LP and will be connected to DCP's low/high pressure gathering system located in Eddy County, New Mexico. It will require 1,100' of pipeline to connect the facility to low/high pressure gathering system. Spur Energy Partners LLC provides (periodically) to DCP a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Spur Energy Partners LLC and DCP have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP's Processing Plant located in Sec. 36, Twn. 19S, Rng. 24E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

#### Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP's system at that time. Based on current information, it is Spur Energy Partners LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

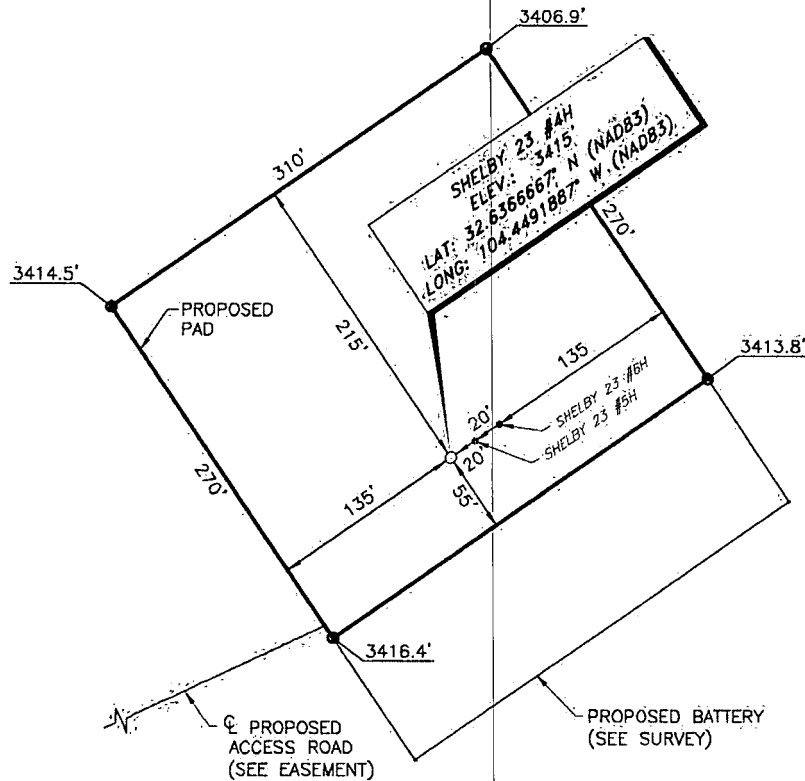
#### Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease

- Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

SPUR ENERGY PARTNERS LLC  
SHELBY 23 #4H SITE PLAN  
(858' FNL & 718' FEL)  
SECTION 28, T19S, R25E  
N. M. P. M., EDDY COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of CR-23 (Rock Daisy Rd.) and CR-29 (Crossbuck Rd.);  
Go East on CR-23 approx. 3.2 miles to a lease road on the left,  
Turn left and go North approx. 1.3 miles to a proposed road on the left,  
Turn left and go Northeast approx. 457 feet to location on the left.



SCALE: 1" = 100'  
0 50' 100'  
BEARINGS ARE GRID NAD 83  
NM EAST  
DISTANCES ARE HORIZ. GROUND

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NO.	REVISION	DATE
JOB NO.:	LS19121146	
DWG: NO.:	19121146-4	

**RRC**

701 S. CECIL ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 12-11-2019
SURVEYED BY: JF/EF
DRAWN BY: KAKN
APPROVED BY: RMH
SHEET: 1 OF 1

## Spur Energy Partners LLC. - Shelby 23 4H

### 1. Geologic Formations

TVD of target	2675'	Pilot Hole Depth	N/A
MD at TD:	8517'	Deepest Expected fresh water:	397'

### Delaware Basin

Formation	TVD - RKB	Expected Fluids
San Andres Upper	810	Losses
San Andres Middle	1,105	Losses
San Andres Lower	1,790	Losses
Glorieta Top	2,385	Oil/Gas
Upper Paddock	2,525	Oil/Gas
Lower Paddock 1	2,685	Oil/Gas
Lower Paddock 2	2,795	Oil/Gas
<b>Lower Paddock 3</b>	<b>2915</b>	<b>Oil/Gas</b>

\*H<sub>2</sub>S, water flows, loss of circulation, abnormal pressures, etc.

### 2. Casing Program

Hole Size (in)	Casing Interval		Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	Buoyant	Buoyant
	From (ft)	To (ft)							Body SF Tension	Joint SF Tension
12.25	0	1200	9.625	36	J-55	BTC	1.125	1.2	1.4	1.4
8.75	0	2973	7	32	L-80	LTC	1.125	1.2	1.4	1.4
8.75	2973	8517	5.5	20	L-80	BK-HT	1.125	1.2	1.4	1.4

## Spur Energy Partners LLC. - Shelby 23 4H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	N/A
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

### 3. Cementing Program

Casing String	# Sks	Wt. (lb/gal)	Yld (ft <sup>3</sup> /sack)	H <sub>2</sub> O (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface (Lead)	380	12.8	1.65	8.19	10:25	35/65 Poz C
Surface (Tail)	170	14.8	1.33	6.32	6:40	Class C Cement, Accelerator
Production (Lead)	265	11.5	2.63	9.7	N/A	50/50 Poz C
Production (Tail)	1225	14.2	1.38	6.686	N/A	50/50 Poz C

Casing String	Top (ft)	Bottom (ft)	% Excess
Surface (Lead)	0	950	100%
Surface (Tail)	950	1200	165%
Production (Lead)	0	1640	0%
Production (Tail)	1640	8517	50%

## Spur Energy Partners LLC. - Shelby 23 4H

### 4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12.25" Hole	13-5/8"	3M	Annular	✓	70% of working pressure
		3M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
8.75" Hole	13-5/8"	3M	Annular	✓	70% of working pressure
		3M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		

\*Specify if additional ram is utilized.

