

Form 3160-3
(April 2004)FORM 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-120887, NM-14468 BHL
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. Hayduke 34 Federal Com No. 4 H (38769)
3b. Phone No (include area code) 432-571-7800		9. API Well No. 30-015- 39356
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 660 FSL & 400 FEL (P) At proposed prod Zone 760 FSL & 660 FWL Horizontal Wolfcamp Test		10. Field and Pool or Exploratory DISCOVERY DRILL Wolfcamp Wildcat, EAST
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M or Blk and Survey or Area 34-25S-26E
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any) 400		12. County or Parish Eddy
16. No of acres in lease NM-14468 - 680 acres NM-120887 - 720 acres		13. State NM
17. Spacing Unit dedicated to this well 52 320 acres		
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1236		
19. Proposed Depth Pilot Hole 10250 MD 13825, TVD 9682		20. BLM/BIA Bond No. on File NM-2575
21. Elevations (Show whether DF, KDB, RT, GL, etc) 3390' GR		22. Approximate date work will start* 06.15.11
23. Estimated duration 30-35 days		
24. Attachments		

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

- Well plat certified by a registered surveyor
- A Drilling Plan
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office)

- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
- Operator Certification
- 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 04.19.11
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Title

Manager Operations Administration

Approved By (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed)	Date AUG 18 2011
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Title

FIELD MANAGER

Office

CARLSBAD FIELD OFFICE

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

Conditions of approval, if any, are attached

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

* (Instructions on page 2)

Carlsbad Controlled Water Basin

OCD CONDITION OF APPROVAL of Drilling.

Intent to drill ONLY --- CANNOT produce until the Non-Standard Location has been approved by OCD Santa Fe office

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

K-2 08/26/11

Approval Subject to General Requirements
& Special Stipulations Attached

APPROVAL FOR TWO YEARS

Application to Drill
Hayduke 34 Federal Com No. 4
Cimarex Energy Co. of Colorado
Unit P, Section 34
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 660 FSL & 400 FEL
BHL 760 FSL & 660 FWL
2. Elevation above sea level: 3390' 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 13825, TVD 9682 Pilot Hole 10250
6. Estimated tops of geological markers:

Rustler	Spotty, N/A	Bone Spring "A" Shale	5647
Top Salt	1059	Bone Spring "C" Shale	5910
Base Salt	1716	1st Bone Spring Ss	6440
Delaware	1907	2nd Bone Spring Ss	7000
Cherry Canyon	2902	2nd BS Ss Lower	7723
Brushy Canyon	3888	3rd Bone Spring Ss	8308
Bone Spring	5434	Wolfcamp	8660
7. Possible mineral bearing formations:

Wolfcamp	Gas
Bone Spring	Gas
Delaware	Oil

8. Proposed drilling Plan

After setting surface and intermediate drill 8½" hole to 9350 and set 7" casing from 0-9353 and cement. Then drill out of 7" shoe with 6½" bit to pilot hole TD @ 10250 and log. Cement pilot hole with 295 Sks 16.5 ppg Yield 1.06 PlugCem H + 0.6% CFR-3 +0.2% HR-601. Dress off cement and kick off of cement plug with 6½" bit @ 9453 to drill lateral. Drill to TD 13825 MD, 9682 TVD and run 4½" liner from liner hanger at 9153 to TD and cement liner.

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9. Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 450 215	8.4 - 8.8	30-32	NC	FW spud mud. Add FW to control weight & viscosity and paper to prevent seepage.
215 to 1900	10	28-29	NC	Saturated Brine. Sweep as needed to clean hole.
1900 to 10250	9.0	28-30	NC	Cut brine. Sweep as needed to clean hole.
9153 to 13825	12.0	28-32	NC	OBM

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	17½"	0 to 450 215	New 13½"	48#	STC	H-40
Intermediate	12¼"	0 to 1900	New 9"	40#	LTC	J-55
Production	8¾"	0 to 9353	New 7"	26#	LTC	P-110
Liner	6½"	9153 to 13825	New 4½"	11.6#	BTC/LTC*	P-110

*BTC from 9153-9813 (EOC) and LTC from 9813-13825

**Equivalent or better casing may be substituted for all proposed casing strings. If lost returns occur during drilling of 8.75" hole, stronger casing will be used and a DVT and 2-stage cement job will be implemented as shown below.

