OCD-ARTESIA

ATS-11-334
EA-11-561
30-015-39728

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.: NM-19423, ~~See~~

6 If Indian, Allotee or Tribe Name:

1a Type of Work: ☒ DRILL ☐ REENTER

7 If Unit or CA Agreement, Name and No:

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

8. Lease Name and Well No.: White City 10 Federal Com No. 4 [36735]

2. Name of Operator: Cimarex Energy Co. of Colorado 162683

9. API Well No.: 30-015- 39728

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; WOLFCAMP EAST [96890]

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At Surface: 1950 FNL & 400 FEL

At proposed prod Zone: 1900 FNL & 660 FWL *Horizontal Wolfcamp Test*

11 Sec , T R. M or Blk. and Survey or Area: 10-25S-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-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**
N/A	MD 13752, TVD 9685	NM-2575
21 Elevations (Show whether DF, KDB, RT, GL, etc.)	**22 Approximate date work will start***	**23. Estimated duration**
3392' GR	05.15.11	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.

25 Signature	Name *(Printed/Typed)*	Date
Zeno Farris	Zeno Farris	03.04.11
Title		
Manager Operations Administration		
Approved By *(Signature)* /s/ James A. Amos	**Name (Printed/Typed)**	**Date**
Title FIELD MANAGER	**Office** CARLSBAD FIELD OFFICE	NOV 25 2011

RECEIVED
NOV 29 2011
NMOCD ARTESIA

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

cbh

Application to Drill

White City 10 Federal Com No. 4

Cimarex Energy Co. of Colorado

Unit H, Section 10

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 1950 FNL & 400 FEL
   BHL 1900 FNL & 660 FWL

2. Elevation above sea level: 3392' 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 13752, TVD 9685

6. Estimated tops of geological markers:

Rustler	Spotty, N/A	1st Bone Spring Ss	6440
Top Salt	1145	2nd Bone Spring Ss	6911
Base Salt	1760	2nd BS Ss Lower	7714
Delaware	1967	3rd Bone Spring Ss	8301
Cherry Canyon	2926	Wolfcamp	8634
Brushy Canyon	4020		
Bone Spring	5433		
Bone Spring "A" Shale	5617		
Bone Spring "C" Shale	5896		

7. Possible mineral bearing formations:

Wolfcamp	Gas
Bone Spring	Gas
Delaware	Oil

8. Proposed drilling Plan

Drill 8¾" hole to 9300 and set 7" casing from 0-9300 and cement. Drill out of bottom of casing shoe with a 6⅛" bit and build curve and drill to TD @ 13752 MD, 9685 TVD. Run 4½" liner from 9198-TD and cement.

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	1947	10	28-29	NC	Saturated Brine. Sweep as needed to clean hole.
1947	to	9300	9.0	28-30	NC	Cut brine. Sweep as needed to clean hole.
9300	to	13752	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	1947	New	9⅝"	40#	LTC	J-55
Production	8¾"	0	to	9300	New	7"	26#	LTC	P-110
Liner	6⅛"	9198	to	13752	New	4½"	11.6#	BTC/LTC*	P-110

*BTC from ~~9000~~ 9198-9848 (EOC) and LTC from 9848-13752

see COA

11. Cementing Program:

Surface Excess 100%	Lead: 100 sx (C) +2% S1+2%D46 YIELD 1.97 Tail: 350 sx. (C) +1% S1 YIELD 1.34. **TOC Surface Centralizers per Onshorder 2.III.B.1.f**
Intermediate Excess 75%	Lead: 360 sx. (C) 4% D20 + .2% D46 + 1% S1. YIELD 1.96, MIX WATER 10.85, WT. 12.9 Tail: 220 sx. (C) + .1% D13. YIELD 1.33, MIX WATER 3.36, WT. 14.8 **TOC Surface**
Production & ~~Fiberglass~~ Excess 28%	Lead: 500 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: 650 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%	445 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.**

According to the State Engineer, depth to groundwater is 20. 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 1947 and 7" to 9300 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 10 - T25S - R26E
White City 10 Fed #4