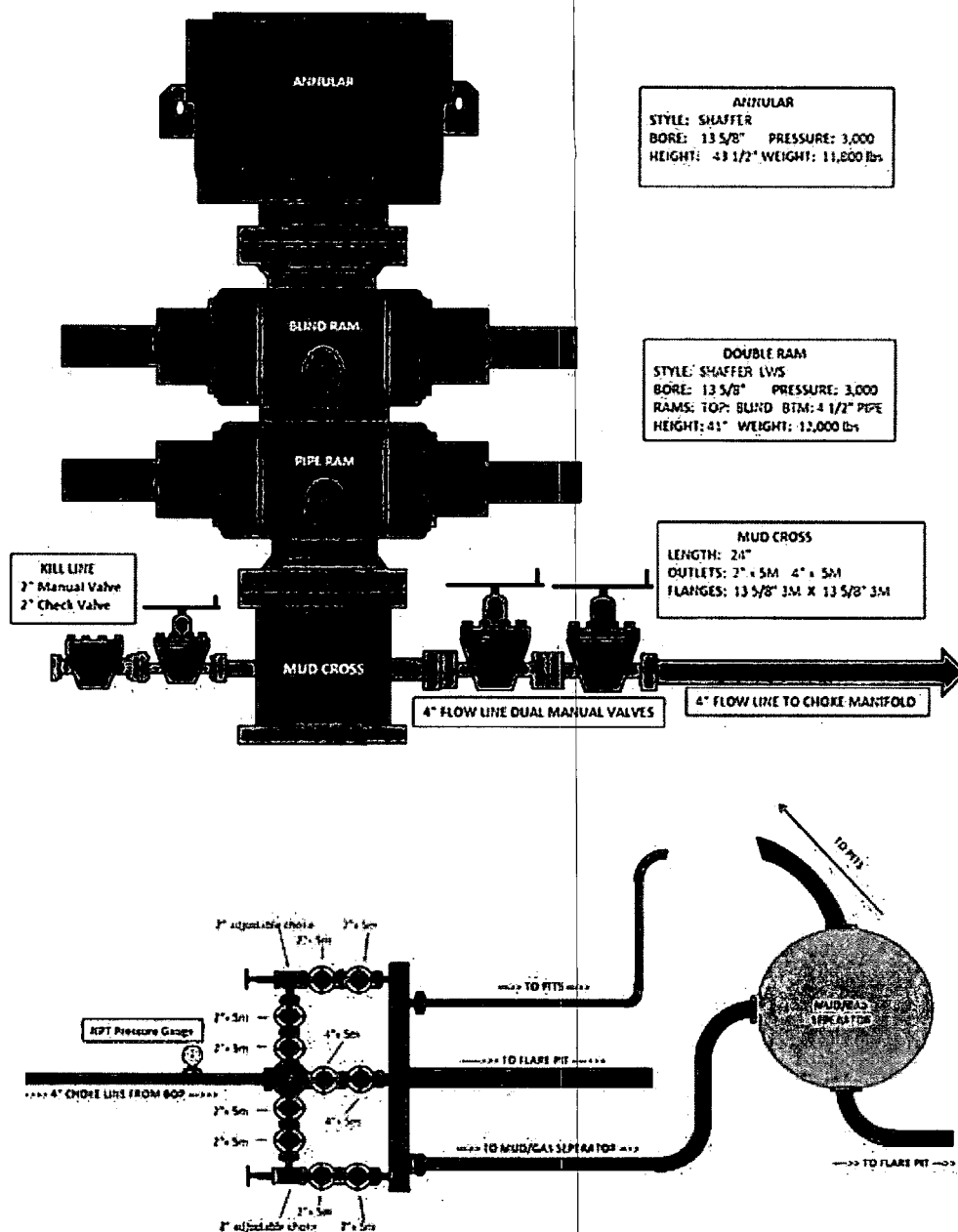
Spur will utilize a 5M annular with a 5M BOPE stack. The BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.	
	Y	Are anchors required by manufacturer?
	A multibowl or a unionized multibowl wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. We will test the flange connection of the wellhead with a test port that is directly in the flange. We are proposing that we will run the wellhead through the rotary prior to cementing surface casing as discussed with the BLM on October 8, 2015. See attached schematics.	



**Spur Energy Partners LLC. - Shelby 23 4H**



The buffer tank and panic line will not be connected at any point during drilling operations.

Required safety valves, with appropriate wrenches and subs for the drill string being utilized, will be in the open position and accessible on the rig floor.

## Spur Energy Partners LLC. - Shelby 23 4H

### 5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	1200	Water-Based Mud	8.6-8.9	32-36	N/C
1200	8517	Water-Based Mud	8.6-8.9	32-36	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CACL2. Spur will use a closed mud system.

What will be used to monitor the loss or gain of fluid?	PVT/MD Totco/Visual Monitoring
---	--------------------------------

### 6. Logging and Testing Procedures

Logging, Coring and Testing:		
Yes	Will run GR from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.	
No	Logs are planned based on well control or offset log information.	
No	Drill stem test? If yes, explain	
No	Coring? If yes, explain	
Additional logs planned	Interval	
No	Resistivity	
No	Density	
No	CBL	
Yes	Mud log	SCP - TD
No	PEX	

### 7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	1238 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	102°F

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

## Spur Energy Partners LLC. - Shelby 23 4H

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

### 8. Other facets of operation

	Yes/No
Will the well be drilled with a walking/skidding operation? If yes, describe. <ul style="list-style-type: none"><li>We plan to drill the two well pad in batch by section: all surface sections, and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.</li></ul>	Yes
Will more than one drilling rig be used for drilling operations? If yes, describe.	No

