

HOBBS OCD

ATS-12-863

EA-12-1192

SEP 21 2012

OCD Hobbs

Form 3160-3
(April 2004)

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

1a. Type of Work ☒ DRILL ☐ REENTER		5. Lease Serial No. NMLC 0 061873B	
1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Cimarex Energy Co. (215099)		7. If Unit or CA Agreement, Name and No.	
3a. Address 600 N. Marienfeld St. Ste. 600 Midland Tx 79701		8. Lease Name and Well No. (39462) Cotton Draw 9L Federal No. 2H	
3b. Phone No (include area code) 432-571-7800		9. API Well No. 30-025-40784	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 280 FSL & 2290 FWL At proposed prod Zone 330 FNL & 2260 FWL Horizontal Bone Spring test		10. Field and Pool, or Exploratory Wildcat, Bone Spring (96715) 605 5253209418	
14. Distance in miles and direction from nearest town or post office*		11. Sec, T, R, M or Blk. and Survey or Area 9-25S-32E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line if any) 280'		12. County or Parish Lea	
16. No of acres in lease NMLC 0 061873B 1759.31 acres		13. State NM	
17. Spacing Unit dedicated to this well E2W2 160 acres			
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1600'		20. BLM/BIA Bond No. on File CO-B000011	
19. Proposed Depth Pilot Hole TD 12100 MD 15194 TVD 10642			
21. Elevations (Show whether DF, KDB, RT, GL, etc) 3443' GR		22. Approximate date work will start* 08.01.12	
		23. Estimated duration 25-30 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 | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above) |
| 2. A Drilling Plan | 5. Operator Certification |
| 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) | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature <i>Zeno Farris</i>	Name (Printed/Typed) Zeno Farris	Date 06.19.12
----------------------------------	-------------------------------------	------------------

Title

Manager Operations Administration

Approved By (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed) <i>/s/ Don Peterson</i>	Date SEP 19 2012
---	--	---------------------

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 C 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

* (Instructions on page 2)

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL
Carlsbad Controlled Water Basin

SEP 26 2012

Application to Drill
Cotton Draw 9L Federal No. 2H
Cimarex Energy Co.
Unit N, Section 9
T25S-R32E, Lea County, NM

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

- 1 Location: SHL 280 FSL & 2290 FWL
BHL 330 FNL & 2260 FWL
- 2 Elevation above sea level: 3443' 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: MD 15194 TVD 10642
- 6 Estimated tops of geological markers:
- | | |
|------------------|--------|
| Rustler | 764' |
| Top of Salt | 888' |
| Castile | 3265' |
| Base of Salt | 4408' |
| Delaware Sands | 4632' |
| Cherry Canyon | 5596' |
| Brushy Canyon | 7468' |
| Bone Spring | 8526' |
| FBSS | 9632' |
| SBSS | 10211' |
| 3rd BS Carbonate | 11447' |
| Wolfcamp | 11911' |
- 7 Possible mineral bearing formation:
- | | |
|-------------|-----|
| Bone Spring | Oil |
| Delaware | Oil |

8 Proposed Mud Circulating System:

See COA

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 789'	8.4 - 8.6	28	NC	FW
789' to 4612'	10.0	30-32	NC	Brine
4612' to 10335'	8.4-9.0	28-29	NC	FW and brine, use hi-vis sweeps to keep hole clean
10335' to 15194'	8.5-9.5	27-45	NC	2% KCL

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.

Proposed drilling Plan

See COA-pilot hole

Drill 8 $\frac{3}{4}$ " pilot hole to 12100 and log. Pump 30bbls MUDPUSHII 12ppg, followed by 495 sks Type H Cement, D080 (Dispersant) 0.080 gal/sk, D177 (Retarder) 0.045gal/sk 17.5 ppg yield 0.94 & 0% Excess from 12100 to 10335. Set whipstock and kick off 8 $\frac{3}{4}$ " lateral @ 10335 and drill to TD @ 15194 MD, 10642 TVD. Run 5 $\frac{1}{2}$ " 17# P-110 LTC from 0-15194 and cement.

Application to Drill
Cotton Draw 9L Federal No. 2H
 Cimarex Energy Co.
 Unit N, Section 9
 T25S-R32E, Lea County, NM

9 Casing & Cementing Program:

See COA

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface 1	17 1/2"	0' to 789'	New 13 3/8"	48#	STC	H-40
Intermediate	12 1/4"	0' to 4612'	New 9 5/8"	40#	LTC	J-55
Production	8 3/4"	0' to 15194'	New 5 1/2"	17#	LTC	P-110

10 Cementing:

Surface Lead: 545SKS Halcem C + 4% Bentomite + 2% CaCl 13.5ppg 1.75 yield
 Tail: 420SKS Halcem C + 2% CaCl 14.2ppg 1.34 yield 100% Excess
TOC Surface **Centralizers per Onshorder 2.III.B.1.f**

Intermediate Lead: 1655SKS Econocem + 5% Salt + 5# Gilsonite 14.6ppg 1.54 yield
 Tail: 200SKS Halcem + 1% CaCl 14.8ppg 1.34 yield 70% Excess
TOC Surface

Production Lead: 1030SKS Econocem H + 0.5% CFR-3 + 0.1% HR-601 11.9ppg 2.44 yield
 Tail: 1305SKS Versacem H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 0.1% HR-601 14.5ppg 1.22 yield 25% Excess
TOC 3800' **Centralizers every 3rd joint in through the curve or legal location hardline to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.**

According to the NM State Enginner, depth to ground water is 200 feet. Fresh water zones will be protected by setting 13 3/8" casing at 789' and 9 5/8" casing at 4612' and cementing to surface. Hydrocarbon zones will be protected by setting 5 1/2" casing at 15194' and cementing to 3800'. *See COA*

<u>Collapse Factor</u>	<u>Burst Factor</u>	<u>Tension Factor</u>
1.125	1.125	1.6

11 Pressure control Equipment:

** See COA*
 Exhibit "E". A 13 3/8" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 4612'. 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. Mud gas seperator will be installed before drilling out of the surface casing.

