AFS-10-531

OCD-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

5 Lease Serial No BHL
NM-19423, NM-94839

6. If Indian, Allotee or Tribe Name

1a Type of Work: ☒ DRILL ✓ ☐ REENTER

7. If Unit or CA Agreement, Name and No.
Pending

1b Type of Well. ☐ Oil Well ☒ Gas Well ☐ Other ✓ ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. (37373)
Cottonwood Draw 22 Federal Com No. 7 H

2. Name of Operator
Cimarex Energy Co. of Colorado (162683)

9. API Well No.
30-015- 39376 (96890)

3a Address
600 N. Marienfeld St., Ste. 600; Midland, TX 79701

3b. Phone No. *(include area code)*
432-571-7800

10. Field and Pool, or Exploratory
~~SAGE DRAW~~; WC, EAST (G)
~~Wolfcamp~~ Wildcat

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At Surface 1980 FNL & 400 FEL (H)
At proposed prod. Zone 1880 FNL & 660 FWL *Horizontal Wolfcamp Test*

11 Sec., T. R. M. or Blk and Survey or Area
22-25S-26E

14. Distance in miles and direction from nearest town or post office*

12 County or Parish
Eddy

13. State
NM

15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig unit line if any)	16 No of acres in lease	17. Spacing Unit dedicated to this well
400	NM-94839 - 1480 acres NM-19423 - 2560 acres	N2 320 acres
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on File**
331	Pilot Hole 10250 MD 13756, TVD 9528	NM-2575
21 Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3336' GR ✓	06.15.11	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:

1 Well plat certified by a registered surveyor
2. A Drilling Plan
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)
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator Certification
6 Such other site specific information and/or plans as may be required by the authorized officer.

RECEIVED
AUG 29 2011
NMOCD ARTESIA

25 Signature	Name *(Printed/Typed)*	Date
Zeno Farris	Zeno Farris	03.28.11

Title
Manager Operations Administration

Approved By *(Signature)*	Name (Printed/Typed)	Date
/s/ Don Peterson		AUG 24 2011
Title	**Office**	
FIELD MANAGER	**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

KZ 09/01/11

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

Application to Drill

Cottonwood Draw 22 Federal Com No. 7

Cimarex Energy Co. of Colorado

Unit H, Section 22

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 1980 FNL & 400 FEL
   BHL 1880 FNL & 660 FWL

2. Elevation above sea level: 3336' GR

3. Geologic name of surface formation: Quaternery 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 13756, TVD 9528 Pilot Hole 10250

6. Estimated tops of geological markers:

Rustler	Spotty, N/A	1st Bone Spring Ss	6390
Top Salt	1059	2nd Bone Spring Ss	6945
Base Salt	1688	2nd BS Ss Lower	7668
Delaware	1887	3rd Bone Spring Ss	8265
Cherry Canyon	2873	Wolfcamp	8617
Brushy Canyon	3887		
Bone Spring	5153		
Bone Spring "A" Shale	5634		
Bone Spring "C" Shale	5888		

7. Possible mineral bearing formations:

Wolfcamp	Gas
Bone Spring	Gas
Delaware	Oil

8. Proposed drilling Plan

Drill 8¾" hole to 9241 and set 7" casing from 0-9241 and cement. Then drill out of 7" shoe with 6⅛" bit to pilot hole TD @ 10250 and log. Cement pilot hole with 275 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 6⅛" bit @ 9341 to drill lateral. Drill to TD 13756 MD, 9528 TVD and run 4½" liner from liner hanger at 9041 to TD and cement liner.

9. Mud Circulating System:

Depth			Mud Wt	Visc	Fluid Loss	Type Mud
0'	to	450	8.4 - 8.8	30-32	NC	FW spud mud. Add FW to control weight & viscosity and paper to prevent seepage.
450	to	1872	10	28-29	NC	Saturated Brine. Sweep as needed to clean hole.
1872	to	9241	9.0	28-30	NC	Cut brine. Sweep as needed to clean hole.
9241	to	13756	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	New	13⅜"	48#	STC	H-40
Intermediate	12¼"	0	to	1872	New	9⅝"	40#	LTC	J-55
Production	8¾"	0	to	9241	New	7"	26#	LTC	P-110
Liner	6⅛"	9041	to	13756	New	4½"	11.6#	BTC/LTC*	P-110