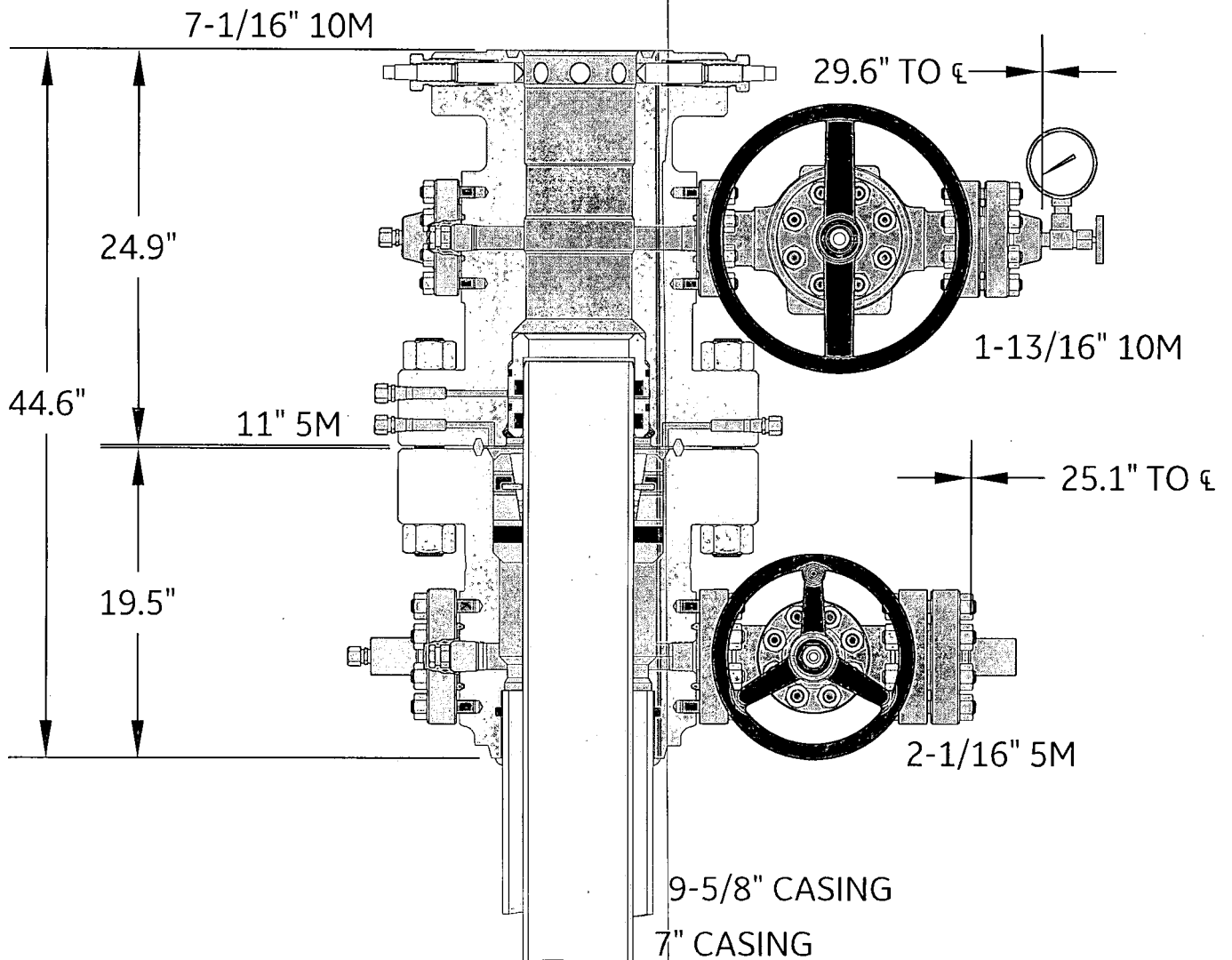
**Total estimated cuttings volume:** 808.4 bbls.

#### Attachments

- ☒ Directional Plan
- ☒ H2S Contingency Plan
- ☒ Rig Attachments
- ☒ Premium Connection Specs

### 9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Christopher Hollis	Drilling Manager	832-930-8629	713-380-7754



# Pressure Control

9-5/8" x 7" 10M CONVENTIONAL WELLHEAD  
ASSEMBLY, WITH T-EBS-F TUBING HEAD

**BAKER  
HUGHES**  
a GE company



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REVIEWED BY:

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Sht. 1 of 1

APPROVED BY:

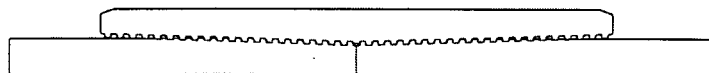
DATE:

20DEC19

SPUR ENERGY PARTNERS



Keeping You Connected.



SEMI  
**PREMIUMCONNECTIONS**  
FIELD TESTED. FIELD PROVEN.

## Precision Connections BK-HT

5.5 in. 20 lb/ft L-80 with 6.3 in. Coupling OD

### Pipe Body

Nominal OD	5.500	inches
Nominal Weight	20.00	lb/ft
Wall Thickness	0.361	inches
Plain End Weight	19.81	lb/ft
Drift	4.653	inches
Nominal ID	4.778	inches

Grade	L-80	
Min Yield	80,000	lbf/in <sup>2</sup>
Min Tensile	95,000	lbf/in <sup>2</sup>
Critical Section Area	5.828	in <sup>2</sup>
Pipe Body Yield Strength	466	klps
Min Internal Yield Pressure	9,190	psi
Collapse Pressure	8,830	psi

### Connection

Coupling OD	6.300	inches
Coupling Length	8.250	inches
Make Up Loss	4.125	inches
Critical Section Area	8.456	in <sup>2</sup>
Internal Pressure Rating	100%	
External Pressure Rating	100%	
Tension Efficiency	100%	
Connection Strength	466	klps
Compression Efficiency	100%	
Uniaxial Bend Rating	58.2	° / 100 ft
Min Make Up Torque	6,050	ft-lbs
Yield Torque	23,250	ft-lbs

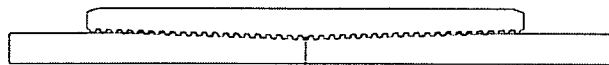
v1.2

7/26/2018

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Keeping You Connected.



SEMI  
**PREMIUMCONNECTIONS**  
FIELD TESTED. FIELD PROVEN.

## Torque Data Sheet - Precision Connections BK-HT

5.5 in. 20 lb/ft L-80 with 6.3 in. Coupling OD

Min Make Up Torque 6,050 ft-lbs

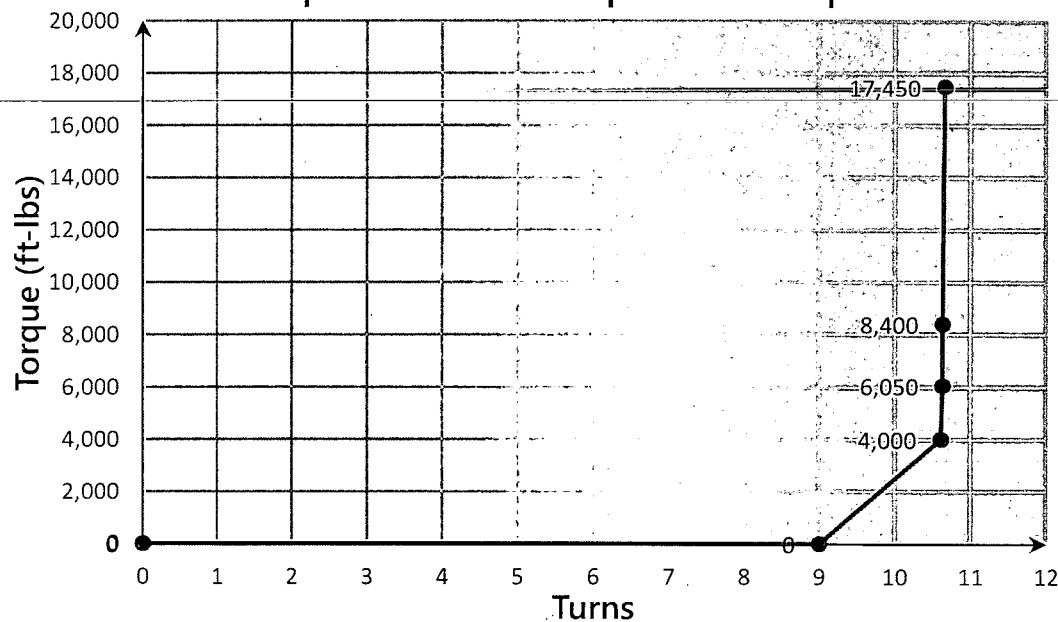
Max Make Up Torque 17,450 ft-lbs

Optimum Torque 8,400 ft-lbs

Max Operating Torque 19,800 ft-lbs

Yield Torque 23,250 ft-lbs

### Representative Torque Turn Graph



v1.2

7/26/2018



Company: Spur Energy Partners, LLC  
Project: Eddy County, NM (NAD 83 - NME)  
Site: Shelby 23  
Well: #4H  
Wellbore: OH  
Rig: Akita 57  
Design: Plan #1 / 9:17, January 15 2020

