ATS-14-439

OCD Hobbs

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DEC 03 20

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Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Split Estate

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
SHL\BHL: NM089425

6. If Indian, Allotee or Tribe Name

1a. Type of Work: [X] DRILL [ ] REENTER

7. If Unit or CA Agreement, Name and No.
NM071019X

1b. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone

8. Lease Name and Well No. (300545)
Red Hills Unit 28H

2. Name of Operator
Cimarex Energy C~ OF COLORADO (162683)

9. API Well No.
30025 - 42307

3a. Address
600 N. Marienfield St. Ste. 600 Midland Tx 79071

3b. Phone No. *(include area code)*
432-571-7800

10. Field and Pool, or Exploratory
Bone Spring Wildcat 97994

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At Surface: 140 FNL & 875 FWL
At proposed prod. Zone: 330 FSL & 440 FWL *Bone Spring*

11. Sec,. T. R. M. or Blk. and Survey and Area
4, 26S, 33E

14. Distance in miles and direction from nearest town or post office*
Approximately 30 miles NW of Jal, NM

12. County or Parish: Lea

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
140	NM089425=600.00 acres	160.00

18. Distance from proposed* location to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on File
30	Pilot Hole TD: N/A 14,496 MD 9,875 TVD	NM2575; NMB000835

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3354 GR	5/1/14	35 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

1. Well plat certified by a registered surveyor
2. A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands , the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator Certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name *(Printed/Typed)*	Date
Paula Brunson	Paula Brunson	3/20/14

Title: Regulatory Compliance

Approved By *(Signature)* Steve Caffey	Name (Printed/Typed)	Date NOV 25 2014
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.S. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

(Instructions on page 2)

Carlsbad Controlled Water Basin

12/3/14

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

DEC 04 2014

Operator - Land Owner Agreement

Company: **Cimarex Energy Co.**

Proposed Well: **Red Hills Unit 28H**

Federal Lease Number: **NM089425**

Please be advised that Cimarex Energy Co. has an agreement with the surface owner, listed below, concerning entry and surface restoration after completion of drilling operations at the above described well.

Dinwiddle Cattle Company, LLC
Tommy Dinwiddle
P.O. Box 374
Roswell, NM 88202
575-355-7610

After abandonment of the well, all pits will be filled and levelled and all equipment and trash will be removed from the well site. No other requirements were made concerning restoration of the well site.

9/12/14
Date

Hope Knauls
Signature Hope Knauls

Operator Certification Statement
Red Hills Unit 28H
Cimarex Energy Co.
UL: D, Sec. 4, 26S, 33E
Lea Co., NM

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Operator's Representative
Cimarex Energy Co. of Colorado
600 N. Marienfeld St., Ste. 600
Midland, TX 79701
Office Phone: (432) 571-7800

CERTIFICATION: I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this 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 the company I represent, 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.

Executed this 20 day of March, 2014

NAME: Paula Brunson

Paula Brunson
TITLE: Regulatory Compliance
ADDRESS: 600 N. Marienfield St. Ste. 600 Midland Tx 79071
TELEPHONE: 432-571-7800
EMAIL: pbrunson@cimarex.com
Field Representative: Same as above

Application to Drill
Red Hills Unit 28H
Cimarex Energy Co.
UL: D, Sec. 4, 26S, 33E
Lea Co., NM

In response to questions asked under Section II B of Bulletin NTL-6, the following information is provided for your consideration:

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1. Location: SHL 140 FNL & 875 FWL
BHL 330 FSL & 440 FWL

2. Elevation Above Sea Level: 3,354' GR

3. Geologic Name of Surface Formation: Quaternary Alluvium Deposits

4. Drilling Tools and Associated Equipment: Conventional rotary drilling rig using fluid as a circulating medium for solids removal

5. Proposed Drilling Depth: 14,496 MD 9,875 TVD Pilot Hole TD: N/A

6. Estimated Tops of Geological Markers:

Formation	Est Top	Bearing
Rustler	995	N/A
Salt	1140	N/A
Castille	3380	N/A
Lamar	4900	N/A
Bell Canyon	4945	N/A
Cherry Canyon	6190	N/A
Brushy Canyon	7485	N/A
Bone Spring	9045	Hydrocarbons
U. Avalon (Leonard)	9080	Hydrocarbons
L. Avalon	9680	Hydrocarbons

7. Possible Mineral Bearing Formation: Shown above

7A. OSE Ground Water Estimated Depth: 180'

8. Casing Program:

See COA

Name	Casing Depth From (ft)	Casing Setting Depth (ft) MD	Casing Setting Depth (ft)TVD	Open Hole Size (inches)	Casing Size (inches)	Casing Weight (lb/ft)	Casing Grade	Thread	Conditon	BHP (psig)	Anticipated Mud Weight (ppg)	Collapse SF at Full Evacuation(1.125)	Collapse SF at 1/3 Evacuation(1.125)	Burst SF (1.125)	Cumulative Air Weight	Cumulative Bouyed Weight (lbs)	Bouyant Tension SF (1.8)
Surface	0	~~1043~~ 1000	~~1045~~	17 1/2	13-3/8"	48.00	H-40	ST&C	New	478	8.8	1.55		3.62	50,160	43,421	7.42
Intermediate	0	~~4920~~ 4850	~~4920~~	12 1/4	9-5/8"	~~36~~ 40.00	J-55	LT&C	New	2583	10.1		1.17	1.36	177,120	149,808	3.02
Production	0	9398	9398	8 3/4	5-1/2"	17.00	L-80	LT&C	New	4496	9.2	1.40		1.72	167,875	144,295	2.34
Production	9398	14~~496~~ 496	9875	8 3/4	5-1/2"	17.00	L-80	BT&C	New	4724	9.2	1.33		1.64	8,109	6,970	56.96

Note: Operator may drill a 8-1/2" OH from end of curve to TD of the well. This is to reduce the need to ream the conventionally drilled curve to run a RSS assembly into the lateral.

Application to Drill
Red Hills Unit 28H
Cimarex Energy Co.
UL: D, Sec. 4, 26S, 33E
Lea Co., NM

8A. Casing Design and Casing Loading Assumptions:

Surface	Tension	A 1.8 design factor with effects of buoyancy: 8.80 ppg.
	Collapse	A 1.125 design factor with full internal evacuation and a collapse force equal to a 8.80 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.
Intermediate	Tension	A 1.8 design factor with effects of buoyancy: 10.10 ppg.
	Collapse	A 1.125 design factor evacuated 1/3 TVD of next casing string with a collapse force equal to a 10.10 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.
Production and\or Production Completion System	Tension	A 1.8 design factor with effects of buoyancy: 9.20 ppg.
	Collapse	A 1.125 design factor with full internal evacuation of next casing string with a collapse force equal to a 9.20 ppg mud gradient.
	Burst	A 1.125 design with a surface pressure equal to the fracture gradient at setting depth less gas gradient to surface.

9. Cementing Program:

Casing Type	Type	Sacks	Yield	Weight	Cubic Feet	Cement Blend
Surface	Lead	498	1.75	13.50	871	Class C + Bentonite + Calcium Chloride + LCM, 8.829 gps water
	Tail	136	1.34	14.80	181	Class C + LCM, 6.32 gps water
	TOC: 0		**45% Excess**			**Centralizers per Onshore Order 2.III.B.1f**
Intermediate	Lead	897	1.88	12.90	1686	35:65 (poz/C) + Salt + Bentonite + LCM + retarder, 9.65 gps water
	Tail	288	1.34	14.80	385	Class C + retarder + LCM, 6.32 gps water
	TOC: 0		**44% Excess**			
Production	Lead	545	2.40	11.90	1307	35:65 (poz/H) + salt + Sodium Metasilcate + Bentonite + Fluid Loss + Dispersant + LCM + Retarder, 13.80 gps water
See COA	Tail	1255	1.24	14.50	1556	50:50 (poz/H) + Bentonite + Salt + Fluid Loss + Dispersant + LCM + Retarder, 5.55 gps water
	TOC: ~~4720~~ 4650		**16% Excess**			**No centralizers planned in the lateral section. 1 every jt from EOC to KOP. 1 every 4th joint from KOP to 500' inside previous casing.**

Cement volumes will be adjusted depending on hole size

9a. Proposed Drilling Plan:

Pilot Hole TD: No Pilot KOP: 9,398' EOC: 10,148'

Set Surface and Intermediate casing strings. Drill production hole to KOP. Continue drillling lateral through the curve to TD. Run prod casing & cement.

