

SECRETARY'S POTASH

QCD Artesia

Form 3160-3
(April 2004)

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

UNITED 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-124659, NM-0302720	
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 Pending	
3a Address 600 N. Marienfeld St., Ste. 600; Midland, TX 79701		8 Lease Name and Well No Burton 6 Federal Com No. 4 H	
3b. Phone No. (include area code) 432-571-7800		9 API Well No 30-015- 39332	
4 Location of Well (Report location clearly and in accordance with any State requirements *) At Surface 330 FNL & 990 FEL At proposed prod Zone 330 FSL & 660 FEL Horizontal Bone Spring test		10 Field and Pool, or Exploratory Parkway; Bone Spring	
14 Distance in miles and direction from nearest town or post office*		11 Sec., T. R. M. or Blk. and Survey or Area 6-20S-30E	
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any) 330'		12 County or Parish Eddy	
16 No of acres in lease NM-124659 - 558.28 acres NM-0302720 - 360 acres		13 State NM	
17 Spacing Unit dedicated to this well E2E2 160.19 acres			
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 990'		19 Proposed Depth Pilot Hole 8550 MD 12778 TVD 8275	
20 BLM/BIA Bond No on File NM-2575			
21 Elevations (Show whether DF, KDB, RT, GL, etc) 3246' GR		22 Approximate date work will start* 03.15.11	
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 <i>Zeno Farris</i>	Name (Printed/Typed) Zeno Farris	Date 01/10/11
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Title
Manager Operations Administration

Approved By (Signature) <i>/s/ Robert A. Casias</i>	Name (Printed/Typed)	Date AUG 4 2011
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Title
acting 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

[Signature]

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

**Approval Subject to General Requirements
& Special Stipulations Attached**

Application to Drill
Burton 6 Federal Com No. 4
 Cimarex Energy Co. of Colorado
 Unit A, Section 6
 T20S-R30E, Eddy 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 330 FNL & 990 FEL
 BHL 330 FSL & 660 FEL

- 2 Elevation above sea level: 3246' 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 12778 TVD 8275 Pilot Hole 8550

- 6 Estimated tops of geological markers:

Rustler	342'	Delaware Sands	3500'
T. Salt	375'	Bone Spring	6120'
B. Salt	1250'	SBSS	8175'
Capitan	1647'		
Yates	2387'		

- 7 Possible mineral bearing formation:
 Bone Spring Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 350' 250'	8.4 - 8.6	28	NC	FW
350' to 1600' 1400'	10.0	30-32	NC	Brine water
1600' to 3500' 3400'	8.4 - 8.8	28	NC	FW
3500' to 12778'	8.4	28-32	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

After setting surface 1, surface 2, and intermediate, drill to pilot hole depth of 8550 and log. Set 280 sx Halcem-H + 0.5% CFR-3 + 0.1% HR-601 (wt 16.5, yld 1.06, excess 50%) cement plug from 7900-8550. Drill through cement and kick off 8¾" lateral @ 7960 and drill to TD 12778 MD, 8275 TVD. Run 5½" casing from 0-12778 and cement as shown on page 2.

Application to Drill
Burton 6 Federal Com No. 4
 Cimarex Energy Co. of Colorado
 Unit A, Section 6
 T20S-R30E, Eddy County, NM

9. Casing & Cementing Program:

See
COA

String	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface 1	26"	0 to 250 350	New 20"	94#	BTC	J-55
Surface 2	17½"	0 to 1400 1600	New 13⅝"	54.5#	STC	J-55
Intermediate	12¼"	0 to 3400 3500	New 9⅝"	36#	LTC	J-55
Production	8¾"	0 to 12778	New 5½"	17#	LTC	P-110

10. Cementing: See COA

Surface 1 740SKS Halcem-C + 2% CaCl 14.2ppg 1.34yield 100% Excess
TOC Surface Centralizers per Onshorder 2.III.B.1.f

Surface 2 Lead:1375SKS Extendacem-CZ 13.5ppg 1.75yield 100% Excess
 Tail:260SKS Halcem-C + 2% CaCl 14.2ppg 1.34 yield 50% Excess
TOC Surface

Intermediate Lead:865SKS Econocem-HLC + 5% Salt + 5# Gilsonite 14.6ppg 1.54yield 70% Excess
 Tail:160SKS Halcem-C + 1% CaCl 14.8ppg 1.34 yield 25% Excess
TOC Surface

Lateral Lead:785SKS Econocem-H + 0.2% HR-604 11.9ppg 2.44 yield 50% Excess
 Tail:1240SKS Versacem-H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 0.1% HR-601 14.5ppg 1.22 yield 25% Excess
TOC 3300 Centralizers every 3rd joint in lateral to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.

Office of the State Engineer indicates that the average depth to groundwater is 57'. Fresh water zones will be protected by setting 20" casing at 350 and cementing to surface. Capitan Reef will be protected by setting 13⅝" casing at 1600 and cementing to surface and 9⅝" casing at 3500 and cementing to surface. Hydrocarbon by setting 5½" casing at 12778 MD and cementing to 3300.

<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 13⅝" 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.

See
COA
 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 20" surface pipe the well will be equipped with a 2M diverter system. (See Exhibit "E-1"). From the base of the 13 3/8" casing through the running of 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.

1005

Application to Drill
Burton 6 Federal Com No. 4
Cimarex Energy Co. of Colorado
Unit A, Section 6
T20S-R30E, Eddy County, NM

- 12 Testing, Logging and Coring Program: *See COA*
- A. Mud logging program: 2 man unit from 3500' 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.