Wellbore #1

Plan: Plan #1

Standard Planning Report

26 January, 2011

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well White City 10 Fed #4
Company:	Cimarex Energy Co.	**TVD Reference:**	WELL @ 3410.0usft (RKB = 20')
Project:	Eddy County (NM83E)	**MD Reference:**	WELL @ 3410.0usft (RKB = 20')
Site:	Sec 10 - T25S - R26E	**North Reference:**	Grid
Well:	White City 10 Fed #4	**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 10 - T25S - R26E

Site Position:		**Northing:**	414,262.90 usft	**Latitude:**	32° 8' 19.944 N
From:	Map	**Easting:**	559,908.40 usft	**Longitude:**	104° 16' 24.003 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.03 °

Well White City 10 Fed #4

Well Position	**+N/-S**	2,670.7 usft	**Northing:**	416,933.60 usft	**Latitude:**	32° 8' 46.374 N
	+E/-W	-137.8 usft	**Easting:**	559,770.60 usft	**Longitude:**	104° 16' 25.589 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	3,390.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	01/26/11	7.93	60.02	48,565

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	271.63	

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	
9,398.0	0.00	0.00	9,398.0	0.0	0.0	0.00	0.00	0.00	0.00	
9,848.0	90.00	271.63	9,684.5	8.1	-286.4	20.00	20.00	0.00	271.63	
13,751.8	90.00	271.63	9,684.5	119.2	-4,188.5	0.00	0.00	0.00	0.00	White City #10 PBHL