11. Cementing Program:

Surface Excess 100%	Lead: 100SX CL. (C) +2% S1+2%D46 YIELD 1.97 Tail: 390SX. CL. (C) +1% S1 YIELD 1.34. TOC Surface Centralizers per Onshorder 2.III.B.1.f
Intermediate Excess 2 5%	Lead: 360SX. (C) 4% D20 + .2% D46 + 1% S1. YIELD 1.96, MIX WATER 10.85, WT. 12.9 Tail: 220SX. (C) + .1% D13. YIELD 1.33, MIX WATER 3.36, WT. 14.8 TOC Surface
Production Excess 25%	Lead: 1570 sx Econocem H + 3% Salt + 3# Gilsonite + 0.2% HR-601 (12.6, 1.78) Tail: 220 sx Halcem H + 0.1% HR-601 (15.6, 1.19) TOC Surface
Production Contingency Excess 25% DVT @ 2000	Stage 1: Lead: 870 sks 12.9#, Yield 1.86, EconoCem HLH + 5% NaCl + 5 lbm/sk Gilsonite and Tail: 640 sks 14.4#, yield 1.22, VersaCemH + 0.4% LAP-1 + 0.3% CFR-3 +0.25 lbm/sk D-AIR + 1 lbm/Sk NaCl +0.1% HR-601 Stage 2: 200 sx 12.9#, Yield 1.86, EconoCem HLC + 5% NaCl + 5 lbm/sk Gilsonite DVT setting depth will be adjusted depending on hole conditions. DVT to be set at a minimum of 50' below previous shoe and a maximum of 200' above current shoe. Cement volumes will be adjusted accordingly. TOC Surface
Liner Excess 25%	470 sx. Versacem H, 14.5 wgt., 1.22 Yield, 5.37 fresh water, .1%HR 601, 1 lbm. salt 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 groundwater is 13. Fresh water zones will be protected by setting 13½" casing at 215 and cementing to surface. Hydrocarbon zones will be protected by setting 9½" casing at 1900 and 7" to 9353 and cementing to surface. If necessary, a DVT will be run on production casing and a 2 stage cement job will be implemented.

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

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12. Pressure control Equipment:

Exhibit "E". A 13 3/8" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 215'. 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 utilized if drilling in potential H2S area.

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.

BOPs will be tested by an independent service company to 250 psi low and 5000 psi high. Hydril will be tested to 250 psi low and 2500 psi high.

Cimarex Energy Co. of Colorado (operator) requests a variance if Cactus 122 (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: 211964 See attached htdrostatic test report

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

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

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

- A. Mud logging program: No mud logging program.
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. DSTs or Cores:

14. Potential Hazards:

No abnormal pressures or temperatures are expected. In accordance with Onshore Order 6, Cimarex has encountered H₂S 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 H₂S 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 4000 psi Estimated BHT 175°

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

Drilling expected to take 25-35 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.

Wolfcamp pay will be perforated and stimulated.

The proposed well will be tested and potentialized as a gas well.

Cimarex Energy Co. (Midland)

Eddy County (NM83E)

Sec 34 - T25S - R26E

Hayduke 34 Fed #4

Wellbore #1

Plan: Plan #2

Standard Survey Report

29 March, 2011

Great White Directional Services

Survey Report

Company:	Cimarex Energy Co. (Midland)	Local Co-ordinate Reference:	Well Hayduke 34 Fed #4
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 3360.0usft (Original Well Elev)
Site:	Sec 34 - T25S - R26E	MD Reference:	WELL @ 3360.0usft (Original Well Elev)
Well:	Hayduke 34 Fed #4	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

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 34 - T25S - R26E		
Site Position:	Map	Northing:	396,971.00 usft
From:		Easting:	559,617.80 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 5' 28.821 N
		Longitude:	104° 16' 27.494 W
		Grid Convergence:	0.03 °

Well	Hayduke 34 Fed #4		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 4' 51.041 N
		Longitude:	104° 16' 25.057 W
		Ground Level:	3,345.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF200510	02/21/11	7.92
			Dip Angle
			(°)
			59.96
			Field Strength
			(nT)
			48,519

Design	Plan #2		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			271.26

Survey Tool Program	Date 03/29/11		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
0.0	13,825.0	Plan #2 (Wellbore #1)	MWD
			Description
			MWD - Standard

Planned Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	

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Well:	Hayduke 34 Fed #4	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00

Great White Directional Services

Survey Report

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5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,452.8	0.00	0.00	9,452.8	0.0	0.0	0.0	0.00	0.00	0.00	
9,500.0	11.80	271.26	9,499.7	0.1	-4.8	4.8	25.00	25.00	0.00	