10. Pressure Control Equipment:

Exhibit "E-1". A BOP consisting of two rams with blind rams and pipe rams, and one annular preventer. Below the surface casing, a 2M system will be used. Below the intermediate casing, a 3M system will be used. See attachments for BOP and choke manifold diagrams. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A Rotating head may be installed as needed. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP and associated equipment will be installed, used, maintained, and tested in a manner necessary to assure well control and shall be in place and operational prior to drilling the surface casing shoe. The Annular Preventer shall be functioned at least weekly. The pipe and blind rams will be operated each trip. No abnormal pressure or temperature is expected while drilling.

BOPS will be tested by an independent service company. The ram preventers, choke manifold, and safety valves will be tested as follows: On the surface casing, pressure tests will be made to 250 psi low and 2000 psi high. On the intermediate casing, pressure tests will be made to 250 psi low and 3000 psi high.

The Annular Preventer will be tested to 250 psi low and 1000 psi high on the surface casing, and 250 low and 1500 high on the intermediate casing.

Cimarex Energy Co. of Colorado requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached (please see Exhibit F, F-1, F-2, F-3). The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used.

Application to Drill
Red Hills Unit 28H
Cimarex Energy Co.
UL: D, Sec. 4, 26S, 33E
Lea Co., NM

11. Proposed Mud Circulating System:

Depth	Mud Weight	Visc	Fluid Loss	Type Mud
0' to 1045'	8.30 - 8.80	28	NC	FW Spud Mud
1045' to 4920'	9.60 - 10.10	30-32	NC	Brine Water
4920' to 14495'	8.70 - 9.20	30-32	NC	FW/Cut Brine

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

The Mud Monitoring System is an electronic Pason System satisfying requirements of Onshore Order 1.

12. Testing, Logging and Coring Program:

A. Mud logging program: 2 man unit from 4920 to TD
B. Electric logging program: CNL / LDT / CAL / GR, DLL /GR -- Inter. Csg to TD
CNL /GR -- Surf to Inter. Csg
C. No DSTs or cores are planned at this time
D.CBL w/ CCL from as far as gravity will let it fall to TOC

13. Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex does not anticipate that there will be enough H_2S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H_2S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H_2S Safety package on all wells, attached is an "H_2S Drilling Operations Plan." Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP: 4444 psi Estimated BHT: 159°

14. Construction and Drilling:

Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.
Drilling expected to take: 35 days.
If production casing is run an additional 30 days will be required to complete and construct surface facilities.

15. Other Facets of Operations:

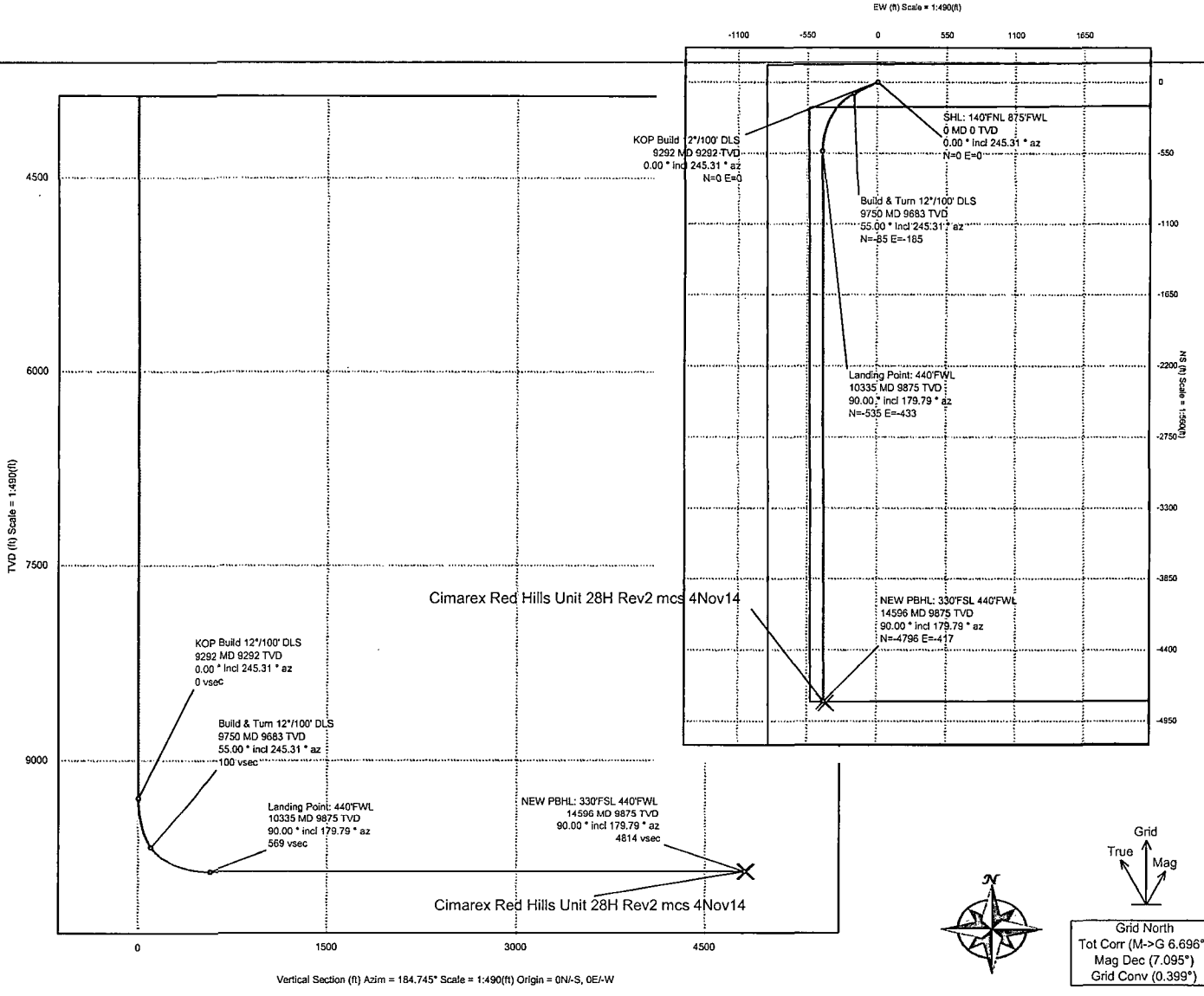
If production casing is run an additional 30 days will be required to complete and construct surface facilities.
L. Avalon pay will be perforated and stimulated.
The proposed well will be tested and potentialed as **Oil**

Cimarex

PATHFINDER
A Schlumberger Company

Borehole:	Well:	Field:	Structure:
Original Borehole	Red Hills Unit #28H	NM Lea County	TBD

Gravity & Magnetic Parameters				Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model: HDGM 2014	Dip: 59.834°	Date: 04-Nov-2014		Lat: N 32 4 45.86	Northing: 393432.8ftUS	Grid Conv: 0.3985°		Slot: Red Hills Unit #28H	TVD Ref: Ground Level(3354ft above MSL)		
MagDec: 7.095°	FS: 48206.684nT	Gravity FS: 998.686mgn (9.80665 Based)		Lon: W 103 34 58.65	Easting: 773747.4ftUS	Scale Fact: 0.99997096		Plan: Rev2 mcs 4Nov14			



Vertical Section (ft) Azim = 184.745° Scale = 1:490(ft) Origin = 0N/-S, 0E/-W

Grid North
Tot Corr (M->G 6.696°)
Mag Dec (7.095°)
Grid Conv (0.399°)

