

HOBBS OCD

475-11-468

Form 3160-3
(April 2004)OCD-HOBBS
SECRETARY'S POTASH RECEIVED
AUG 25 2011FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of Work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM-01135
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. of Colorado		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. <u><38779></u> Southeast Lusk 33 Federal No. 3 H
3b. Phone No. (include area code) 432-571-7800		9. API Well No. 30-025- <u>40256</u>
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 25 FNL & 2460 FEL <u>Unit B</u> At proposed prod Zone 330 FSL & 1980 FEL <u>Unit B Horizontal Bone Spring test</u>		10. Field and Pool, or Exploratory <u><41469></u> Lusk; Bone Spring, South
14 Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Bk. and Survey or Area 33-19S-32E
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line if any) 1795'	16. No of acres in lease 1118.01 acres	12. County or Parish Lea
17. Spacing Unit dedicated to this well E2E2 159.56 acres	13. State NM	
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1097'	19 Proposed Depth MD 14191 TVD 9370	20. BLM/BIA Bond No. on File NM-2575
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3560' GR	22. Approximate date work will start* 08.01.11	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 <u>Zeno Farris</u>	Name (Printed/Typed) Zeno Farris	Date 05.18.11
Title Manager Operations Administration		
Approved By (Signature) <u>/s/ Jesse J. Juen</u>	Name (Printed/Typed)	Date AUG 16 2011
Title STATE DIRECTOR	Office NM STATE 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.

* (Instructions on page 2)

CAPITAN CONTROLLED WATER BASIN

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

KZ 08/01/11

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

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

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

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

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised July 16, 2010

HOBBS OGD

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

AUG 25 2011

RECEIVED AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-40256	Pool Code 41460	Pool Name Lusk; Bone Spring, South
Property Code 38774	Property Name SOUTHEAST LUSK "33" FEDERAL	Well Number 3H
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3560'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	33	19 S	32 E		25	NORTH	2460	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	33	19 S	32 E		330	SOUTH	1980	EAST	LEA
Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.	NSL Pending					

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

SURFACE LOCATION Lat - N 32°37'26.64" Long - W 103°46'14.06" NMSPEC- N 591224.5 E 714596.5 (NAD-83) SHL & PP Bone Spring 25 FNL & 2460 FEL EOC/Beg Prod Interval 310 FNL & 2431 FEL BHL 330 FSL & 1980 FEL PROPOSED BOTTOM HOLE LOCATION Lat - N 32°36'37.95" Long - W 103°46'08.50" NMSPEC- N 586306.60 E 715097.79 (NAD-83)	2460' 3558.9' 3564.1' 3558.6' 3560.2' 4944.5' NM-01135 1980' B.H.	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. <u>Zeno Farris</u> 5/18/2011 Signature Date <u>Zeno Farris</u> Printed Name <u>zfarris@cimarex.com</u> Email Address 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. <u>MARY L. JONES</u> Date Surveyed <u>[Signature]</u> Signature & Seal of Professional Surveyor Certificate No. Gary L. Jones 7977 BASIN SURVEYS 24234
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Application to Drill
Southeast Lusk 33 Federal No. 3
 Cimarex Energy Co. of Colorado
 Unit B, Section 33
 T19S-R32E, Eddy County, NM

HOBBS OCD

AUG 25 2011

RECEIVED

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

- 1 Location: SHL 25 FNL & 2460 FEL
 BHL 330 FSL & 1980 FEL

- 2 Elevation above sea level: 3560' 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 14191 TVD 9370

- 6 Estimated tops of geological markers:

Rustler	850'	Bone Spring	7300'
T. Salt	1120'	Avalon SS	7530'
B. Salt	2700'	Upper BS Shale	7700'
Capitan Reef	3000'	1st BS SS	8470'
Delaware	4450'	2nd BS SS	9120'

- 7 Possible mineral bearing formation:

Bone Spring	Oil
Delaware	Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 900' 970	8.4 - 8.6	30-32	May lose circ	FW gel spud mud
900' to 4000' 4300	8.4 - 8.6	28-29	May lose circ	FW mud
4000' to 14191'	8.4 - 9.4	28-29	NC	FW and brine, use hi-vis sweeps to keep hole clean

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

Drill surface and intermediate holes and set casing. Drill 8¾" hole to KOP @ 9083 and drill through curve to lateral TD @ 13657 MD, 9370 TVD. Set 5½" 17# P110 LTC casing from 0-9034 (50' above KOP), BTC from 9034-9534 (EOC), and LTC from 9534-14191. Cement as shown in cementing proposal.

Application to Drill
Southeast Lusk 33 Federal No. 3
 Cimarex Energy Co. of Colorado
 Unit B, Section 33
 T19S-R32E, Eddy County, NM

Casing & Cementing Program:

see COA
 970
 4300

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface	17½"	0' to 900'	New 13¾"	54.5#	STC	J-55
Intermediate	12¼"	0' to 4000'	New 9⅝"	40#	LTC	J-55
Production	8¾"	0' to 14191'	New 5½"	17#	LTC/BTC	P-110

10 Cementing:

Surface

Lead: 556 SKS Halcem C + 4% Bentomite + 2% CaCl 13.5 ppg 1.75 yield 100% Excess

Tail: 235 SKS Halcem C + 2% CaCl 14.2 ppg 1.34 yield 100% Excess

TOC Surface Centralizers per Onshore Order 2.III.B.1.f

Intermediate

see
 COA

Lead: 881 SKS EconoCem + 5% salt + 5 lbm gilsonite 14.6ppg 1.54 yield 25% Excess

Tail: 172 SKS HalCem + 1% CaCl 14.8 ppg 1.34 yield 25% Excess

TOC Surface

Production

Lead: 860 SKS EconoCem - H + 0.2 % HR-601 2.44 11.9.ppg 2.44 yield 50% Excess

Tail: 1250 SKS Versacem - H + 0.5% Halad(R)-344 + 0.4% CFR-3 + 1 lbm/sk salt + 0.1% HR-601 14.5 ppg 1.22 yield 25% Excess

TOC 3800
 see
 COA

Centralizers every 3rd joint in lateral to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.