Location Eddy County, NM
Field (Burton) Sec 6, T20S, R30E
Facility Burton 6 Fed No.4H

Slot No.4H SHL
Well No.4H
Wellbore No.4H PWB



INTEQ

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	175.741	0.00	0.00	0.00	0.00	0.00
Est KOP	7960.00	0.000	175.741	7960.00	0.00	0.00	0.00	0.00
End of Curve	8455.06	90.002	175.741	8275.16	-314.30	23.41	18.18	315.17
No.4H PBHL	12777.79	90.002	175.741	8275.00	-4625.09	344.46	0.00	4637.90

Plot reference wellpath is Prelim_1

True vertical depths are referenced to Rlg on No.4H SHL (RT)

Grid System: NAD83 / TM New Mexico State Planes, Eastern Zone (3001), US feet

Measured depths are referenced to Rlg on No.4H SHL (RT)

North Reference: Grid north

Rlg on No.4H SHL (RT) to Mean Sea Level: 3246 feet

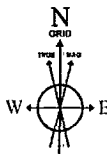
Scale: True distance

Mean Sea Level to Mud line (Facility: Burton 6 Fed No.4H): -3246 feet

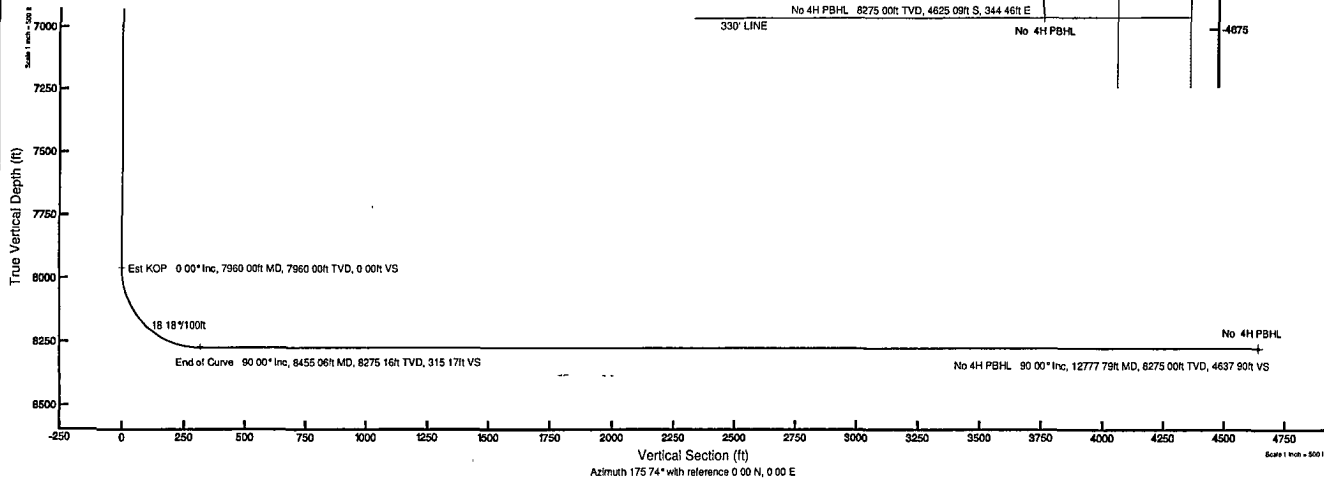
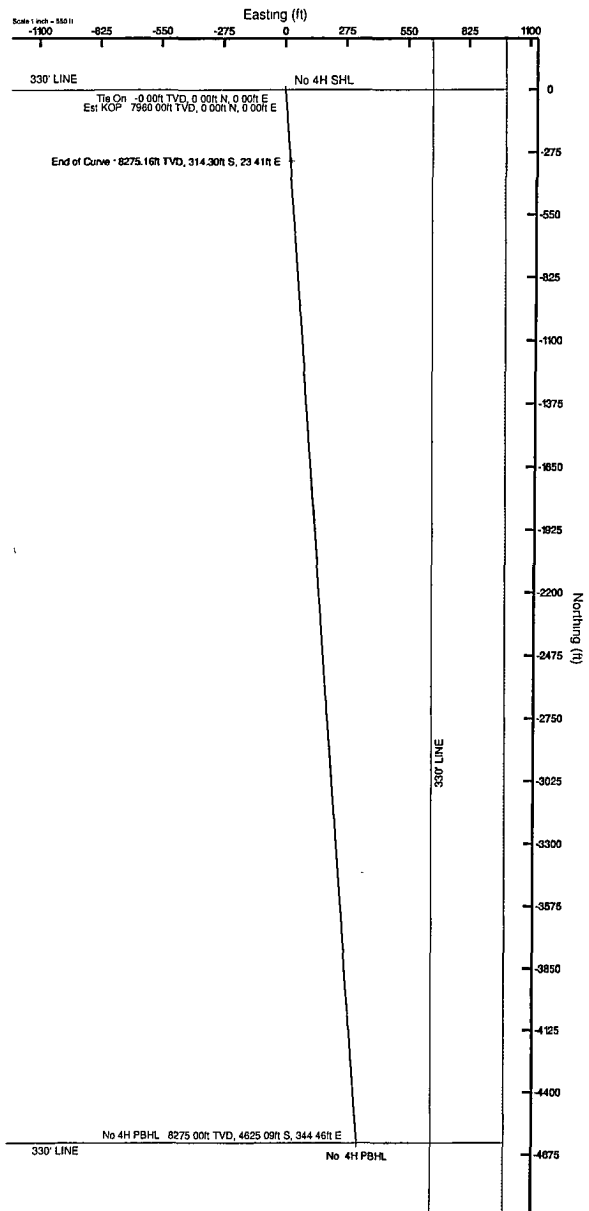
Depths are in feet