*BTC from 8886-9386 (EOC) and LTC from 9386-13671

11. Cementing Program:

Surface Excess 100%	Lead: 176 sx (C) +2% S1+2%D46 YIELD 1.97 Tail: 235 sx. (C) +1% S1 YIELD 1.34. **TOC Surface Centralizers per Onshorder 2.III.B.1.f**
Intermediate Excess 25%	Lead: 271 sx. (C) 4% D20 + .2% D46 + 1% S1. YIELD 1.96, MIX WATER 10.85, WT. 12.9 Tail: 173 sx. (C) + .1% D13. YIELD 1.33, MIX WATER 3.36, WT. 14.8 **TOC Surface**
Production Excess 25%	Lead: 605 sx Interfill H with 0.3% HR-601, 5 lb/ sx Gilsonite, 0.125 lb/ sx Poly-E-Flake, mixed at 11.9 ppg. Yield 2.47 cf/ sx. Tail: 440 sx Super H with 0.5% Halad ® 344, 0.25% D-Air 3000, 0.4% CFR-3, 1 lb/ sx Salt, 5 lb/ sx Gilsonite, 0.125 lb/ sx Poly-E-Flake, 0.35% HR-7 mixed at 13.2 ppf. Yield 1.61 cf/ sx **TOC Surface**
Liner Excess 25%	451 sx 50:50 Poz:H + 2%D20 + 0.2% D112 + 0.2% D65, Yield 1.24, 14.58 ppg **Centralizers every 3rd joint in lateral to provide adequate cement coverage every 100' unless lateral doglegs require greater spacing between centralizers.**

See COA

According to the State Engineer, depth to groundwater is 21. Fresh water zones will be protected by setting 13⅜ " casing at 450 and cementing to surface. Hydrocarbon zones will be protected by setting 9⅝" casing at 1872 and 7" to 9241 and cementing to surface.

Collapse Factor	Burst Factor	Tension Factor
1.125	1.125	1.6

12. Pressure control Equipment:
Exhibit "E". A 13⅝" 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 nippled 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 H_2S 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_2S 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 potentialed as **a gas well.**

Cimarex Energy Co.

Eddy County (NM83E)
Sec 22 - T25S - R26
Cottonwood Draw 22 Fed Com #7

Wellbore #1

Plan: Plan #1

Standard Planning Report

10 January, 2011

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Cottonwood Draw 22 Fed Com #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 22 - T25S - R26	**North Reference:**	Grid
Well:	Cottonwood Draw 22 Fed Com #7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

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 22 - T25S - R26

Site Position:		**Northing:**	407,849.00 usft	**Latitude:**	32° 7' 16.470 N
From:	Map	**Easting:**	559,962.20 usft	**Longitude:**	104° 16' 23.419 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.03 °

Well Cottonwood Draw 22 Fed Com #7

Well Position	**+N/-S**	-1,499.2 usft	**Northing:**	406,349.80 usft	**Latitude:**	32° 7' 1.634 N
	+E/-W	-35.0 usft	**Easting:**	559,927.20 usft	**Longitude:**	104° 16' 23.836 W
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 (nT)
	IGRF200510	01/10/11	7.94	60.00	48,577

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	272.09

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
9,340.6	0.00	0.00	9,340.6	0.0	0.0	0.00	0.00	0.00	0.00	
9,797.8	91.44	272.09	9,627.0	10.7	-293.5	20.00	20.00	0.00	272.09	
13,756.2	91.44	272.09	9,527.5	155.0	-4,248.0	0.00	0.00	0.00	0.00	Cottonwood #7

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Cottonwood Draw 22 Fed Com #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 22 - T25S - R26	**North Reference:**	Grid
Well:	Cottonwood Draw 22 Fed Com #7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