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well White City 10 Fed #4
Company:	Cimarex Energy Co.	**TVD Reference:**	WELL @ 3410.0usft (RKB = 20')
Project:	Eddy County (NM83E)	**MD Reference:**	WELL @ 3410.0usft (RKB = 20')
Site:	Sec 10 - T25S - R26E	**North Reference:**	Grid
Well:	White City 10 Fed #4	**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)
9,398.0	0.00	0.00	9,398.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP 20°/100 DLS @ 271.63° AZI									
9,400.0	0.40	271.63	9,400.0	0.0	0.0	0.0	20.00	20.00	0.00
9,424.0	5.21	271.63	9,424.0	0.0	-1.2	1.2	20.00	20.00	0.00
Wolfcamp C									
9,425.0	5.40	271.63	9,425.0	0.0	-1.3	1.3	20.00	20.00	0.00
9,450.0	10.40	271.63	9,449.7	0.1	-4.7	4.7	20.00	20.00	0.00
9,475.0	15.40	271.63	9,474.1	0.3	-10.3	10.3	20.00	20.00	0.00
9,500.0	20.40	271.63	9,497.9	0.5	-18.0	18.0	20.00	20.00	0.00
9,525.0	25.40	271.63	9,520.9	0.8	-27.7	27.7	20.00	20.00	0.00
9,529.6	26.32	271.63	9,525.0	0.8	-29.7	29.7	20.00	20.00	0.00
Wolfcamp D									
9,550.0	30.40	271.63	9,543.0	1.1	-39.4	39 4	20.00	20.00	0.00
9,575.0	35.40	271.63	9,564.0	1.5	-52.9	53.0	20.00	20.00	0.00
9,600.0	40.40	271.63	9,583.7	1.9	-68.3	68.3	20.00	20.00	0.00
9,625.0	45.40	271.63	9,602.0	2.4	-85.3	85.3	20.00	20.00	0.00
9,650.0	50.40	271.63	9,618.7	3.0	-103.8	103.9	20.00	20.00	0.00
9,675.0	55.40	271.63	9,633.8	3.5	-123.8	123.8	20.00	20.00	0.00
9,700.0	60.40	271.63	9,647.1	4.1	-144.9	145.0	20.00	20.00	0.00
9,725.0	65.40	271.63	9,658.5	4.8	-167.2	167.2	20.00	20.00	0.00
9,750.0	70.40	271.63	9,667.9	5.4	-190.3	190.4	20.00	20.00	0.00
9,775.0	75.40	271.63	9,675.2	6.1	-214.2	214.3	20.00	20.00	0.00
9,800.0	80.40	271.63	9,680.5	6.8	-238.6	238.7	20.00	20.00	0.00
9,825.0	85.40	271.63	9,683.6	7.5	-263.4	263.5	20.00	20.00	0.00
9,848.0	90.00	271.63	9,684.5	8.1	-286.4	286.5	20.00	20.00	0.00
EOC - Hold to TD									
9,900.0	90.00	271.63	9,684.5	9.6	-338.3	338.5	0.00	0.00	0.00
10,000.0	90.00	271.63	9,684.5	12.5	-438.3	438.5	0.00	0.00	0.00
10,100.0	90.00	271.63	9,684.5	15.3	-538.3	538.5	0.00	0.00	0.00
10,200.0	90.00	271.63	9,684.5	18.2	-638.2	638.5	0.00	0.00	0.00
10,300.0	90.00	271.63	9,684.5	21.0	-738.2	738.5	0.00	0.00	0.00
10,400.0	90.00	271.63	9,684.5	23.9	-838.1	838.5	0.00	0.00	0.00
10,500.0	90.00	271.63	9,684.5	26.7	-938.1	938.5	0.00	0.00	0.00
10,600.0	90.00	271.63	9,684.5	29.5	-1,038.1	1,038.5	0.00	0.00	0.00
10,700.0	90.00	271.63	9,684.5	32.4	-1,138.0	1,138.5	0.00	0.00	0.00