Great White Directional Services

Survey Report

Company:	Cimarex Energy Co. (Midland)	Local Co-ordinate Reference:	Well Hayduke 34 Fed #4
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 3360.0usft (Original Well Elev)
Site:	Sec 34 - T25S - R26E	MD Reference:	WELL @ 3360.0usft (Original Well Elev)
Well:	Hayduke 34 Fed #4	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,600.0	36.80	271.26	9,590.1	1.0	-45.7	45.7	25.00	25.00	0.00
9,700.0	61.80	271.26	9,654.8	2.7	-120.9	120.9	25.00	25.00	0.00
9,800.0	86.80	271.26	9,681.6	4.8	-216.3	216.4	25.00	25.00	0.00
9,812.8	90.00	271.26	9,682.0	5.0	-229.1	229.2	25.00	25.00	0.00
9,900.0	90.00	271.26	9,682.0	6.9	-316.3	316.4	0.00	0.00	0.00
10,000.0	90.00	271.26	9,682.0	9.1	-416.3	416.4	0.00	0.00	0.00
10,100.0	90.00	271.26	9,682.0	11.3	-516.3	516.4	0.00	0.00	0.00
10,200.0	90.00	271.26	9,682.0	13.5	-616.2	616.4	0.00	0.00	0.00
10,300.0	90.00	271.26	9,682.0	15.7	-716.2	716.4	0.00	0.00	0.00
10,400.0	90.00	271.26	9,682.0	17.9	-816.2	816.4	0.00	0.00	0.00
10,500.0	90.00	271.26	9,682.0	20.1	-916.2	916.4	0.00	0.00	0.00
10,600.0	90.00	271.26	9,682.0	22.3	-1,016.1	1,016.4	0.00	0.00	0.00
10,700.0	90.00	271.26	9,682.0	24.5	-1,116.1	1,116.4	0.00	0.00	0.00
10,800.0	90.00	271.26	9,682.0	26.7	-1,216.1	1,216.4	0.00	0.00	0.00
10,900.0	90.00	271.26	9,682.0	28.9	-1,316.1	1,316.4	0.00	0.00	0.00
11,000.0	90.00	271.26	9,682.0	31.1	-1,416.0	1,416.4	0.00	0.00	0.00
11,100.0	90.00	271.26	9,682.0	33.3	-1,516.0	1,516.4	0.00	0.00	0.00
11,200.0	90.00	271.26	9,682.0	35.5	-1,616.0	1,616.4	0.00	0.00	0.00
11,300.0	90.00	271.26	9,682.0	37.7	-1,716.0	1,716.4	0.00	0.00	0.00
11,400.0	90.00	271.26	9,682.0	39.9	-1,815.9	1,816.4	0.00	0.00	0.00
11,500.0	90.00	271.26	9,682.0	42.1	-1,915.9	1,916.4	0.00	0.00	0.00
11,600.0	90.00	271.26	9,682.0	44.3	-2,015.9	2,016.4	0.00	0.00	0.00
11,700.0	90.00	271.26	9,682.0	46.5	-2,115.9	2,116.4	0.00	0.00	0.00
11,800.0	90.00	271.26	9,682.0	48.7	-2,215.8	2,216.4	0.00	0.00	0.00
11,900.0	90.00	271.26	9,682.0	50.9	-2,315.8	2,316.4	0.00	0.00	0.00
12,000.0	90.00	271.26	9,682.0	53.1	-2,415.8	2,416.4	0.00	0.00	0.00
12,100.0	90.00	271.26	9,682.0	55.3	-2,515.8	2,516.4	0.00	0.00	0.00
12,200.0	90.00	271.26	9,682.0	57.5	-2,615.8	2,616.4	0.00	0.00	0.00
12,300.0	90.00	271.26	9,682.0	59.7	-2,715.7	2,716.4	0.00	0.00	0.00
12,400.0	90.00	271.26	9,682.0	61.9	-2,815.7	2,816.4	0.00	0.00	0.00
12,500.0	90.00	271.26	9,682.0	64.1	-2,915.7	2,916.4	0.00	0.00	0.00
12,600.0	90.00	271.26	9,682.0	66.2	-3,015.7	3,016.4	0.00	0.00	0.00
12,700.0	90.00	271.26	9,682.0	68.4	-3,115.6	3,116.4	0.00	0.00	0.00
12,800.0	90.00	271.26	9,682.0	70.6	-3,215.6	3,216.4	0.00	0.00	0.00
12,900.0	90.00	271.26	9,682.0	72.8	-3,315.6	3,316.4	0.00	0.00	0.00
13,000.0	90.00	271.26	9,682.0	75.0	-3,415.6	3,416.4	0.00	0.00	0.00
13,100.0	90.00	271.26	9,682.0	77.2	-3,515.5	3,516.4	0.00	0.00	0.00
13,200.0	90.00	271.26	9,682.0	79.4	-3,615.5	3,616.4	0.00	0.00	0.00
13,300.0	90.00	271.26	9,682.0	81.6	-3,715.5	3,716.4	0.00	0.00	0.00
13,400.0	90.00	271.26	9,682.0	83.8	-3,815.5	3,816.4	0.00	0.00	0.00
13,500.0	90.00	271.26	9,682.0	86.0	-3,915.4	3,916.4	0.00	0.00	0.00
13,600.0	90.00	271.26	9,682.0	88.2	-4,015.4	4,016.4	0.00	0.00	0.00
13,700.0	90.00	271.26	9,682.0	90.4	-4,115.4	4,116.4	0.00	0.00	0.00

