

# OPERATOR'S COPY

Form 3160-3  
(April 2004)

**RECEIVED**

MAY 25 2012

FORM APPROVED  
OMB No 1001-0137  
Expires March 31, 2007

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**NMOC D ARTESIA**

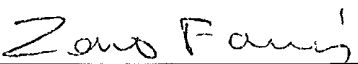
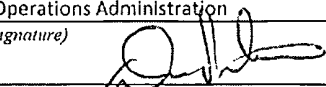
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work. <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM-94076
1b. Type of Well. <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> 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 Pintall 23 Federal No. 74<371767
3b. Phone No. (include area code) 432-571-7800		9. API Well No 30-015- 40337
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 2500 FNL & 1335 FWL At proposed prod. Zone 330 FNL & 1365 FWL Horizontal Delaware Test		10. Field and Pool, or Exploratory Cottonwood Draw; Delaware, N < 96720
11. Sec., T. R. M. or Blk. and Survey or Area 23-255-26E		12. County or Parish Eddy
13. State NM		14. Distance in miles and direction from nearest town or post office*
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line if any) 15'	16. No of acres in lease 360	17. Spacing Unit dedicated to this well E2NW 80 acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. N/A	19. Proposed Depth Pilot Hole 3400' Lateral MD 5087' TVD 2999'	20. BLM/BIA Bond No. on File NM-2575
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3295' GR	22. Approximate date work will start* 01.01.10	23. Estimated duration 15-20 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 	Name (Printed/Typed) Zeno Farris	Date 12.04.09
Title Manager Operations Administration		
Approved By (Signature) 	Name (Printed/Typed) G. V. FIELD MANAGER	Date 5/27/10
Title Office		CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon

Conditions of approval, if any, are attached

**APPROVAL FOR TWO YEARS**

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

\* (Instructions on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

Operator Certification Statement  
Pintail 23 Federal No. 7  
Cimarex Energy Co. of Colorado  
Unit Letter F, Section 23  
T25S-R26E, Eddy County, NM

Operator's Representative

Cimarex Energy Co. of Colorado  
600 N. Marienfeld St., Ste. 600  
Midland, TX 79701  
Office Phone: (432) 620-1938  
Zeno Farris

**CERTIFICATION:** I hereby certify that the statements and plans made in this APD are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Cimarex Energy Co. of Colorado and/or its contractors/subcontractors and is in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of U.S.C. 1001 for the filing of a false statement.

NAME: Zeno Farris  
Zeno Farris  
DATE: December 4, 2009  
TITLE: Manager Operations Administration

DISTRICT I  
1628 K. French Tr., Hobbs, NM 88240

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

DISTRICT III  
1000 Rio Branson Rd., Artesia, NM 87410

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

State of New Mexico  
Energy, Minerals and Natural Resources Department

Revised October 15, 2009

Submit one copy to appropriate

OIL CONSERVATION DIVISION

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number <b>30-015-40337</b>	Pool Code 96720	Pool Name Cottonwood Draw; Delaware, N
Property Code <b>37776</b>	Property Name PINTAIL "23" FEDERAL	Well Number <b>7H</b>
GRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3295'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	23	25 S	26 E		2500	NORTH	1335	WEST	EDDY

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
C	23	25 S	26 E		330	NORTH	1365	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
80			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

	<p><b>PROPOSED BOTTOM HOLE LOCATION</b> Lot - N 32°07'18.05" Long - W 104°16'03.37" NUSPCE - N 408009.360 E 561686.329 (NAD-83)</p> <p><b>BHL</b> 330 FNL &amp; 1365 FWL</p> <p><b>Proposed Producing Interval</b></p> <p><b>EOC</b> 2309 FNL &amp; 1337 FWL</p> <p><b>SURFACE LOCATION</b> Lot - N 32°08'56.57" Long - W 104°16'03.65" NUSPCE - N 405839.565 E 561663.545 (NAD-83)</p> <p><b>SHL &amp; P.P. Delaware</b> 330 FSL &amp; 660 FEL</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>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 undivided 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.</p> <p><i>Zeno Farris</i> 10/4/2009 Signature Date</p> <p>Zeno Farris Printed Name</p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p>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.</p> <p>DATE SURVEYED 10/15/2009 Signature &amp; Seal of Professional Surveyor GARY L. JONES Certificate No. Gary L. Jones 7977</p>	
	<p><b>BASIN SURVEYS</b></p>	

Application to Drill  
**Pintail 23 Federal No. 7**  
Cimarex Energy Co. of Colorado  
Unit Letter F, Section 23  
T25S-R26E, 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 2500 FNL & 1335 FWL  
BHL 330 FNL & 1365 FWL
2. Elevation above sea level: 3295' 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: Pilot Hole 3400' Lateral MD 5087' TVD 2999'
6. Estimated tops of geological markers:

Top Salt	1044'	Cherry Canyon M	2899'
Base Salt	1664'	Cherry Canyon M3	2959'
Bell Canyon	1864'	M3 TVD Target	2999'
Ramsey	1924'	Cherry Canyon L	3154'
Cherry Canyon	2844'	Cherry Canyon K	3199'
7. Possible mineral bearing formations:

Bell Canyon	Oil
Cherry Canyon	Oil

8. Proposed drilling Plan

Drill 12¼" hole to 440' and set 9½" casing. In case of excessive lost returns from 0-370,' POOH and ream hole with 14¾" bit and set 11¼" casing from 0-370.' Then proceed with drilling 12¼" hole to 440' and set 9½" casing from 0-440.'