Coordinates are in feet referenced to Slot

Created by: gomeasrc on 1/7/2011



BGM (1945.0 to 2012.0) Dip: 60.49° Field: 48878.4 nT
Magnetic North is 7.93 degrees East of True North (at 1/7/2011)
Grid North is 0.18 degrees East of True North
To correct azimuth from True to Grid subtract 0.18 degrees
To correct azimuth from Magnetic to Grid add 7.75 degrees
For example: If the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.75 = 97.75





Planned Wellpath Report

Prelim_1
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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.4H SHL
Area	Eddy County, NM	Well	No.4H
Field	(Burton) Sec 6, T20S, R30E	Wellbore	No.4H PWB
Facility	Burton 6 Fed No.4H		

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	Gomeoscr
Scale	0.999921	Report Generated	1/7/2011 at 2:58:36 PM
Convergence at slot	0.18° East	Database/Source file	WA Midland/No.4H_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	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W
Facility Reference Pt			642139.30	585356.10	32°36'31.568"N	104°00'21.503"W
Field Reference Pt			639370.01	585205.16	32°36'30.158"N	104°00'53.884"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.4H SHL (RT) to Facility Vertical Datum	0.00ft
Horizontal Reference Pt	Slot	Rig on No.4H SHL (RT) to Mean Sea Level	3246.00ft
Vertical Reference Pt	Rig on No.4H SHL (RT)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No.4H SHL (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	175.74°



Planned Wellpath Report

Prelim_1

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

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Field	(Burton) Sec 6, T20S, R30E	Wellbore	No.4H PWB
Facility	Burton 6 Fed No.4H		

WELLPATH DATA (133 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	175.741	0.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	Tie On
100.00†	0.000	175.741	100.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
200.00†	0.000	175.741	200.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
300.00†	0.000	175.741	300.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
400.00†	0.000	175.741	400.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
500.00†	0.000	175.741	500.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
600.00†	0.000	175.741	600.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
700.00†	0.000	175.741	700.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
800.00†	0.000	175.741	800.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
900.00†	0.000	175.741	900.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
1000.00†	0.000	175.741	1000.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
1100.00†	0.000	175.741	1100.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
1200.00†	0.000	175.741	1200.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
1300.00†	0.000	175.741	1300.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
1400.00†	0.000	175.741	1400.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
1500.00†	0.000	175.741	1500.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
1600.00†	0.000	175.741	1600.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
1700.00†	0.000	175.741	1700.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
1800.00†	0.000	175.741	1800.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
1900.00†	0.000	175.741	1900.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
2000.00†	0.000	175.741	2000.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
2100.00†	0.000	175.741	2100.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
2200.00†	0.000	175.741	2200.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
2300.00†	0.000	175.741	2300.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
2400.00†	0.000	175.741	2400.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
2500.00†	0.000	175.741	2500.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
2600.00†	0.000	175.741	2600.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
2700.00†	0.000	175.741	2700.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
2800.00†	0.000	175.741	2800.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
2900.00†	0.000	175.741	2900.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
3000.00†	0.000	175.741	3000.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
3100.00†	0.000	175.741	3100.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
3200.00†	0.000	175.741	3200.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
3300.00†	0.000	175.741	3300.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
3400.00†	0.000	175.741	3400.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
3500.00†	0.000	175.741	3500.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	Delaware
3600.00†	0.000	175.741	3600.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
3700.00†	0.000	175.741	3700.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
3800.00†	0.000	175.741	3800.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
3900.00†	0.000	175.741	3900.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
4000.00†	0.000	175.741	4000.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
4100.00†	0.000	175.741	4100.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
4200.00†	0.000	175.741	4200.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
4300.00†	0.000	175.741	4300.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
4400.00†	0.000	175.741	4400.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Cimarex Energy Co.	Slot	No.4H SHL
Area	Eddy County, NM	Well	No.4H
Field	(Burton) Sec 6, T20S, R30E	Wellbore	No.4H PWB
Facility	Burton 6 Fed No.4H		