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)
9,340.6	0.00	0.00	9,340.6	0.0	0.0	0.0	0.00	0.00	0.00
KOP 20°/100 DLS @ 272° AZI									
9,350.0	1.88	272.09	9,350.0	0.0	-0.2	0.2	20.00	20.00	0.00
9,370.1	5.89	272.09	9,370.0	0.1	-1.5	1.5	20.00	20.00	0.00
Wolfcamp C									
9,375.0	6.88	272.09	9,374.9	0.1	-2.1	2.1	20.00	20.00	0.00
9,400.0	11.88	272.09	9,399.6	0.2	-6.1	6.1	20.00	20.00	0.00
9,425.0	16.88	272.09	9,423.8	0.5	-12.3	12.3	20.00	20.00	0.00
9,450.0	21.88	272.09	9,447.4	0.8	-20.6	20.6	20.00	20.00	0.00
9,475.0	26.88	272.09	9,470.1	1.1	-30.9	31.0	20.00	20.00	0.00
9,488.5	29.58	272.09	9,482.0	1.4	-37.3	37.3	20.00	20.00	0.00
Wolfcamp D									
9,500.0	31.88	272.09	9,491.9	1.6	-43.2	43.2	20.00	20.00	0.00
9,525.0	36.88	272.09	9,512.5	2.1	-57.3	57.3	20.00	20.00	0.00
9,550.0	41.88	272.09	9,531.8	2.7	-73.1	73.2	20.00	20.00	0.00
9,575.0	46.88	272.09	9,549.7	3.3	-90.6	90.7	20.00	20.00	0.00
9,600.0	51.88	272.09	9,566.0	4.0	-109.6	109.6	20.00	20.00	0.00
9,625.0	56.88	272.09	9,580.5	4.7	-129.9	129.9	20.00	20.00	0.00
9,650.0	61.88	272.09	9,593.3	5.5	-151.4	151.5	20.00	20.00	0.00
9,675.0	66.88	272.09	9,604.1	6.3	-173.9	174.0	20.00	20.00	0.00
9,700.0	71.88	272.09	9,612.9	7.2	-197.3	197.4	20.00	20.00	0.00
9,725.0	76.88	272.09	9,619.6	8.1	-221.3	221.5	20.00	20.00	0.00
9,750.0	81.88	272.09	9,624.2	9.0	-245.9	246.0	20.00	20.00	0.00
9,775.0	86.88	272.09	9,626.7	9.9	-270.7	270.9	20.00	20.00	0.00
9,797.8	91.44	272.09	9,627.0	10.7	-293.5	293.7	20.00	20.00	0.00
EOC - Hold to TD									
9,800.0	91.44	272.09	9,626.9	10.8	-295.7	295.9	0.00	0.00	0.00
9,900.0	91.44	272.09	9,624.4	14.4	-395.6	395.8	0.00	0.00	0.00
10,000.0	91.44	272.09	9,621.9	18.1	-495.5	495.8	0.00	0.00	0.00
10,100.0	91.44	272.09	9,619.4	21.7	-595.4	595.8	0.00	0.00	0.00
10,200.0	91.44	272.09	9,616.9	25.4	-695.3	695.8	0.00	0.00	0.00
10,300.0	91.44	272.09	9,614.4	29.0	-795.2	795.7	0.00	0.00	0.00
10,400.0	91.44	272.09	9,611.9	32.7	-895.1	895.7	0.00	0.00	0.00
10,500.0	91.44	272.09	9,609.3	36.3	-995.0	995.7	0.00	0.00	0.00
10,600.0	91.44	272.09	9,606.8	40.0	-1,094.9	1,095.6	0.00	0.00	0.00
10,700.0	91.44	272.09	9,604.3	43.6	-1,194.8	1,195.6	0.00	0.00	0.00
10,800.0	91.44	272.09	9,601.8	47.2	-1,294.7	1,295.6	0.00	0.00	0.00
10,900.0	91.44	272.09	9,599.3	50.9	-1,394.6	1,395.5	0.00	0.00	0.00
11,000.0	91.44	272.09	9,596.8	54.5	-1,494.5	1,495.5	0.00	0.00	0.00
11,100.0	91.44	272.09	9,594.3	58.2	-1,594.4	1,595.5	0.00	0.00	0.00
11,200.0	91.44	272.09	9,591.8	61.8	-1,694.3	1,695.4	0.00	0.00	0.00
11,300.0	91.44	272.09	9,589.2	65.5	-1,794.2	1,795.4	0.00	0.00	0.00
11,400.0	91.44	272.09	9,586.7	69.1	-1,894.1	1,895.4	0.00	0.00	0.00
11,500.0	91.44	272.09	9,584.2	72.8	-1,994.0	1,995.3	0.00	0.00	0.00
11,600.0	91.44	272.09	9,581.7	76.4	-2,093.9	2,095.3	0.00	0.00	0.00
11,700.0	91.44	272.09	9,579.2	80.1	-2,193.8	2,195.3	0.00	0.00	0.00
11,800.0	91.44	272.09	9,576.7	83.7	-2,293.7	2,295.2	0.00	0.00	0.00
11,900.0	91.44	272.09	9,574.2	87.4	-2,393.6	2,395.2	0.00	0.00	0.00
12,000.0	91.44	272.09	9,571.6	91.0	-2,493.5	2,495.2	0.00	0.00	0.00
12,100.0	91.44	272.09	9,569.1	94.6	-2,593.4	2,595.2	0.00	0.00	0.00
12,200.0	91.44	272.09	9,566.6	98.3	-2,693.3	2,695.1	0.00	0.00	0.00
12,300.0	91.44	272.09	9,564.1	101.9	-2,793.2	2,795.1	0.00	0.00	0.00
12,400.0	91.44	272.09	9,561.6	105.6	-2,893.1	2,895.1	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Cottonwood Draw 22 Fed Com #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 22 - T25S - R26	**North Reference:**	Grid
Well:	Cottonwood Draw 22 Fed Com #7	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