#### WELL DETAILS: #4H

RKB=18.5' @ 3433.90usft (Akita 57)

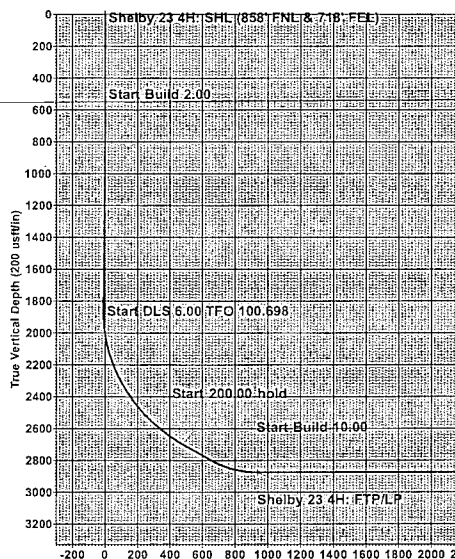
			3415.00		
+N-S	+E-W	Northing	Easting	Latitude	Longitude
0.00	0.00	595369.70	505674.10	32.636667	-104.449189

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00
3	1270.39	15.41	268.93	1261.14	-1.91	-102.94	2.00	-3.78
4	1894.30	15.41	268.93	1862.62	-4.99	-268.68	0.00	-9.87
5	2923.18	60.00	1.04	2698.24	485.39	-411.33	8.00	478.85
6	3123.18	60.00	1.04	2798.24	659.57	-408.19	0.00	652.05
7	3423.18	90.00	1.04	2875.00	946.00	-403.80	10.00	938.53
8	8590.63	90.00	1.04	2875.00	6112.60	-309.31	0.00	6105.98
9	8540.63	90.00	1.04	2875.00	6162.60	-308.40	0.00	6155.99

#### DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
Shelby 23 4H: SHL (858' FNL & 718' FEL)	0.00	0.00	0.00	595369.70	505674.10	32.636667	-104.449189
Shelby 23 4H: FTP/LP	2875.00	946.00	-403.80	596315.70	505271.10	32.639266	-104.450501
Shelby 23 4H: LTP	2875.00	6112.60	-309.30	601482.30	505364.80	32.653468	-104.450215
Shelby 23 4H: PBHL (50' FNL & 1125' FEL)	2875.00	6162.60	-308.40	601532.30	505365.70	32.653505	-104.450213



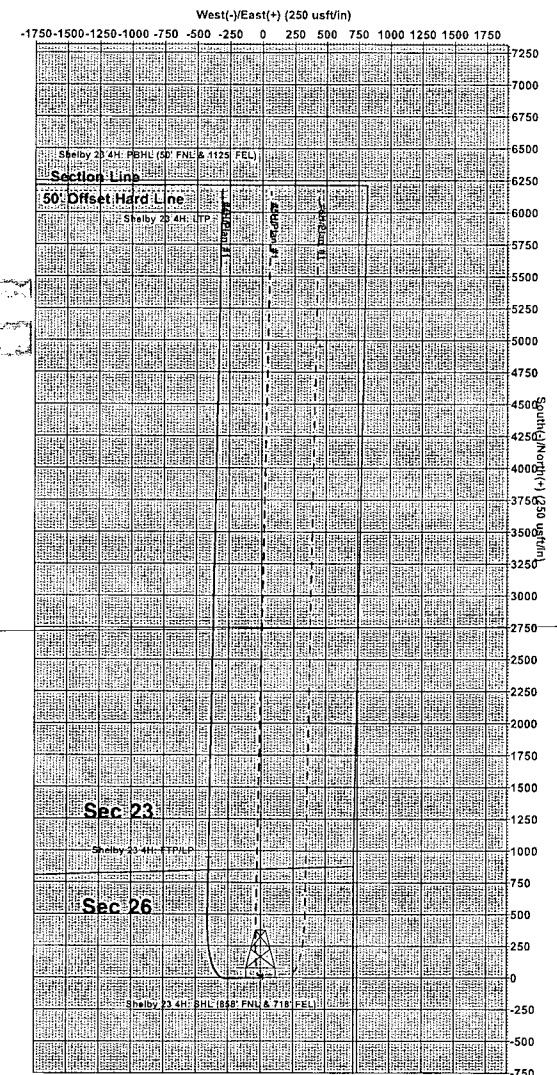
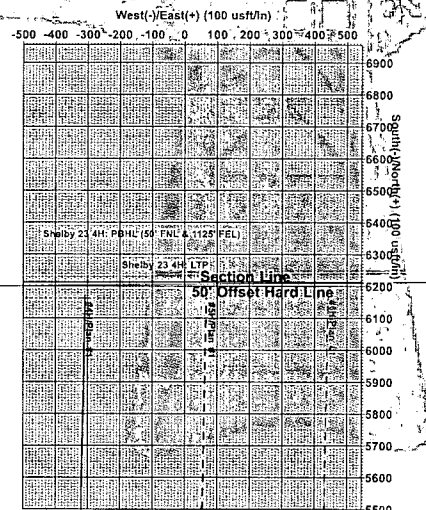
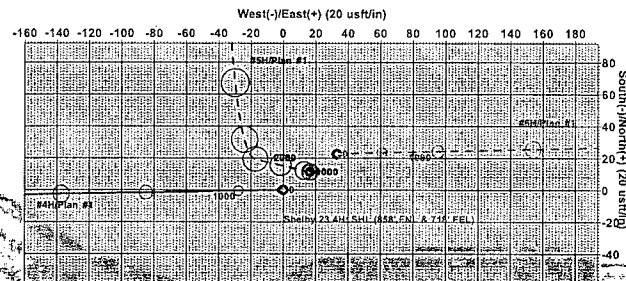
Azimuth to Grid North  
True North: 0.00°  
Magnetic North: 7.19°  
Magnetic Field  
Strength: 47622.7nT  
Dip Angle: 60.27°  
Date: 1/14/2020  
Model: IGRF2015

#### PROJECT DETAILS: Eddy County, NM (NAD 83 - NME)

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: New Mexico Eastern Zone  
System Datum: Mean Sea Level

**Disclaimer:**  
All Plan Details, boundary lines and offset well locations, survey data is provided by customer and subject to customer approval.