According to the State Engineer, depth to ground water is 400. Fresh water zones will be protected by setting 13¾" casing at 900 and cementing to surface. Hydrocarbon zones will be protected by setting 9⅝" casing at 4000 and production casing at 14191 and cementing to 3800.

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

11 Pressure control Equipment:

Exhibit "E". A 13¾" 5000 PSI working pressure BOP tested to 3000 psi 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 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. Mud gas separator will be available when drilling in H2S areas.

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. From the base of the surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system tested to 3000 psi.

BOPS will be tested by an independent service company to 250 psi low and 3000 psi high. Hydril will be tested to 250 psi low and 1500 psi high.

Application to Drill
Southeast Lusk 33 Federal No. 3
Cimarex Energy Co. of Colorado
Unit B, Section 33
T19S-R32E, Eddy County, NM

12 Testing, Logging and Coring Program: *See CGA*

- A. Mud logging program: 2 man unit from 4000 to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- 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 **3000 psi** Estimated BHT **130°**

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. 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



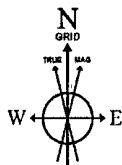
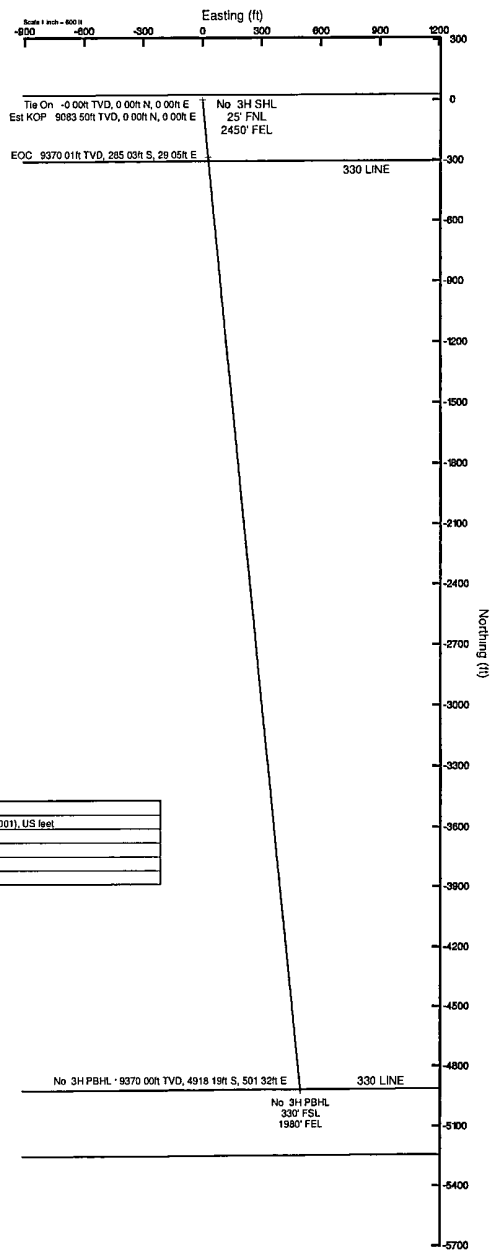
Cimarex Energy Co.

Location: Lea County, NM
Field: (SE Lusk) Sec 33, T19S, R32E
Facility: SE Lusk 33 Fed Com No. 3H

Slot: No. 3H SHL
Well: No. 3H
Wellbore: No. 3H PWB

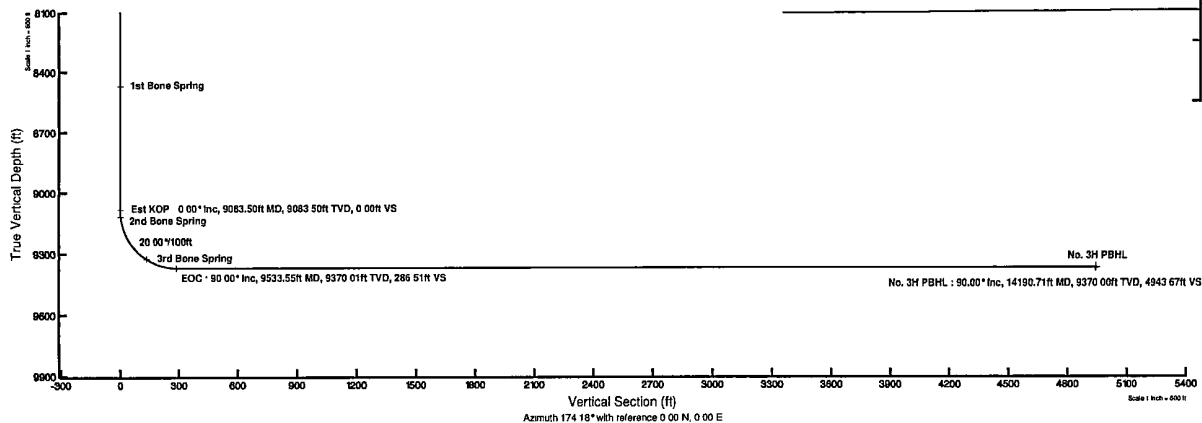


Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	0.00	0.000	174.180	0.00	0.00	0.00	0.00
Est KOP	9083.50	0.000	174.180	9083.50	0.00	0.00	0.00
EOC	9533.55	90.000	174.180	9370.01	-285.03	29.05	286.51
No. 3H PBHL	14190.71	90.000	174.180	9370.00	-4918.19	501.32	4943.67