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL: 140'FNL 875'FWL	0.00	0.00	245.31	0.00	0.00	0.00	0.00	
KOP Build 12°/100' DLS	9291.55	0.00	245.31	9291.55	0.00	0.00	0.00	0.00
Build & Turn 12°/100' DLS	9749.88	55.00	245.31	9682.67	100.06	-85.04	-184.99	12.00
Landing Point: 440'FWL	10334.56	90.00	179.79	9875.00	569.11	-535.10	-433.31	12.00
NEW PBHL: 330'FSL 440'FWL	14595.81	90.00	179.79	9875.00	4814.41	-4796.32	-417.44	0.00

D E C	CONTROLLED
Plan ref	Cimarex Red Hills Unit 28H Rev2 mcs 4Nov14
Drawing ref	
Copy number	1 of 1
Date	05-Nov-2014

1	Originator	Craig Geaslen
2	DE Sign Off Authority	
3	D&M Line Manager	
4	Client	

Copy number for

Cimarex Red Hills Unit 28H Rev2 mcs 4Nov14 Proposal Geodetic Report

(Non-Def Plan)

Report Date:	November 05, 2014 - 02:50 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex	**Vertical Section Azimuth:**	184.745 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Red Hills Unit #28H / Red Hills Unit #28H	**TVD Reference Datum:**	Ground Level
Well:	Red Hills Unit #28H	**TVD Reference Elevation:**	3354.000 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3354.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.095 °
Survey Name:	Cimarex Red Hills Unit 28H Rev2 mcs 4Nov14	**Total Gravity Field Strength:**	998.6863mgn (9.80665 Based)
Survey Date:	March 17, 2014	**Gravity Model:**	DOX
Tort / AHD / DDI / ERD Ratio:	125.161 ° / 5006.791 ft / 5.967 / 0.507	**Total Magnetic Field Strength:**	48206.684 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.834 °
Location Lat / Long:	N 32° 4' 45.85595", W 103° 34' 58.64567"	**Declination Date:**	November 04, 2014
Location Grid N/E Y/X:	N 393432.800 ftUS, E 773747.400 ftUS	**Magnetic Declination Model:**	HDGM 2014
CRS Grid Convergence Angle:	0.3985 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99997096	**Grid Convergence Used:**	0.3985 °
Version / Patch:	2.7.1043.0	**Total Corr Mag North->Grid North:**	6.6965 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL: 140'FNL 875'FWL	0.00	0.00	245.31	0.00	-3354.00	0.00	0.00	0.00	N/A	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
KOP Build 12°/100' DLS	9291.55	0.00	245.31	9291.55	5937.55	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
Build & Turn 12°/100' DLS	9749.88	55.00	245.31	9682.67	6328.67	100.06	-85.04	-184.99	12.00	245.31	203.60	393347.76	773562.42	N 32 4 45.03	W 103 35 0.80
Landing Point: 440'FWL	10334.56	90.00	179.79	9875.00	6521.00	569.11	-535.10	-433.31	12.00	219.00	688.54	392897.72	773314.10	N 32 4 40.59	W 103 35 3.72
NEW PBHL: 330'FSL 440'FWL	14595.81	90.00	179.79	9875.00	6521.00	4814.41	-4796.32	-417.44	0.00	184.97	4814.45	388636.63	773329.97	N 32 3 58.42	W 103 35 3.88

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	9291.550	1/100.000	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Red Hills Unit 28H Rev2 mcs 4Nov14
	1	9291.550	14595.808	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Red Hills Unit 28H Rev2 mcs 4Nov14

Cimarex Red Hills Unit 28H Rev2 mcs 4Nov14 Proposal Geodetic Report - 100ft Interpolated

(Non-Def Plan)