BOP unit will be hydraulically operated. BOP will be nipped up and operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling.

See COA
 Before drilling out of the surface casing BOPs will be tested to 250 psi low and 3000 psi high by an independent service company. Hydril will be tested to 250 psi low and 1500 psi high. Before drilling out of the intermediate casing BOPs will be tested to 250 psi low and 5000 psi high. Hydril will be tested to 250 psi low and 2500 high.

Cimarex Energy Co. of Colorado (operator) requests a variance if Cactus 101 (rig name) is used to drill this well to use a co-flex line between the BOP and choke manifold.

Manufacturer: Midwest Hose & Specialty

Serial Number: 59473

Length: 35' Size: 4-1/16" Ends - flanges/clamps

WP rating: 10,000 psi Anchors required by manufacturer - Yes/No

Application to Drill
Cotton Draw 9L Federal No. 2H
Cimarex Energy Co.
Unit N, Section 9
T25S-R32E, Lea County, NM

12 Testing, Logging and Coring Program:

* See COA

- A. Mud logging program: 2 man unit from 4612 to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR Surface to TD
- C. No DSTs or cores are planned at this time.

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 H₂S from the surface to the Bone Spring formations to meet the BLM's minimum requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for the drilling and completion of this well. Since we have an H₂S Safety package on all wells, attached is an "H₂S 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 **5100 psi** Estimated BHT **138°**

14 Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.

Drilling expected to take 30-35 days

If production casing is run an additional 30 days will be required to complete and construct surface facilities.

15 Other Facets of Operations:

After running casing, cased hole gamma ray neutron collar logs will be run from total depth over possible pay intervals.

Bone Spring pay will be perforated and stimulated.

The proposed well will be tested and potentialized as **an oil well.**



Cimarex Energy Co.

Location: Lea County, New Mexico
Field: (Cotton Draw) Sec 9, T25S, R32E
Facility: Cotton Draw 9L Federal No. 2H

Slot: Slot #1
Well: No. 2H
Wellbore: No. 2H (PWB)



Well Profile Data

Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	359.182	0.00	0.00	0.00	0.00	0.00
KOP	10355.52	0.000	359.182	10355.52	0.00	0.00	0.00	0.00
EOB/SOH	10805.52	90.000	359.182	10642.00	286.45	-4.09	20.00	286.48
TD/PBHL	15193.83	90.000	359.182	10642.00	4674.32	-66.70	0.00	4674.79

Location Information

Facility Name			Grnd East (US ft)	Grnd North (US ft)	Latitude	Longitude
Cotton Draw 9L Federal No. 2H			743186.900	414714.000	32°08'18.411"N	103°40'52.340"W
Slot	Local N (ft)	Local E (ft)	Grnd East (US ft)	Grnd North (US ft)	Latitude	Longitude
Slot #1	0.00	0.00	743186.900	414714.000	32°08'18.411"N	103°40'52.340"W
Rig on Slot #1 (RT) to Mud line (At Slot: Slot #1)					20ft	
Mean Sea Level to Mud line (At Slot: Slot #1)					-3443ft	
Rig on Slot #1 (RT) to Mean Sea Level					3463ft	

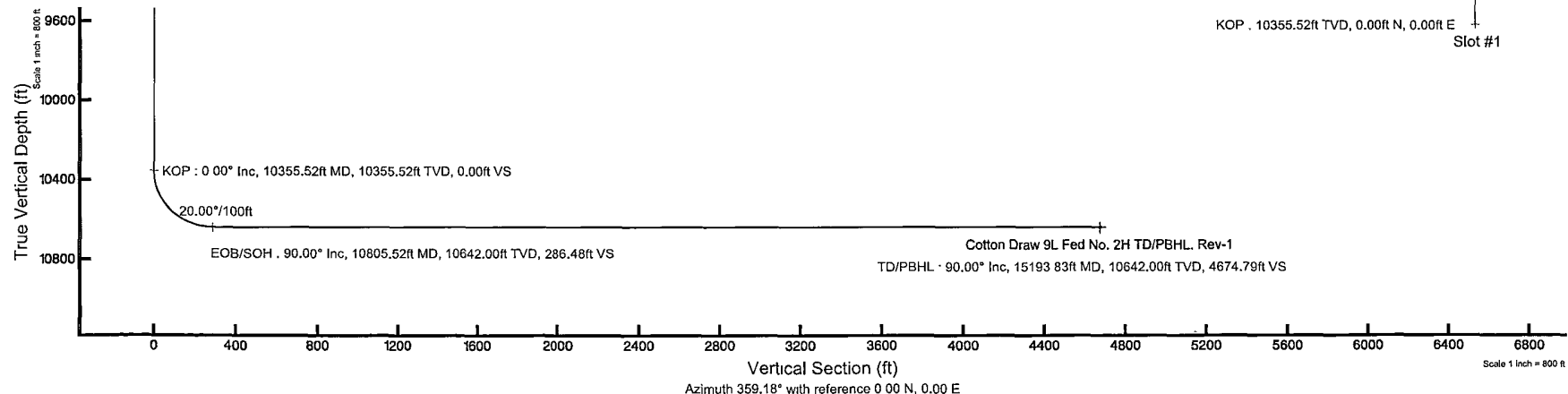
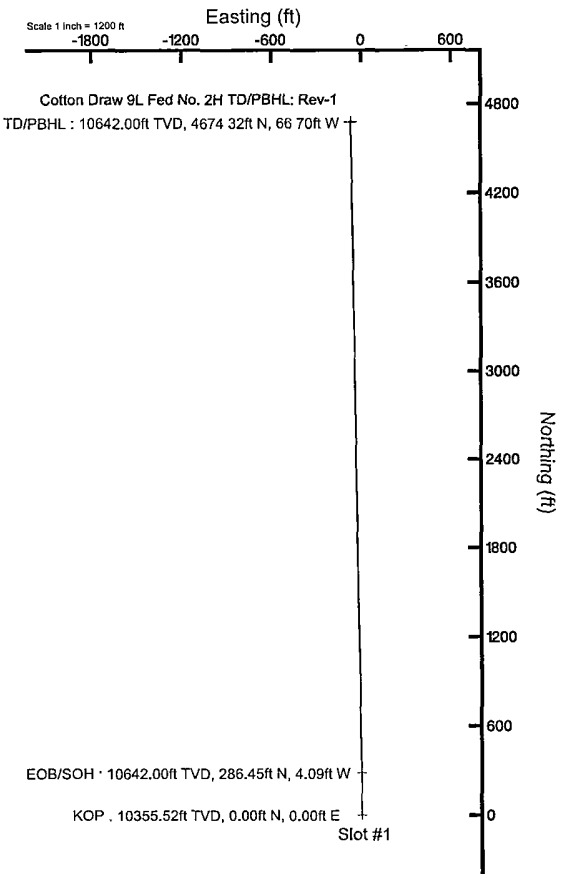
Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grnd East (US ft)	Grnd North (US ft)	Latitude	Longitude
Cotton Draw 9L Fed No 2H TD/PBHL Rev-1	15193.83	10642.00	4674.32	-66.70	743120.20	419388.10	32°09'04.668"N	103°40'52.786"W