BGGM (1945 0 to 2012 0) Dip 60.54° Field: 48891 nT
Magnetic North is 7.79 degrees East of True North (at 3/28/2011)
Grid North is 0.30 degrees East of True North
To correct azimuth from True to Grid subtract 0.30 degrees
To correct azimuth from Magnetic to Grid add 7.48 degrees
For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.48 = 97.48

Plot reference wellpath is Prelim. 1	Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet
True vertical depths are referenced to Rig on No. 3H SHL (RT)	North Reference: Grid north
Measured depths are referenced to Rig on No. 3H SHL (RT)	Scale: True distance
Rig on No. 3H SHL (RT) to Mean Sea Level: 3560 feet	Depths are in feet
Mean Sea Level to Mud line (Facility: SE Lusk 33 Fed Com No. 3H) -3560 feet	Created by: cathphix on 3/28/2011
Coordinates are in feet referenced to Slot	





Planned Wellpath Report

Prelim_1
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HOBBS OCD

AUG 25 2011



INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No. 3H PWB
Facility	SE Lusk 33 Fed Com No. 3H		

REPORT SETUP INFORMATION

Projection System	NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect@ 2.0
North Reference	Grid	User	Calhphik
Scale	0.999943	Report Generated	3/28/2011 at 3:03:03 PM
Convergence at slot	0.30° East	Database/Source file	WA Midland/No._3H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W
Facility Reference Pt			714596.50	591224.50	32°37'26.635"N	103°46'14.054"W
Field Reference Pt			716321.10	590723.40	32°37'21.586"N	103°45'53.920"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 3H SHL (RT) to GL	0.00ft
Horizontal Reference Pt	Slot	Rig on No. 3H SHL (RT) to Mean Sea Level	3560.00ft
Vertical Reference Pt	Rig on No. 3H SHL (RT)	GL to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 3H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	174.18°



Planned Wellpath Report

Prelim 1
Page 2 of 6



INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No. 3H PWB
Facility	SE Lusk 33 Fed Com No. 3H		

WELLPATH DATA (150 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	174.180	0.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	Tie On
100.00†	0.000	174.180	100.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
200.00†	0.000	174.180	200.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
300.00†	0.000	174.180	300.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
400.00†	0.000	174.180	400.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
500.00†	0.000	174.180	500.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
600.00†	0.000	174.180	600.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
700.00†	0.000	174.180	700.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
800.00†	0.000	174.180	800.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
900.00†	0.000	174.180	900.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
1000.00†	0.000	174.180	1000.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
1100.00†	0.000	174.180	1100.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
1200.00†	0.000	174.180	1200.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
1300.00†	0.000	174.180	1300.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
1400.00†	0.000	174.180	1400.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
1500.00†	0.000	174.180	1500.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
1600.00†	0.000	174.180	1600.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
1700.00†	0.000	174.180	1700.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
1800.00†	0.000	174.180	1800.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
1900.00†	0.000	174.180	1900.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
2000.00†	0.000	174.180	2000.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
2100.00†	0.000	174.180	2100.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
2200.00†	0.000	174.180	2200.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
2300.00†	0.000	174.180	2300.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
2400.00†	0.000	174.180	2400.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
2500.00†	0.000	174.180	2500.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
2600.00†	0.000	174.180	2600.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
2700.00†	0.000	174.180	2700.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
2800.00†	0.000	174.180	2800.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
2900.00†	0.000	174.180	2900.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
3000.00†	0.000	174.180	3000.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
3100.00†	0.000	174.180	3100.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
3200.00†	0.000	174.180	3200.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
3300.00†	0.000	174.180	3300.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
3400.00†	0.000	174.180	3400.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
3500.00†	0.000	174.180	3500.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
3600.00†	0.000	174.180	3600.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
3700.00†	0.000	174.180	3700.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
3800.00†	0.000	174.180	3800.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
3900.00†	0.000	174.180	3900.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
4000.00†	0.000	174.180	4000.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
4100.00†	0.000	174.180	4100.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
4200.00†	0.000	174.180	4200.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
4300.00†	0.000	174.180	4300.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
4400.00†	0.000	174.180	4400.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No. 3H PWB
Facility	SE Lusk 33 Fed Com No. 3H		

WELLPATH DATA (150 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4450.00†	0.000	174.180	4450.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	Delware
4500.00†	0.000	174.180	4500.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
4600.00†	0.000	174.180	4600.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
4700.00†	0.000	174.180	4700.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
4800.00†	0.000	174.180	4800.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
4900.00†	0.000	174.180	4900.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
5000.00†	0.000	174.180	5000.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
5100.00†	0.000	174.180	5100.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
5200.00†	0.000	174.180	5200.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
5300.00†	0.000	174.180	5300.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
5400.00†	0.000	174.180	5400.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
5500.00†	0.000	174.180	5500.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
5600.00†	0.000	174.180	5600.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
5700.00†	0.000	174.180	5700.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
5800.00†	0.000	174.180	5800.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
5900.00†	0.000	174.180	5900.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
6000.00†	0.000	174.180	6000.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
6100.00†	0.000	174.180	6100.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
6200.00†	0.000	174.180	6200.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
6300.00†	0.000	174.180	6300.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
6400.00†	0.000	174.180	6400.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
6500.00†	0.000	174.180	6500.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
6600.00†	0.000	174.180	6600.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
6700.00†	0.000	174.180	6700.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
6800.00†	0.000	174.180	6800.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
6900.00†	0.000	174.180	6900.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
7000.00†	0.000	174.180	7000.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
7100.00†	0.000	174.180	7100.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
7200.00†	0.000	174.180	7200.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
7300.00†	0.000	174.180	7300.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	Bone Spring
7400.00†	0.000	174.180	7400.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
7500.00†	0.000	174.180	7500.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
7530.00†	0.000	174.180	7530.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	Avalon SS
7600.00†	0.000	174.180	7600.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
7700.00†	0.000	174.180	7700.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
7800.00†	0.000	174.180	7800.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
7900.00†	0.000	174.180	7900.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
8000.00†	0.000	174.180	8000.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
8100.00†	0.000	174.180	8100.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
8200.00†	0.000	174.180	8200.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
8300.00†	0.000	174.180	8300.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
8400.00†	0.000	174.180	8400.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
8470.00†	0.000	174.180	8470.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	1st Bone Spring
8500.00†	0.000	174.180	8500.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
8600.00†	0.000	174.180	8600.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No. 3H PWB
Facility	SE Lusk 33 Fed Com No. 3H		