After drilling and setting surface casing and possible surface casing contingency, drill through 9½" casing with 8¾" bit and cut core from 2940-3140'. Continue drilling to 3400' and log. Pump cement plug in 8¾" open hole and drill through cement to kick off 8¾" lateral @ 2808.' Drill lateral to EOC @ 3108' and switch to 7½" bit from EOC to TD @ 5087.' Run 5½" 17# J-55 LTC from 0 to 2808' (KOP) and BTC from 2808' to TD. Cement liner.

Application to Drill  
Pintail 23 Federal No. 7  
Cimarex Energy Co. of Colorado  
Unit Letter F, Section 23  
T25S-R26E, Eddy County, NM

9. Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 440'	8.4 - 8.6	30-32	NC	FW spud mud. Sweep as needed to clean hole.
440' to 3,400'	10	28-29	NC	Saturated Brine. Sweep as needed to clean hole.
2,808' to 5,087'	9.5 - 9.8	28-29	NC	Cut brine. Sweep as needed to clean hole.

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.

10. Casing Program:

	Hole Size	Depth	Casing OD	Weight	Collar	Grade
Surface	12 1/4"	0' to 440'	New 9 1/2"	40#	LTC	J-55
Contingency	14 1/2"	0' to 370'	New 13 3/4"	48#	LTC	H-40
Pilot Hole	8 1/2"	0' to 3400'				
Production 1	8 1/2"	0' to 2808'	New 5 1/2"	17#	LTC	J-55
Production 2	7 1/2"	2808' to 5087'	New 5 1/2"	17#	BTC	L-80

per Zero F.  
5-24-10 CRW

11. Cementing Program:

Surface Casing	Lead: 150 sx (Class C) + 4% D20 + 0.2% D46 + 2% S1, (12.9 ppg, 1.97 cuft/sx) Tail: 150 sx (Class C) + 2% S1 (14.80 ppg, 1.34 cuft/sx) TOC Surface
Surface Contingency	310 sx Clas C + 2% S1 + 0.236# D-130 (14.8, yld 1.34) TOC Surface
Pilot Hole	Lead: 300 sx H + 0.65% D-65 + 0.05% D-13 (wt 17.0, yld 0.99) Tail: 190 sx C + 0.1% D-167 + 0.1% D-13 (wt 14.8, yld 1.33) TOC 2750'
Production casing	Lead: 650 sx 50/50 Pozmix/Class C + 5% D44 + 6% D20 + 0.2 % D46 + 0.125 pps D130 (wt 11.9, yld 1.91) Tail: 660 sx C + 1.33% D44 + 0.1% D167 + 0.1% D65 + 0.1 D13 (wt 13.0, yld 1.35) TOC Surface

Fresh water zones will be protected by setting 9 1/2" casing at 440' and cementing to surface. Hydrocarbon zones will be protected by plugging open-hole pilot hole to 2750' and setting 5 1/2" casing at 5087' in the horizontal portion and cementing to surface.

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

Application to Drill  
Pintail 23 Federal No. 7  
Cimarex Energy Co. of Colorado  
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12. Pressure control Equipment;

Exhibit "E". An 11" 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.

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.

13. Testing, Logging and Coring Program: *See COA*

- A. Mud logging program: 2-man unit from 1200' to TD.
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. A core will be cut from 2940-3140.'

14. Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex has encountered H<sub>2</sub>S in a one-time encounter in an Intra-salt Pocket and while drilling and completing wells in the Delaware Mountain Group. In this regard, attached is an H<sub>2</sub>S Drilling Operations Plan. The ROEs encountered do not meet the BLM's minimum requirements for the submission of a "Public Protection Plan" for the drilling and completion of this well. 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	<b>2300 psi</b>	Estimated BHT	<b>110°</b>
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15. Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.

Drilling expected to take 15-20 days

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

16. Other Facets of Operations:

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

Delaware pay will be perforated and stimulated.

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

# **Cimarex Energy Co.**

**Eddy County (NM83E)**

**Sec 23-T25S-R26E**

**Pintail 23 Fed #7**

**Wellbore #1**

**Plan: Plan #1 11-10-09**

## **Standard Planning Report**

**10 November, 2009**

# Great White Directional Services

## Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Pintail 23 Fed #7
Company:	Cimarex Energy Co.	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Project:	Eddy County (NM83E)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 23-T25S-R26E	North Reference:	Grid
Well:	Pintail 23 Fed #7	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 11-10-09		

Project:	Eddy County (NM83E)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Sec 23-T25S-R26E		
Site Position:		Northing:	407,021.87 usft
From:	Map	Easting:	561,065.26 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	32° 7' 8.278 N
		Longitude:	104° 16' 10.598 W
		Grid Convergence:	0.03°

Well:	Pintail 23 Fed #7		
Well Position	+N/-S	-1,182.3 usft	Northing:
	+E/-W	598.3 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level:
			0.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF200510	2009/11/10	(°) 8.07	(°) 60.02	(nT) 48,687

Design:	Plan #1 11-10-09			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	0.60