Great White Directional Services

Survey Report

Company:	Cimarex Energy Co. (Midland)	Local Co-ordinate Reference:	Well Hayduke 34 Fed #4
Project:	Eddy County (NM83E)	TVD Reference:	WELL @ 3360.0usft (Original Well Elev)
Site:	Sec 34 - T25S - R26E	MD Reference:	WELL @ 3360.0usft (Original Well Elev)
Well:	Hayduke 34 Fed #4	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #2	Database:	EDM 5000.1 Single User Db

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,800.0	90.00	271.26	9,682.0	92.6	-4,215.4	4,216.4	0.00	0.00	0.00
13,825.0	90.00	271.26	9,682.0	93.2	-4,240.4	4,241.4	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Target #1	0.00	0.00	9,682.0	93.2	-4,241.0	393,246.76	555,588.45	32° 4' 51.984 N	104° 17' 14.353 W
- hit/miss target									
- Shape									
- plan misses target center by 0.7usft at 13825.0usft MD (9682.0 TVD, 93.2 N, -4240.4 E)									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
8,660.0	8,660.0	Wolfcamp				
9,260.0	9,260.0	Wolfcamp B				
9,439.0	9,439.0	Wolfcamp C				
9,538.0	9,536.1	Wolfcamp D				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9453	9453	0	0	KOP 25°/100 DLS @ 271.26° AZI
9813	9682	5	-229	EOC - 4012.2 hold at 9812.8 MD
13,825	9682	93	-4240	TD at 13825.0

Checked By: _____	Approved By: _____	Date: _____
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WELL DETAILS: Hayduke 34 Fed #4



Azimuths to Grid North
Magnetic North 7.89°
Magnetic Field
Strength: 48518.8nT
Dip Angle: 59.96°
Date: 2011/02/21
Model: IGRF200510

Project: Eddy County (NM83E)
Site: Sec 34 - T25S - R26E
Well: Hayduke 34 Fed #4
Wellbore: Wellbore #1
Design: Plan #2

+N/-S +E/-W Northing Easting Latitude Longitude
30.0 0.0 393153.59 559829.50 32° 4' 51.041 N 104° 16' 25.057 W
SHL: 660' FSL / 400' FEL
BHL: 760' FSL / 660' FWL

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Hayduke #4	3070.0	93.2	-4241.1	393246.76	555588.45
Target #1	9682.0	93.2	-4241.1	393246.76	555588.45