WELLPATH DATA (150 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8700.00†	0.000	174.180	8700.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
8800.00†	0.000	174.180	8800.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
8900.00†	0.000	174.180	8900.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
9000.00†	0.000	174.180	9000.00	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	
9083.50†	0.000	174.180	9083.50	0.00	0.00	0.00	714596.50	591224.50	32°37'26.635"N	103°46'14.054"W	0.00	Est KOP
9100.00†	3.300	174.180	9099.99	0.47	-0.47	0.05	714596.55	591224.03	32°37'26.630"N	103°46'14.053"W	20.00	
9120.00†	7.299	174.180	9119.90	2.32	-2.31	0.24	714596.74	591222.19	32°37'26.612"N	103°46'14.051"W	20.00	2nd Bone Spring
9200.00†	23.298	174.180	9196.82	23.36	-23.24	2.37	714598.87	591201.26	32°37'26.405"N	103°46'14.028"W	20.00	
9300.00†	43.296	174.180	9279.98	77.98	-77.58	7.91	714604.41	591146.93	32°37'25.867"N	103°46'13.966"W	20.00	
9370.00†	57.294	174.180	9324.58	131.70	-131.02	13.36	714609.85	591093.49	32°37'25.338"N	103°46'13.906"W	20.00	3rd Bone Spring
9400.00†	63.294	174.180	9339.44	157.75	-156.93	16.00	714612.50	591067.58	32°37'25.081"N	103°46'13.877"W	20.00	
9500.00†	83.292	174.180	9368.05	253.04	-251.73	25.66	714622.16	590972.78	32°37'24.143"N	103°46'13.770"W	20.00	
9533.55	90.000	174.180	9370.01	286.51	-285.03	29.05	714625.55	590939.49	32°37'23.813"N	103°46'13.732"W	20.00	EOC
9600.00†	90.000	174.180	9370.01	352.96	-351.14	35.79	714632.29	590873.38	32°37'23.159"N	103°46'13.657"W	0.00	
9700.00†	90.000	174.180	9370.01	452.96	-450.63	45.93	714642.43	590773.90	32°37'22.174"N	103°46'13.545"W	0.00	
9800.00†	90.000	174.180	9370.01	552.96	-550.11	56.07	714652.57	590674.42	32°37'21.189"N	103°46'13.432"W	0.00	
9900.00†	90.000	174.180	9370.01	652.96	-649.60	66.21	714662.71	590574.94	32°37'20.204"N	103°46'13.320"W	0.00	
10000.00†	90.000	174.180	9370.01	752.96	-749.08	76.36	714672.85	590475.46	32°37'19.219"N	103°46'13.208"W	0.00	
10100.00†	90.000	174.180	9370.01	852.96	-848.57	86.50	714682.99	590375.98	32°37'18.234"N	103°46'13.095"W	0.00	
10200.00†	90.000	174.180	9370.01	952.96	-948.05	96.64	714693.13	590276.51	32°37'17.249"N	103°46'12.983"W	0.00	
10300.00†	90.000	174.180	9370.01	1052.96	-1047.53	106.78	714703.27	590177.03	32°37'16.265"N	103°46'12.870"W	0.00	
10400.00†	90.000	174.180	9370.01	1152.96	-1147.02	116.92	714713.41	590077.55	32°37'15.280"N	103°46'12.758"W	0.00	
10500.00†	90.000	174.180	9370.01	1252.96	-1246.50	127.06	714723.55	589978.07	32°37'14.295"N	103°46'12.646"W	0.00	
10600.00†	90.000	174.180	9370.01	1352.96	-1345.99	137.20	714733.69	589878.59	32°37'13.310"N	103°46'12.533"W	0.00	
10700.00†	90.000	174.180	9370.01	1452.96	-1445.47	147.34	714743.83	589779.11	32°37'12.325"N	103°46'12.421"W	0.00	
10800.00†	90.000	174.180	9370.01	1552.96	-1544.96	157.48	714753.97	589679.63	32°37'11.340"N	103°46'12.308"W	0.00	
10900.00†	90.000	174.180	9370.01	1652.96	-1644.44	167.62	714764.11	589580.15	32°37'10.355"N	103°46'12.196"W	0.00	
11000.00†	90.000	174.180	9370.01	1752.96	-1743.93	177.76	714774.25	589480.68	32°37'09.371"N	103°46'12.084"W	0.00	
11100.00†	90.000	174.180	9370.01	1852.96	-1843.41	187.90	714784.39	589381.20	32°37'08.386"N	103°46'11.971"W	0.00	
11200.00†	90.000	174.180	9370.00	1952.96	-1942.90	198.04	714794.53	589281.72	32°37'07.401"N	103°46'11.859"W	0.00	
11300.00†	90.000	174.180	9370.00	2052.96	-2042.38	208.18	714804.67	589182.24	32°37'06.416"N	103°46'11.746"W	0.00	
11400.00†	90.000	174.180	9370.00	2152.96	-2141.86	218.32	714814.81	589082.76	32°37'05.431"N	103°46'11.634"W	0.00	
11500.00†	90.000	174.180	9370.00	2252.96	-2241.35	228.46	714824.95	588983.28	32°37'04.446"N	103°46'11.522"W	0.00	
11600.00†	90.000	174.180	9370.00	2352.96	-2340.83	238.61	714835.09	588883.80	32°37'03.461"N	103°46'11.409"W	0.00	
11700.00†	90.000	174.180	9370.00	2452.96	-2440.32	248.75	714845.23	588784.33	32°37'02.476"N	103°46'11.297"W	0.00	
11800.00†	90.000	174.180	9370.00	2552.96	-2539.80	258.89	714855.37	588684.85	32°37'01.492"N	103°46'11.185"W	0.00	
11900.00†	90.000	174.180	9370.00	2652.96	-2639.29	269.03	714865.51	588585.37	32°37'00.507"N	103°46'11.072"W	0.00	
12000.00†	90.000	174.180	9370.00	2752.96	-2738.77	279.17	714875.65	588485.89	32°36'59.522"N	103°46'10.960"W	0.00	
12100.00†	90.000	174.180	9370.00	2852.96	-2838.26	289.31	714885.79	588386.41	32°36'58.537"N	103°46'10.847"W	0.00	
12200.00†	90.000	174.180	9370.00	2952.96	-2937.74	299.45	714895.93	588286.93	32°36'57.552"N	103°46'10.735"W	0.00	
12300.00†	90.000	174.180	9370.00	3052.96	-3037.22	309.59	714906.07	588187.45	32°36'56.567"N	103°46'10.623"W	0.00	
12400.00†	90.000	174.180	9370.00	3152.96	-3136.71	319.73	714916.21	588087.97	32°36'55.582"N	103°46'10.510"W	0.00	
12500.00†	90.000	174.180	9370.00	3252.96	-3236.19	329.87	714926.35	587988.50	32°36'54.597"N	103°46'10.398"W	0.00	
12600.00†	90.000	174.180	9370.00	3352.96	-3335.68	340.01	714936.49	587889.02	32°36'53.613"N	103°46'10.285"W	0.00	
12700.00†	90.000	174.180	9370.00	3452.96	-3435.16	350.15	714946.63	587789.54	32°36'52.628"N	103°46'10.173"W	0.00	