Report Date:	November 05, 2014 - 02:51 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex	**Vertical Section Azimuth:**	184.745 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Red Hills Unit #28H / Red Hills Unit #28H	**TVD Reference Datum:**	Ground Level
Well:	Red Hills Unit #28H	**TVD Reference Elevation:**	3354.000 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3354.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.095 °
Survey Name:	Cimarex Red Hills Unit 28H Rev2 mcs 4Nov14	**Total Gravity Field Strength:**	998.6863mgn (9.80665 Based)
Survey Date:	March 17, 2014	**Gravity Model:**	DOX
Tort / AHD / DDI / ERD Ratio:	125.161 ° / 5006.791 ft / 5.967 / 0.507	**Total Magnetic Field Strength:**	48206.684 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.834 °
Location Lat / Long:	N 32° 4' 45.85595", W 103° 34' 58.64567"	**Declination Date:**	November 04, 2014
Location Grid N/E Y/X:	N 393432.800 ftUS, E 773747.400 ftUS	**Magnetic Declination Model:**	HDGM 2014
CRS Grid Convergence Angle:	0.3985 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99997096	**Grid Convergence Used:**	0.3985 °
Version / Patch:	2.7.1043.0	**Total Corr Mag North->Grid North:**	6.6965 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL: 140'FNL 875'FWL	0.00	0.00	245.31	0.00	-3354.00	0.00	0.00	0.00	N/A	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	100.00	0.00	245.31	100.00	-3254.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	200.00	0.00	245.31	200.00	-3154.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	300.00	0.00	245.31	300.00	-3054.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	400.00	0.00	245.31	400.00	-2954.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	500.00	0.00	245.31	500.00	-2854.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	600.00	0.00	245.31	600.00	-2754.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	700.00	0.00	245.31	700.00	-2654.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	800.00	0.00	245.31	800.00	-2554.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	900.00	0.00	245.31	900.00	-2454.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	1000.00	0.00	245.31	1000.00	-2354.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	1100.00	0.00	245.31	1100.00	-2254.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	1200.00	0.00	245.31	1200.00	-2154.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	1300.00	0.00	245.31	1300.00	-2054.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	1400.00	0.00	245.31	1400.00	-1954.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	1500.00	0.00	245.31	1500.00	-1854.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	1600.00	0.00	245.31	1600.00	-1754.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	1700.00	0.00	245.31	1700.00	-1654.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	1800.00	0.00	245.31	1800.00	-1554.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	1900.00	0.00	245.31	1900.00	-1454.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	2000.00	0.00	245.31	2000.00	-1354.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	2100.00	0.00	245.31	2100.00	-1254.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	2200.00	0.00	245.31	2200.00	-1154.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	2300.00	0.00	245.31	2300.00	-1054.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	2400.00	0.00	245.31	2400.00	-954.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	2500.00	0.00	245.31	2500.00	-854.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	2600.00	0.00	245.31	2600.00	-754.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	2700.00	0.00	245.31	2700.00	-654.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	2800.00	0.00	245.31	2800.00	-554.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	2900.00	0.00	245.31	2900.00	-454.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	3000.00	0.00	245.31	3000.00	-354.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	3100.00	0.00	245.31	3100.00	-254.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	3200.00	0.00	245.31	3200.00	-154.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	3300.00	0.00	245.31	3300.00	-54.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	3400.00	0.00	245.31	3400.00	46.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	3500.00	0.00	245.31	3500.00	146.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	3600.00	0.00	245.31	3600.00	246.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	3700.00	0.00	245.31	3700.00	346.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	3800.00	0.00	245.31	3800.00	446.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	3900.00	0.00	245.31	3900.00	546.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	4000.00	0.00	245.31	4000.00	646.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	4100.00	0.00	245.31	4100.00	746.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	4200.00	0.00	245.31	4200.00	846.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	4300.00	0.00	245.31	4300.00	946.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	4400.00	0.00	245.31	4400.00	1046.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	4500.00	0.00	245.31	4500.00	1146.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	4600.00	0.00	245.31	4600.00	1246.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	4700.00	0.00	245.31	4700.00	1346.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	4800.00	0.00	245.31	4800.00	1446.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	4900.00	0.00	245.31	4900.00	1546.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	5000.00	0.00	245.31	5000.00	1646.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	5100.00	0.00	245.31	5100.00	1746.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	5200.00	0.00	245.31	5200.00	1846.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	5300.00	0.00	245.31	5300.00	1946.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	5400.00	0.00	245.31	5400.00	2046.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	5500.00	0.00	245.31	5500.00	2146.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	5600.00	0.00	245.31	5600.00	2246.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	5700.00	0.00	245.31	5700.00	2346.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	5800.00	0.00	245.31	5800.00	2446.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	5900.00	0.00	245.31	5900.00	2546.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	6000.00	0.00	245.31	6000.00	2646.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	6100.00	0.00	245.31	6100.00	2746.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	6200.00	0.00	245.31	6200.00	2846.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	6300.00	0.00	245.31	6300.00	2946.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	6400.00	0.00	245.31	6400.00	3046.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	6500.00	0.00	245.31	6500.00	3146.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	6600.00	0.00	245.31	6600.00	3246.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	6700.00	0.00	245.31	6700.00	3346.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	6800.00	0.00	245.31	6800.00	3446.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	6900.00	0.00	245.31	6900.00	3546.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	7000.00	0.00	245.31	7000.00	3646.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	7100.00	0.00	245.31	7100.00	3746.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	7200.00	0.00	245.31	7200.00	3846.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	7300.00	0.00	245.31	7300.00	3946.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	7400.00	0.00	245.31	7400.00	4046.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	7500.00	0.00	245.31	7500.00	4146.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	7600.00	0.00	245.31	7600.00	4246.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	7700.00	0.00	245.31	7700.00	4346.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	7800.00	0.00	245.31	7800.00	4446.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	7900.00	0.00	245.31	7900.00	4546.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	8000.00	0.00	245.31	8000.00	4646.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	8100.00	0.00	245.31	8100.00	4746.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	8200.00	0.00	245.31	8200.00	4846.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	8300.00	0.00	245.31	8300.00	4946.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	8400.00	0.00	245.31	8400.00	5046.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	8500.00	0.00	245.31	8500.00	5146.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	8600.00	0.00	245.31	8600.00	5246.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	8700.00	0.00	245.31	8700.00	5346.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	8800.00	0.00	245.31	8800.00	5446.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	8900.00	0.00	245.31	8900.00	5546.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	9000.00	0.00	245.31	9000.00	5646.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	9100.00	0.00	245.31	9100.00	5746.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	9200.00	0.00	245.31	9200.00	5846.00	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