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,808.0	0.00	0.00	2,808.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,108.0	90.00	0.60	2,999.0	191.0	2.0	30.00	30.00	0.00	0.60	
5,086.9	90.00	0.60	2,999.0	2,169.8	22.7	0.00	0.00	0.00	0.00	Pintail #7 PBHL



# Great White Directional Services

## Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Pintall 23 Fed #7
Company:	Cimarex Energy Co.	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Project:	Eddy County (NM83E)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 23-T25S-R26E	North Reference:	Grid
Well:	Pintall 23 Fed #7	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 11-10-09		

### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Bulld Rate (°/100ft)	Turn Rate (°/100ft)
2,808.0	0.00	0.00	2,808.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP: 30°/100 DLS, 0.60°/AZI									
2,810.0	0.60	0.60	2,810.0	0.0	0.0	0.0	30.00	30.00	0.00
2,820.0	3.60	0.60	2,820.0	0.4	0.0	0.4	30.00	30.00	0.00
2,830.0	6.60	0.60	2,830.0	1.3	0.0	1.3	30.00	30.00	0.00
2,840.0	9.60	0.60	2,839.9	2.7	0.0	2.7	30.00	30.00	0.00
2,850.0	12.60	0.60	2,849.7	4.6	0.0	4.6	30.00	30.00	0.00
2,860.0	15.60	0.60	2,859.4	7.0	0.1	7.0	30.00	30.00	0.00
2,870.0	18.60	0.60	2,868.9	10.0	0.1	10.0	30.00	30.00	0.00
2,880.0	21.60	0.60	2,878.3	13.4	0.1	13.4	30.00	30.00	0.00
2,890.0	24.60	0.60	2,887.5	17.3	0.2	17.3	30.00	30.00	0.00
2,900.0	27.60	0.60	2,896.5	21.7	0.2	21.7	30.00	30.00	0.00
2,910.0	30.60	0.60	2,905.2	26.6	0.3	26.6	30.00	30.00	0.00
2,920.0	33.60	0.60	2,913.7	31.9	0.3	31.9	30.00	30.00	0.00
2,930.0	36.60	0.60	2,921.9	37.7	0.4	37.7	30.00	30.00	0.00
2,940.0	39.60	0.60	2,929.7	43.8	0.5	43.8	30.00	30.00	0.00
2,950.0	42.60	0.60	2,937.3	50.4	0.5	50.4	30.00	30.00	0.00
2,960.0	45.60	0.60	2,944.5	57.4	0.6	57.4	30.00	30.00	0.00
2,970.0	48.60	0.60	2,951.3	64.7	0.7	64.7	30.00	30.00	0.00
2,980.0	51.60	0.60	2,957.7	72.3	0.8	72.4	30.00	30.00	0.00
2,990.0	54.60	0.60	2,963.7	80.3	0.8	80.3	30.00	30.00	0.00
3,000.0	57.60	0.60	2,969.3	88.6	0.9	88.6	30.00	30.00	0.00
3,010.0	60.60	0.60	2,974.4	97.2	1.0	97.2	30.00	30.00	0.00
3,020.0	63.60	0.60	2,979.1	106.1	1.1	106.1	30.00	30.00	0.00
3,030.0	66.60	0.60	2,983.3	115.1	1.2	115.1	30.00	30.00	0.00
3,040.0	69.59	0.60	2,987.0	124.4	1.3	124.4	30.00	30.00	0.00
3,050.0	72.59	0.60	2,990.3	133.9	1.4	133.9	30.00	30.00	0.00
3,060.0	75.59	0.60	2,993.0	143.5	1.5	143.5	30.00	30.00	0.00
3,070.0	78.59	0.60	2,995.2	153.2	1.6	153.2	30.00	30.00	0.00
3,080.0	81.59	0.60	2,996.9	163.1	1.7	163.1	30.00	30.00	0.00
3,090.0	84.59	0.60	2,998.2	173.0	1.8	173.0	30.00	30.00	0.00
3,100.0	87.59	0.60	2,998.8	183.0	1.9	183.0	30.00	30.00	0.00
3,108.0	90.00	0.60	2,999.0	191.0	2.0	191.0	30.00	30.00	0.00
EOC - Hold to TD									
3,200.0	90.00	0.60	2,999.0	283.0	3.0	283.0	0.00	0.00	0.00
3,300.0	90.00	0.60	2,999.0	383.0	4.0	383.0	0.00	0.00	0.00
3,400.0	90.00	0.60	2,999.0	483.0	5.1	483.0	0.00	0.00	0.00
3,500.0	90.00	0.60	2,999.0	582.9	6.1	583.0	0.00	0.00	0.00
3,600.0	90.00	0.60	2,999.0	682.9	7.2	683.0	0.00	0.00	0.00
3,700.0	90.00	0.60	2,999.0	782.9	8.2	783.0	0.00	0.00	0.00
3,800.0	90.00	0.60	2,999.0	882.9	9.2	883.0	0.00	0.00	0.00
3,900.0	90.00	0.60	2,999.0	982.9	10.3	983.0	0.00	0.00	0.00
4,000.0	90.00	0.60	2,999.0	1,082.9	11.3	1,083.0	0.00	0.00	0.00
4,100.0	90.00	0.60	2,999.0	1,182.9	12.4	1,183.0	0.00	0.00	0.00
4,200.0	90.00	0.60	2,999.0	1,282.9	13.4	1,283.0	0.00	0.00	0.00
4,300.0	90.00	0.60	2,999.0	1,382.9	14.5	1,383.0	0.00	0.00	0.00
4,400.0	90.00	0.60	2,999.0	1,482.9	15.5	1,483.0	0.00	0.00	0.00
4,500.0	90.00	0.60	2,999.0	1,582.9	16.6	1,583.0	0.00	0.00	0.00
4,600.0	90.00	0.60	2,999.0	1,682.9	17.6	1,683.0	0.00	0.00	0.00
4,700.0	90.00	0.60	2,999.0	1,782.9	18.7	1,783.0	0.00	0.00	0.00
4,800.0	90.00	0.60	2,999.0	1,882.9	19.7	1,883.0	0.00	0.00	0.00
4,900.0	90.00	0.60	2,999.0	1,982.9	20.8	1,983.0	0.00	0.00	0.00
5,000.0	90.00	0.60	2,999.0	2,082.9	21.8	2,083.0	0.00	0.00	0.00
5,086.9	90.00	0.60	2,999.0	2,169.8	22.7	2,169.9	0.00	0.00	0.00