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)
12,500.0	91.44	272.09	9,559.1	109.2	-2,993.0	2,995.0	0.00	0.00	0.00
12,600.0	91.44	272.09	9,556.6	112.9	-3,092.9	3,095.0	0.00	0.00	0.00
12,700.0	91.44	272.09	9,554.1	116.5	-3,192.8	3,195.0	0.00	0.00	0.00
12,800.0	91.44	272.09	9,551.5	120.2	-3,292.7	3,294.9	0.00	0.00	0.00
12,900.0	91.44	272.09	9,549.0	123.8	-3,392.6	3,394.9	0.00	0.00	0.00
13,000.0	91.44	272.09	9,546.5	127.5	-3,492.5	3,494.9	0.00	0.00	0.00
13,100.0	91.44	272.09	9,544.0	131.1	-3,592.4	3,594.8	0.00	0.00	0.00
13,200.0	91.44	272.09	9,541.5	134.7	-3,692.3	3,694.8	0.00	0.00	0.00
13,300.0	91.44	272.09	9,539.0	138.4	-3,792.2	3,794.8	0.00	0.00	0.00
13,400.0	91.44	272.09	9,536.5	142.0	-3,892.1	3,894.7	0.00	0.00	0.00
13,500.0	91.44	272.09	9,534.0	145.7	-3,992.1	3,994.7	0.00	0.00	0.00
13,600.0	91.44	272.09	9,531.4	149.3	-4,092.0	4,094.7	0.00	0.00	0.00
13,700.0	91.44	272.09	9,528.9	153.0	-4,191.9	4,194.6	0.00	0.00	0.00
13,756.2	91.44	272.09	9,527.5	155.0	-4,248.0	4,250.8	0.00	0.00	0.00
TD at 13756.2									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Cottonwood #7	0.00	0.00	9,527.0	155.2	-4,248.0	406,505.02	555,679.23	32° 7' 3.191 N	104° 17' 13.231 W
- plan misses target center by 0.6usft at 13756.2usft MD (9527.5 TVD, 155.0 N, -4248.0 E)									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
8,617.0	8,617.0	Wolfcamp		0.00	
9,206.0	9,206.0	Wolfcamp B		0.00	
9,370.1	9,370.0	Wolfcamp C		0.00	
9,488.5	9,482.0	Wolfcamp D		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
9,340.6	9,340.6	0.0	0.0	KOP 20°/100 DLS @ 272° AZI
9,797.8	9,627.0	10.7	-293.5	EOC - Hold to TD
13,756.2	9,527.5	155.0	-4,248.0	TD at 13756.2

CIMAREX

Cimarex Energy Co.
Project: Eddy County (NM83E)
Site: Sec 22 - T25S - R26
Well: Cottonwood Draw 22 Fed Com #7
Wellbore: Wellbore #1

GREAT WHITE DIRECTIONAL SERVICES, L.L.C.

WELL DETAILS: Cottonwood Draw 22 Fed Com #7

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	406349.80	559927.20	32° 7' 1.634 N	104° 16' 23.836 W

SHL: 1980' FNL / 400' FEL
BHL: 1880' FNL / 660' FWL

T G M

Azimuths to Grid North
Total Correction: 7.91°
Magnetic Field
Strength: 48576.7snT
Dip Angle: 60.00°
Date: 01/10/2011
Model: IGRF200510

WELLBORE TARGET DETAILS (LAT/LONG)