Planned Wellpath Report

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No. 3H PWB
Facility	SE Lusk 33 Fed Com No. 3H		

WELLPATH DATA (150 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12800.00†	90.000	174.180	9370.00	3552.96	-3534.65	360.29	714956.77	587690.06	32°36'51.643"N	103°46'10.061"W	0.00	
12900.00†	90.000	174.180	9370.00	3652.96	-3634.13	370.43	714966.91	587590.58	32°36'50.658"N	103°46'09.948"W	0.00	
13000.00†	90.000	174.180	9370.00	3752.96	-3733.62	380.57	714977.05	587491.10	32°36'49.673"N	103°46'09.836"W	0.00	
13100.00†	90.000	174.180	9370.00	3852.96	-3833.10	390.71	714987.19	587391.62	32°36'48.688"N	103°46'09.724"W	0.00	
13200.00†	90.000	174.180	9370.00	3952.96	-3932.59	400.86	714997.33	587292.14	32°36'47.703"N	103°46'09.611"W	0.00	
13300.00†	90.000	174.180	9370.00	4052.96	-4032.07	411.00	715007.47	587192.67	32°36'46.718"N	103°46'09.499"W	0.00	
13400.00†	90.000	174.180	9370.00	4152.96	-4131.55	421.14	715017.61	587093.19	32°36'45.734"N	103°46'09.386"W	0.00	
13500.00†	90.000	174.180	9370.00	4252.96	-4231.04	431.28	715027.75	586993.71	32°36'44.749"N	103°46'09.274"W	0.00	
13600.00†	90.000	174.180	9370.00	4352.96	-4330.52	441.42	715037.89	586894.23	32°36'43.764"N	103°46'09.162"W	0.00	
13700.00†	90.000	174.180	9370.00	4452.96	-4430.01	451.56	715048.03	586794.75	32°36'42.779"N	103°46'09.049"W	0.00	
13800.00†	90.000	174.180	9370.00	4552.96	-4529.49	461.70	715058.17	586695.27	32°36'41.794"N	103°46'08.937"W	0.00	
13900.00†	90.000	174.180	9370.00	4652.96	-4628.98	471.84	715068.31	586595.79	32°36'40.809"N	103°46'08.825"W	0.00	
14000.00†	90.000	174.180	9370.00	4752.96	-4728.46	481.98	715078.45	586496.32	32°36'39.824"N	103°46'08.712"W	0.00	
14100.00†	90.000	174.180	9370.00	4852.96	-4827.95	492.12	715088.59	586396.84	32°36'38.840"N	103°46'08.600"W	0.00	
14190.71	90.000	174.180	9370.00 ¹	4943.67	-4918.19	501.32	715097.79	586306.60	32°36'37.946"N	103°46'08.498"W	0.00	No. 3H PBHL

HOLE & CASING SECTIONS Ref Wellbore: No. 3H PWB Ref Wellpath: Prelim_1

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
17.5in Open Hole	0.00	1750.00	1750.00	0.00	1750.00	0.00	0.00	0.00	0.00
13.375in Casing	0.00	1750.00	1750.00	0.00	1750.00	0.00	0.00	0.00	0.00
12.25in Open Hole	1750.00	4000.00	2250.00	1750.00	4000.00	0.00	0.00	0.00	0.00
9.625in Casing	1750.00	4000.00	2250.00	1750.00	4000.00	0.00	0.00	0.00	0.00
8.75in Open Hole	4000.00	14190.71	10190.71	4000.00	NA	0.00	0.00	NA	NA
5.5in Casing	4000.00	14190.71	10190.71	4000.00	NA	0.00	0.00	NA	NA