10,800.0	90.00	271.63	9,684.5	35.2	-1,238.0	1,238.5	0.00	0.00	0.00
10,900.0	90.00	271.63	9,684.5	38.1	-1,337.9	1,338.5	0.00	0.00	0.00
11,000.0	90.00	271.63	9,684.5	40.9	-1,437.9	1,438.5	0.00	0.00	0.00
11,100.0	90.00	271.63	9,684.5	43.8	-1,537.9	1,538.5	0.00	0.00	0.00
11,200.0	90.00	271.63	9,684.5	46.6	-1,637.8	1,638.5	0.00	0.00	0.00
11,300.0	90.00	271.63	9,684.5	49.5	-1,737.8	1,738.5	0.00	0.00	0.00
11,400.0	90.00	271.63	9,684.5	52.3	-1,837.7	1,838.5	0.00	0.00	0.00
11,500.0	90.00	271.63	9,684.5	55.1	-1,937.7	1,938.5	0.00	0.00	0.00
11,600.0	90.00	271.63	9,684.5	58.0	-2,037.7	2,038.5	0.00	0.00	0.00
11,700.0	90.00	271.63	9,684.5	60.8	-2,137.6	2,138.5	0.00	0.00	0.00
11,800.0	90.00	271.63	9,684.5	63.7	-2,237.6	2,238.5	0.00	0.00	0.00
11,900.0	90.00	271.63	9,684.5	66.5	-2,337.5	2,338.5	0.00	0.00	0.00
12,000.0	90.00	271.63	9,684.5	69.4	-2,437.5	2,438.5	0.00	0.00	0.00
12,100.0	90.00	271.63	9,684.5	72.2	-2,537.5	2,538.5	0.00	0.00	0.00
12,200.0	90.00	271.63	9,684.5	75.1	-2,637.4	2,638.5	0.00	0.00	0.00
12,300.0	90.00	271.63	9,684.5	77.9	-2,737.4	2,738.5	0.00	0.00	0.00
12,400.0	90.00	271.63	9,684.5	80.7	-2,837.3	2,838.5	0.00	0.00	0.00
12,500.0	90.00	271.63	9,684.5	83.6	-2,937.3	2,938.5	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well White City 10 Fed #4
Company:	Cimarex Energy Co.	**TVD Reference:**	WELL @ 3410.0usft (RKB = 20')
Project:	Eddy County (NM83E)	**MD Reference:**	WELL @ 3410.0usft (RKB = 20')
Site:	Sec 10 - T25S - R26E	***North Reference:***	Grid
Well:	White City 10 Fed #4	**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)
12,600.0	90.00	271.63	9,684.5	86.4	-3,037.2	3,038.5	0.00	0.00	0.00
12,700.0	90.00	271.63	9,684.5	89.3	-3,137.2	3,138.5	0.00	0.00	0.00
12,800.0	90.00	271.63	9,684.5	92.1	-3,237.2	3,238.5	0.00	0.00	0.00
12,900.0	90.00	271.63	9,684.5	95.0	-3,337.1	3,338.5	0.00	0.00	0.00
13,000.0	90.00	271.63	9,684.5	97.8	-3,437.1	3,438.5	0.00	0.00	0.00
13,100.0	90.00	271.63	9,684.5	100.7	-3,537.0	3,538.5	0.00	0.00	0.00
13,200.0	90.00	271.63	9,684.5	103.5	-3,637.0	3,638.5	0.00	0.00	0.00
13,300.0	90.00	271.63	9,684.5	106.3	-3,737.0	3,738.5	0.00	0.00	0.00
13,400.0	90.00	271.63	9,684.5	109.2	-3,836.9	3,838.5	0.00	0.00	0.00
13,500.0	90.00	271.63	9,684.5	112.0	-3,936.9	3,938.5	0.00	0.00	0.00
13,600.0	90.00	271.63	9,684.5	114.9	-4,036.8	4,038.5	0.00	0.00	0.00
13,700.0	90.00	271.63	9,684.5	117.7	-4,136.8	4,138.5	0.00	0.00	0.00
13,751.8	90.00	271.63	9,684.5	119.2	-4,188.5	4,190.2	0.00	0.00	0.00
TD at 13751.8									