KOP Build 12°/100' DLS	9291.55	0.00	245.31	9291.55	5937.55	0.00	0.00	0.00	0.00	0.00	0.00	393432.80	773747.40	N 32 4 45.86	W 103 34 58.65
	9300.00	1.01	245.31	9300.00	5946.00	0.04	-0.03	-0.07	12.00	245.31	0.07	393432.77	773747.33	N 32 4 45.86	W 103 34 58.65
	9400.00	13.01	245.31	9399.07	6045.07	6.03	-5.12	-11.14	12.00	245.31	12.26	393427.68	773736.26	N 32 4 45.81	W 103 34 58.78
	9500.00	25.01	245.31	9493.44	6139.44	22.01	-18.71	-40.69	12.00	245.31	44.78	393414.09	773706.71	N 32 4 45.67	W 103 34 59.12
	9600.00	37.01	245.31	9578.99	6224.99	47.28	-40.19	-87.42	12.00	245.31	96.21	393392.61	773659.98	N 32 4 45.46	W 103 34 59.66
	9700.00	49.01	245.31	9651.97	6297.97	80.75	-68.63	-149.29	12.00	245.31	164.31	393364.17	773598.12	N 32 4 45.19	W 103 35 0.39
Build & Turn 12°/100' DLS	9749.88	55.00	245.31	9682.67	6328.67	100.06	-85.04	-184.99	12.00	245.31	203.60	393347.76	773562.42	N 32 4 45.03	W 103 35 0.80
	9800.00	56.72	238.35	9710.82	6356.82	122.59	-104.63	-221.51	12.00	244.72	244.97	393328.17	773525.90	N 32 4 44.84	W 103 35 1.23
	9900.00	61.22	225.35	9762.51	6408.51	180.88	-157.56	-288.51	12.00	241.36	328.73	393275.25	773458.90	N 32 4 44.32	W 103 35 2.01
	10000.00	66.85	213.55	9806.41	6452.41	254.71	-226.92	-345.30	12.00	236.69	413.19	393205.88	773402.11	N 32 4 43.63	W 103 35 2.68
	10100.00	73.28	202.77	9840.57	6486.57	340.85	-309.70	-389.40	12.00	231.50	497.54	393123.11	773358.01	N 32 4 42.82	W 103 35 3.20
	10200.00	80.24	192.71	9863.52	6509.52	435.53	-402.26	-418.88	12.00	226.16	580.75	393030.55	773328.53	N 32 4 41.90	W 103 35 3.55
	10300.00	87.47	183.08	9874.24	6520.24	534.63	-500.57	-432.45	12.00	220.82	661.50	392932.25	773314.96	N 32 4 40.93	W 103 35 3.71
Landing Point: 440'FWL	10334.56	90.00	179.79	9875.00	6521.00	569.11	-535.10	-433.31	12.00	219.00	688.54	392897.72	773314.10	N 32 4 40.59	W 103 35 3.72
	10400.00	90.00	179.79	9875.00	6521.00	634.31	-600.54	-433.07	0.00	215.80	740.40	392832.28	773314.34	N 32 4 39.94	W 103 35 3.73
	10500.00	90.00	179.79	9875.00	6521.00	733.93	-700.54	-432.70	0.00	211.70	823.40	392732.28	773314.72	N 32 4 38.95	W 103 35 3.73
	10600.00	90.00	179.79	9875.00	6521.00	833.56	-800.54	-432.33	0.00	208.37	909.82	392632.29	773315.09	N 32 4 37.96	W 103 35 3.73
	10700.00	90.00	179.79	9875.00	6521.00	933.19	-900.54	-431.95	0.00	205.63	998.78	392532.29	773315.46	N 32 4 36.97	W 103 35 3.74
	10800.00	90.00	179.79	9875.00	6521.00	1032.81	-1000.54	-431.58	0.00	203.33	1089.65	392432.29	773315.83	N 32 4 35.99	W 103 35 3.74
	10900.00	90.00	179.79	9875.00	6521.00	1132.44	-1100.54	-431.21	0.00	201.40	1182.00	392332.30	773316.20	N 32 4 35.00	W 103 35 3.75
	11000.00	90.00	179.79	9875.00	6521.00	1232.06	-1200.54	-430.84	0.00	199.74	1275.50	392232.30	773316.58	N 32 4 34.01	W 103 35 3.75
	11100.00	90.00	179.79	9875.00	6521.00	1331.69	-1300.54	-430.46	0.00	198.31	1369.92	392132.31	773316.95	N 32 4 33.02	W 103 35 3.75
	11200.00	90.00	179.79	9875.00	6521.00	1431.31	-1400.53	-430.09	0.00	197.07	1465.09	392032.31	773317.32	N 32 4 32.03	W 103 35 3.76
	11300.00	90.00	179.79	9875.00	6521.00	1530.94	-1500.53	-429.72	0.00	195.98	1560.85	391932.31	773317.69	N 32 4 31.04	W 103 35 3.76
	11400.00	90.00	179.79	9875.00	6521.00	1630.57	-1600.53	-429.35	0.00	195.02	1657.12	391832.32	773318.07	N 32 4 30.05	W 103 35 3.76
	11500.00	90.00	179.79	9875.00	6521.00	1730.19	-1700.53	-428.97	0.00	194.16	1753.80	391732.32	773318.44	N 32 4 29.06	W 103 35 3.77
	11600.00	90.00	179.79	9875.00	6521.00	1829.82	-1800.53	-428.60	0.00	193.39	1850.84	391632.32	773318.81	N 32 4 28.07	W 103 35 3.77
	11700.00	90.00	179.79	9875.00	6521.00	1929.44	-1900.53	-428.23	0.00	192.70	1948.18	391532.33	773319.18	N 32 4 27.08	W 103 35 3.78
	11800.00	90.00	179.79	9875.00	6521.00	2029.07	-2000.53	-427.86	0.00	192.07	2045.77	391432.33	773319.56	N 32 4 26.09	W 103 35 3.78
	11900.00	90.00	179.79	9875.00	6521.00	2128.69	-2100.53	-427.48	0.00	191.50	2143.59	391332.34	773319.93	N 32 4 25.10	W 103 35 3.78
	12000.00	90.00	179.79	9875.00	6521.00	2228.32	-2200.53	-427.11	0.00	190.98	2241.60	391232.34	773320.30	N 32 4 24.11	W 103 35 3.79
	12100.00	90.00	179.79	9875.00	6521.00	2327.95	-2300.53	-426.74	0.00	190.51	2339.77	391132.34	773320.67	N 32 4 23.12	W 103 35 3.79
	12200.00	90.00	179.79	9875.00	6521.00	2427.57	-2400.53	-426.37	0.00	190.07	2438.10	391032.35	773321.05	N 32 4 22.13	W 103 35 3.79
	12300.00	90.00	179.79	9875.00	6521.00	2527.20	-2500.53	-425.99	0.00	189.67	2536.55	390932.35	773321.42	N 32 4 21.14	W 103 35 3.80
	12400.00	90.00	179.79	9875.00	6521.00	2626.82	-2600.53	-425.62	0.00	189.30	2635.13	390832.35	773321.79	N 32 4 20.15	W 103 35 3.80
	12500.00	90.00	179.79	9875.00	6521.00	2726.45	-2700.53	-425.25	0.00	188.95	2733.80	390732.36	773322.16	N 32 4 19.16	W 103 35 3.81
	12600.00	90.00	179.79	9875.00	6521.00	2826.07	-2800.52	-424.88	0.00	188.63	2832.57	390632.36	773322.54	N 32 4 18.17	W 103 35 3.81
	12700.00	90.00	179.79	9875.00	6521.00	2925.70	-2900.52	-424.50	0.00	188.33	2931.42	390532.37	773322.91	N 32 4 17.18	W 103 35 3.81
	12800.00	90.00	179.79	9875.00	6521.00	3025.33	-3000.52	-424.13	0.00	188.05	3030.35	390432.37	773323.28	N 32 4 16.19	W 103 35 3.82
	12900.00	90.00	179.79	9875.00	6521.00	3124.95	-3100.52	-423.76	0.00	187.78	3129.35	390332.37	773323.65	N 32 4 15.20	W 103 35 3.82
	13000.00	90.00	179.79	9875.00	6521.00	3224.58	-3200.52	-423.39	0.00	187.54	3228.40	390232.38	773324.03	N 32 4 14.22	W 103 35 3.82
	13100.00	90.00	179.79	9875.00	6521.00	3324.20	-3300.52	-423.01	0.00	187.30	3327.52	390132.38	773324.40	N 32 4 13.23	W 103 35 3.83
	13200.00	90.00	179.79	9875.00	6521.00	3423.83	-3400.52	-422.64	0.00	187.08	3426.68	390032.38	773324.77	N 32 4 12.24	W 103 35 3.83
	13300.00	90.00	179.79	9875.00	6521.00	3523.45	-3500.52	-422.27	0.00	186.88	3525.90	389932.39	773325.14	N 32 4 11.25	W 103 35 3.84
	13400.00	90.00	179.79	9875.00	6521.00	3623.08	-3600.52	-421.90	0.00	186.68	3625.15	389832.39	773325.52	N 32 4 10.26	W 103 35 3.84
	13500.00	90.00	179.79	9875.00	6521.00	3722.71	-3700.52	-421.52	0.00	186.50	3724.45	389732.40	773325.89	N 32 4 9.27	W 103 35 3.84
	13600.00	90.00	179.79	9875.00	6521.00	3822.33	-3800.52	-421.15	0.00	186.32	3823.78	389632.40	773326.26	N 32 4 8.28	W 103 35 3.85
	13700.00	90.00	179.79	9875.00	6521.00	3921.96	-3900.52	-420.78	0.00	186.16	3923.15	389532.40	773326.63	N 32 4 7.29	W 103 35 3.85
	13800.00	90.00	179.79	9875.00	6521.00	4021.58	-4000.52	-420.41	0.00	186.00	4022.55	389432.41	773327.01	N 32 4 6.30	W 103 35 3.85
	13900.00	90.00	179.79	9875.00	6521.00	4121.21	-4100.52	-420.03	0.00	185.85	4121.97	389332.41	773327.38	N 32 4 5.31	W 103 35 3.86
	14000.00	90.00	179.79	9875.00	6521.00	4220.83	-4200.52	-419.66	0.00	185.71	4221.43	389232.42	773327.75	N 32 4 4.32	W 103 35 3.86
	14100.00	90.00	179.79	9875.00	6521.00	4320.46	-4300.51	-419.29	0.00	185.57	4320.91	389132.42	773328.12	N 32 4 3.33	W 103 35 3.87
	14200.00	90.00	179.79	9875.00	6521.00	4420.09	-4400.51	-418.92	0.00	185.44	4420.41	389032.42	773328.50	N 32 4 2.34	W 103 35 3.87
	14300.00	90.00	179.79	9875.00	6521.00	4519.71	-4500.51	-418.54	0.00	185.31	4519.93	388932.43	773328.87	N 32 4 1.35	W 103 35 3.87