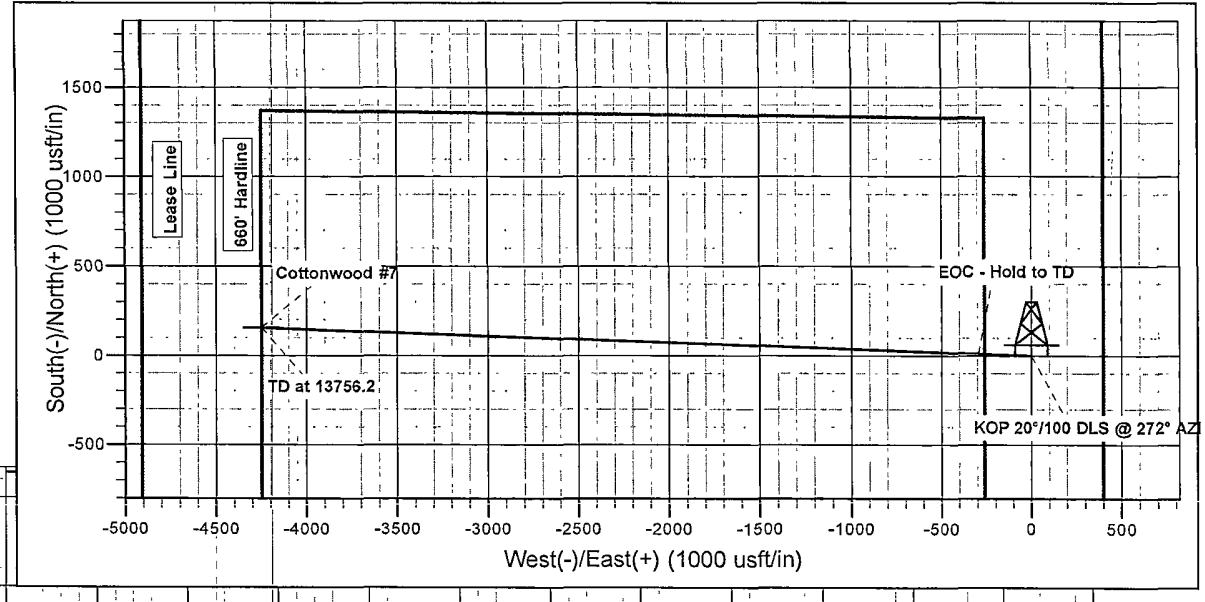
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Cottonwood #7	9527.0	155.2	-4248.0	32° 7' 3.191 N	104° 17' 13.231 W

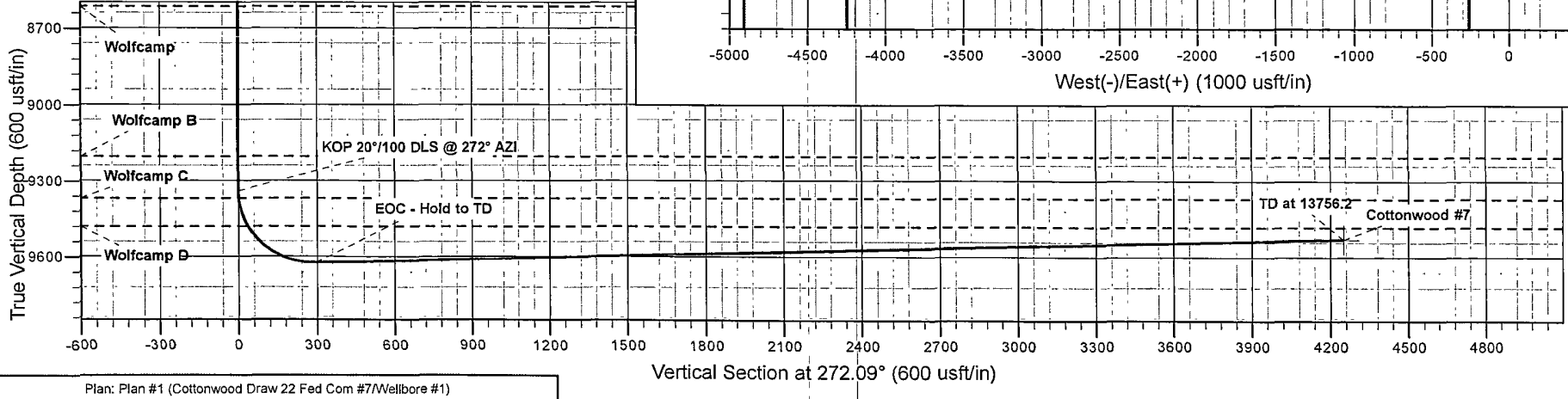
SECTION DETAILS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
9340.6	9340.6	0.00	0.00	0.0	0.0	0.0	0.0	KOP 20°/100 DLS @ 272° AZI
9627.0	9797.8	91.44	272.09	10.7	-293.5	293.7	293.7	EOC - Hold to TD
9527.5	13756.2	91.44	272.09	155.0	-4248.0	4250.8	4250.8	TD at 13756.2