Vertical Section at 1.84° (200 usft/in)



Plan: Plan #1 (#4H/OH) Akita 57

Created By: Derek Stephens Date: 9:17, January 15 2020



## Spur Energy Partners, LLC

Eddy County, NM (NAD 83 - NME)

Shelby 23

#4H

OH

Plan: Plan #1

## Standard Plan With Toolface

15 January, 2020

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## Wellbenders

### Standard Plan With Toolface

<b>Company:</b>	Spur Energy Partners, LLC	<b>Local Co-ordinate Reference:</b>	Well #4H
<b>Project:</b>	Eddy County, NM (NAD 83 - NME)	<b>TVD Reference:</b>	RKB=18.9' @ 3433.90usft (Akita 57)
<b>Site:</b>	Shelby 23	<b>MD Reference:</b>	RKB=18.9' @ 3433.90usft (Akita 57)
<b>Well:</b>	#4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	WBDS_SQL_2

<b>Project</b>	Eddy County, NM (NAD 83 - NME)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site</b>	Shelby 23		
<b>Site Position:</b>	<b>Northing:</b>	594,944.60 usft	<b>Latitude:</b>
<b>From:</b>	<b>Easting:</b>	504,431.00 usft	<b>Longitude:</b>
<b>Position Uncertainty:</b>	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>
			-0.065 °

<b>Well</b>	#4H		
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Latitude:</b>
	<b>+E/-W</b>	0.00 usft	<b>Longitude:</b>
<b>Position Uncertainty</b>	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>
			3,415.00 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
			(°)	(°)	(nT)
	IGRF2015	1/14/2020	7.114	60.268	47,822.71969799

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	1.04

<b>Survey Tool Program</b>	Date 1/15/2020			
<b>From</b>	<b>To</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
(usft)	(usft)			
0.00	8,640.63	Plan #1 (OH)	MWD+IGRF	OWSG MWD + IGRF or WMM



## Wellbenders

### Standard Plan With Toolface

<b>Company:</b>	Spur Energy Partners, LLC	<b>Local Co-ordinate Reference:</b>	Well #4H
<b>Project:</b>	Eddy County, NM (NAD 83 - NME)	<b>TVD Reference:</b>	RKB=18.9' @ 3433.90usft (Akita 57)
<b>Site:</b>	Shelby 23	<b>MD Reference:</b>	RKB=18.9' @ 3433.90usft (Akita 57)
<b>Well:</b>	#4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	WBDS_SQL_2

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
600.00	2.00	268.93	599.98	-0.03	-1.74	-0.06	2.00	2.00	0.00	268.935	
700.00	4.00	268.93	699.84	-0.13	-6.98	-0.26	2.00	2.00	0.00	0.000	
800.00	6.00	268.93	799.45	-0.29	-15.69	-0.58	2.00	2.00	0.00	0.000	
900.00	8.00	268.93	898.70	-0.52	-27.88	-1.02	2.00	2.00	0.00	0.000	
1,000.00	10.00	268.93	997.47	-0.81	-43.52	-1.60	2.00	2.00	0.00	0.000	
1,100.00	12.00	268.93	1,095.62	-1.16	-62.59	-2.30	2.00	2.00	0.00	0.000	
1,200.00	14.00	268.93	1,193.06	-1.58	-85.08	-3.13	2.00	2.00	0.00	0.000	
1,270.39	15.41	268.93	1,261.14	-1.91	-102.94	-3.78	2.00	2.00	0.00	0.000	
1,300.00	15.41	268.93	1,289.68	-2.06	-110.81	-4.07	0.00	0.00	0.00	0.000	
1,400.00	15.41	268.93	1,386.09	-2.55	-137.37	-5.05	0.00	0.00	0.00	0.000	
1,500.00	15.41	268.93	1,482.50	-3.05	-163.94	-6.02	0.00	0.00	0.00	0.000	
1,600.00	15.41	268.93	1,578.90	-3.54	-190.50	-7.00	0.00	0.00	0.00	0.000	
1,700.00	15.41	268.93	1,675.31	-4.04	-217.07	-7.97	0.00	0.00	0.00	0.000	
1,800.00	15.41	268.93	1,771.71	-4.53	-243.63	-8.95	0.00	0.00	0.00	0.000	
1,894.30	15.41	268.93	1,862.62	-4.99	-268.68	-9.87	0.00	0.00	0.00	0.000	
1,900.00	15.35	270.21	1,868.12	-5.01	-270.19	-9.91	6.00	-1.05	22.28	100.698	
1,950.00	15.14	281.61	1,916.37	-3.67	-283.21	-8.81	6.00	-0.42	22.80	99.473	
2,000.00	15.50	292.89	1,964.61	0.25	-295.76	-5.12	6.00	0.73	22.57	88.471	
2,050.00	16.41	303.32	2,012.69	6.73	-307.82	1.14	6.00	1.80	20.85	77.584	
2,100.00	17.76	312.44	2,060.49	15.75	-319.36	9.95	6.00	2.71	18.25	67.558	
2,150.00	19.48	320.16	2,107.88	27.30	-330.33	21.30	6.00	3.43	15.43	58.836	



## Wellbenders

### Standard Plan With Toolface

Company:	Spur Energy Partners, LLC	Local Co-ordinate Reference:	Well #4H
Project:	Eddy County, NM (NAD 83 - NME)	TVD Reference:	RKB=18.9' @ 3433.90usft (Akita 57)
Site:	Shelby 23	MD Reference:	RKB=18.9' @ 3433.90usft (Akita 57)
Well:	#4H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	WBDS_SQL_2