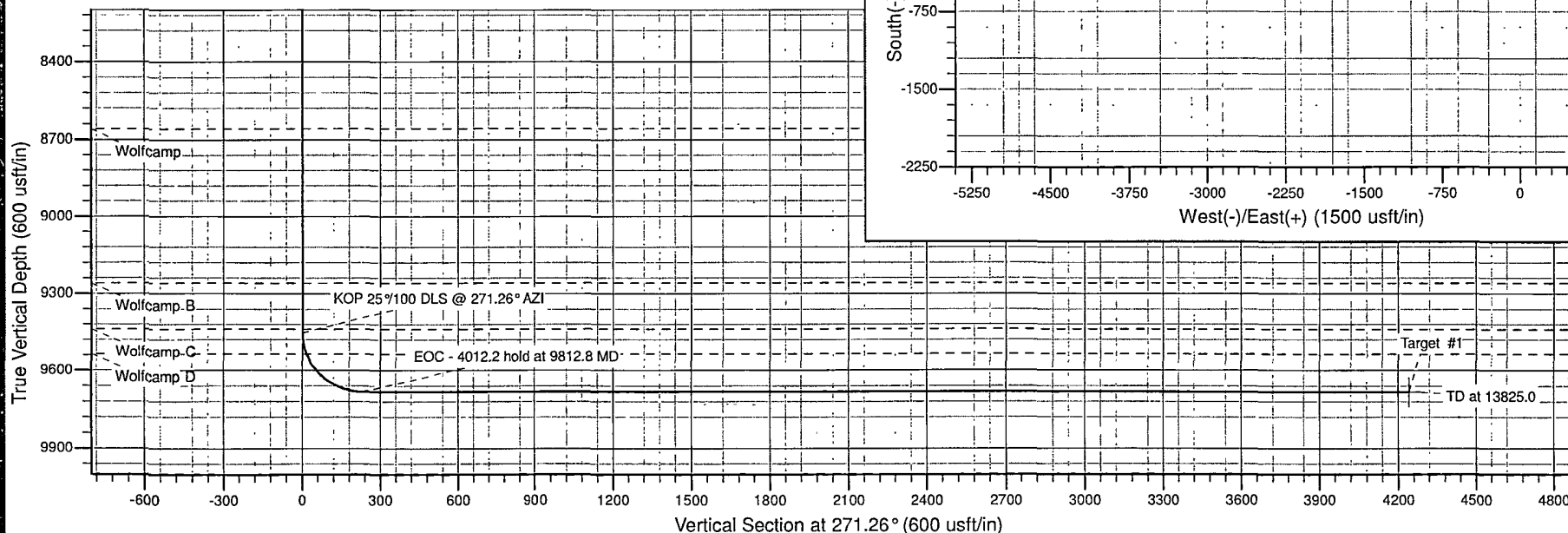
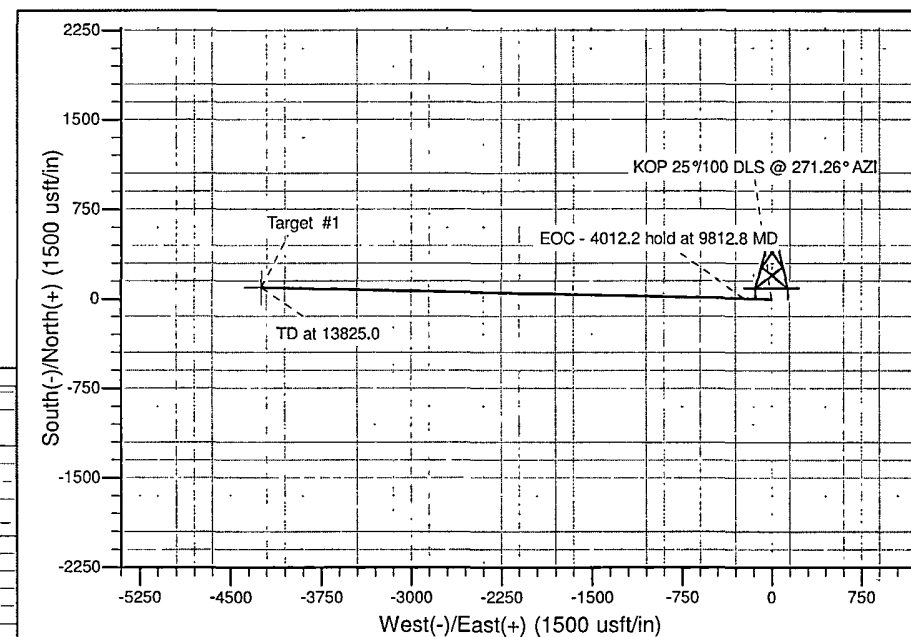
Point

PLAN DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
9452.8	0.00	0.00	9452.8	0.0	0.0	0.00	0.00	0.0
9812.8	90.00	271.26	9682.0	5.0	-229.1	25.00	271.26	229.2
13825.0	90.00	271.26	9682.0	93.2	-4240.4	0.00	0.00	4241.4

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
9452.8	9452.8	0.00	0.00	0.0	0.0	0.0	0.0	KOP 25°/100 DLS @ 271.26° AZI
9682.0	9812.8	90.00	271.26	5.0	-229.1	229.2	229.2	EOC - 4012.2 hold at 9812.8 MD
9682.0	13825.0	90.00	271.26	93.2	-4240.4	4241.4	4241.4	TD at 13825.0