Bottom Hole Location

MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grnd East (US ft)	Grnd North (US ft)	Latitude	Longitude
15193.83	90.000	359.182	10642.00	4674.32	-66.70	743120.20	419388.10	32°09'04.668"N	103°40'52.786"W

Plot reference wellpath is Rev-A.0	
True vertical depths are referenced to Rig on Slot #1 (RT)	Grnd System: NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on Slot #1 (RT)	North Reference: Grnd north
Rig on Slot #1 (RT) to Mean Sea Level: 3463 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #1): -3443 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: jemachvl on 6/13/2012



Rev-A.0



Planned Wellpath Report

Rev-A.0
Page 1 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	Slot #1
Area	Lea County, New Mexico	Well	No. 2H
Field	(Cotton Draw) Sec 9, T25S, R32E	Wellbore	No. 2H (PWB)
Facility	Cotton Draw 9L Federal No. 2H		

REPORT SETUP INFORMATION			
Projection System	NAD83 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Lemachrl
Scale	0.999956	Report Generated	6/13/2012 at 1:12:03 PM
Convergence at slot	0.35° East	Database/Source file	WA_Midland/No._2H_PWB_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W
Facility Reference Pt			-743186.90-	414714.00	32°08'18.411"N	103°40'52.340"W
Field Reference Pt			0.00	0.00	30°59'18.404"N	106°03'38.987"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on Slot #1 (RT) to Facility Vertical Datum	20.00ft
Horizontal Reference Pt	Slot	Rig on Slot #1 (RT) to Mean Sea Level	3463.00ft
Vertical Reference Pt	Rig on Slot #1 (RT)	Rig on Slot #1 (RT) to Mud Line at Slot (Slot #1)	20.00ft
MD Reference Pt	Rig on Slot #1 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.18°



Planned Wellpath Report

Rev-A.0

Page 2 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	Slot #1
Area	Lea County, New Mexico	Well	No. 2H
Field	(Cotton Draw) Sec 9, T25S, R32E	Wellbore	No. 2H (PWB)
Facility	Cotton Draw 9L Federal No. 2H		

WELLPATH DATA (155 stations) † = interpolated/extrapolated station													
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
0.00	0.000	359.182	0.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
100.00†	0.000	359.182	100.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
200.00†	0.000	359.182	200.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
300.00†	0.000	359.182	300.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
400.00†	0.000	359.182	400.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
500.00†	0.000	359.182	500.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
600.00†	0.000	359.182	600.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
700.00†	0.000	359.182	700.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
800.00†	0.000	359.182	800.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
900.00†	0.000	359.182	900.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
1000.00†	0.000	359.182	1000.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
1100.00†	0.000	359.182	1100.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
1200.00†	0.000	359.182	1200.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
1300.00†	0.000	359.182	1300.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
1400.00†	0.000	359.182	1400.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
1500.00†	0.000	359.182	1500.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
1600.00†	0.000	359.182	1600.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
1700.00†	0.000	359.182	1700.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
1800.00†	0.000	359.182	1800.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
1900.00†	0.000	359.182	1900.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
2000.00†	0.000	359.182	2000.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
2100.00†	0.000	359.182	2100.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
2200.00†	0.000	359.182	2200.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
2300.00†	0.000	359.182	2300.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
2400.00†	0.000	359.182	2400.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
2500.00†	0.000	359.182	2500.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
2600.00†	0.000	359.182	2600.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
2700.00†	0.000	359.182	2700.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
2800.00†	0.000	359.182	2800.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
2900.00†	0.000	359.182	2900.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00



Planned Wellpath Report

Rev-A.0

Page 3 of 7



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	Slot #1
Area	Lea County, New Mexico	Well	No. 2H
Field	(Cotton Draw) Sec 9, T25S, R32E	Wellbore	No. 2H (PWB)
Facility	Cotton Draw 9L Federal No. 2H		