WELLPATH DATA (133 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
4500.00†	0.000	175.741	4500.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
4600.00†	0.000	175.741	4600.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
4700.00†	0.000	175.741	4700.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
4800.00†	0.000	175.741	4800.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
4900.00†	0.000	175.741	4900.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
5000.00†	0.000	175.741	5000.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
5100.00†	0.000	175.741	5100.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
5200.00†	0.000	175.741	5200.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
5300.00†	0.000	175.741	5300.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
5400.00†	0.000	175.741	5400.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
5500.00†	0.000	175.741	5500.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
5600.00†	0.000	175.741	5600.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
5700.00†	0.000	175.741	5700.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
5800.00†	0.000	175.741	5800.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
5900.00†	0.000	175.741	5900.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
6000.00†	0.000	175.741	6000.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
6100.00†	0.000	175.741	6100.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
6120.00†	0.000	175.741	6120.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	Bone Spring
6200.00†	0.000	175.741	6200.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
6300.00†	0.000	175.741	6300.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
6400.00†	0.000	175.741	6400.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
6500.00†	0.000	175.741	6500.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
6600.00†	0.000	175.741	6600.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
6700.00†	0.000	175.741	6700.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
6800.00†	0.000	175.741	6800.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
6900.00†	0.000	175.741	6900.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
7000.00†	0.000	175.741	7000.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
7100.00†	0.000	175.741	7100.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
7200.00†	0.000	175.741	7200.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
7300.00†	0.000	175.741	7300.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
7400.00†	0.000	175.741	7400.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
7460.00†	0.000	175.741	7460.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	1st Bone Spring
7500.00†	0.000	175.741	7500.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
7600.00†	0.000	175.741	7600.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
7700.00†	0.000	175.741	7700.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
7800.00†	0.000	175.741	7800.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
7900.00†	0.000	175.741	7900.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	
7960.00	0.000	175.741	7960.00	0.00	0.00	0.00	642139.30	585356.10	32°36'31.568"N	104°00'21.503"W	0.00	Est KOP
8000.00†	7.272	175.741	7999.89	2.54	-2.53	0.19	642139.49	585353.57	32°36'31.543"N	104°00'21.501"W	18.18	
8100.00†	25.452	175.741	8095.44	30.59	-30.50	-2.27	642141.57	585325.60	32°36'31.266"N	104°00'21.478"W	18.18	
8200.00†	43.632	175.741	8177.47	87.05	-86.81	6.47	642145.76	585269.30	32°36'30.709"N	104°00'21.431"W	18.18	
8300.00†	61.812	175.741	8237.78	166.29	-165.83	12.35	642151.65	585190.28	32°36'29.927"N	104°00'21.365"W	18.18	
8400.00†	79.992	175.741	8270.36	260.39	-259.67	19.34	642158.64	585096.45	32°36'28.998"N	104°00'21.286"W	18.18	
8455.06	90.002	175.741	8275.16	315.17	-314.30	23.41	642162.71	585041.83	32°36'28.458"N	104°00'21.241"W	18.18	End of Curve
8500.00†	90.002	175.741	8275.16	360.11	-359.11	26.75	642166.04	584997.01	32°36'28.014"N	104°00'21.203"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.4H SHL
Area	Eddy County, NM	Well	No.4H
Field	(Burton) Sec 6, T20S, R30E	Wellbore	No.4H PWB
Facility	Burton 6 Fed No.4H		