SR & A

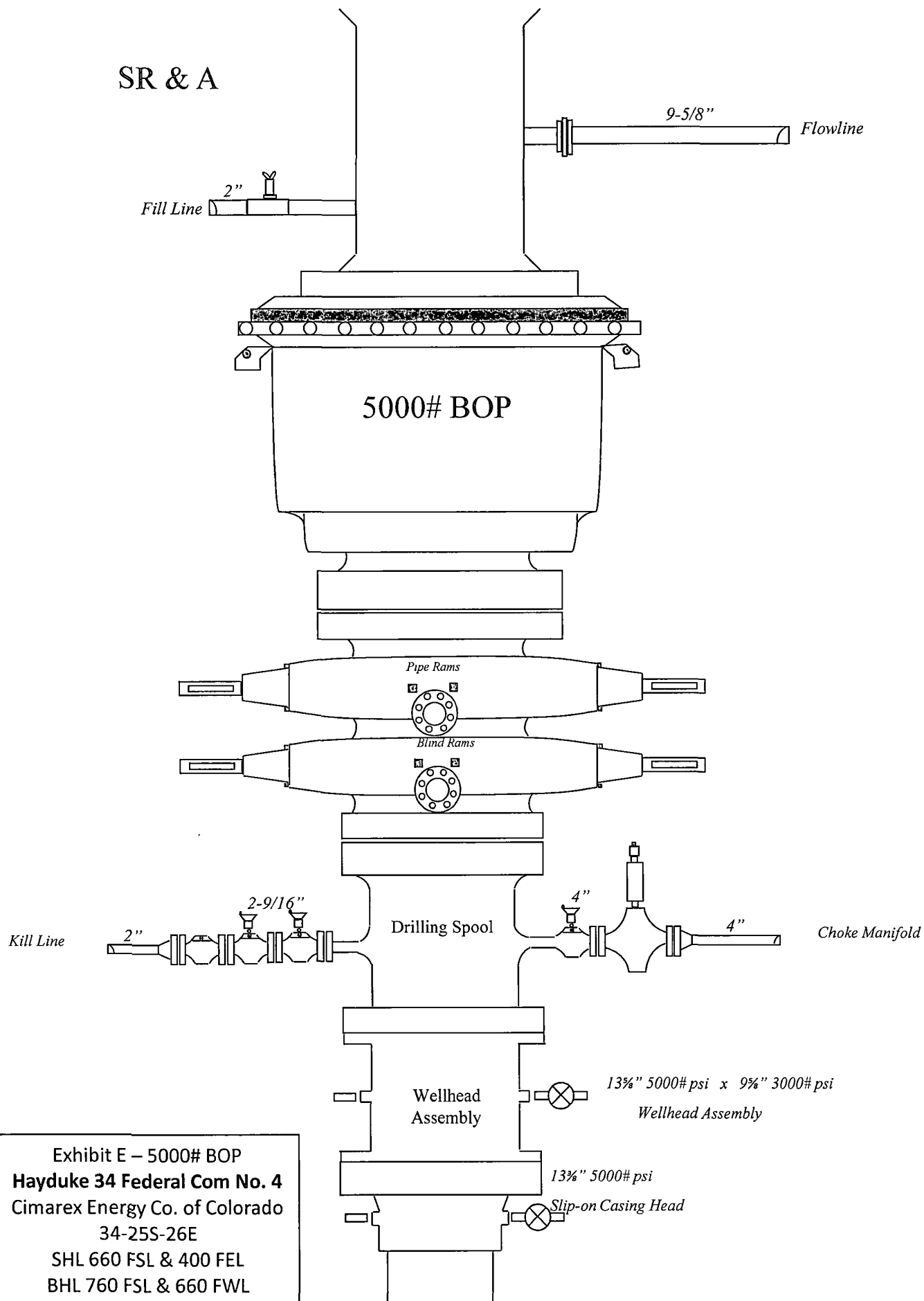


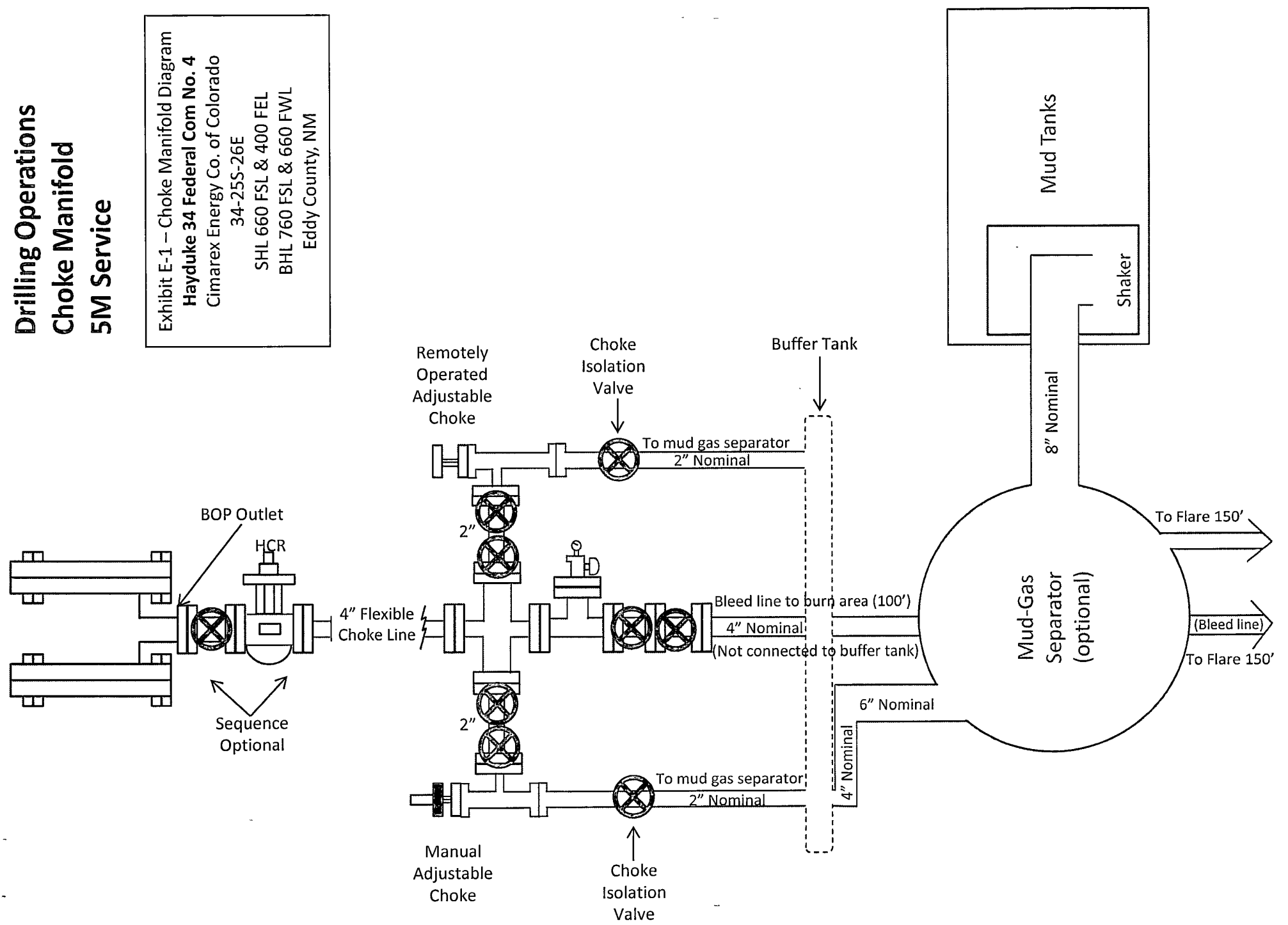
Exhibit E – 5000# BOP
Hayduke 34 Federal Com No. 4
Cimarex Energy Co. of Colorado
34-25S-26E
SHL 660 FSL & 400 FEL
BHL 760 FSL & 660 FWL
Eddy County, NM