WELLPATH DATA (155 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
3000.00†	0.000	359.182	3000.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
3100.00†	0.000	359.182	3100.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
3200.00†	0.000	359.182	3200.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
3300.00†	0.000	359.182	3300.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
3400.00†	0.000	359.182	3400.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
3500.00†	0.000	359.182	3500.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
3600.00†	0.000	359.182	3600.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
3700.00†	0.000	359.182	3700.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
3800.00†	0.000	359.182	3800.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
3900.00†	0.000	359.182	3900.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
4000.00†	0.000	359.182	4000.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
4100.00†	0.000	359.182	4100.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
4200.00†	0.000	359.182	4200.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
4300.00†	0.000	359.182	4300.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
4400.00†	0.000	359.182	4400.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
4500.00†	0.000	359.182	4500.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
4600.00†	0.000	359.182	4600.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
4700.00†	0.000	359.182	4700.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
4800.00†	0.000	359.182	4800.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
4900.00†	0.000	359.182	4900.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
5000.00†	0.000	359.182	5000.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
5100.00†	0.000	359.182	5100.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
5200.00†	0.000	359.182	5200.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
5300.00†	0.000	359.182	5300.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
5400.00†	0.000	359.182	5400.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
5500.00†	0.000	359.182	5500.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
5600.00†	0.000	359.182	5600.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
5700.00†	0.000	359.182	5700.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
5800.00†	0.000	359.182	5800.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
5900.00†	0.000	359.182	5900.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00



Planned Wellpath Report

Rev-A.0

Page 4 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	Slot #1
Area	Lea County, New Mexico	Well	No. 2H
Field	(Cotton Draw) Sec 9, T25S, R32E	Wellbore	No. 2H (PWB)
Facility	Cotton Draw 9L Federal No. 2H		

WELLPATH DATA (155 stations) † = interpolated/extrapolated station													
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
6000.00†	0.000	359.182	6000.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
6100.00†	0.000	359.182	6100.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
6200.00†	0.000	359.182	6200.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
6300.00†	0.000	359.182	6300.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
6400.00†	0.000	359.182	6400.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
6500.00†	0.000	359.182	6500.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
6600.00†	0.000	359.182	6600.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
6700.00†	0.000	359.182	6700.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
6800.00†	0.000	359.182	6800.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
6900.00†	0.000	359.182	6900.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
7000.00†	0.000	359.182	7000.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
7100.00†	0.000	359.182	7100.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
7200.00†	0.000	359.182	7200.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
7300.00†	0.000	359.182	7300.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
7400.00†	0.000	359.182	7400.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
7500.00†	0.000	359.182	7500.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
7600.00†	0.000	359.182	7600.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
7700.00†	0.000	359.182	7700.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
7800.00†	0.000	359.182	7800.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
7900.00†	0.000	359.182	7900.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
8000.00†	0.000	359.182	8000.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
8100.00†	0.000	359.182	8100.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
8200.00†	0.000	359.182	8200.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
8300.00†	0.000	359.182	8300.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
8400.00†	0.000	359.182	8400.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
8500.00†	0.000	359.182	8500.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
8600.00†	0.000	359.182	8600.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
8700.00†	0.000	359.182	8700.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
8800.00†	0.000	359.182	8800.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
8900.00†	0.000	359.182	8900.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00



Planned Wellpath Report

Rev-A.0

Page 5 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	Slot #1
Area	Lea County, New Mexico	Well	No. 2H
Field	(Cotton Draw) Sec 9, T25S, R32E	Wellbore	No. 2H (PWB)
Facility	Cotton Draw 9L Federal No. 2H		

WELLPATH DATA (155 stations) † = interpolated/extrapolated station													
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
9000.00†	0.000	359.182	9000.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
9100.00†	0.000	359.182	9100.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
9200.00†	0.000	359.182	9200.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
9300.00†	0.000	359.182	9300.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
9400.00†	0.000	359.182	9400.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
9500.00†	0.000	359.182	9500.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
9600.00†	0.000	359.182	9600.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
9700.00†	0.000	359.182	9700.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
9800.00†	0.000	359.182	9800.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
9900.00†	0.000	359.182	9900.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
10000.00†	0.000	359.182	10000.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
10100.00†	0.000	359.182	10100.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
10200.00†	0.000	359.182	10200.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
10300.00†	0.000	359.182	10300.00	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
10355.52	0.000	359.182	10355.52	0.00	0.00	0.00	743186.90	414714.00	32°08'18.411"N	103°40'52.340"W	0.00	0.000	0.00
10400.00†	8.896	359.182	10399.82	3.45	3.45	-0.05	743186.85	414717.45	32°08'18.446"N	103°40'52.340"W	3.45	359.182	20.00
10500.00†	28.896	359.182	10493.95	35.67	35.66	-0.51	743186.39	414749.66	32°08'18.764"N	103°40'52.343"W	35.67	359.182	20.00
10600.00†	48.896	359.182	10571.39	98.14	98.13	-1.40	743185.50	414812.12	32°08'19.383"N	103°40'52.349"W	98.14	359.182	20.00
10700.00†	68.896	359.182	10622.79	183.33	183.31	-2.62	743184.28	414897.30	32°08'20.226"N	103°40'52.357"W	183.33	359.182	20.00
10800.00†	88.896	359.182	10641.95	280.96	280.93	-4.01	743182.89	414994.92	32°08'21.192"N	103°40'52.367"W	280.96	359.182	20.00
10805.52	90.000	359.182	10642.00	286.48	286.45	-4.09	743182.81	415000.44	32°08'21.246"N	103°40'52.367"W	286.48	359.182	20.00
10900.00†	90.000	359.182	10642.00	380.96	380.92	-5.44	743181.46	415094.90	32°08'22.181"N	103°40'52.376"W	380.96	359.182	0.00
11000.00†	90.000	359.182	10642.00	480.96	480.91	-6.86	743180.04	415194.89	32°08'23.171"N	103°40'52.386"W	480.96	359.182	0.00
11100.00†	90.000	359.182	10642.00	580.96	580.90	-8.29	743178.61	415294.87	32°08'24.160"N	103°40'52.395"W	580.96	359.182	0.00
11200.00†	90.000	359.182	10642.00	680.96	680.89	-9.72	743177.18	415394.86	32°08'25.150"N	103°40'52.405"W	680.96	359.182	0.00
11300.00†	90.000	359.182	10642.00	780.96	780.88	-11.14	743175.76	415494.84	32°08'26.139"N	103°40'52.414"W	780.96	359.182	0.00
11400.00†	90.000	359.182	10642.00	880.96	880.87	-12.57	743174.33	415594.83	32°08'27.129"N	103°40'52.424"W	880.96	359.182	0.00
11500.00†	90.000	359.182	10642.00	980.96	980.86	-14.00	743172.90	415694.81	32°08'28.118"N	103°40'52.434"W	980.96	359.182	0.00
11600.00†	90.000	359.182	10642.00	1080.96	1080.85	-15.42	743171.48	415794.80	32°08'29.108"N	103°40'52.443"W	1080.96	359.182	0.00
11700.00†	90.000	359.182	10642.00	1180.96	1180.84	-16.85	743170.05	415894.78	32°08'30.097"N	103°40'52.453"W	1180.96	359.182	0.00