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
White City #10 PBHL	0.00	0.00	9,685.0	119.5	-4,188.5	417,053.10	555,582.06	32° 8' 47.577 N	104° 17' 14.309 W
- plan misses target center by 0.6usft at 13751.8usft MD (9684.5 TVD, 119.2 N, -4188.5 E)									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
8,634.0	8,634.0	Wolfcamp		0.00	
9,241.0	9,241.0	Wolfcamp B		0.00	
9,424.0	9,424.0	Wolfcamp C		0.00	
9,529.6	9,525.0	Wolfcamp D		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
9,398.0	9,398.0	0.0	0.0	KOP 20°/100 DLS @ 271.63° AZI
9,848.0	9,684.5	8.1	-286.4	EOC - Hold to TD
13,751.8	9,684.5	119.2	-4,188.5	TD at 13751.8

CIMAREX

GREAT WHITE

Project	Eddy County (NM83E)
Site	Sec 10 - T25S - R26E
Well	White City 10 Fed #4
Wellbore	Wellbore #1
Design	Plan #1
Version	

WELL DETAILS: White City 10 Fed #4

Ground Level: 3390.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	416933.60	559770.60	32° 8' 46.374 N	104° 16' 25.589 W

SHL: 1950' FNL / 400' FEL
BHL: 1900' FNL / 660' FWL

Azimuths to Grid North
Total Correction: 7.90°
Magnetic Field
Strength: 48564.7snT
Dip Angle 60.02°
Date 01/26/2011
Model: IGRF200510

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
9398.0	9398.0	0.00	0.00	0.0	0.0	0.0	0.0	KOP 20°/100 DLS @ 271.63° AZI
9684.5	9848.0	90.00	271.63	8.1	-286.4	286.5	286.5	EOC - Hold to TD
9684.5	13751.8	90.00	271.63	119.2	-4188.5	4190.2	4190.2	TD at 13751.8