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
8617.0	8617.0	Wolfcamp	0.00	
9206.0	9206.0	Wolfcamp B	0.00	
9370.0	9370.1	Wolfcamp C	0.00	
9482.0	9488.5	Wolfcamp D	0.00	





Plan: Plan #1 (Cottonwood Draw 22 Fed Com #7/Wellbore #1)

Created By. Aaron Pullin Date. 10 36, January 10 2011

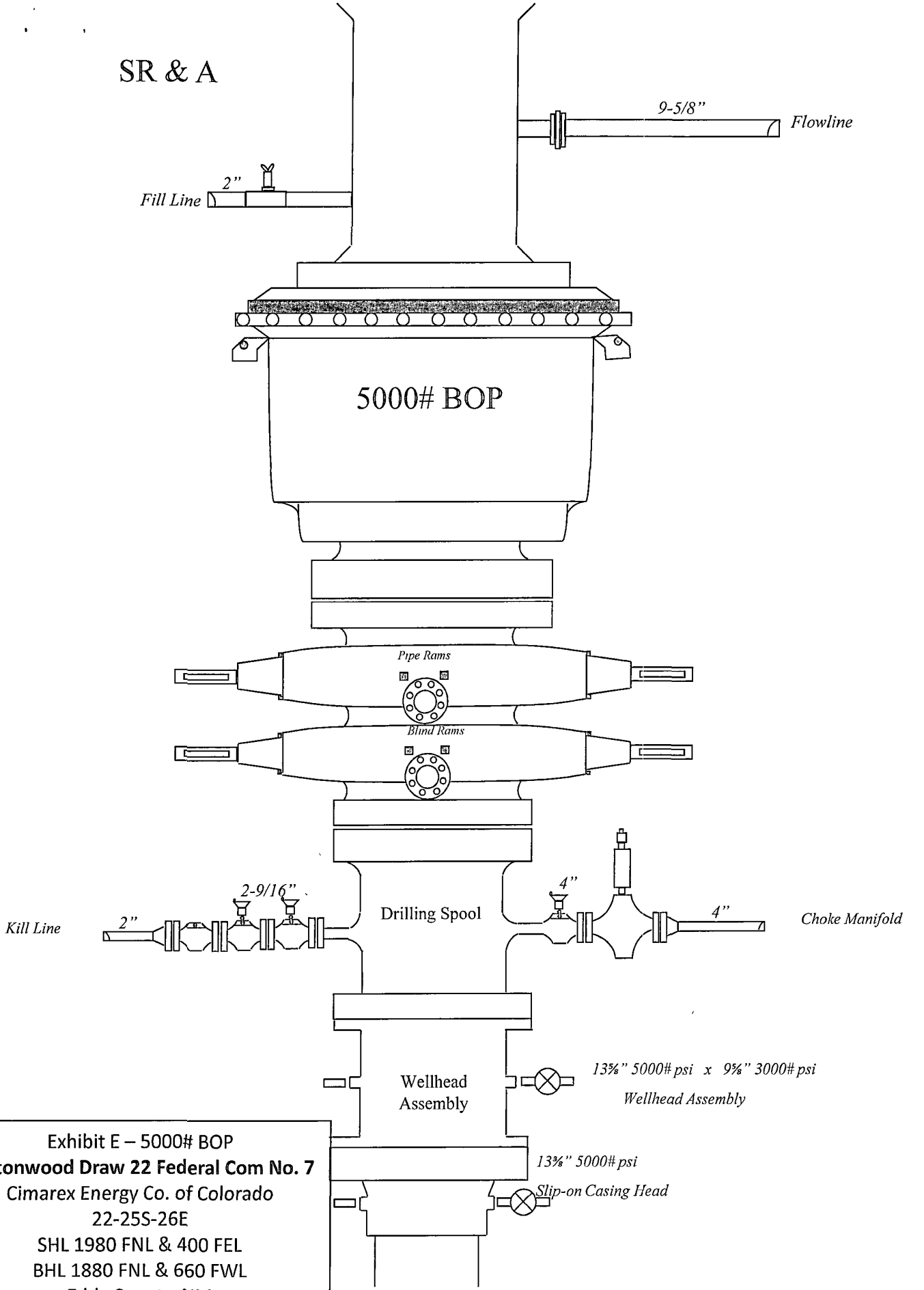
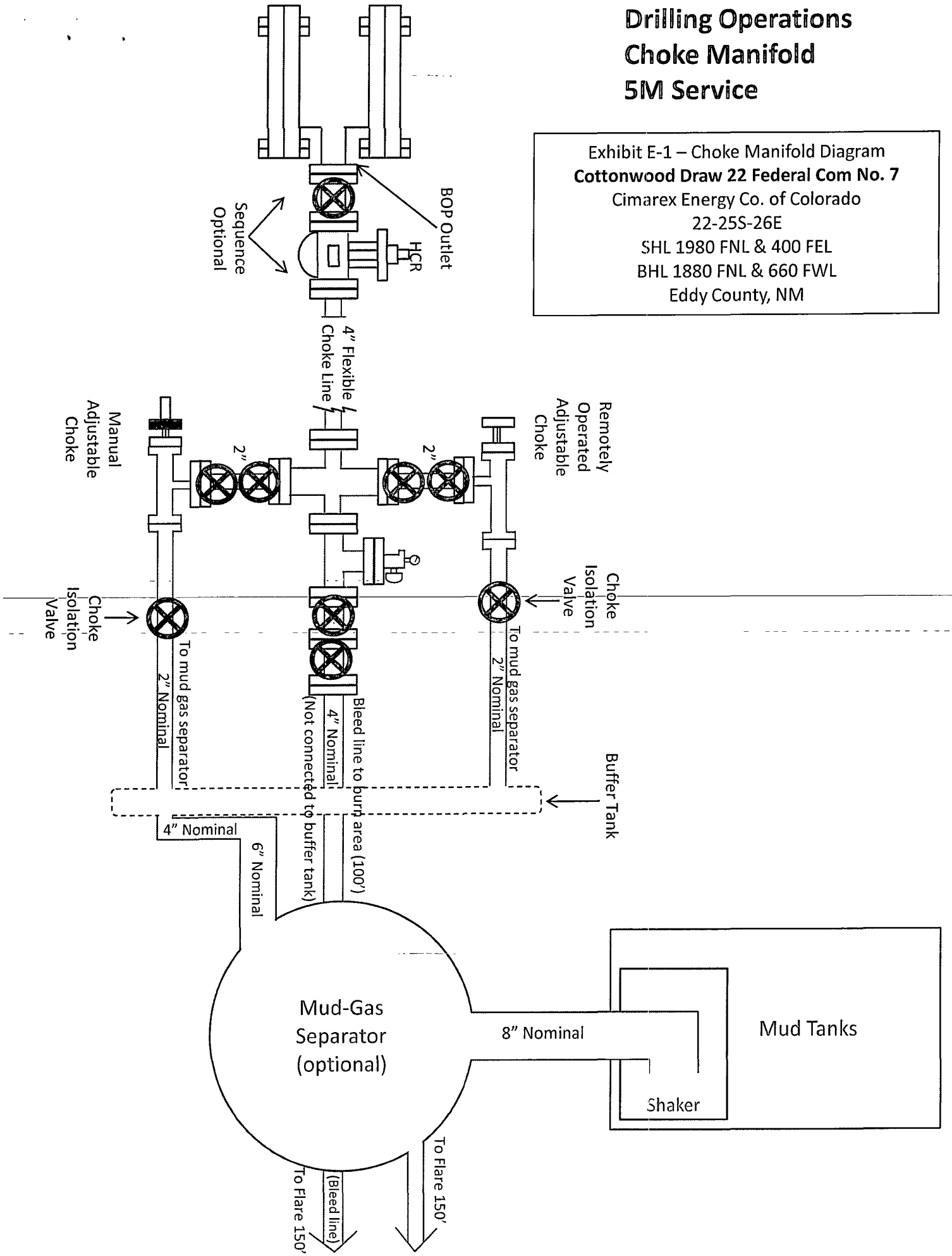
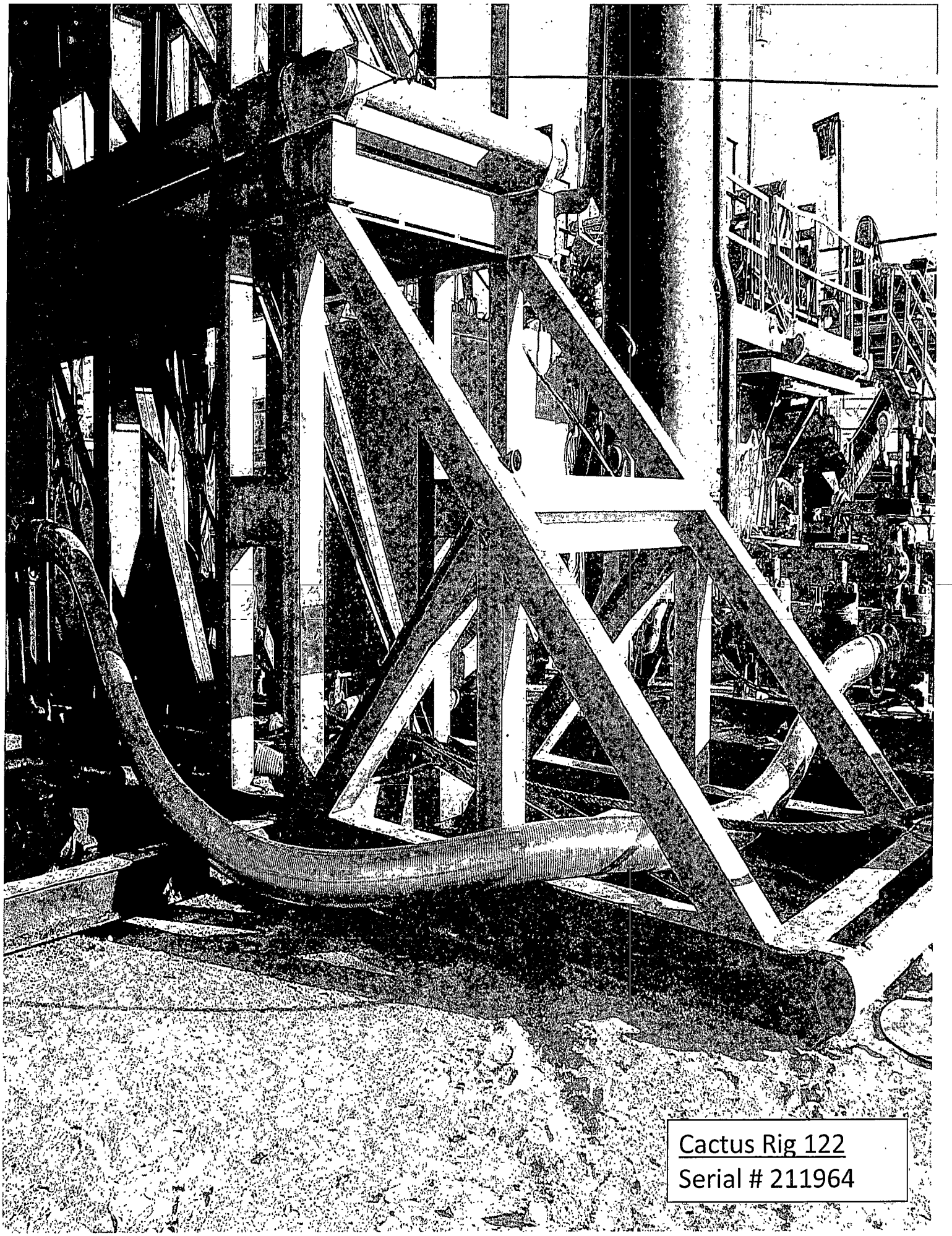