Planned Wellpath Report

Rev-A.0

Page 6 of 7



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	Slot #1
Area	Lea County, New Mexico	Well	No. 2H
Field	(Cotton Draw) Sec 9, T25S, R32E	Wellbore	No. 2H (PWB)
Facility	Cotton Draw 9L Federal No. 2H		

WELLPATH DATA (155 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
11800.00†	90.000	359.182	10642.00	1280.96	1280.83	-18.28	743168.62	415994.77	32°08'31.087"N	103°40'52.462"W	1280.96	359.182	0.00
11900.00†	90.000	359.182	10642.00	1380.96	1380.82	-19.70	743167.20	416094.75	32°08'32.076"N	103°40'52.472"W	1380.96	359.182	0.00
12000.00†	90.000	359.182	10642.00	1480.96	1480.81	-21.13	743165.77	416194.74	32°08'33.065"N	103°40'52.481"W	1480.96	359.182	0.00
12100.00†	90.000	359.182	10642.00	1580.96	1580.80	-22.56	743164.34	416294.72	32°08'34.055"N	103°40'52.491"W	1580.96	359.182	0.00
12200.00†	90.000	359.182	10642.00	1680.96	1680.79	-23.99	743162.92	416394.71	32°08'35.044"N	103°40'52.500"W	1680.96	359.182	0.00
12300.00†	90.000	359.182	10642.00	1780.96	1780.78	-25.41	743161.49	416494.69	32°08'36.034"N	103°40'52.510"W	1780.96	359.182	0.00
12400.00†	90.000	359.182	10642.00	1880.96	1880.77	-26.84	743160.06	416594.68	32°08'37.023"N	103°40'52.520"W	1880.96	359.182	0.00
12500.00†	90.000	359.182	10642.00	1980.96	1980.76	-28.27	743158.64	416694.66	32°08'38.013"N	103°40'52.529"W	1980.96	359.182	0.00
12600.00†	90.000	359.182	10642.00	2080.96	2080.75	-29.69	743157.21	416794.65	32°08'39.002"N	103°40'52.539"W	2080.96	359.182	0.00
12700.00†	90.000	359.182	10642.00	2180.96	2180.74	-31.12	743155.78	416894.63	32°08'39.992"N	103°40'52.548"W	2180.96	359.182	0.00
12800.00†	90.000	359.182	10642.00	2280.96	2280.73	-32.55	743154.36	416994.62	32°08'40.981"N	103°40'52.558"W	2280.96	359.182	0.00
12900.00†	90.000	359.182	10642.00	2380.96	2380.72	-33.97	743152.93	417094.61	32°08'41.971"N	103°40'52.567"W	2380.96	359.182	0.00
13000.00†	90.000	359.182	10642.00	2480.96	2480.71	-35.40	743151.50	417194.59	32°08'42.960"N	103°40'52.577"W	2480.96	359.182	0.00
13100.00†	90.000	359.182	10642.00	2580.96	2580.70	-36.83	743150.07	417294.58	32°08'43.950"N	103°40'52.586"W	2580.96	359.182	0.00
13200.00†	90.000	359.182	10642.00	2680.96	2680.68	-38.25	743148.65	417394.56	32°08'44.939"N	103°40'52.596"W	2680.96	359.182	0.00
13300.00†	90.000	359.182	10642.00	2780.96	2780.67	-39.68	743147.22	417494.55	32°08'45.929"N	103°40'52.605"W	2780.96	359.182	0.00
13400.00†	90.000	359.182	10642.00	2880.96	2880.66	-41.11	743145.79	417594.53	32°08'46.918"N	103°40'52.615"W	2880.96	359.182	0.00
13500.00†	90.000	359.182	10642.00	2980.96	2980.65	-42.53	743144.37	417694.52	32°08'47.908"N	103°40'52.625"W	2980.96	359.182	0.00
13600.00†	90.000	359.182	10642.00	3080.96	3080.64	-43.96	743142.94	417794.50	32°08'48.897"N	103°40'52.634"W	3080.96	359.182	0.00
13700.00†	90.000	359.182	10642.00	3180.96	3180.63	-45.39	743141.51	417894.49	32°08'49.887"N	103°40'52.644"W	3180.96	359.182	0.00
13800.00†	90.000	359.182	10642.00	3280.96	3280.62	-46.81	743140.09	417994.47	32°08'50.876"N	103°40'52.653"W	3280.96	359.182	0.00
13900.00†	90.000	359.182	10642.00	3380.96	3380.61	-48.24	743138.66	418094.46	32°08'51.866"N	103°40'52.663"W	3380.96	359.182	0.00
14000.00†	90.000	359.182	10642.00	3480.96	3480.60	-49.67	743137.23	418194.44	32°08'52.855"N	103°40'52.672"W	3480.96	359.182	0.00
14100.00†	90.000	359.182	10642.00	3580.96	3580.59	-51.10	743135.81	418294.43	32°08'53.845"N	103°40'52.682"W	3580.96	359.182	0.00
14200.00†	90.000	359.182	10642.00	3680.96	3680.58	-52.52	743134.38	418394.41	32°08'54.834"N	103°40'52.691"W	3680.96	359.182	0.00
14300.00†	90.000	359.182	10642.00	3780.96	3780.57	-53.95	743132.95	418494.40	32°08'55.824"N	103°40'52.701"W	3780.96	359.182	0.00
14400.00†	90.000	359.182	10642.00	3880.96	3880.56	-55.38	743131.53	418594.38	32°08'56.813"N	103°40'52.711"W	3880.96	359.182	0.00
14500.00†	90.000	359.182	10642.00	3980.96	3980.55	-56.80	743130.10	418694.37	32°08'57.803"N	103°40'52.720"W	3980.96	359.182	0.00
14600.00†	90.000	359.182	10642.00	4080.96	4080.54	-58.23	743128.67	418794.35	32°08'58.792"N	103°40'52.730"W	4080.96	359.182	0.00
14700.00†	90.000	359.182	10642.00	4180.96	4180.53	-59.66	743127.25	418894.34	32°08'59.782"N	103°40'52.739"W	4180.96	359.182	0.00