PLAN DETAILS

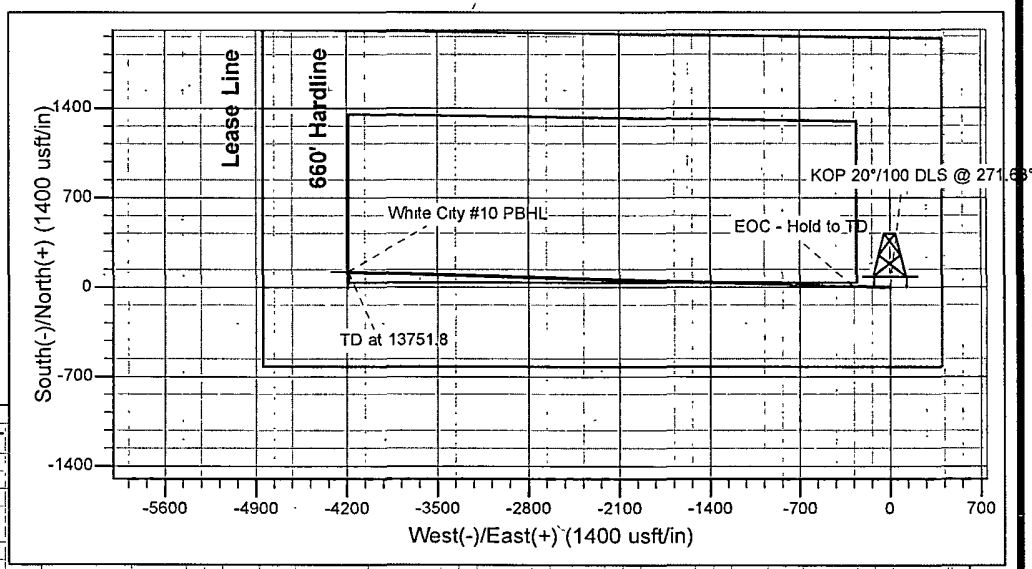
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
9398.0	0.00	0.00	9398.0	0.0	0.0	0.00	0.00	0.0	
9848.0	90.00	271.63	9684.5	8.1	-286.4	20.00	271.63	286.5	
13751.8	90.00	271.63	9684.5	119.2	-4188.5	0.00	0.00	4190.2	White City #10 PBHL

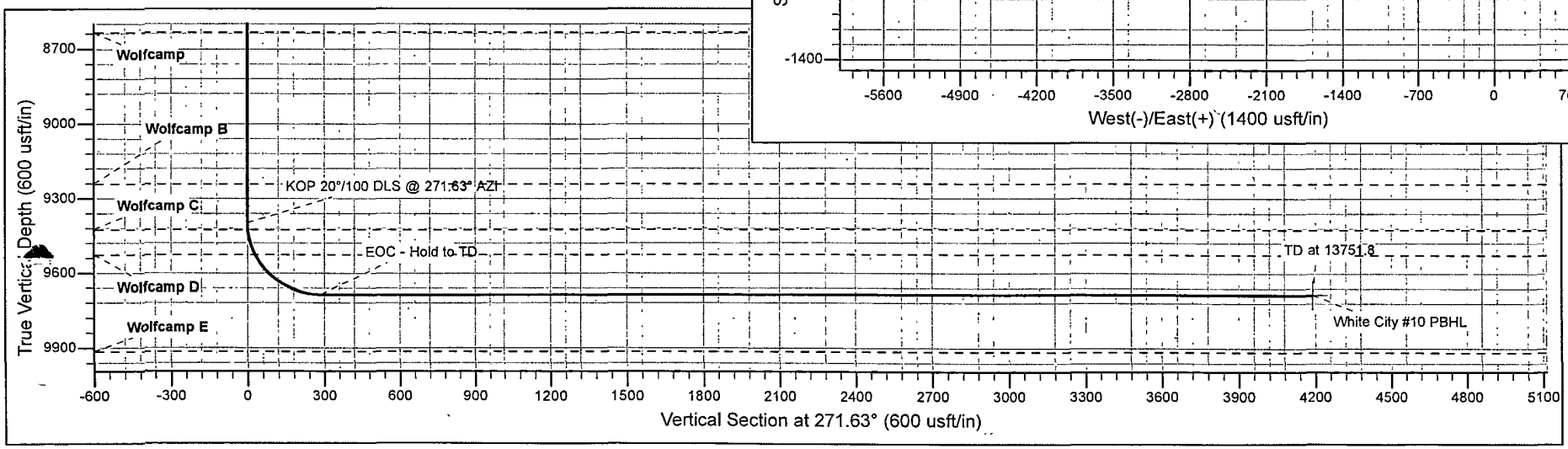
WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
White City #10 PBHL	9685.0	119.5	-4188.5	417053.10	555582.06

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
8634.0	8634.0	Wolfcamp	0.00	
9241.0	9241.0	Wolfcamp B	0.00	
9424.0	9424.0	Wolfcamp C	0.00	
9525.0	9529.6	Wolfcamp D	0.00	