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure Azimuth (°)	Closure (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	14400.00	90.00	179.79	9875.00	6521.00	4619.34	-4600.51	-418.17	0.00	185.19	4619.48	388832.43	773329.24	N 32 4 0.36	W 103 35 3.88
	14500.00	90.00	179.79	9875.00	6521.00	4718.96	-4700.51	-417.80	0.00	185.08	4719.04	388732.43	773329.61	N 32 3 59.37	W 103 35 3.88
NEW PBHL: 330'FSL 440'FWL	14595.81	90.00	179.79	9875.00	6521.00	4814.41	-4796.32	-417.44	0.00	184.97	4814.45	388636.63	773329.97	N 32 3 58.42	W 103 35 3.88

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	9291.550	1/100.000	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Red Hills Unit 28H Rev2 mcs 4Nov14
	1	9291.550	14595.808	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Red Hills Unit 28H Rev2 mcs 4Nov14

Drilling 12-1/4" hole
below 13 3/8" Casing

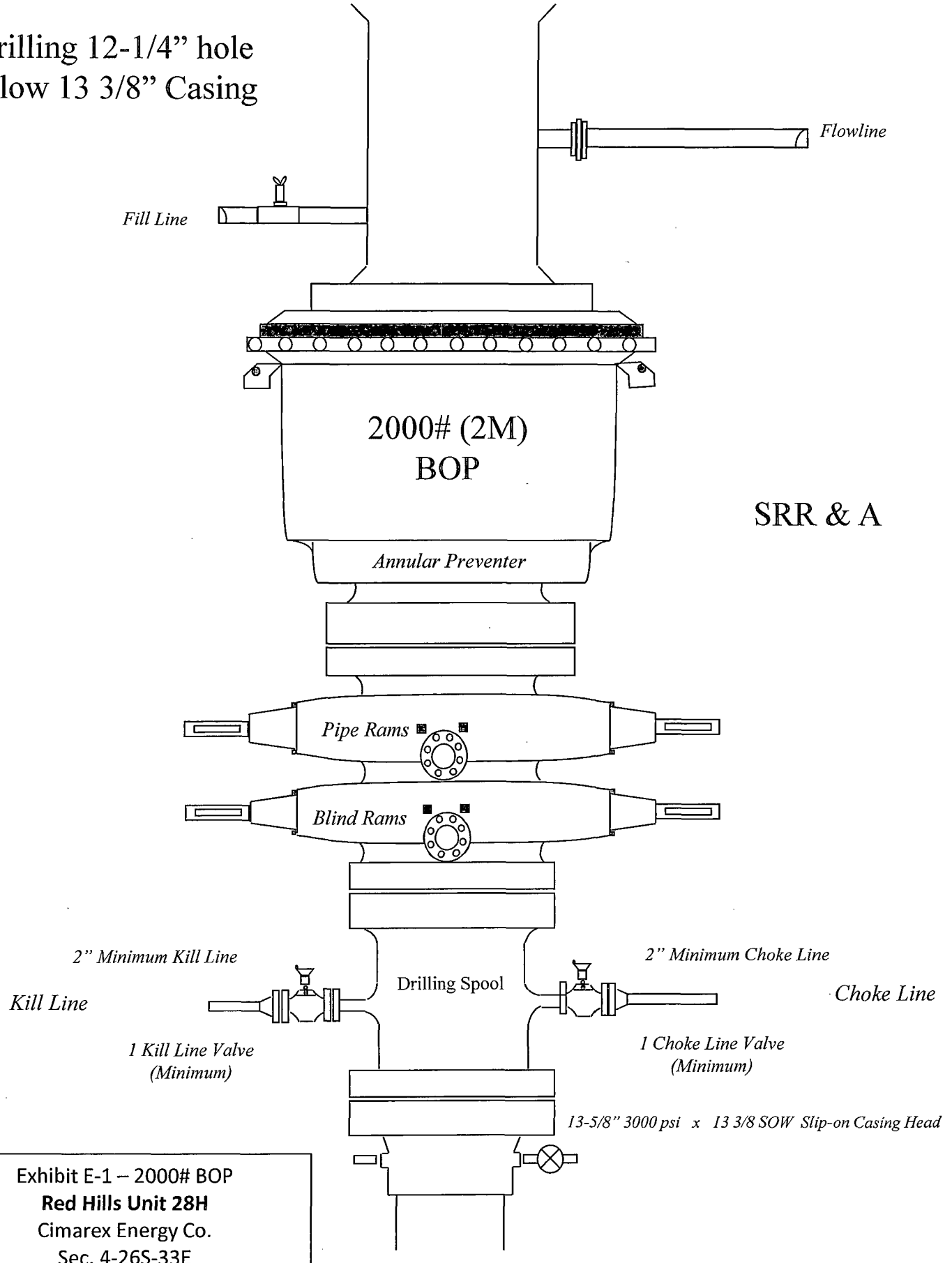
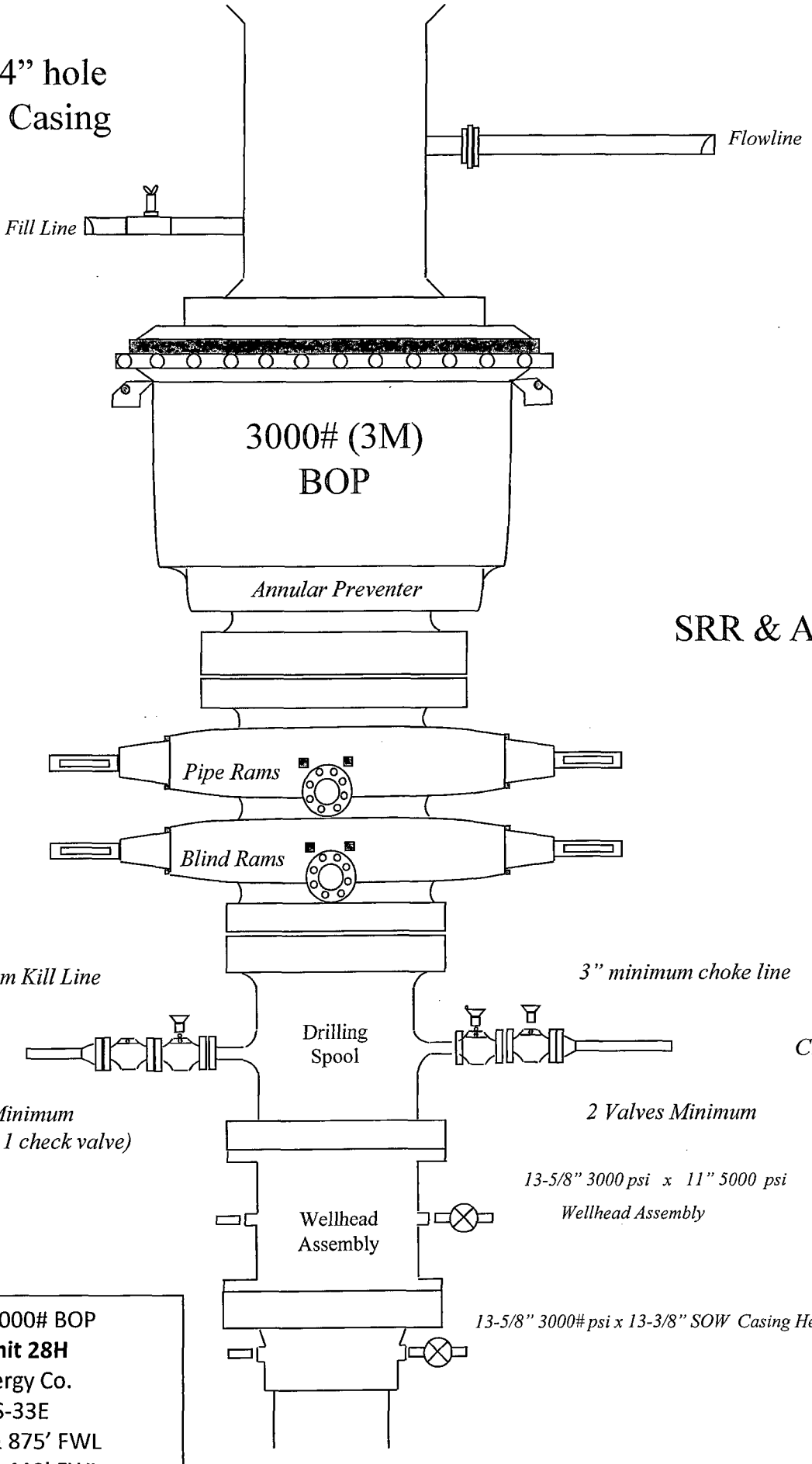


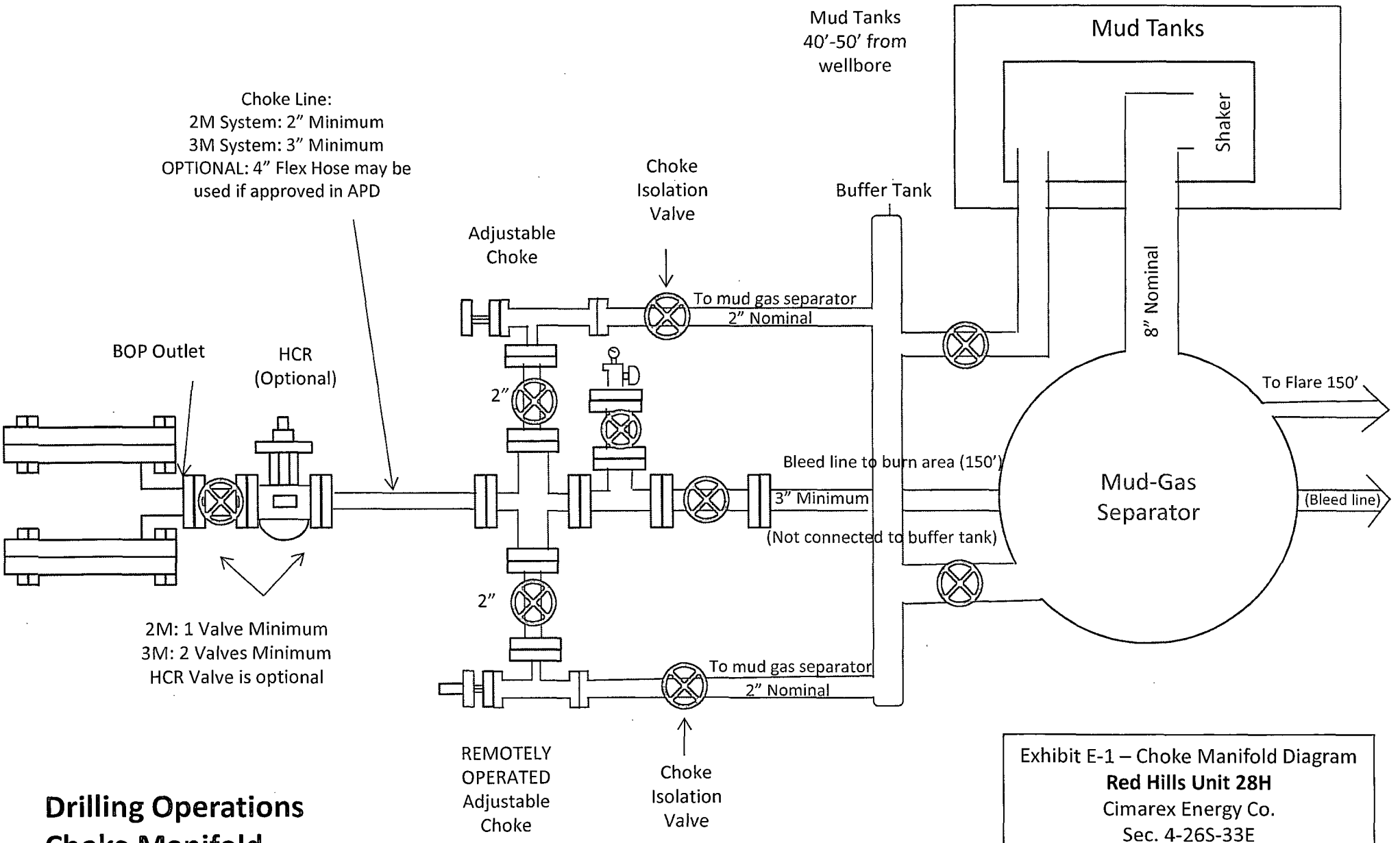
Exhibit E-1 – 2000# BOP
Red Hills Unit 28H
Cimarex Energy Co.
Sec. 4-26S-33E
SHL 140' FNL & 875' FWL
BHL 330' FSL & 440' FWL
Lea County, NM