Exhibit E – 5000# BOP
Cottonwood Draw 22 Federal Com No. 7
Cimarex Energy Co. of Colorado
22-25S-26E
SHL 1980 FNL & 400 FEL
BHL 1880 FNL & 660 FWL
Eddy County, NM

Drilling Operations
Choke Manifold
5M Service

Exhibit E-1 – Choke Manifold Diagram
Cottonwood Draw 22 Federal Com No. 7
Cimarex Energy Co. of Colorado
22-25S-26E
SHL 1980 FNL & 400 FEL
BHL 1880 FNL & 660 FWL
Eddy County, NM





Cactus Rig 122
Serial # 211964

MIDWEST

HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT		
Customer: CACTUS		**P.O. Number:** Asset#M4812
HOSE SPECIFICATIONS		
Type: CHOKE LINE		**Length:** 35'
I.D. 4" *INCHES*		**O.D.** 8" *INCHES*
WORKING PRESSURE 10,000 *PSI*	**TEST PRESSURE** 15,000 *PSI*	**BURST PRESSURE** *PSI*
COUPLINGS		
Type of End Fitting 4 1/16 10K FLANGE		
Type of Coupling: SWEDGED	**MANUFACTURED BY** MIDWEST HOSE & SPECIALTY	
PROCEDURE		
Hose assembly pressure tested with water at ambient temperature.		
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 wraped 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 componets.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 vermculite 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, unibolt 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)

P.O. Box 96558 – 1421 S.E. 29th St. Oklahoma City, OK 73143 * (405) 670-6718 * Fax: (405) 670-6816