Planned Wellpath Report

Rev-A.0
Page 7 of 7



REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	Slot #1
Area	Lea County, New Mexico	Well	No. 2H
Field	(Cotton Draw) Sec 9, T25S, R32E	Wellbore	No. 2H (PWB)
Facility	Cotton Draw 9L Federal No. 2H		

WELLPATH DATA (155 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
14800.00†	90.000	359.182	10642.00	4280.96	4280.52	-61.08	743125.82	418994.32	32°09'00.771"N	103°40'52.749"W	4280.96	359.182	0.00
14900.00†	90.000	359.182	10642.00	4380.96	4380.51	-62.51	743124.39	419094.31	32°09'01.761"N	103°40'52.758"W	4380.96	359.182	0.00
15000.00†	90.000	359.182	10642.00	4480.96	4480.50	-63.94	743122.97	419194.29	32°09'02.750"N	103°40'52.768"W	4480.96	359.182	0.00
15100.00†	90.000	359.182	10642.00	4580.96	4580.49	-65.36	743121.54	419294.28	32°09'03.740"N	103°40'52.777"W	4580.96	359.182	0.00
15193.83	90.000	359.182	10642.00†	4674.79	4674.32	-66.70	743120.20	419388.10	32°09'04.668"N	103°40'52.786"W	4674.79	359.182	0.00

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) Cotton Draw 9L Fed No. 2H TD/PBHL: Rev-1	15193.83	10642.00	4674.32	-66.70	743120.20	419388.10	32°09'04.668"N	103°40'52.786"W	point