# Great White Directional Services

## Planning Report

Database:	EDM 5000.1 Single-User Db	Local Co-ordinate Reference:	Well Pintail 23 Fed #7
Company:	Cimarex Energy Co.	TVD Reference:	WELL @ 0.0usft (Original Well Elev)
Project:	Eddy County (NM83E)	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Site:	Sec 23-T25S-R26E	North Reference:	Grid
Well:	Pintail 23 Fed #7	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 11-10-09		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Bulld Rate (°/100ft)	Turn Rate (°/100ft)
TD at 5086.9' TD - Pintail #7 PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Eastng (usft)	Latitude	Longitude
hit/miss target									
Shape									
Pintail #7 PBHL	0.00	0.01	2,999.0	2,169.8	22.8	408,009.36	561,686.33	32° 7' 18 047 N	104° 16' 3.369 W
- plan misses target center by 0.1usft at 5086.9usft MD (2999.0 TVD, 2169.8 N, 22.7 E)									
- Point									

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,808.0	2,808.0	0.0	0.0	KOP 30°/100 DLS, 0.60° AZI
3,108.0	2,999.0	191.0	2.0	EOC - Hold to TD
5,086.9	2,999.0	2,169.8	22.7	TD at 5086.9' TD

# Cimarex Energy Co.

Project: Eddy County (NM83E)  
Site: Sec 23-T2S-R26E  
Well: Pintail 23 Fed #7  
Wellbore: Wellbore #1  
Design: Plan #1 11-10-09

## WELL DETAILS: Pintail 23 Fed #7

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	405839.56	561663.55	32° 6' 56.574 N	104° 16' 3.649 W
		SHL: 2500' FNL / 1335' FWL			
		BHL: 330' FNL / 1365' FWL			



Azimuths to Grid North  
Total Correction: 8.04°  
Magnetic Field  
Strength: 48687.3nT  
Dip Angle: 60.02°  
Date: 2009/11/10  
Model: IGRF200510

### WELLBORE TARGET DETAILS

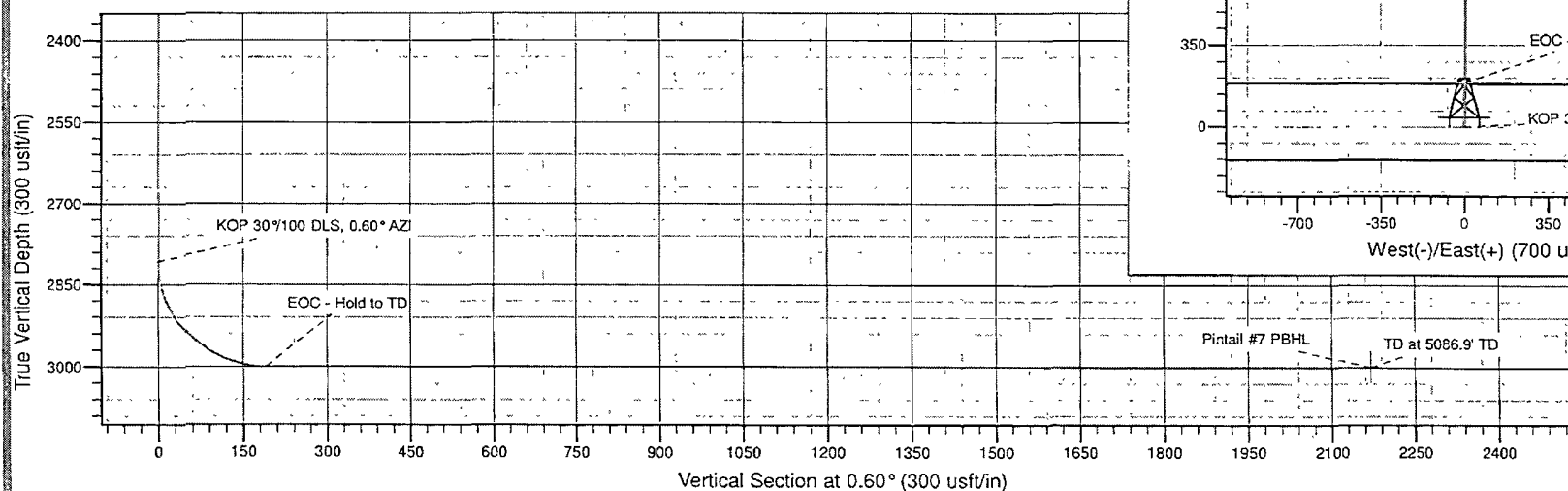
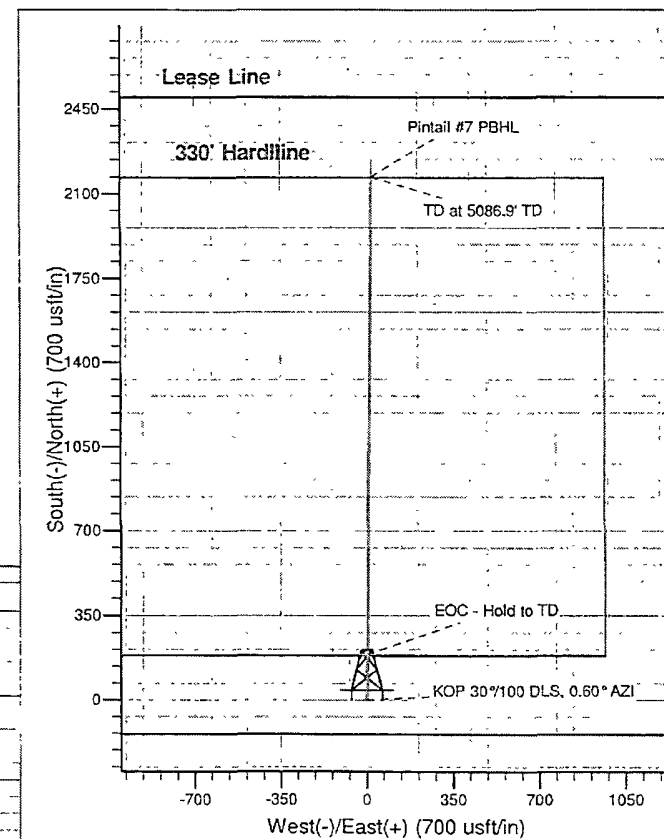
Name	TVD	+N/-S	+E/-W	Northing	Easting
Pintail #7 PBHL	2999.0	2169.8	22.8	408009.36	561686.33