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
2,200.00	21.47	326.58	2,154.72	41.35	-340.71	35.16	6.00	3.98	12.85	51.521
2,250.00	23.67	331.92	2,200.89	57.84	-350.48	51.47	6.00	4.39	10.67	45.498
2,300.00	26.01	336.37	2,246.27	76.75	-359.60	70.21	6.00	4.70	8.90	40.570
2,350.00	28.48	340.12	2,290.72	98.01	-368.05	91.31	6.00	4.93	7.49	36.530
2,400.00	31.03	343.30	2,334.13	121.56	-375.81	114.72	6.00	5.10	6.37	33.198
2,450.00	33.65	346.05	2,376.37	147.36	-382.85	140.38	6.00	5.24	5.48	30.430
2,500.00	36.32	348.43	2,417.34	175.31	-389.16	168.22	6.00	5.34	4.77	28.113
2,550.00	39.03	350.53	2,456.91	205.35	-394.72	198.15	6.00	5.42	4.20	26.157
2,600.00	41.77	352.40	2,494.99	237.39	-399.52	230.10	6.00	5.49	3.73	24.494
2,650.00	44.55	354.07	2,531.46	271.35	-403.53	263.98	6.00	5.55	3.35	23.072
2,700.00	47.34	355.59	2,566.23	307.13	-406.76	299.70	6.00	5.59	3.04	21.850
2,750.00	50.15	356.98	2,599.19	344.64	-409.18	337.16	6.00	5.63	2.77	20.794
2,800.00	52.98	358.26	2,630.27	383.77	-410.80	376.25	6.00	5.66	2.55	19.879
2,850.00	55.82	359.44	2,659.37	424.41	-411.61	416.87	6.00	5.68	2.37	19.085
2,900.00	58.67	0.55	2,686.42	466.46	-411.61	458.91	6.00	5.70	2.22	18.395
2,923.18	60.00	1.04	2,698.24	486.39	-411.33	478.85	6.00	5.72	2.12	17.795
3,000.00	60.00	1.04	2,736.65	552.91	-410.13	545.38	0.00	0.00	0.00	0.000
3,100.00	60.00	1.04	2,786.65	639.50	-408.56	631.98	0.00	0.00	0.00	0.000
3,123.18	60.00	1.04	2,798.24	659.57	-408.19	652.05	0.00	0.00	0.00	0.000
3,150.00	62.68	1.04	2,811.10	683.10	-407.77	675.59	10.00	10.00	0.00	0.000
3,200.00	67.68	1.04	2,832.08	728.46	-406.94	720.95	10.00	10.00	0.00	0.000
3,250.00	72.68	1.04	2,849.03	775.48	-406.09	767.98	10.00	10.00	0.00	0.000
3,300.00	77.68	1.04	2,861.81	823.79	-405.22	816.30	10.00	10.00	0.00	0.000
3,350.00	82.68	1.04	2,870.33	873.03	-404.32	865.55	10.00	10.00	0.00	0.000
3,400.00	87.68	1.04	2,874.53	922.83	-403.42	915.36	10.00	10.00	0.00	0.000
3,423.18	90.00	1.04	2,875.00	946.00	-403.00	938.53	10.00	10.00	0.00	0.000
3,500.00	90.00	1.04	2,875.00	1,022.81	-401.61	1,015.35	0.00	0.00	0.00	0.000



## Wellbenders

### Standard Plan With Toolface

<b>Company:</b>	Spur Energy Partners, LLC	<b>Local Co-ordinate Reference:</b>	Well #4H
<b>Project:</b>	Eddy County, NM (NAD 83 - NME)	<b>TVD Reference:</b>	RKB=18.9' @ 3433.90usft (Akita 57)
<b>Site:</b>	Shelby 23	<b>MD Reference:</b>	RKB=18.9' @ 3433.90usft (Akita 57)
<b>Well:</b>	#4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	WBDS_SQL_2

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)	
3,600.00	90.00	1.04	2,875.00	1,122.79	-399.79	1,115.35	0.00	0.00	0.00	0.000	
3,700.00	90.00	1.04	2,875.00	1,222.78	-397.98	1,215.35	0.00	0.00	0.00	0.000	
3,800.00	90.00	1.04	2,875.00	1,322.76	-396.17	1,315.35	0.00	0.00	0.00	0.000	
3,900.00	90.00	1.04	2,875.00	1,422.75	-394.35	1,415.35	0.00	0.00	0.00	0.000	
4,000.00	90.00	1.04	2,875.00	1,522.73	-392.54	1,515.35	0.00	0.00	0.00	0.000	
4,100.00	90.00	1.04	2,875.00	1,622.71	-390.73	1,615.35	0.00	0.00	0.00	0.000	
4,200.00	90.00	1.04	2,875.00	1,722.70	-388.92	1,715.35	0.00	0.00	0.00	0.000	
4,300.00	90.00	1.04	2,875.00	1,822.68	-387.10	1,815.35	0.00	0.00	0.00	0.000	
4,400.00	90.00	1.04	2,875.00	1,922.66	-385.29	1,915.35	0.00	0.00	0.00	0.000	
4,500.00	90.00	1.04	2,875.00	2,022.65	-383.48	2,015.35	0.00	0.00	0.00	0.000	
4,600.00	90.00	1.04	2,875.00	2,122.63	-381.66	2,115.35	0.00	0.00	0.00	0.000	
4,700.00	90.00	1.04	2,875.00	2,222.61	-379.85	2,215.35	0.00	0.00	0.00	0.000	
4,800.00	90.00	1.04	2,875.00	2,322.60	-378.04	2,315.35	0.00	0.00	0.00	0.000	
4,900.00	90.00	1.04	2,875.00	2,422.58	-376.22	2,415.35	0.00	0.00	0.00	0.000	
5,000.00	90.00	1.04	2,875.00	2,522.56	-374.41	2,515.35	0.00	0.00	0.00	0.000	
5,100.00	90.00	1.04	2,875.00	2,622.55	-372.60	2,615.35	0.00	0.00	0.00	0.000	
5,200.00	90.00	1.04	2,875.00	2,722.53	-370.78	2,715.35	0.00	0.00	0.00	0.000	
5,300.00	90.00	1.04	2,875.00	2,822.52	-368.97	2,815.35	0.00	0.00	0.00	0.000	
5,400.00	90.00	1.04	2,875.00	2,922.50	-367.16	2,915.35	0.00	0.00	0.00	0.000	
5,500.00	90.00	1.04	2,875.00	3,022.48	-365.34	3,015.35	0.00	0.00	0.00	0.000	
5,600.00	90.00	1.04	2,875.00	3,122.47	-363.53	3,115.35	0.00	0.00	0.00	0.000	
5,700.00	90.00	1.04	2,875.00	3,222.45	-361.72	3,215.35	0.00	0.00	0.00	0.000	
5,800.00	90.00	1.04	2,875.00	3,322.43	-359.90	3,315.35	0.00	0.00	0.00	0.000	
5,900.00	90.00	1.04	2,875.00	3,422.42	-358.09	3,415.35	0.00	0.00	0.00	0.000	
6,000.00	90.00	1.04	2,875.00	3,522.40	-356.28	3,515.35	0.00	0.00	0.00	0.000	
6,100.00	90.00	1.04	2,875.00	3,622.38	-354.47	3,615.35	0.00	0.00	0.00	0.000	
6,200.00	90.00	1.04	2,875.00	3,722.37	-352.65	3,715.35	0.00	0.00	0.00	0.000	