Drilling 8-3/4" hole
below 9 5/8" Casing



SRR & A

Exhibit E-1 – 3000# BOP
Red Hills Unit 28H
Cimarex Energy Co.
Sec. 4-26S-33E
SHL 140' FNL & 875' FWL
BHL 330' FSL & 440' FWL
Lea County, NM



Drilling Operations
Choke Manifold
2M/3M Service

Exhibit E-1 – Choke Manifold Diagram
Red Hills Unit 28H
Cimarex Energy Co.
Sec. 4-26S-33E
SHL 140' FNL & 875' FWL
BHL 330' FSL & 440' FWL
Lea County, NM

Exhibit F-1 – Co-Flex Hose Hydrostatic Test
Red Hills Unit 28H
Cimarex Energy Co.
Sec. 4-26S-33E
SHL 140' FNL & 875' FWL
BHL 330' FSL & 440' FWL
Lea County, NM

Midwest Hose & Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT

Customer:	P.O. Number:
Oderco Inc	odyd-271

HOSE SPECIFICATIONS

Type: Stainless Steel Armor Choke & Kill Hose	Hose Length: 45'ft.
I.D. 4 INCHES	O.D. 9 INCHES

WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE
10,000 PSI	15,000 PSI	0 PSI

COUPLINGS

Stem Part No.	Ferrule No.
OKC OKC	OKC OKC
Type of Coupling: Swage-It	

PROCEDURE

Hose assembly pressure tested with water at ambient temperature.

TIME HELD AT TEST PRESSURE	ACTUAL BURST PRESSURE:
15 MIN.	0 PSI

Hose Assembly Serial Number:	Hose Serial Number:
79793	OKC

Comments:

Date:	Tested:	Approved:
3/8/2011	A. Jaime Sosa	

Midwest Hose & Specialty, Inc.

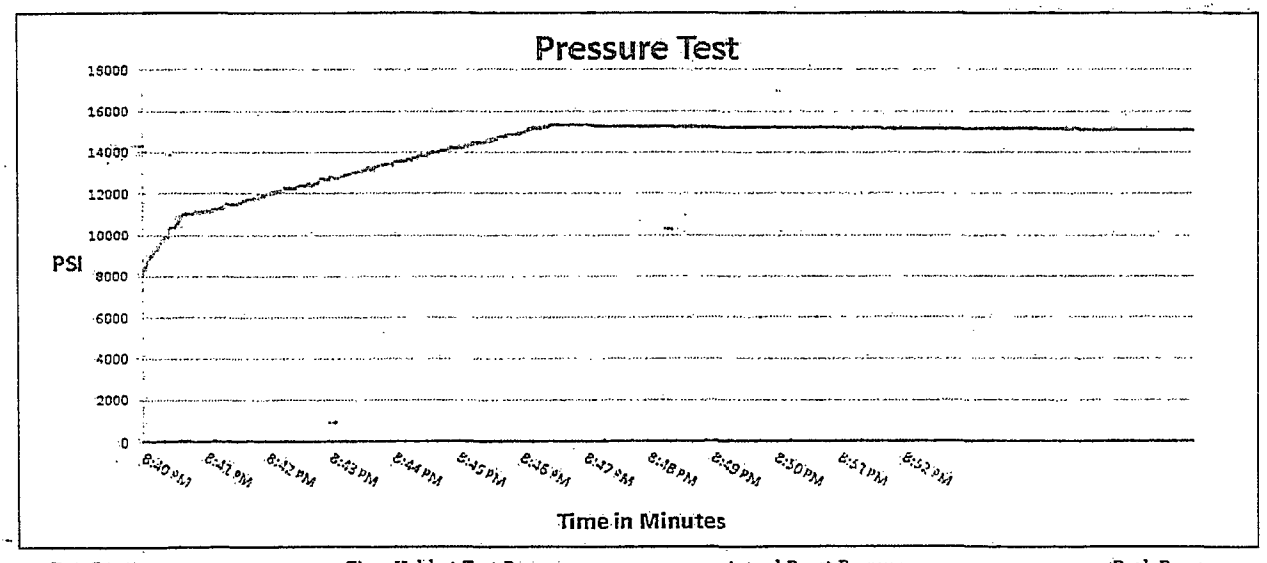
Internal Hydrostatic Test Graph

March 3, 2011

Customer: Houston

Pick Ticket #: 94260

Hose Specifications		Verification	
Hose Type	Length	Type of Fitting	Coupling Method
C & K	45'	4 1/16 10K	Swage
I.D.	O.D.	Die Size	Final O.D.
4"	6.09"	6.38"	6.25"
Working Pressure	Burst Pressure	Hose Serial #	Hose Assembly Serial #
10000 PSI	Standard Safety Multiplier Applies	5544	79793



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	11 Minutes		15483 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Zac Mcconnell*

Approved By: *Kim Thomas*

Exhibit F-1 – Co-Flex Hose Hydrostatic Test
Red Hills Unit 28H
Cimarex Energy Co.
Sec. 4-26S-33E
SHL 140' FNL & 875' FWL
BHL 330' FSL & 440' FWL
Lea County, NM

Exhibit F-2 – Co-Flex Hose
Red Hills Unit 28H
Cimarex Energy Co.
Sec. 4-26S-33E
SHL 140' FNL & 875' FWL
BHL 330' FSL & 440' FWL
Lea County, NM

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer: DEM	PO ODYD-271

SPECIFICATIONS

Sales Order 79793	Dated: 3/8/2011

We hereby cerify that the material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards

Supplier:
Midwest Hose & Specialty, Inc.
10640 Tanner Road
Houston, Texas 77041

Comments:

Approved:	Date: 3/8/2011

Midwest Hose & Specialty, Inc.