WELLPATH DATA (133 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
8600.00†	90.002	175.741	8275.15	460.11	-458.84	34.17	642173.47	584897.30	32°36'27.027"N	104°00'21.120"W	0.00	
8700.00†	90.002	175.741	8275.15	560.11	-558.56	41.60	642180.90	584797.58	32°36'26.040"N	104°00'21.037"W	0.00	
8800.00†	90.002	175.741	8275.15	660.11	-658.29	49.03	642188.32	584697.87	32°36'25.053"N	104°00'20.954"W	0.00	
8900.00†	90.002	175.741	8275.14	760.11	-758.01	56.45	642195.75	584598.15	32°36'24.066"N	104°00'20.870"W	0.00	
9000.00†	90.002	175.741	8275.14	860.11	-857.73	63.88	642203.18	584498.44	32°36'23.079"N	104°00'20.787"W	0.00	
9100.00†	90.002	175.741	8275.13	960.11	-957.46	71.31	642210.60	584398.72	32°36'22.093"N	104°00'20.704"W	0.00	
9200.00†	90.002	175.741	8275.13	1060.11	-1057.18	78.73	642218.03	584299.00	32°36'21.106"N	104°00'20.621"W	0.00	
9300.00†	90.002	175.741	8275.13	1160.11	-1156.90	86.16	642225.45	584199.29	32°36'20.119"N	104°00'20.537"W	0.00	
9400.00†	90.002	175.741	8275.12	1260.11	-1256.63	93.59	642232.88	584099.57	32°36'19.132"N	104°00'20.454"W	0.00	
9500.00†	90.002	175.741	8275.12	1360.11	-1356.35	101.02	642240.31	583999.86	32°36'18.145"N	104°00'20.371"W	0.00	
9600.00†	90.002	175.741	8275.12	1460.11	-1456.08	108.44	642247.73	583900.14	32°36'17.158"N	104°00'20.288"W	0.00	
9700.00†	90.002	175.741	8275.11	1560.11	-1555.80	115.87	642255.16	583800.43	32°36'16.171"N	104°00'20.205"W	0.00	
9800.00†	90.002	175.741	8275.11	1660.11	-1655.52	123.30	642262.59	583700.71	32°36'15.184"N	104°00'20.121"W	0.00	
9900.00†	90.002	175.741	8275.11	1760.11	-1755.25	130.72	642270.01	583601.00	32°36'14.197"N	104°00'20.038"W	0.00	
10000.00†	90.002	175.741	8275.10	1860.11	-1854.97	138.15	642277.44	583501.28	32°36'13.210"N	104°00'19.955"W	0.00	
10100.00†	90.002	175.741	8275.10	1960.11	-1954.70	145.58	642284.87	583401.56	32°36'12.223"N	104°00'19.872"W	0.00	
10200.00†	90.002	175.741	8275.09	2060.11	-2054.42	153.00	642292.29	583301.85	32°36'11.236"N	104°00'19.788"W	0.00	
10300.00†	90.002	175.741	8275.09	2160.11	-2154.14	160.43	642299.72	583202.13	32°36'10.249"N	104°00'19.705"W	0.00	
10400.00†	90.002	175.741	8275.09	2260.11	-2253.87	167.86	642307.15	583102.42	32°36'09.262"N	104°00'19.622"W	0.00	
10500.00†	90.002	175.741	8275.08	2360.11	-2353.59	175.29	642314.57	583002.70	32°36'08.275"N	104°00'19.539"W	0.00	
10600.00†	90.002	175.741	8275.08	2460.11	-2453.31	182.71	642322.00	582902.99	32°36'07.288"N	104°00'19.456"W	0.00	
10700.00†	90.002	175.741	8275.08	2560.11	-2553.04	190.14	642329.42	582803.27	32°36'06.301"N	104°00'19.372"W	0.00	
10800.00†	90.002	175.741	8275.07	2660.11	-2652.76	197.57	642336.85	582703.55	32°36'05.314"N	104°00'19.289"W	0.00	
10900.00†	90.002	175.741	8275.07	2760.11	-2752.49	204.99	642344.28	582603.84	32°36'04.328"N	104°00'19.206"W	0.00	
11000.00†	90.002	175.741	8275.07	2860.11	-2852.21	212.42	642351.70	582504.12	32°36'03.341"N	104°00'19.123"W	0.00	
11100.00†	90.002	175.741	8275.06	2960.11	-2951.93	219.85	642359.13	582404.41	32°36'02.354"N	104°00'19.039"W	0.00	
11200.00†	90.002	175.741	8275.06	3060.11	-3051.66	227.28	642366.56	582304.69	32°36'01.367"N	104°00'18.956"W	0.00	
11300.00†	90.002	175.741	8275.05	3160.11	-3151.38	234.70	642373.98	582204.98	32°36'00.380"N	104°00'18.873"W	0.00	
11400.00†	90.002	175.741	8275.05	3260.11	-3251.10	242.13	642381.41	582105.26	32°35'59.393"N	104°00'18.790"W	0.00	
11500.00†	90.002	175.741	8275.05	3360.11	-3350.83	249.56	642388.84	582005.54	32°35'58.406"N	104°00'18.707"W	0.00	
11600.00†	90.002	175.741	8275.04	3460.11	-3450.55	256.98	642396.26	581905.83	32°35'57.419"N	104°00'18.623"W	0.00	
11700.00†	90.002	175.741	8275.04	3560.11	-3550.28	264.41	642403.69	581806.11	32°35'56.432"N	104°00'18.540"W	0.00	
11800.00†	90.002	175.741	8275.04	3660.11	-3650.00	271.84	642411.12	581706.40	32°35'55.445"N	104°00'18.457"W	0.00	
11900.00†	90.002	175.741	8275.03	3760.11	-3749.72	279.26	642418.54	581606.68	32°35'54.458"N	104°00'18.374"W	0.00	
12000.00†	90.002	175.741	8275.03	3860.11	-3849.45	286.69	642425.97	581506.97	32°35'53.471"N	104°00'18.291"W	0.00	
12100.00†	90.002	175.741	8275.02	3960.11	-3949.17	294.12	642433.39	581407.25	32°35'52.484"N	104°00'18.207"W	0.00	
12200.00†	90.002	175.741	8275.02	4060.11	-4048.90	301.55	642440.82	581307.53	32°35'51.497"N	104°00'18.124"W	0.00	
12300.00†	90.002	175.741	8275.02	4160.11	-4148.62	308.97	642448.25	581207.82	32°35'50.510"N	104°00'18.041"W	0.00	
12400.00†	90.002	175.741	8275.01	4260.11	-4248.34	316.40	642455.67	581108.10	32°35'49.523"N	104°00'17.958"W	0.00	
12500.00†	90.002	175.741	8275.01	4360.11	-4348.07	323.83	642463.10	581008.39	32°35'48.536"N	104°00'17.874"W	0.00	
12600.00†	90.002	175.741	8275.01	4460.11	-4447.79	331.25	642470.53	580908.67	32°35'47.549"N	104°00'17.791"W	0.00	
12700.00†	90.002	175.741	8275.00	4560.11	-4547.51	338.68	642477.95	580808.96	32°35'46.563"N	104°00'17.708"W	0.00	
12777.79	90.002	175.741	8275.00†	4637.90	-4625.09	344.46	642483.73	580731.39	32°35'45.795"N	104°00'17.643"W	0.00	No.4H PBHL



Planned Wellpath Report

Prelim_1
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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	Cimarex Energy Co.	Slot	No.4H SHL
Area	Eddy County, NM	Well	No.4H
Field	(Burton) Sec 6, T20S, R30E	Wellbore	No.4H PWB
Facility	Burton 6 Fed No.4H		

HOLE & CASING SECTIONS Ref Wellbore: No.4H 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]
8.625in Casing	0.00	3500.00	3500.00	0.00	3500.00	0.00	0.00	0.00	0.00
7.875in Open Hole	3500.00	12777.79	9277.79	3500.00	NA	0.00	0.00	NA	NA

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
1) No. 4H PBHL	12777.79	8275.00	-4625.09	344.46	642483.73	580731.39	32°35'45.795"N	104°00'17.643"W	point

SURVEY PROGRAM Ref Wellbore: No.4H PWB Ref Wellpath: Prelim_1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
0.00	12777.79	NaviTrak (Standard)		No.4H PWB