## Wellbenders

### Standard Plan With Toolface

<b>Company:</b>	Spur Energy Partners, LLC	<b>Local Co-ordinate Reference:</b>	Well #4H
<b>Project:</b>	Eddy County, NM (NAD 83 - NME)	<b>TVD Reference:</b>	RKB=18.9' @ 3433.90usft (Akita 57)
<b>Site:</b>	Shelby 23	<b>MD Reference:</b>	RKB=18.9' @ 3433.90usft (Akita 57)
<b>Well:</b>	#4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan #1	<b>Database:</b>	WBDS_SQL_2

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)	
6,300.00	90.00	1.04	2,875.00	3,822.35	-350.84	3,815.35	0.00	0.00	0.00	0.00	0.000
6,400.00	90.00	1.04	2,875.00	3,922.33	-349.03	3,915.35	0.00	0.00	0.00	0.00	0.000
6,500.00	90.00	1.04	2,875.00	4,022.32	-347.21	4,015.35	0.00	0.00	0.00	0.00	0.000
6,600.00	90.00	1.04	2,875.00	4,122.30	-345.40	4,115.35	0.00	0.00	0.00	0.00	0.000
6,700.00	90.00	1.04	2,875.00	4,222.28	-343.59	4,215.35	0.00	0.00	0.00	0.00	0.000
6,800.00	90.00	1.04	2,875.00	4,322.27	-341.77	4,315.35	0.00	0.00	0.00	0.00	0.000
6,900.00	90.00	1.04	2,875.00	4,422.25	-339.96	4,415.35	0.00	0.00	0.00	0.00	0.000
7,000.00	90.00	1.04	2,875.00	4,522.24	-338.15	4,515.35	0.00	0.00	0.00	0.00	0.000
7,100.00	90.00	1.04	2,875.00	4,622.22	-336.33	4,615.35	0.00	0.00	0.00	0.00	0.000
7,200.00	90.00	1.04	2,875.00	4,722.20	-334.52	4,715.35	0.00	0.00	0.00	0.00	0.000
7,300.00	90.00	1.04	2,875.00	4,822.19	-332.71	4,815.35	0.00	0.00	0.00	0.00	0.000
7,400.00	90.00	1.04	2,875.00	4,922.17	-330.89	4,915.35	0.00	0.00	0.00	0.00	0.000
7,500.00	90.00	1.04	2,875.00	5,022.15	-329.08	5,015.35	0.00	0.00	0.00	0.00	0.000
7,600.00	90.00	1.04	2,875.00	5,122.14	-327.27	5,115.35	0.00	0.00	0.00	0.00	0.000
7,700.00	90.00	1.04	2,875.00	5,222.12	-325.46	5,215.35	0.00	0.00	0.00	0.00	0.000
7,800.00	90.00	1.04	2,875.00	5,322.10	-323.64	5,315.35	0.00	0.00	0.00	0.00	0.000
7,900.00	90.00	1.04	2,875.00	5,422.09	-321.83	5,415.35	0.00	0.00	0.00	0.00	0.000
8,000.00	90.00	1.04	2,875.00	5,522.07	-320.02	5,515.35	0.00	0.00	0.00	0.00	0.000
8,100.00	90.00	1.04	2,875.00	5,622.05	-318.20	5,615.35	0.00	0.00	0.00	0.00	0.000
8,200.00	90.00	1.04	2,875.00	5,722.04	-316.39	5,715.35	0.00	0.00	0.00	0.00	0.000
8,300.00	90.00	1.04	2,875.00	5,822.02	-314.58	5,815.35	0.00	0.00	0.00	0.00	0.000
8,400.00	90.00	1.04	2,875.00	5,922.01	-312.76	5,915.35	0.00	0.00	0.00	0.00	0.000
8,500.00	90.00	1.04	2,875.00	6,021.99	-310.95	6,015.35	0.00	0.00	0.00	0.00	0.000
8,590.63	90.00	1.04	2,875.00	6,112.60	-309.31	6,105.98	0.00	0.00	0.00	0.00	0.000
8,600.00	90.00	1.04	2,875.00	6,121.97	-309.14	6,115.35	0.00	0.00	0.00	0.00	0.000
8,640.63	90.00	1.04	2,875.00	6,162.60	-308.40	6,155.99	0.00	0.00	0.00	0.00	0.000



**Wellbenders**  
Standard Plan With Toolface

<b>Company:</b> Spur Energy Partners, LLC	<b>Local Co-ordinate Reference:</b>	<b>Well #4H</b>
<b>Project:</b> Eddy County, NM (NAD 83 - NME)	<b>TVD Reference:</b>	RKB=18.9' @ 3433.90usft (Akita 57)
<b>Site:</b> Shelby 23	<b>MD Reference:</b>	RKB=18.9' @ 3433.90usft (Akita 57)
<b>Well:</b> #4H	<b>North Reference:</b>	Grid
<b>Wellbore:</b> OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b> Plan #1	<b>Database:</b>	WBDS_SQL_2