Planned Wellpath Report

Prelim_1
Page 6 of 6



INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No. 3H SHL
Area	Lea County, NM	Well	No. 3H
Field	(SE Lusk) Sec 33, T19S, R32E	Wellbore	No. 3H PWB
Facility	SE Lusk 33 Fed Com No. 3H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 3H PBHL	14190.71	9370.00	-4918.19	501.32	715097.79	586306.60	32°36'37.946"N	103°46'08.498"W	point

SURVEY PROGRAM Ref Wellbore: No. 3H PWB Ref Wellpath: Prelim_1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	14190.71	NaviTrak (Standard)		No. 3H PWB

SR & A

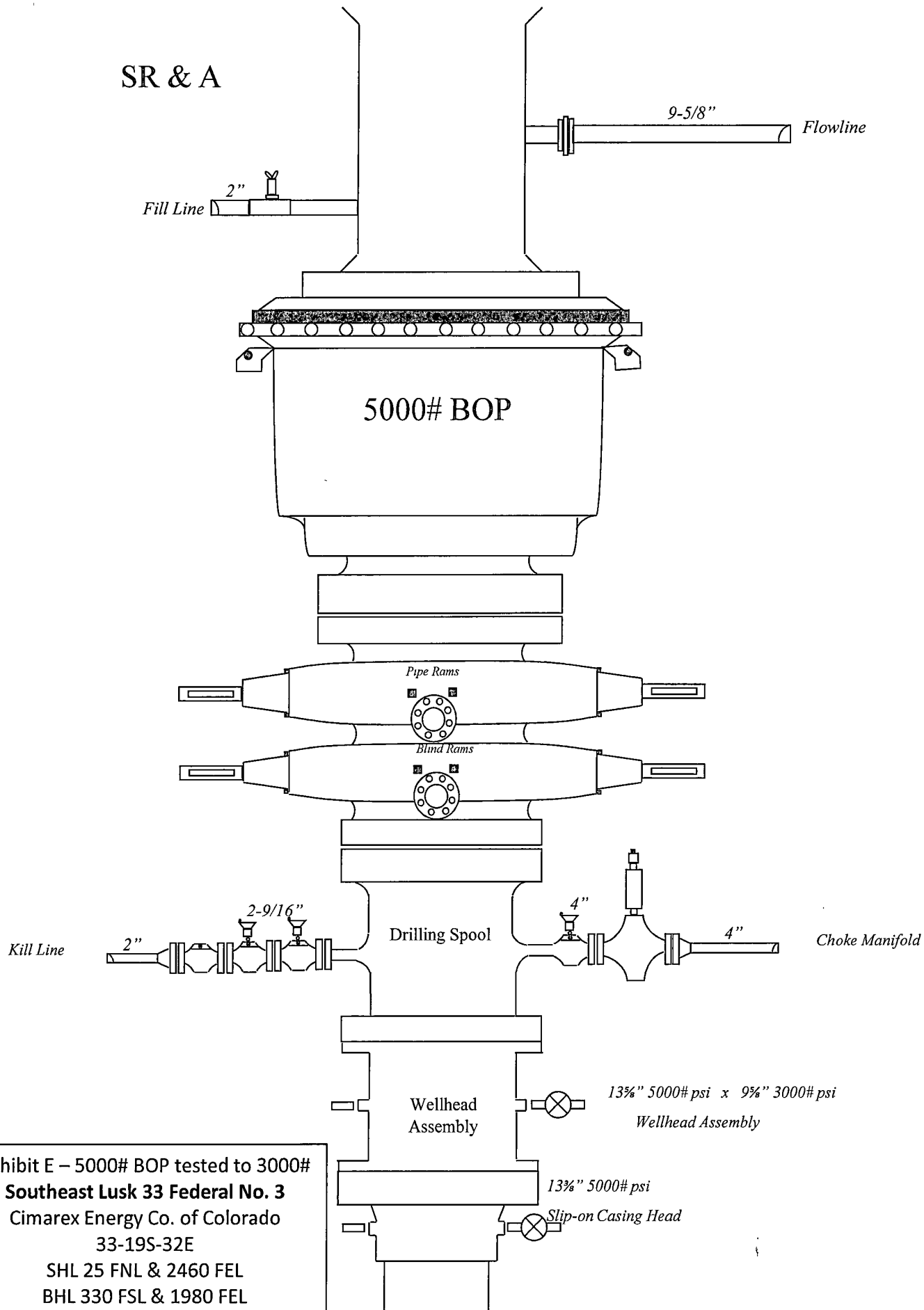
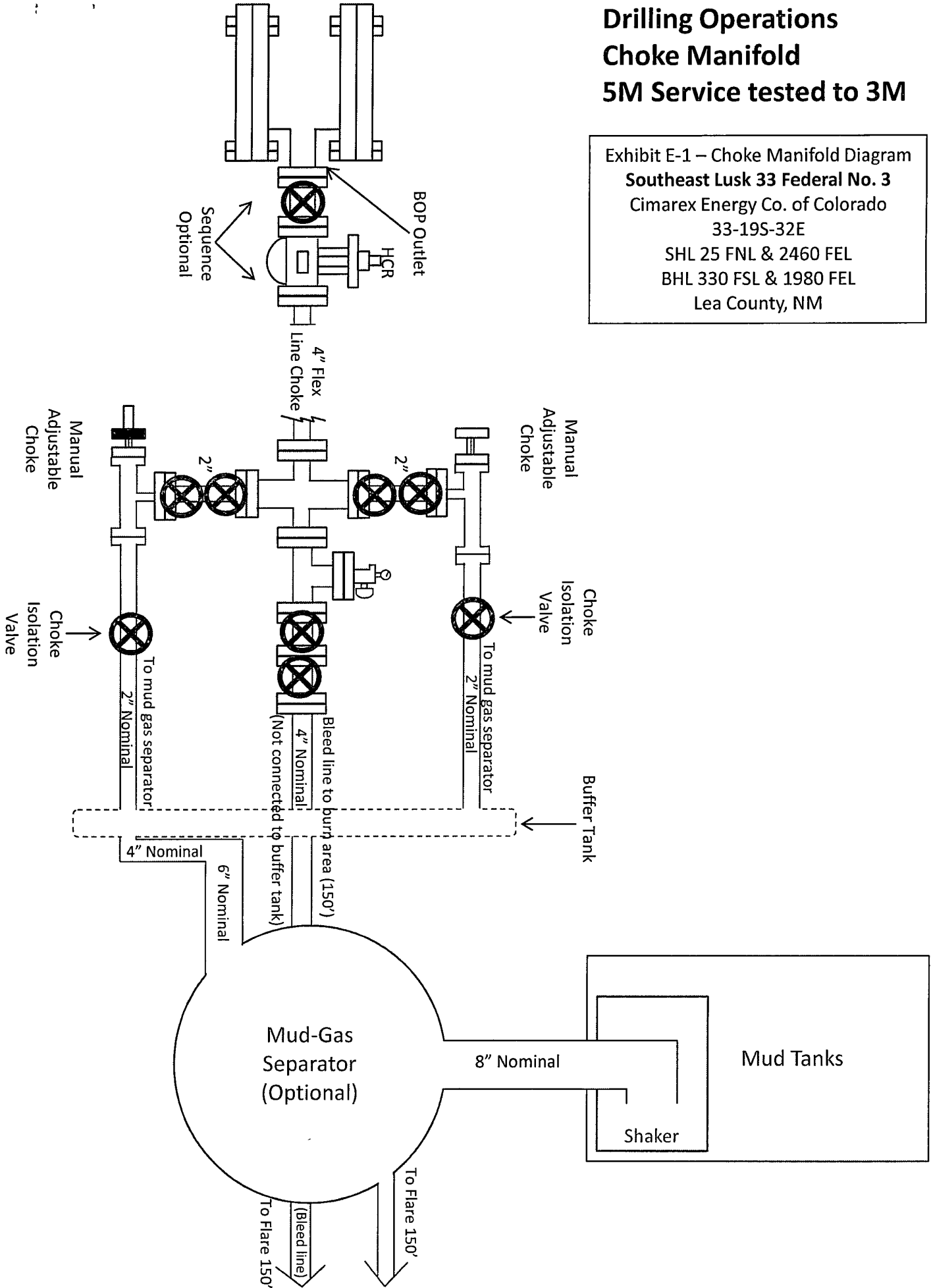
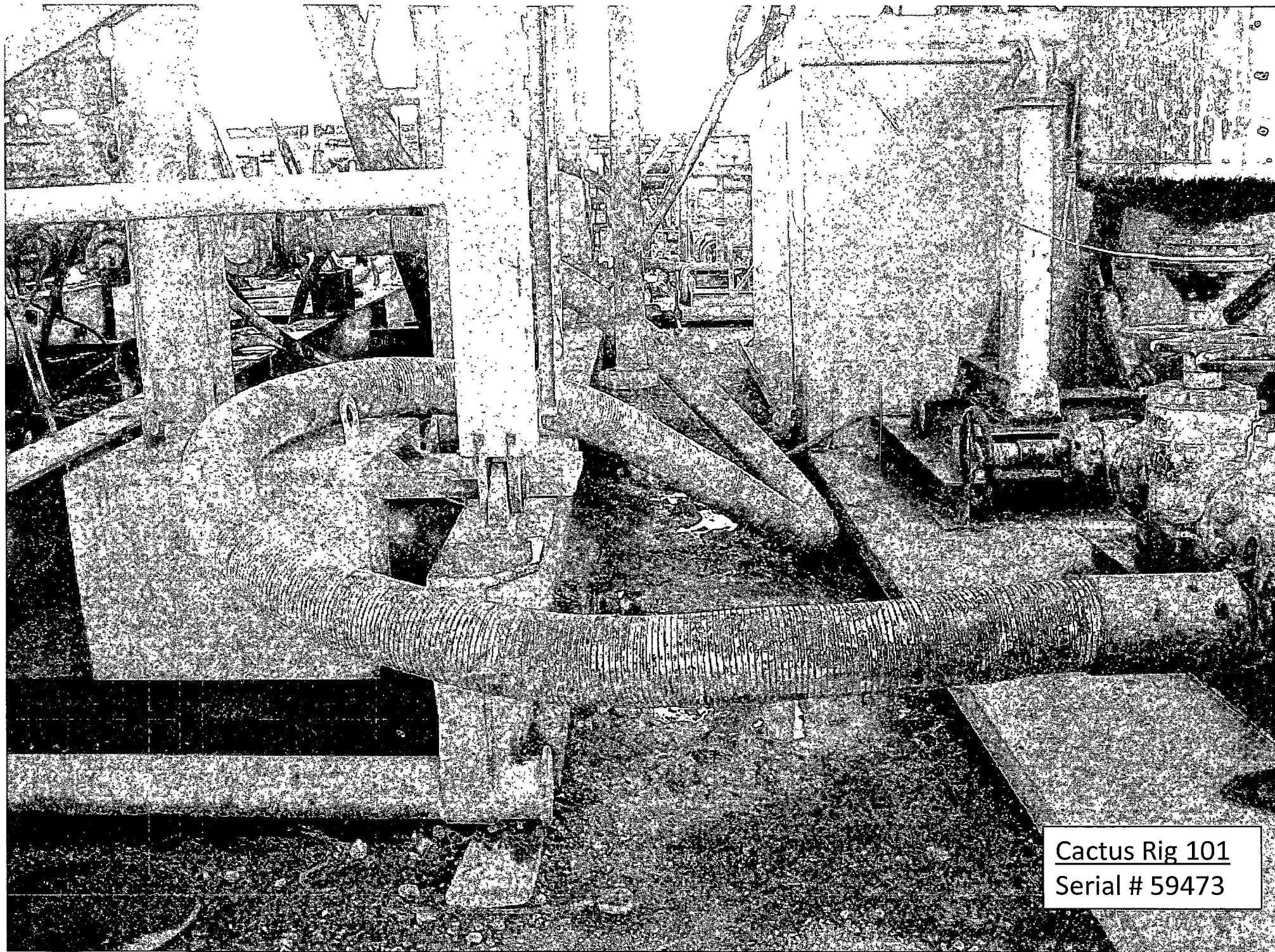