### PLAN DETAILS

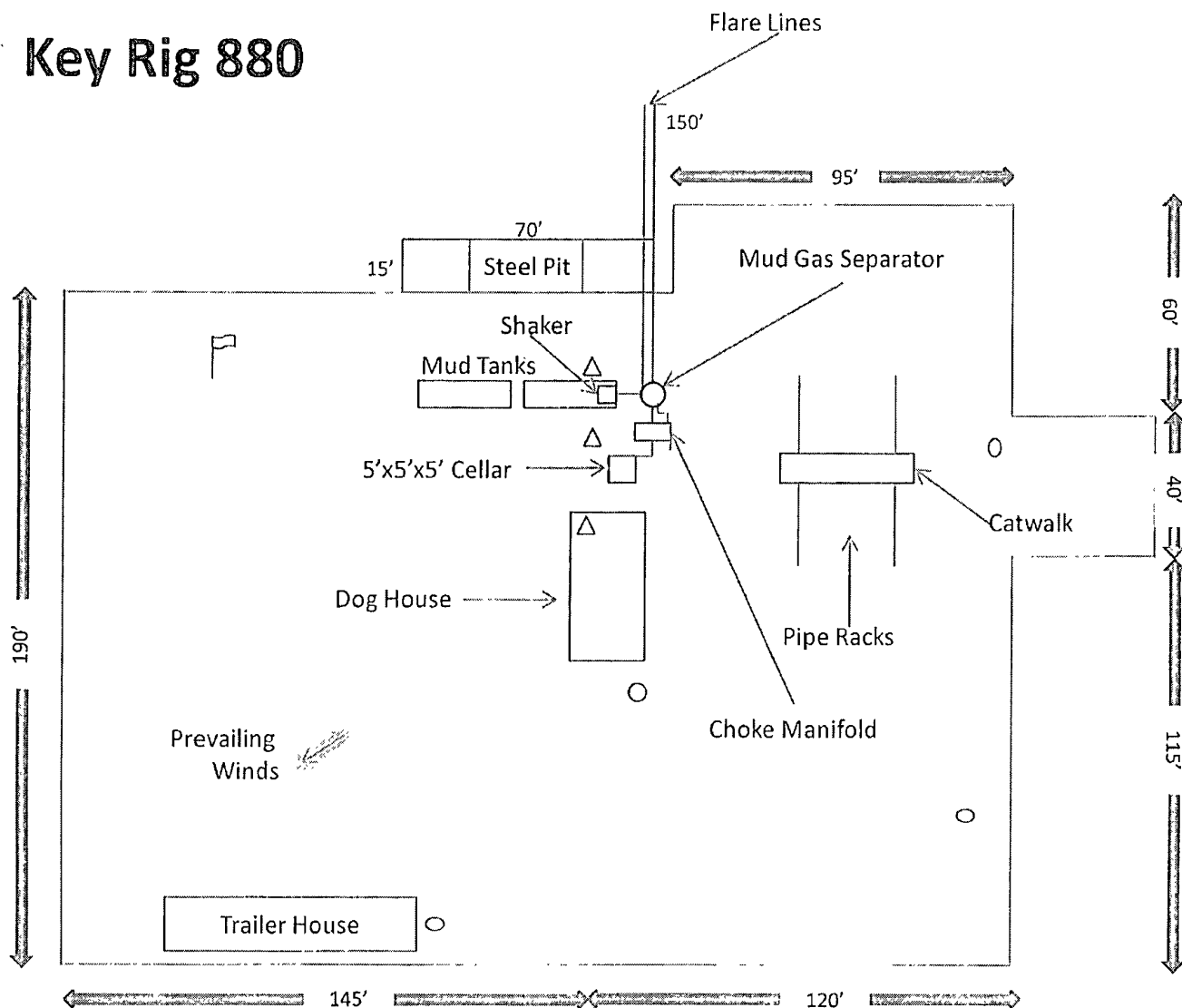
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2908.0	0.00	0.00	2808.0	0.0	0.0	0.00	0.00	0.0	
3108.0	90.00	0.60	2999.0	191.0	2.0	30.00	0.60	191.0	
5086.9	90.00	0.60	2999.0	2169.8	22.7	0.00	0.00	2169.9	Pintail #7 PBHL

### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
2808.0	2808.0	0.00	0.00	0.0	0.0	0.0	0.0	KOP 30°/100 DLS, 0.60° AZI
2999.0	3108.0	90.00	0.60	191.0	2.0	191.0	191.0	EOC - Hold to TD
2999.0	5086.9	90.00	0.60	2169.8	22.7	2169.9	2169.9	TD at 5086.9' TD



# Key Rig 880



- Wind Direction Indicators  
(wind sock or streamers)
- △ H2S Monitors  
(alarms at bell nipple and shale shaker)
- Briefing Areas
- Remote BOP Closing Unit

Exhibit D – Rig Diagram  
**Pintail 23 Federal No. 7**  
 Cimarex Energy Co. of Colorado  
 23-25S-26E  
 SHL 2500 FNL & 1335 FWL  
 BHL 330 FNL & 1365 FWL  
 Eddy County, NM

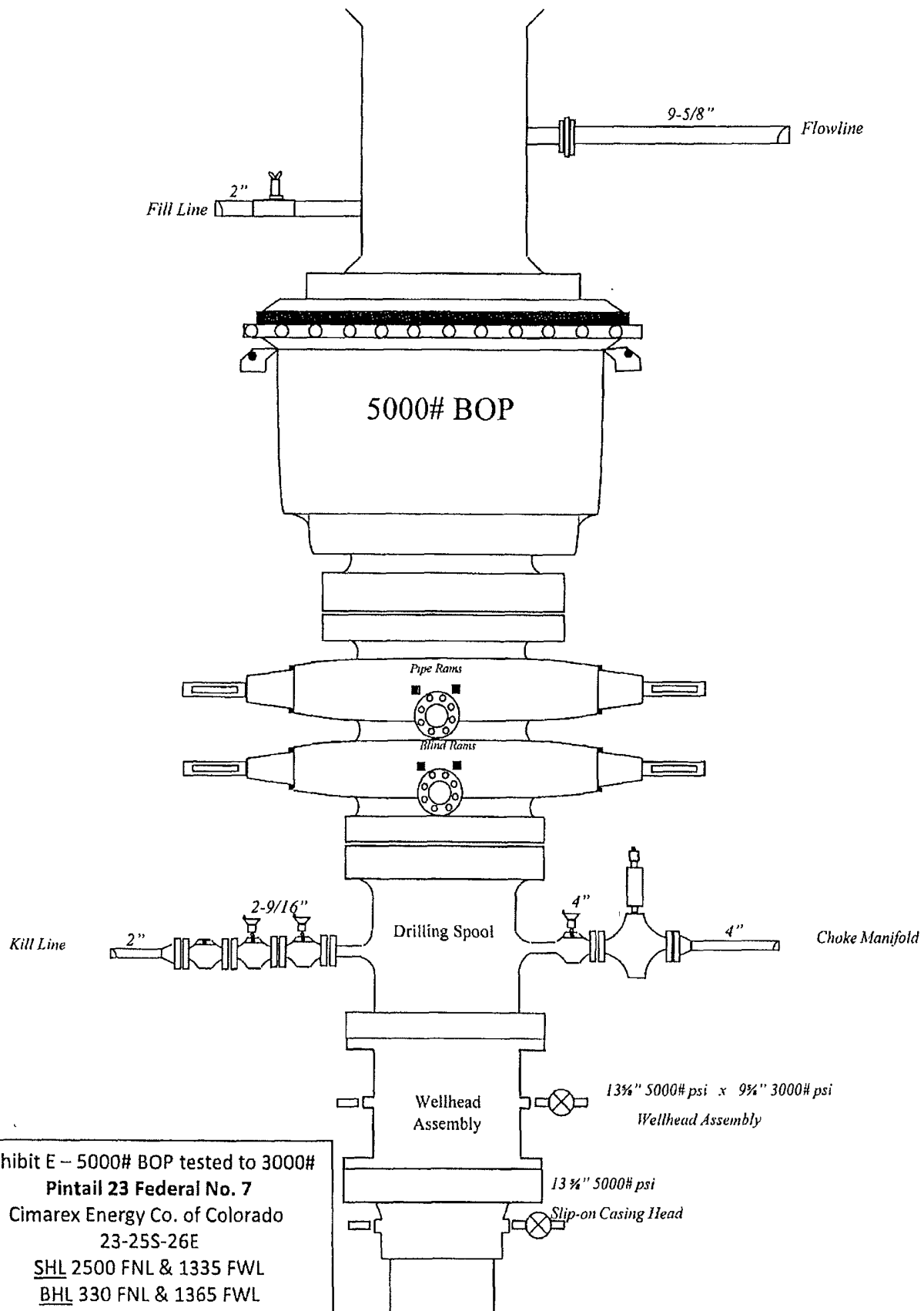
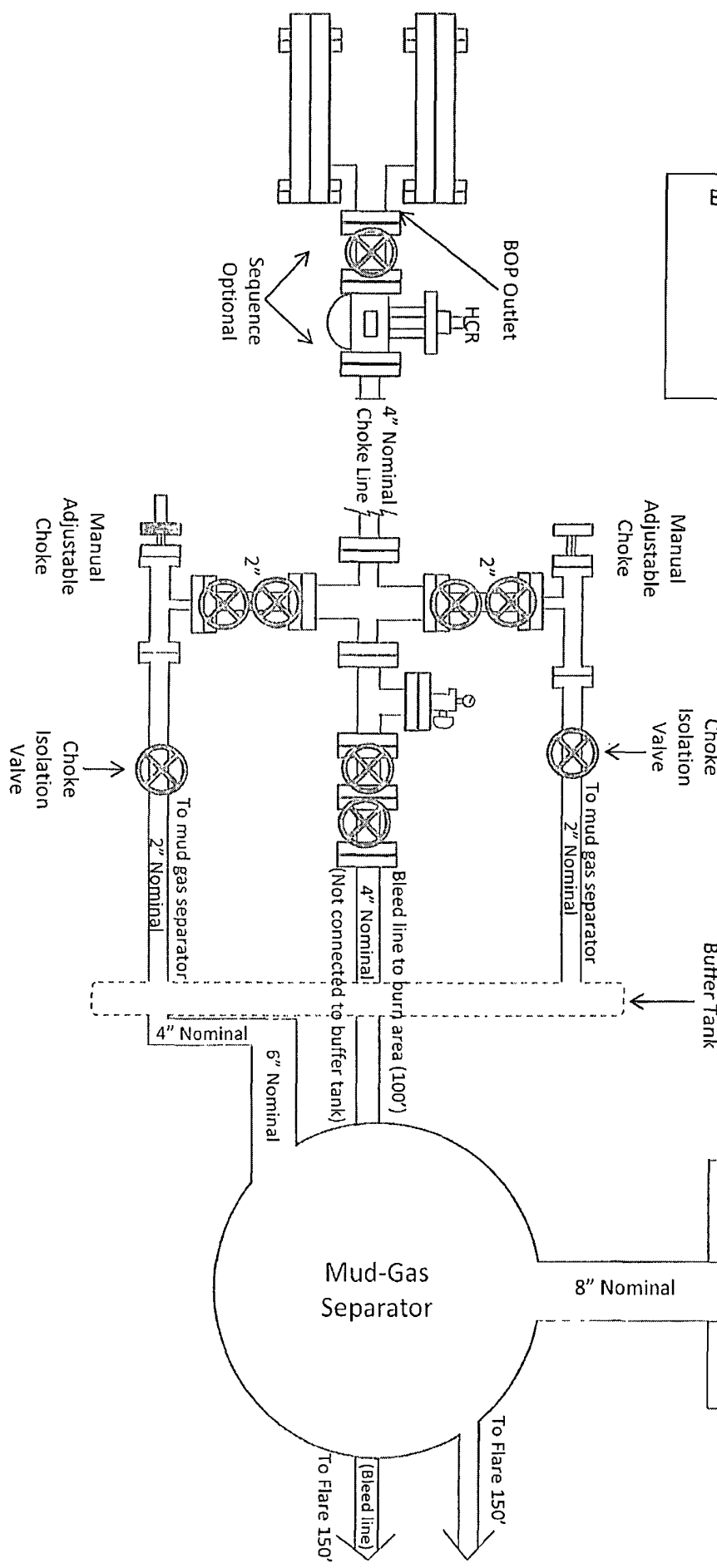


Exhibit E – 5000# BOP tested to 3000#  
**Pintail 23 Federal No. 7**  
 Cimarex Energy Co. of Colorado  
 23-25S-26E  
SHL 2500 FNL & 1335 FWL  
BHL 330 FNL & 1365 FWL  
 Eddy County, NM

Drilling Operations  
Choke Manifold  
5M Service (tested to 3M)

Exhibit E-1 – Choke Manifold Diagram  
Pintail 23 Federal No. 7  
Cimarex Energy Co. of Colorado  
23-25S-26E  
SHL 2500 FNL & 1335 FWL  
BHL 330 FNL & 1365 FWL  
Eddy County, NM



Hydrogen Sulfide Drilling Operations Plan  
Pintail 23 Federal No. 7  
Cimarex Energy Co. of Colorado  
Unit Letter F, Section 23  
T25S-R26E, Eddy County, NM

H<sub>2</sub>S equipment will be rigged up at Surface. The plan should be implemented before drilling out from the surface.

1. Due to a one-time encounter on a previous well, an Intra-salt Pocket was charged with H<sub>2</sub>S and a burnable amount of hydrocarbons.