Checked By: _____	Approved By: _____	Date: _____
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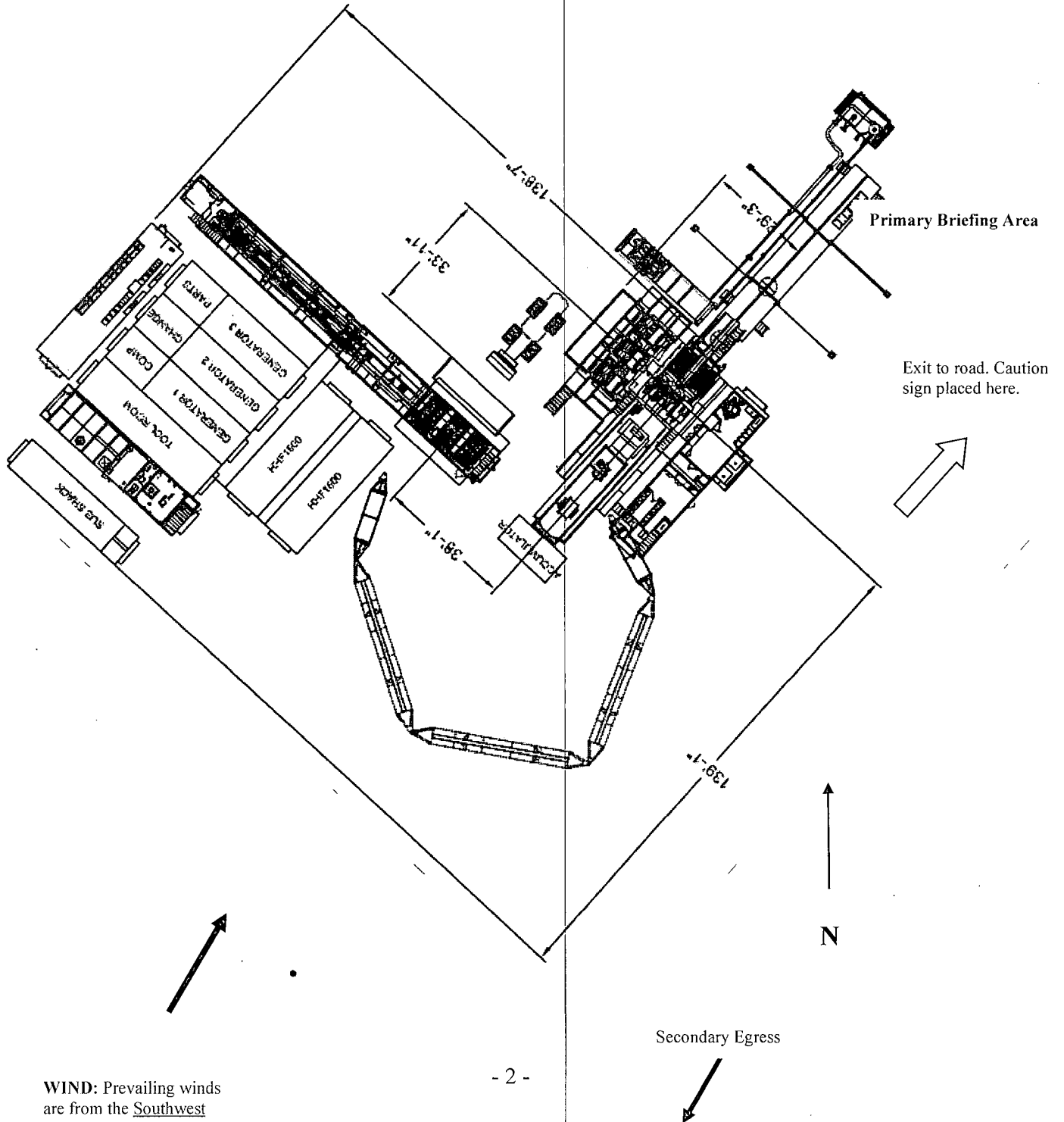
## **Permian Drilling Hydrogen Sulfide Drilling Operations Plan Shelby 23 4H**

Open drill site. No homes or buildings are near the proposed location.

### **1. Escape**

Personnel shall escape upwind of wellbore in the event of an emergency gas release. Escape can take place through the lease road on the Southeast side of the location. Personnel need to move to a safe distance and block the entrance to location. If the primary route is not an option due to the wind direction, then a secondary egress route should be taken.

Secondary Briefing Area







**Hydrogen Sulfide (H<sub>2</sub>S)**  
**Contingency Plan**  
**For**  
**Spur Energy Partners**  
**New Mexico Operations**

**Spur Energy Partners**  
**New Mexico Operations**  
**Hydrogen Sulfide Operation Plan**

**Introduction:**

H<sub>2</sub>S is a toxic, poisonous gas that could cause death or injury. The objective of this contingency plan is to provide an organized plan of action for alerting and protecting the public from H<sub>2</sub>S exposure in the event a potentially hazardous volume is accidentally released to the atmosphere. This plan should be activated immediately if any such release occurs. The Superintendent is responsible for initiating and carrying out the plan.

**Characteristics of H<sub>2</sub>S and SO<sub>2</sub>:**

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

**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.

**H<sub>2</sub>S Training**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H<sub>2</sub>S metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.

2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan.

Note: All H<sub>2</sub>S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H<sub>2</sub>S.

#### **Well Control Equipment**

- A. Flare Line installed
- B. Choke Manifold
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
- D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

#### **Protective equipment for essential personnel:**

30-minute SCBA units located in the doghouse and at briefing areas, as indicated on well site diagram. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

#### **H<sub>2</sub>S detection and monitoring equipment:**

Portable H<sub>2</sub>S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H<sub>2</sub>S levels of 20 PPM are reached. These units are usually capable of detecting SO<sub>2</sub>, which is a byproduct of burning H<sub>2</sub>S.

#### **Visual warning systems:**

- A. Wind direction indicators as shown on well site diagram
- B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

#### **Mud program:**

The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to surface. Proper mud weight, safe drilling practices and the use of H<sub>2</sub>S scavengers will minimize hazards when penetrating H<sub>2</sub>S bearing zones.

#### **Metallurgy:**

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H2S trim.
- B. All elastomers used for packing and seals shall be H2S trim.

**Communication:**

- A. Radio communications in company vehicles including cellular telephones and 2-way radio
- B. Land line (telephone) communications at Office

**Well testing:**

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

**Emergency Procedures**

Assumed 100 ppm Radius Of Exposure (ROE) = 3000'

100 ppm H2S concentration shall trigger activation of this plan.

In the event of a release of gas containing H2S, the first responder(s) must

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

**Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO2). Intentional ignition must be

coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

### **Contacting Authorities**

Company 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 and potential responders has been prepared for use during a release. Spur Energy Partners response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER).

### **Spur Energy Partners Company Call List**

Superintendent - Jerry Mathews	575-748-5234
Engineer – Michael Sliva	281-723-1473
Vice President Oper. - Todd Mucha	832-930-8515
HSE Manager – Mike Schoch	713-816-6350

### **Lea County Agency Call List - (575)**

#### **Hobbs**

State Police.....	392-5588
City Police.....	397-9265
Sheriff's Office .....	393-2515
Ambulance.....	911
Fire Department.....	397-9308
LEPC (Local Emergency Planning Committee) .....	393-2870
NMOCD .....	393-6161
US Bureau of Land Management.....	393-3612

### **Eddy County Agency Call List - (575)**

#### **Carlsbad**

State Police.....	885-3137
City Police.....	885-2111
Sheriff's Office .....	887-7551
Ambulance.....	911
Fire Department.....	885-2111
LEPC (Local Emergency Planning Committee) .....	887-3798
US Bureau of Land Management.....	887-6544
NM Emergency Response Commission (Santa Fe). (505) 476-9600	
24 HR.....	(505) 827-9126
National Emergency Response Center (Washington, DC) .....	(800) 424-8802

#### **Emergency Services**

Hungry Hock Environmental	(575)-393-3386
Flight For Life - Lubbock, TX	(806) 743-9911
Aerocare - Lubbock, TX	(806) 747-8923
Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
Lifeguard Air Med Svc. Albuquerque, NM	(575) 272-3115