SR & A

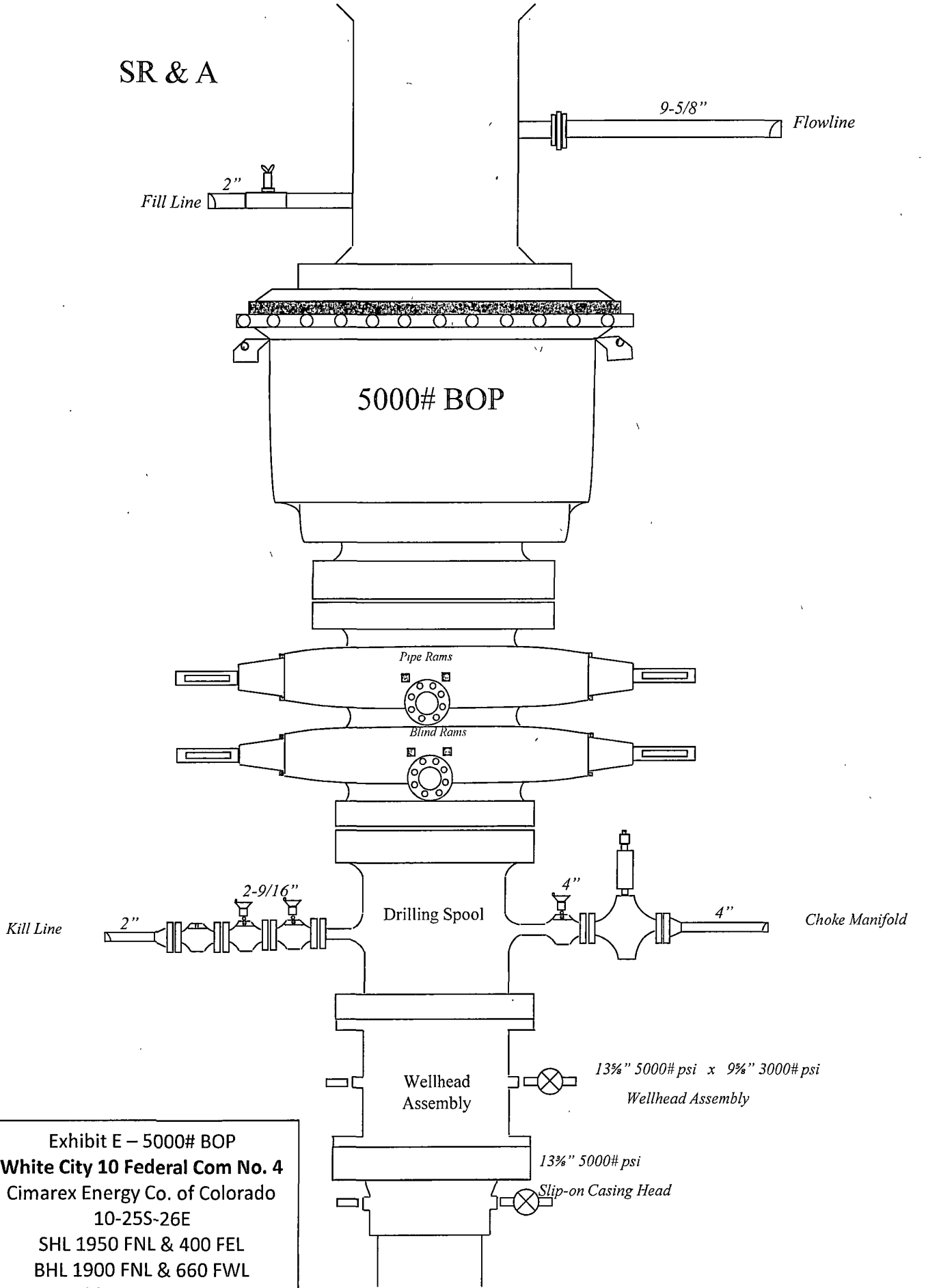
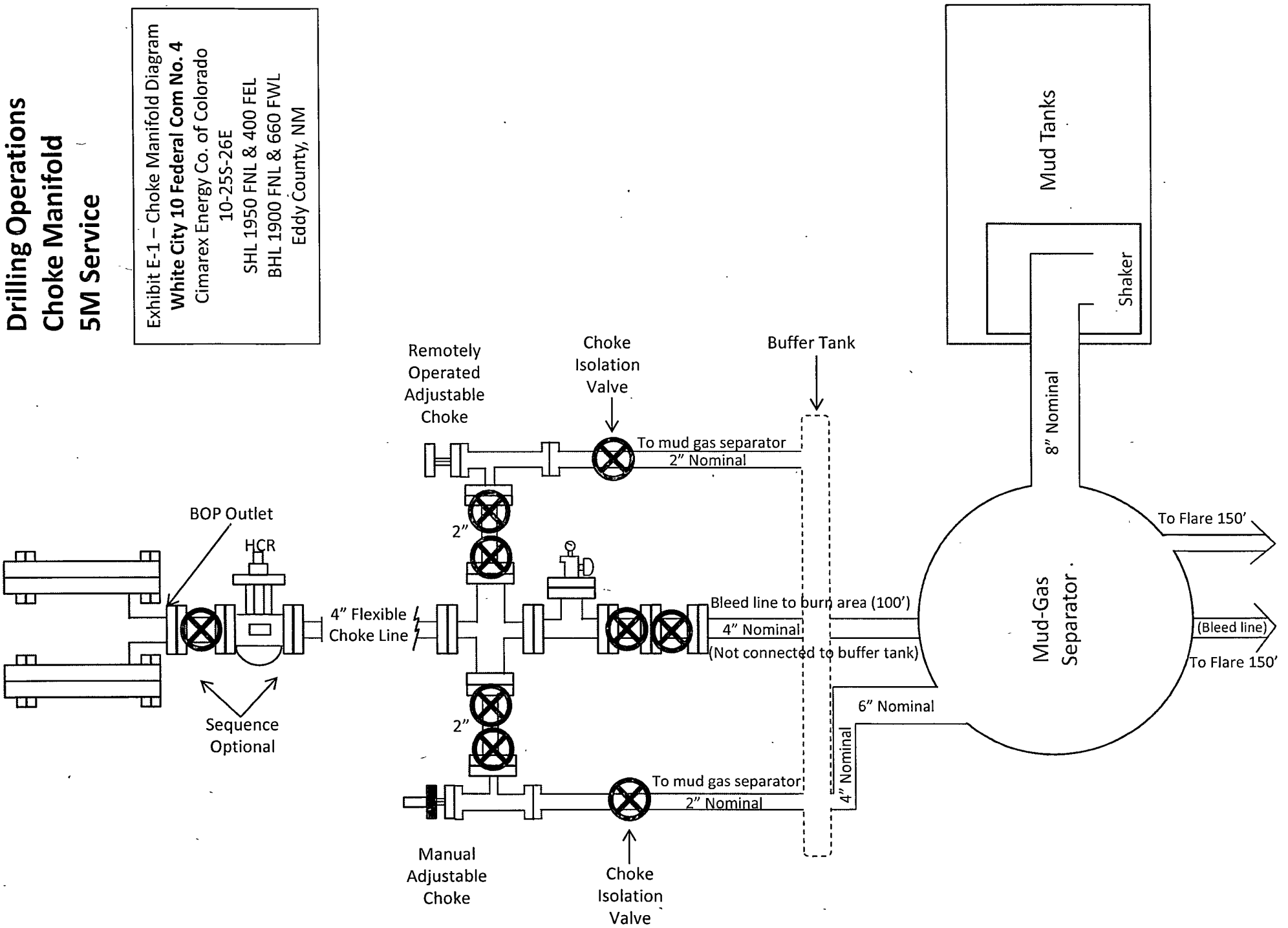