First Potential Problem Zone:

Initial suspected problem zone	Salt Zone @ 1,333'
Potential Open Flow Capacity	1 mcf
Expected H <sub>2</sub> S Concentration	11,000 ppm
100' ROE	6'
500' ROE	3'

Cimarex will have 24-hour H<sub>2</sub>S Safety Supervisors on location while drilling the first 2,000' on this well.

2. Second Potential Problem Zone:

Initial suspected problem zone	Delaware Mountain Group @ 1,800'
Potential Open Flow Capacity	100 mcf
Expected H <sub>2</sub> S Concentration	1,000 ppm
100' ROE	24'
500' ROE	11'

3. All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:

- A. Characteristics of H<sub>2</sub>S
- B. Physical effects and hazards
- C. Proper use of safety equipment and life support systems.
- D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
- E. Evacuation procedure, routes and first aid.
- F. Proper use of 30 minute pressure demand air pack.

4. H<sub>2</sub>S Detection and Alarm Systems:

- A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.

5. Windsock and/or wind streamers:

- A. Windsock at mudpit area should be high enough to be visible.
- B. Windsock at briefing area should be high enough to be visible.

6. Condition Flags and Signs:

- A. Warning sign on access road to location.
- B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H<sub>2</sub>S present in dangerous concentration). Only emergency personnel admitted to location.

Hydrogen Sulfide Drilling Operations Plan  
**Pintail 23 Federal No. 7**  
Cimarex Energy Co. of Colorado  
Unit Letter F, Section 23  
T25S-R26E, Eddy County, NM

7. Well control equipment:

- A. See exhibit "E"

8. Communication:

- A. While working under masks chalkboards will be used for communication.
- B. Hand signals will be used where chalk board is inappropriate.
- C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

9. Drillstem Testing:

No DSTs are planned at this time.

- 10. Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.
- 11. If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers if necessary.



H<sub>2</sub>S Contingency Plan  
Pintail 23 Federal No. 7  
Cimarex Energy Co. of Colorado  
Unit Letter F, Section 23  
T25S-R26E, Eddy County, NM

**Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must:

- ★ Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- ★ Evacuate any public places encompassed by the 100 ppm ROE.
- ★ Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release.
- ★ Use the "buddy system" to ensure no injuries occur during the response.
- ★ Take precautions to avoid personal injury during this operation.
- ★ Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- ★ Have received training in the:
  - ♦ Detection of H<sub>2</sub>S, and
  - ♦ Measures for protection against the gas,
  - ♦ Equipment used for protection and emergency response.

**Ignition of Gas Source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

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

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

**Contacting Authorities**

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H<sub>2</sub>S Contingency Plan Emergency Contacts  
Pintall 23 Federal No. 7  
Cimarex Energy Co. of Colorado  
Unit Letter F, Section 23  
T25S-R26E, Eddy County, NM

<b>Company Office</b>			
Cimarex Energy Co. of Colorado		800-969-4789	
Co. Office and After-Hours Menu			
<b>Key Personnel</b>			
<b>Name</b>	<b>Title</b>	<b>Office</b>	<b>Mobile</b>
Doug Park	Drilling Manager	432-620-1934	972-333-1407
Dee Smith	Drilling Super	432-620-1933	972-882-1010
Jim Evans	Drilling Super	432-620-1929	972-465-0564
Roy Shirley	Field Super		432-634-2136
<b>Artesia</b>			
Ambulance		911	
State Police		575-746-2703	
City Police		575-746-2703	
Sheriff's Office		575-746-9888	
Fire Department		575-746-2701	
Local Emergency Planning Committee		575-746-2122	
New Mexico Oil Conservation Division		575-748-1283	
<b>Carlsbad</b>			
Ambulance		911	
State Police		575-885-3137	
City Police		575-885-2111	
Sheriff's Office		575-887-7551	
Fire Department		575-887-3798	
Local Emergency Planning Committee		575-887-6544	
US Bureau of Land Management		575-887-6544	
<b>Santa Fe</b>			
New Mexico Emergency Response Commission (Santa Fe)		505-476-9600	
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs		505-827-9126	
New Mexico State Emergency Operations Center		505-476-9635	
<b>National</b>			
National Emergency Response Center (Washington, D.C.)		800-424-8802	
<b>Medical</b>			
Flight for Life - 4000 24th St.; Lubbock, TX		806-743-9911	
Aerocare - R3, Box 49F; Lubbock, TX		806-747-8923	
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM		505-842-4433	
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM		505-842-4949	
<b>Other</b>			
Boots & Coots IWC		800-256-9688	or 281-931-8884
Cudd Pressure Control		432-699-0139	or 432-563-3356
Halliburton		575-746-2757	
B.J. Services		575-746-3569	

## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CIMAREX ENERGY
LEASE NO.:	NM-94076
WELL NAME & NO.:	7-PINTAIL 23 FEDERAL
SURFACE HOLE FOOTAGE:	2500' FNL & 1335' FWL
BOTTOM HOLE FOOTAGE:	330' FNL & 1365' FWL
LOCATION:	Section 23, T. 25 S., R 26 E., NMPM
COUNTY:	Eddy County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

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- ☐ **Permit Expiration**
- ☐ **Archacology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Cave/Karst
- ☒ **Construction**
  - Notification
  - V-Door Direction
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
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  - High Cave/Karst
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  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
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- ☒ **Final Abandonment & Reclamation**