Exhibit E – 5000# BOP tested to 3000#
Southeast Lusk 33 Federal No. 3
Cimarex Energy Co. of Colorado
33-19S-32E
SHL 25 FNL & 2460 FEL
BHL 330 FSL & 1980 FEL
Lea County, NM

Drilling Operations
Choke Manifold
5M Service tested to 3M

Exhibit E-1 – Choke Manifold Diagram
Southeast Lusk 33 Federal No. 3
Cimarex Energy Co. of Colorado
33-19S-32E
SHL 25 FNL & 2460 FEL
BHL 330 FSL & 1980 FEL
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: CHOKE 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 101

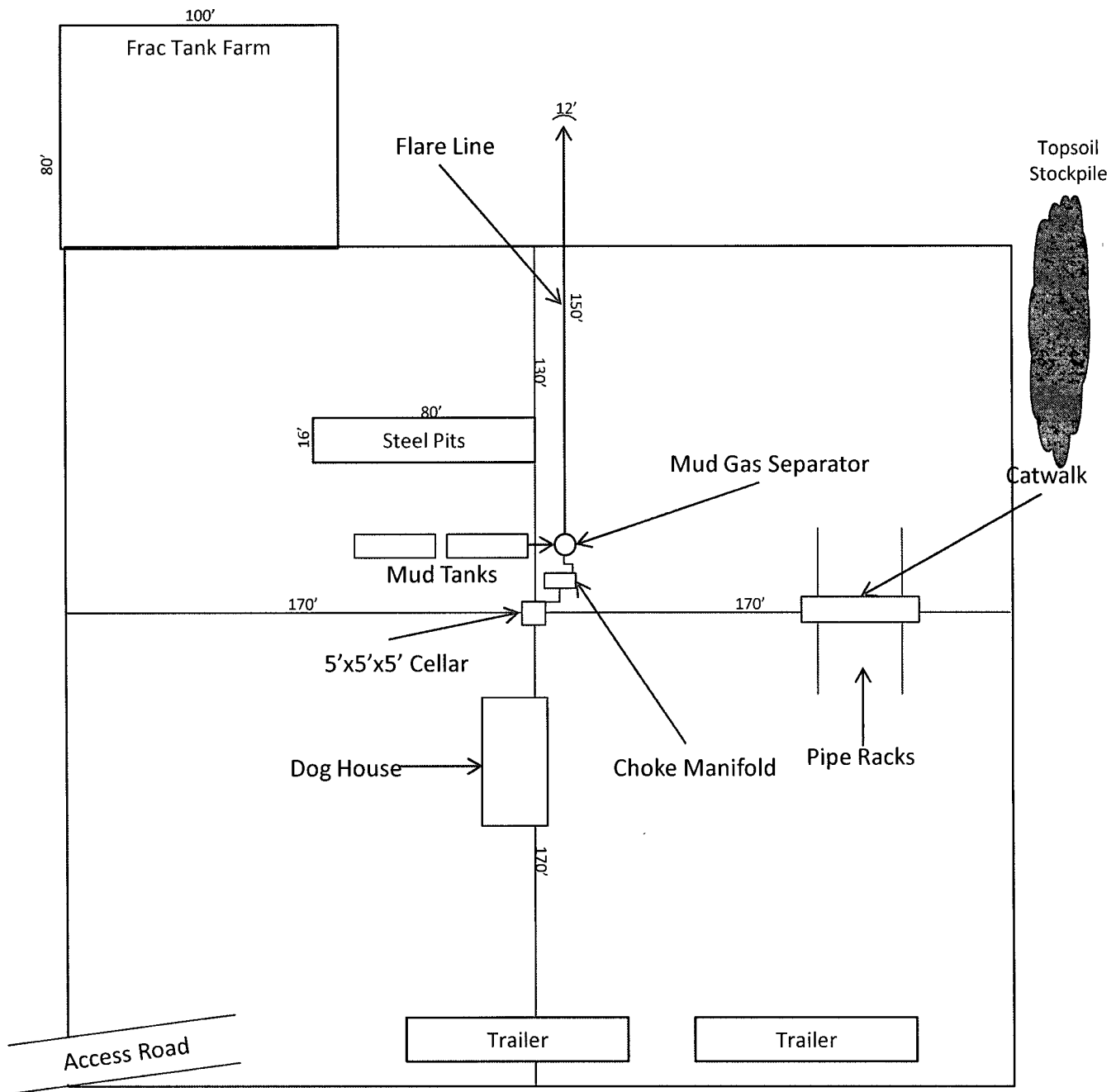


Exhibit D – Rig Diagram
Southeast Lusk 33 Federal No. 3
Cimarex Energy Co. of Colorado
33-19S-32E
SHL 25 FNL & 2460 FEL
BHL 330 FSL & 1980 FEL
Lea County, NM