Exhibit E – 5000# BOP
White City 10 Federal Com No. 4
Cimarex Energy Co. of Colorado
10-25S-26E
SHL 1950 FNL & 400 FEL
BHL 1900 FNL & 660 FWL
Eddy County, NM

Drilling Operations
Choke Manifold
5M Service

Exhibit E-1 – Choke Manifold Diagram
White City 10 Federal Com No. 4
Cimarex Energy Co. of Colorado
10-25S-26E
SHL 1950 FNL & 400 FEL
BHL 1900 FNL & 660 FWL
Eddy County, NM



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.

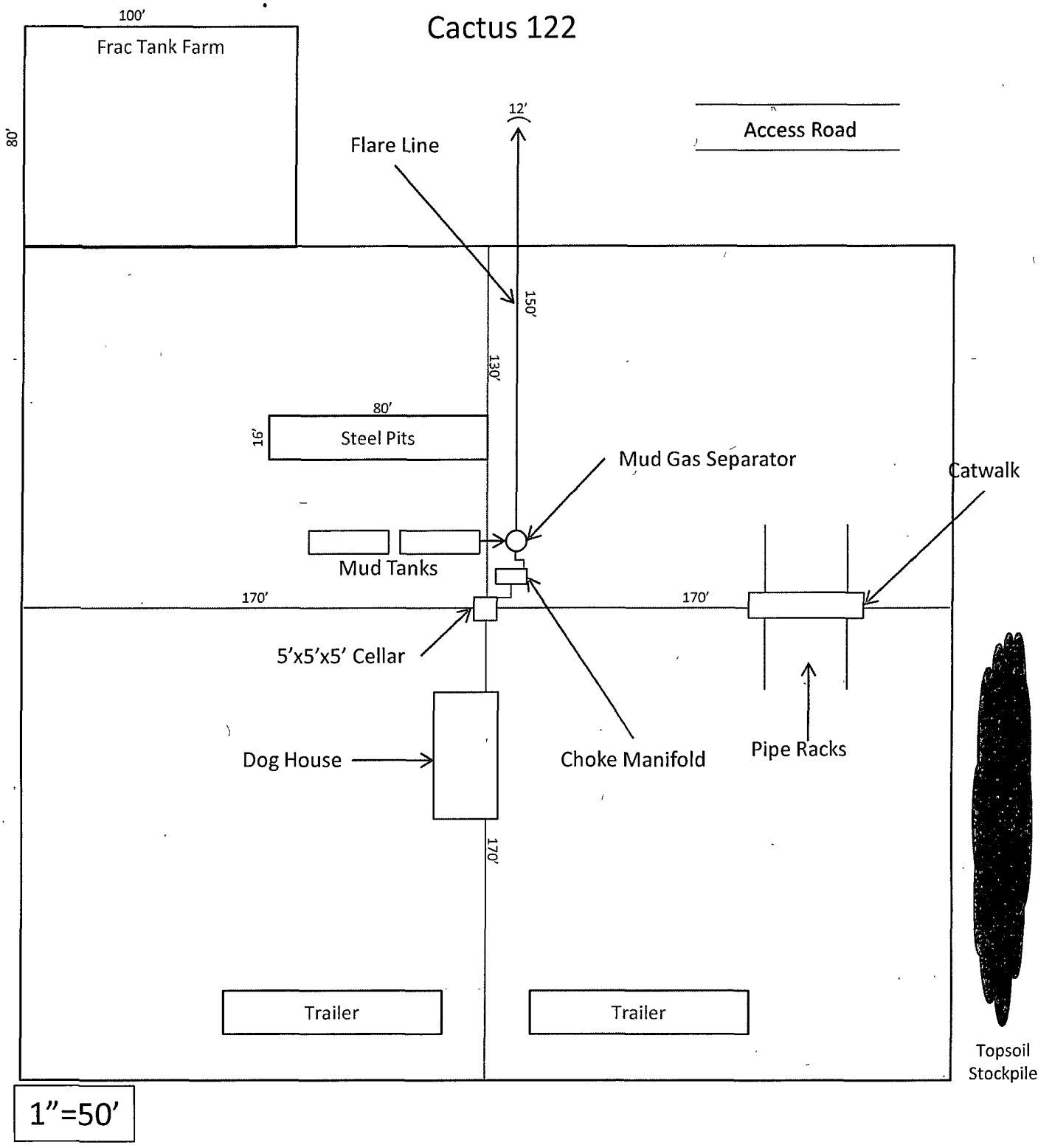
Specification Sheet
Choke & Kill Hose

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

Cactus 122



1"=50'

N

Exhibit D – Rig Diagram
White City 10 Federal Com No. 4
Cimarex Energy Co. of Colorado
10-25S-26E
SHL 1950 FNL & 400 FEL
BHL 1900 FNL & 660 FWL
Eddy County, NM