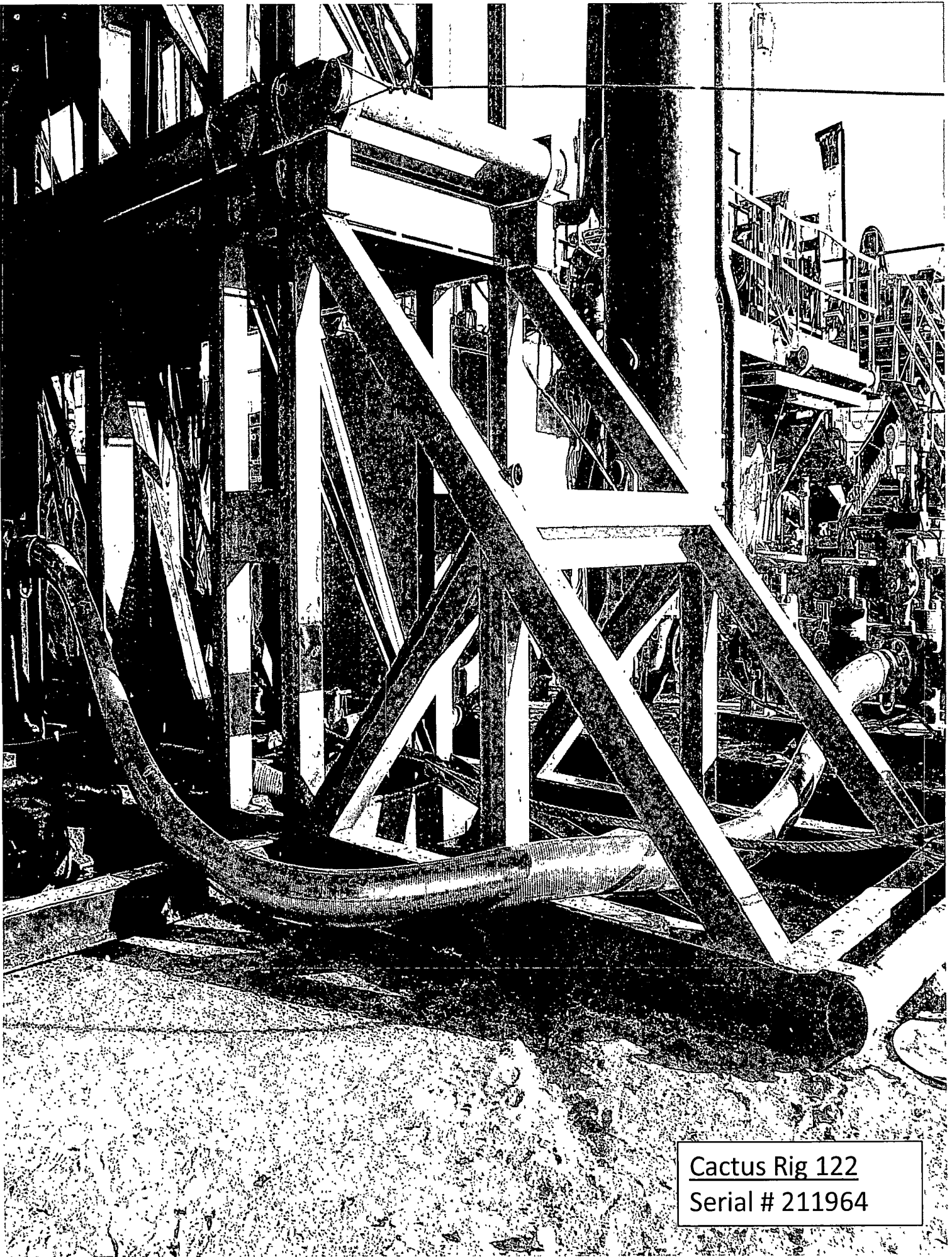
Drilling Operations

Choke Manifold

5M Service

Exhibit E-1 – Choke Manifold Diagram
Hayduke 34 Federal Com No. 4
 Cimarex Energy Co. of Colorado
 34-25S-26E
 SHL 660 FSL & 400 FEL
 BHL 760 FSL & 660 FWL
 Eddy County, NM





Cactus Rig 122
Serial # 211964

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

INTERNAL HYDROSTATIC TEST REPORT			
Customer: CACTUS		P.O. Number: Asset#M4812	
HOSE SPECIFICATIONS			
Type: CHOKER LINE		Length: 35'	
I.D. 4" INCHES		O.D. 8" INCHES	
WORKING PRESSURE 10,000 PSI	TEST PRESSURE 15,000 PSI		BURST PRESSURE PSI
COUPLINGS			
Type of End Fitting 4 1/16 10K FLANGE			
Type of Coupling: SWEDGED		MANUFACTURED BY MIDWEST HOSE & SPECIALTY	
PROCEDURE			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
TIME HELD AT TEST PRESSURE 15 MIN.		ACTUAL BURST PRESSURE: 0 PSI	
COMMENTS: s/n#O211964 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: 6/28/2006	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)

DISTRICT I --- CHECKLIST FOR INTENTS TO DRILL

Operator CIMAREX ENERGY CO. of COLORADO OGRID # 162683
 Well Name & # 38769 HAYDUKE 34 FEDERAL COM # 4 H Surface Type (F) (S) (P)
 Location: UL M, Sect 34, Township 25, s, RNG 26, e, Sub-surface Type (F) (S) (P)
N 34 25 26

A. Date C101 rec'd / / C101 reviewed / /

B. 1. Check mark, Information is OK on Forms:

OGRID X, BONDING FED, PROP CODE X, WELL # X, SIGNATURE

2. Inactive Well list as of: 8/26/11 # wells 1216, # Inactive wells 6

a. District Grant APD but see number of inactive wells:

No letter required X, Sent Letter to Operator , to Santa Fe

3. Additional Bonding as of: 8/26/11

a. District Denial because operator needs addition bonding:

No Letter required X, Sent Letter to Operator , To Santa Fe

b. District Denial because of Inactive well list and Financial Assurance:

No Letter required X, Sent Letter to Operator , To Santa Fe

C. C102 YES , NO , Signature

1. Pool SAGE DRAW, WC, EAST, Code 96890

a. Dedicated acreage 320, What Units FJKLMAOP

b. SUR. Location Standard : Non-Standard Location X

c. Well shares acres: Yes X No / # of wells plus this well #

2. 2nd. Operator in same acreage, Yes , No X # 3H

Agreement Letter , Disagreement letter

3. Intent to Directional Drill Yes X, No

a. Dedicated acreage 320, What Units FJKLMAOP

b. Bottomhole Location Standard X, Non-Standard Bottomhole

4. Downhole Commingle: Yes , No X

a. Pool #2 , Code , Acres

Pool #3 , Code , Acres

Pool #4 , Code , Acres

5. POTASH Area Yes , No

D. Blowout Preventer Yes X, No

E. H2S Yes X, No

F. C144 Pit Registration Yes , No , need

G. Does APD require Santa Fe Approval:

1. Non-Standard Location: Yes X, No , NSL #

2. Non-Standard Proration: Yes , No X, NSP #

3. Simultaneous Dedication: Yes , No X, SD #

Number of wells Plus #

4. Injection order Yes , No X; PMX # or WFX #

5. SWD order Yes , NO X; SWD #

6. DHC from SF ; DHC-HOB ; Holding

7. OCD Approval Date / /

API #30-015- 38356

8. Reviewers

*Condition of approval
must obtain
NSL*