SR & A

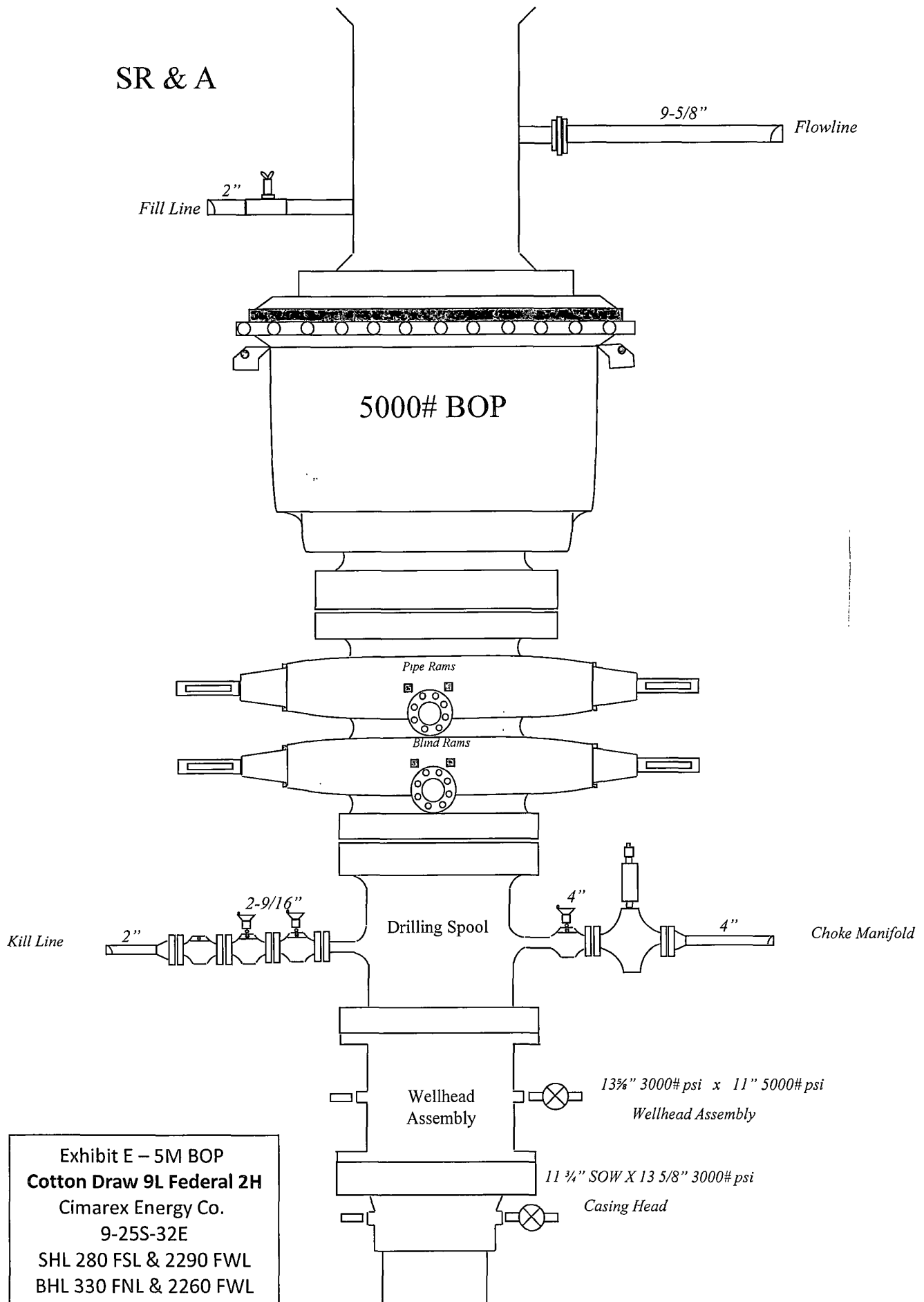
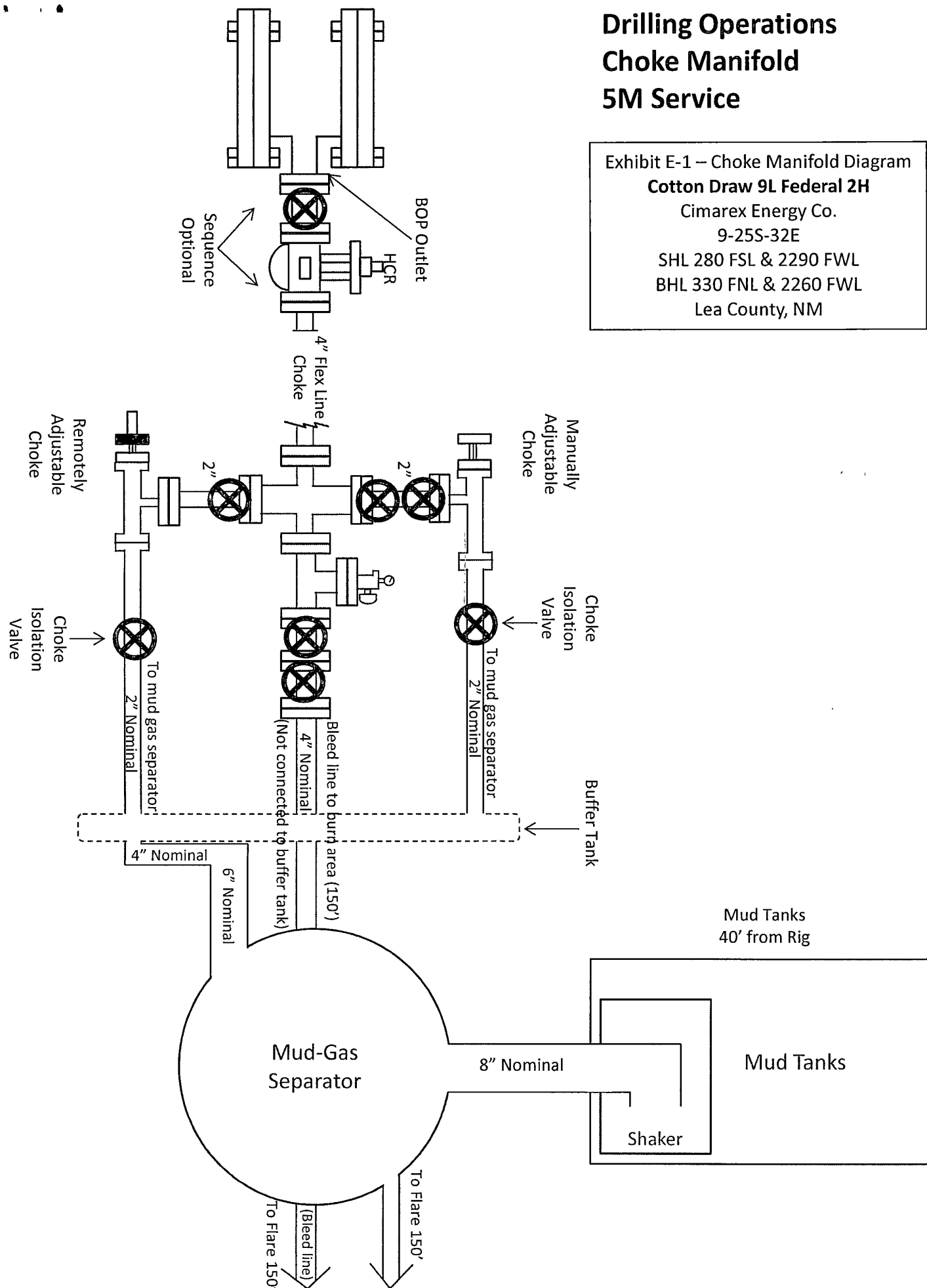


Exhibit E – 5M BOP
Cotton Draw 9L Federal 2H
Cimarex Energy Co.
9-25S-32E
SHL 280 FSL & 2290 FWL
BHL 330 FNL & 2260 FWL
Lea County, NM