Exhibit F -3– Co-Flex Hose
Red Hills Unit 28H
Cimarex Energy Co.
Sec. 4-26S-33E
SHL 140' FNL & 875' FWL
BHL 330' FSL & 440' FWL
Lea County, NM

Specification Sheet
Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium componets.The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

Working Pressure:	5,000 or 10,000 psi working pressure
Test Pressure:	10,000 or 15,000 psi test pressure
Reinforcement:	Multiple steel cables
Cover:	Stainless Steel Armor
Inner Tube:	Petroleum resistant, Abrasion resistant
End Fitting:	API flanges, API male threads, threaded or butt weld hammer unions, unibolt and other special connections
Maximum Length:	110 Feet
ID:	2-1/2", 3", 3-1/2", 4"
Operating Temperature:	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

P.O. Box 96558 – 1421 S.E. 29th St. Oklahoma City, OK 73143 * (405) 670-6718 * Fax: (405) 670-6816

Exhibit F – Co-Flex Hose

Red Hills Unit 28H

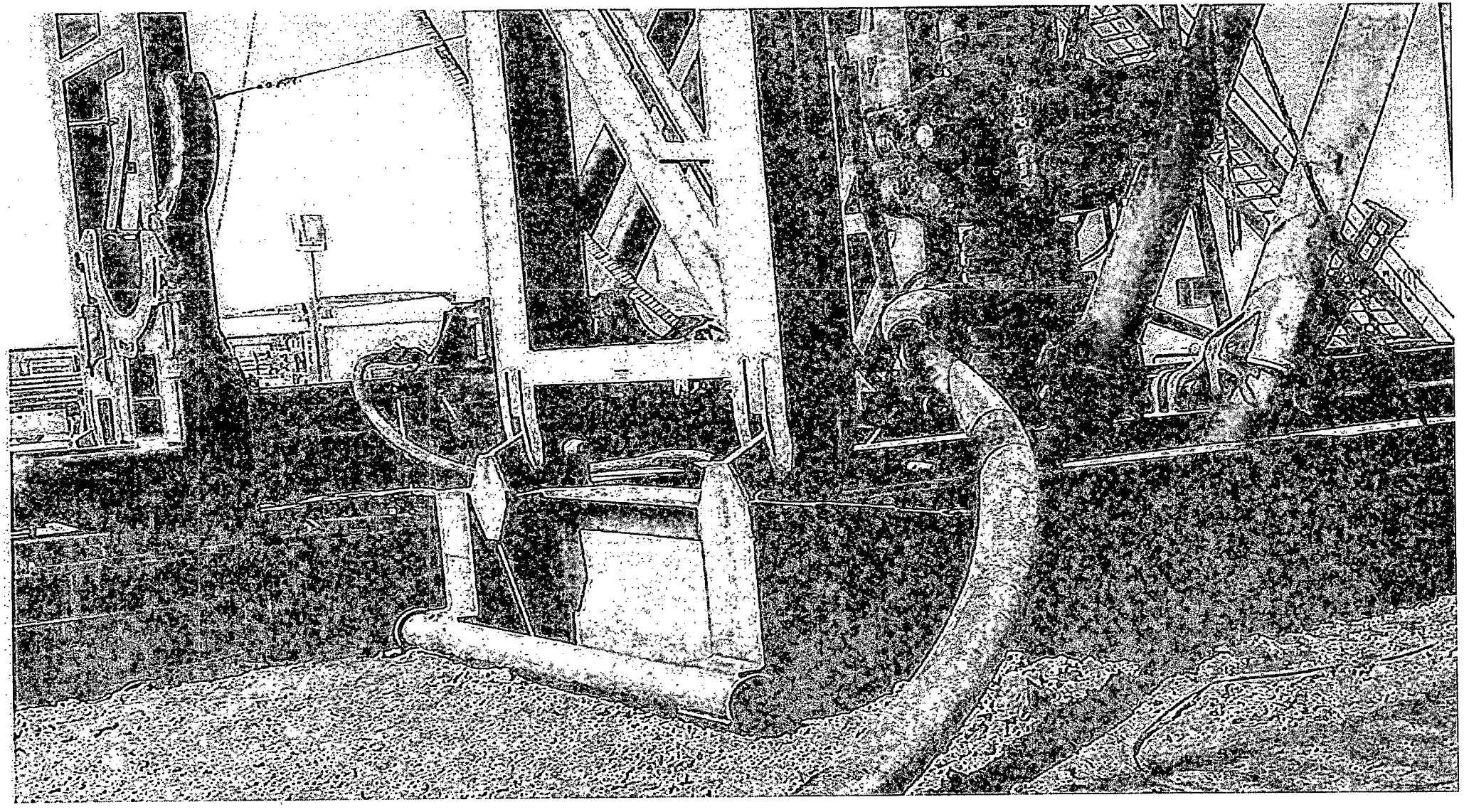
Cimarex Energy Co.

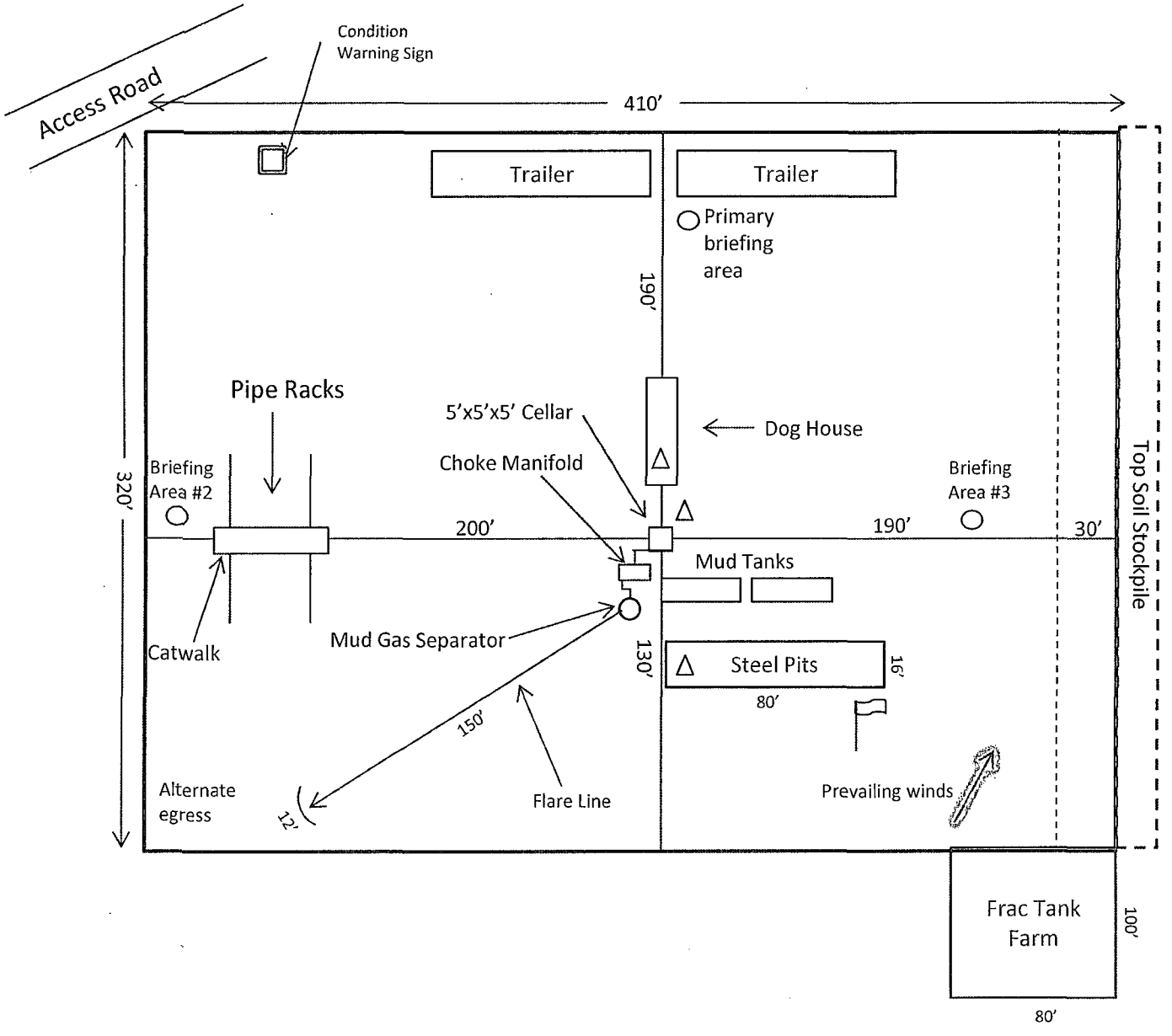
Sec. 4-26S-33E

SHL 140' FNL & 875' FWL

BHL 330' FSL & 440' FWL

Lea County, NM





Wind Direction Indicators
(wind sock or streamers)

• H2S Monitors
(alarms at bell nipple and shale shaker)

Briefing Areas

N

Exhibit D – Rig Layout Diagram
Red Hills Unit 28H
Cimarex Energy Co.
Sec. 4-26S-33E
SHL 140' FNL & 875' FWL
BHL 330' FSL & 440' FWL
Lea County, NM