20" Diverter System

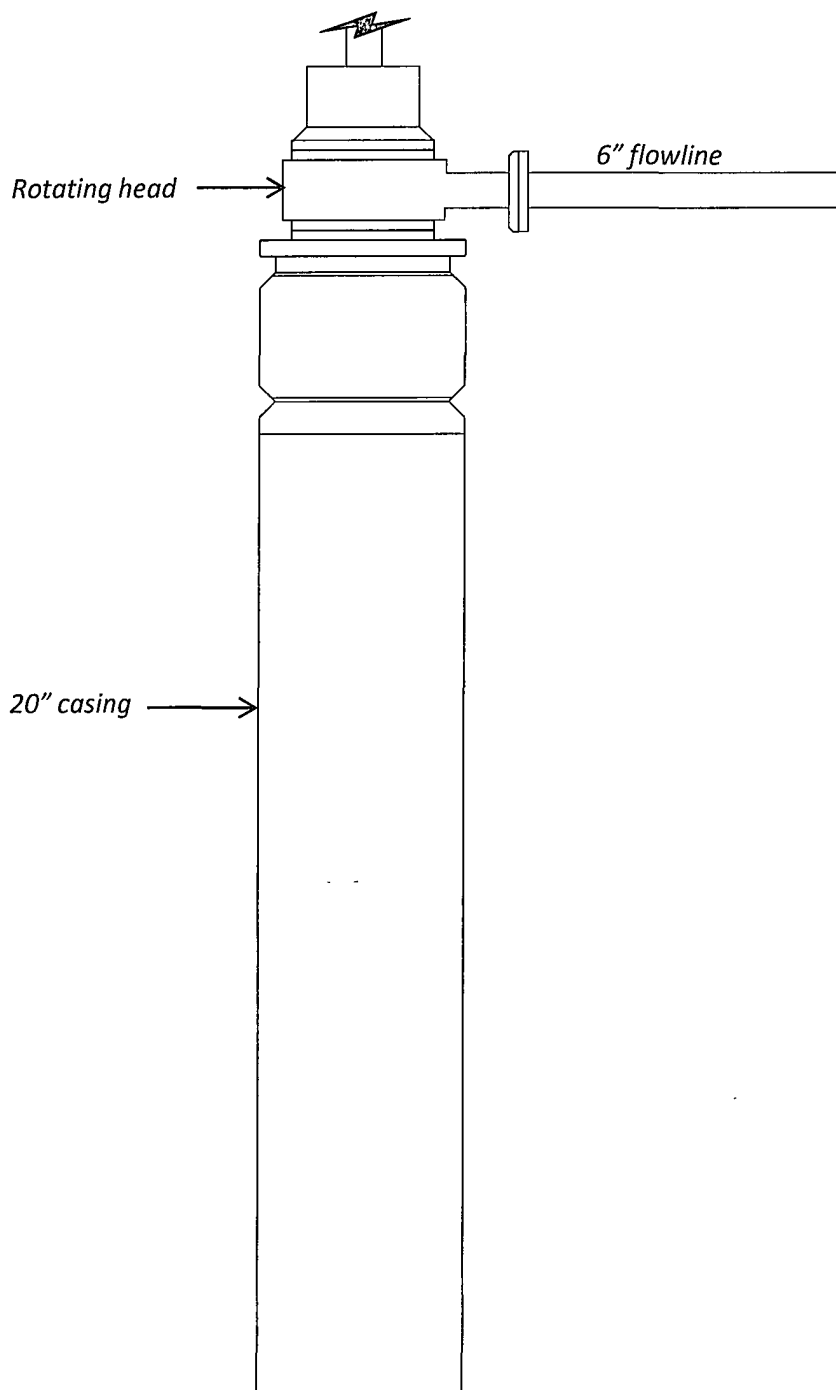


Exhibit E-1 – 20" Diverter System

Burton 6 Federal Com No. 4

Cimarex Energy Co. of Colorado

6-20S-30E

SHL 330 FNL & 990 FEL

BHL 330 FSL & 660 FEL

Eddy County, NM

SR & A

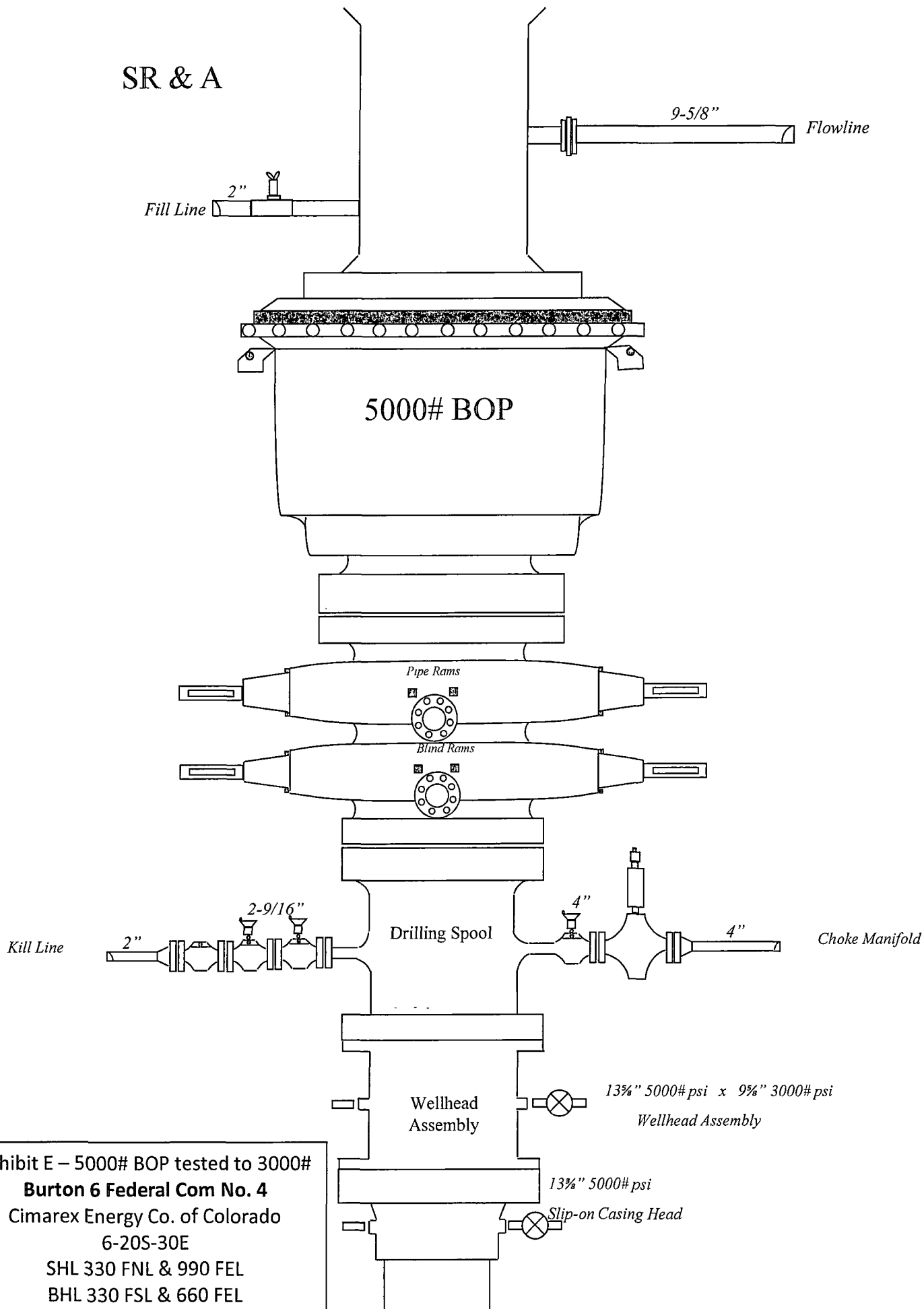


Exhibit E – 5000# BOP tested to 3000#