Drilling Operations
Choke Manifold
5M Service

Exhibit E-1 – Choke Manifold Diagram
Cotton Draw 9L Federal 2H
Cimarex Energy Co.
9-25S-32E
SHL 280 FSL & 2290 FWL
BHL 330 FNL & 2260 FWL
Lea County, NM





Cactus Rig 101
Serial # 59473

M I D W E S T
HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT			
Customer: CACTUS		P.O. Number: Rig#101 Asset#M5358	
HOSE SPECIFICATIONS			
Type: CHOKER LINE		Length: 35'	
I.D. 4" INCHES		O.D. 8" INCHES	
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000 PSI		BURST PRESSURE PSI
COUPLINGS			
Type of End Fitting 4 1/16 10K FLANGE			
Type of Coupling: SWEDGED		MANUFACTURED BY MIDWEST HOSE & SPECIALTY	
PROCEDURE			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
TIME HELD AT TEST PRESSURE 15 MIN.		ACTUAL BURST PRESSURE: 0 PSI	
COMMENTS: s/n#59473 Asset#M5358 Hose is covered with stainless steel armour cover and wrapped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes			
Date: 5/19/2010	Tested By: BOBBY FINK		Approved: MENDI JACKSON



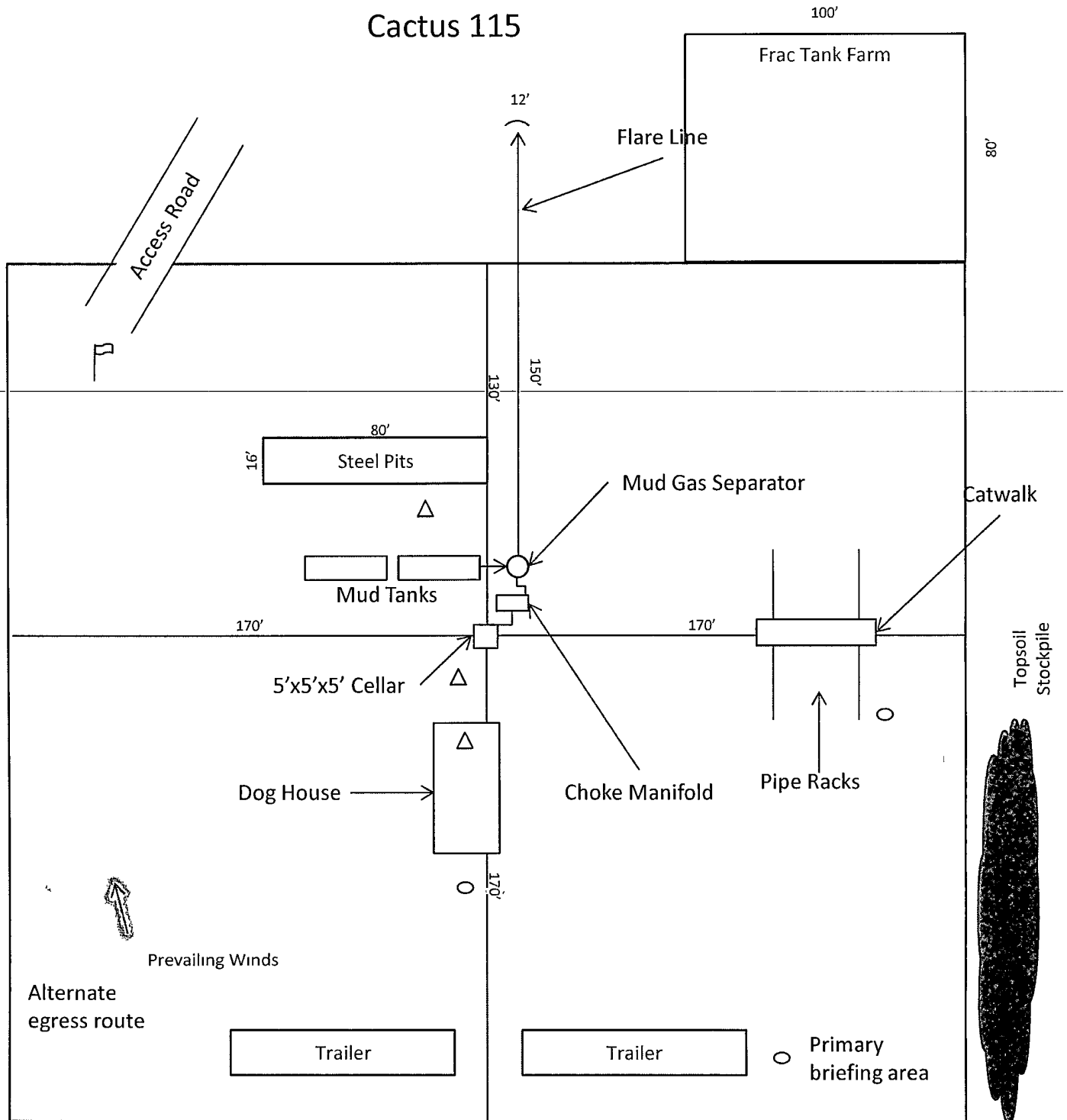
Midwest Hose
& Specialty, Inc.

Specification Sheet Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium components. 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 vermiculite 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, unbolt 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)

Cactus 115



Wind Direction Indicators
(wind sock or streamers)



H2S Monitors
(alarms at bell nipple and shale shaker)



Briefing Areas

Exhibit D – Rig Diagram
Cotton Draw 9L Federal 2H
 Cimarex Energy Co.
 9-25S-32E
 SHL 280 FSL & 2290 FWL
 BHL 330 FNL & 2260 FWL
 Lea County, NM

N