Burton 6 Federal Com No. 4

Cimarex Energy Co. of Colorado

6-20S-30E

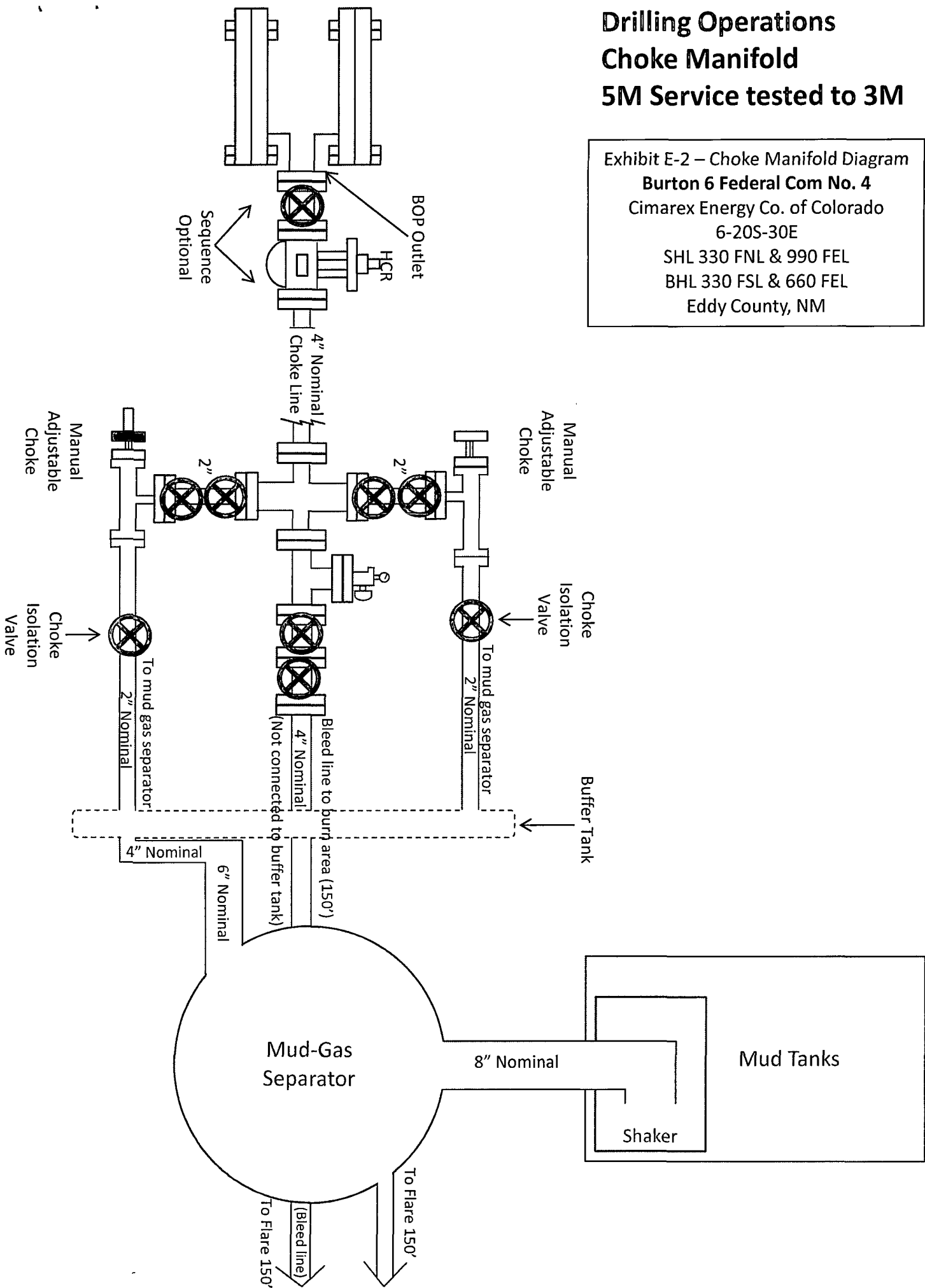
SHL 330 FNL & 990 FEL

BHL 330 FSL & 660 FEL

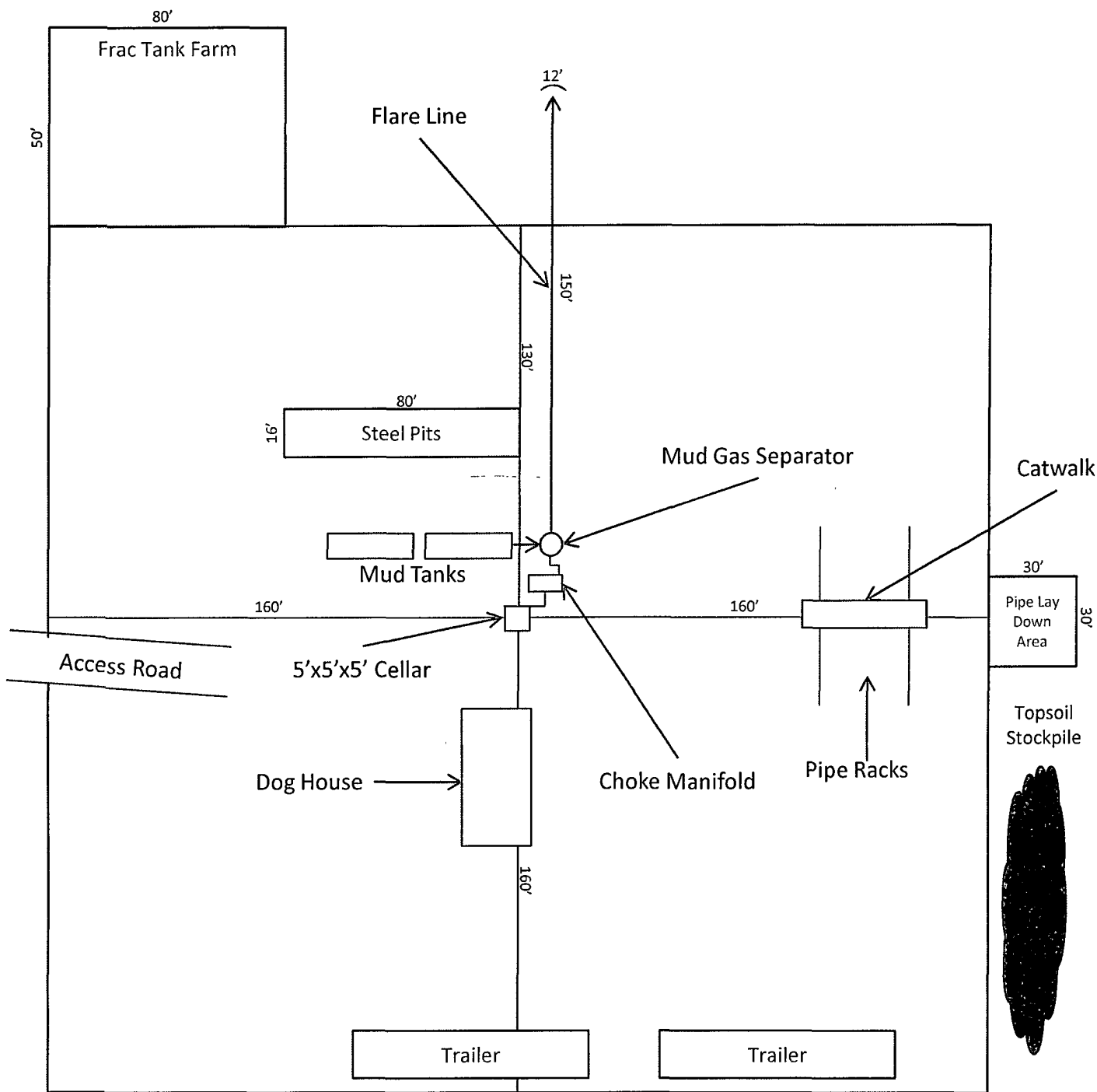
Eddy County, NM

Drilling Operations
Choke Manifold
5M Service tested to 3M

Exhibit E-2 – Choke Manifold Diagram
Burton 6 Federal Com No. 4
Cimarex Energy Co. of Colorado
6-20S-30E
SHL 330 FNL & 990 FEL
BHL 330 FSL & 660 FEL
Eddy County, NM



Key 884



1"=50'

N

Exhibit D – Rig Diagram
Burton 6 Federal Com No. 4
Cimarex Energy Co. of Colorado
6-20S-30E
SHL 330 FNL & 990 FEL
BHL 330 FSL & 660 FEL
Eddy County, NM