Month - Year
MAR - 8 2007
OCD - ARTESIA, NM

OCD-ARTESIA

HIGH CAVEKARST ATS-07-283

Form 3160-3
(July 1992)

FORM APPROVED
OMB NO. 1004-0136
Expires: February 28, 1995

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO.: NM-104674

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ]

1b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [X] MULTIPLE ZONE [ ]

7. UNIT AGREEMENT NAME: Pending

8. FARM OR LEASE NAME, WELL NO.: Crow Flats 7 Federal Com No. 4 36404

2. NAME OF OPERATOR: Cimarex Energy Co. of Colorado 162683

9. API WELL NO.: 30-015- 35479

3. ADDRESS AND TELEPHONE NO.: P.O. Box 140907 Irving TX 75014 972

10. FIELD AND POOL, OR WILDCAT: Diamond Mound; Morrow

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)

1980' FSL & 660' FEL

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

11. SEC. T.,R.,M., BLOCK AND SURVEY OR AREA: 7-16S-28E

Roswell Controlled Water Basin

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 12 miles E/SE of Lake Arthur

12. COUNTY OR PARISH: Eddy

13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, T.O (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
660'	40	E2 320

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	19. PROPOSED DEPTH	20. ROTARY OR CABLE TOOLS
NA	9400'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3670' GR

22. APPROX. DATE WORK WILL START*: 03-15-07

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	H-40 13-3/8" WITNESS	48 #	430'	535 sx circ
12-1/4"	J-55 9-5/8"	40 #	1800'	600 sx circ
8-3/4"	P-110 5-1/2"	17 #	9400'	1375 sx circ, TOC 8285'

From the base of the surface pipe through the running of production casing, the well will be equipped with a 500 psi BOP system. We are requesting a variance for the 13-3/8" surface casing and BOP testing from Onshore Order No. 2, which states that all casing strings below the conductor shall be pressure tested to 0.22 psi per foot or 1500 psi, whichever is greater, but not to exceed 70% of the manufacturer's stated maximum internal yield. During the running of surface pipe and the drilling of the intermediate hole, we do not anticipate any pressures greater than 1000 psi and are requesting a variance to test the 13-3/8" casing and BOP to 1000 psi and to use rig pumps instead of an independent service company.

IN ABOVE SPACE, DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24

SIGNED Zeno Farris TITLE Mgr. Ops. Admin DATE 02-07-07

(This space for Federal or State office use)

PERMIT No. _____ APPROVAL DATE _____

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:

APPROVED BY James Stovall ACTING TITLE FIELD MANAGER DATE MAR 07 2007

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes 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.

APPROVAL FOR 1 YEAR

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Application to Drill

Cimarex Energy Co. of Colorado
Crow Flats 7 Federal Com No. 4
Unit I Section 7
T16S-R28E 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: 1980' FSL & 660' FEL

2 Elevation above sea level: GR 3670'

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: 9400'

6 Estimated tops of geological markers:

San Andres	1750
Abo Shale	5230
Wolfcamp	6450
Strawn LS	8400
Atoka Clastics	8785
Morrow Clastics	9000
Miss Unconformity	9225

7 Possible mineral bearing formation:

Morrow	Gas
Atoka	Gas

8 Casing program:

Hole Size	Interval	Casing OD	Weight	Thread	Collar	Grade
17-1/2"	0-430'	13-3/8"	48	8-R	ST&C	H-40
12-1/4"	0-1800'	9-5/8"	40	8-R	LT&C	J-55
8-3/4"	0-9400'	5-1/2"	17	8-R	LT&C	P-110

Application to Drill

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9 Cementing & Setting Depth:

13 3/8"	Surface	Set 430' of 13 3/8" H-40 48# ST&C casing. Cement with 535 Sx. Of Premium Plus + additives, circulate cement to surface.
9 5/8"	Intermediate	Set 1800' of 9 5/8" J-55 40# LT&C casing. Cement with 600 Sx. Of Class Premium Plus + additives, circulate cement to surface.
5 1/2"	Production	Set 9400' of 5 1/2" P-110 17# LT&C casing. Cement with 1375 Sx. of Class POZ/C Cement + additives. Estimated top of cement 8285'.

See COA

10 Pressure control Equipment:

See COA

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 6000'. 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 nippled up on the 9 5/8" casing and will be 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.

11 Proposed Mud Circulating System:

Depth	Mud Wt	Viscosity	Fluid Loss	Type Mud
0-430'	8.4 - 8.6	30 - 32	May lose circ.	Fresh water spud mud add paper to control seepage and high viscosity sweeps to clean hole.
430'-1800'	9.7 - 10.0	28 - 29	May lose circ.	Brine water. Add paper as needed to control seepage and add lime to control pH (9-10). Use high viscosity sweeps to clean hole.
1800'-8300'	8.4 - 9.9	28 - 29	NC	Brine water. Paper for seepage. Lime for PH (9 - 9.5)
8300'-9400'	8.45 - 8.9	28 - 29	NC	Cut brine. Caustic for pH control.

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. Mud system monitoring equipment with derrick floor indicators and visual/audio alarms shall be installed and operative prior to drilling into the Wolfcamp formation. This equipment will remain in use until production casing is run and cemented.

Application to Drill

Cimarex Energy Co. of Colorado
Crow Flats 7 Federal Com No. 4
Unit I Section 7
T16S-R28E Eddy County, NM

12 Testing, Logging and Coring Program:

A. Mud logging program: Two-man unit from 6000' to TD

B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR

C. No DSTs or cores are planned at this time.

13 Potential Hazards:

No abnormal pressures or temperatures are expected. The area has a potiential H2S hazard. An H2S drilling plan is attached. 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 .

14 Anticipated Starting Date and Duration of Operations:

Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved. Drilling expected to take 35 - 45 days. If production casing is run an additional 30 days will be required to complete and construct surface facilities.

15 Other Facets of Operations:

After running casing, cased hole gamma ray neutron collar logs will be run from total depth over possible pay intervals. The Morrow pay will be perforated and stimulated. The well will be tested and potentialed as a gas well.

Hydrogen Sulfide Drilling Operations Plan

Cimarex Energy Co. of Colorado
Crow Flats 7 Federal Com No. 4
Unit I Section 7
T16S-R28E Eddy County, NM

1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:

A. Characteristics of H2S
B. Physical effects and hazards
C. Proper use of safety equipment and life support systems.
D. Principle and operation of H2S detectors, warning system and briefing
E. Evacuation procedure, routes and first aid.
F. Proper use of 30 minute pressure demand air pack.

2 H2S Detection and Alarm Systems

A. H2S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.

3 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.

4 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, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H2S present in dangerous concentration. Only emergency personnel admitted to location.

5 Well control equipment

A. See exhibit "E"

6 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 foremen's trailers or living quarters.

7 Drillstem Testing not anticipated.

Hydrogen Sulfide Drilling Operations Plan

Cimarex Energy Co. of Colorado
Crow Flats 7 Federal Com No. 4
Unit I Section 7
T16S-R28E Eddy County, NM

8 Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment.

9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas seperator will be brought into service along with H2S scavengers if necessary.

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
	76079	Diamond Mound; Morrow

Property Code	Property Name	Well Number
	CROW FLATS "7" FEDERAL COM	4

OGRID No.	Operator Name	Elevation
162683	CIMAREX ENERGY CO. OF COLORADO	3670'

Surface Location

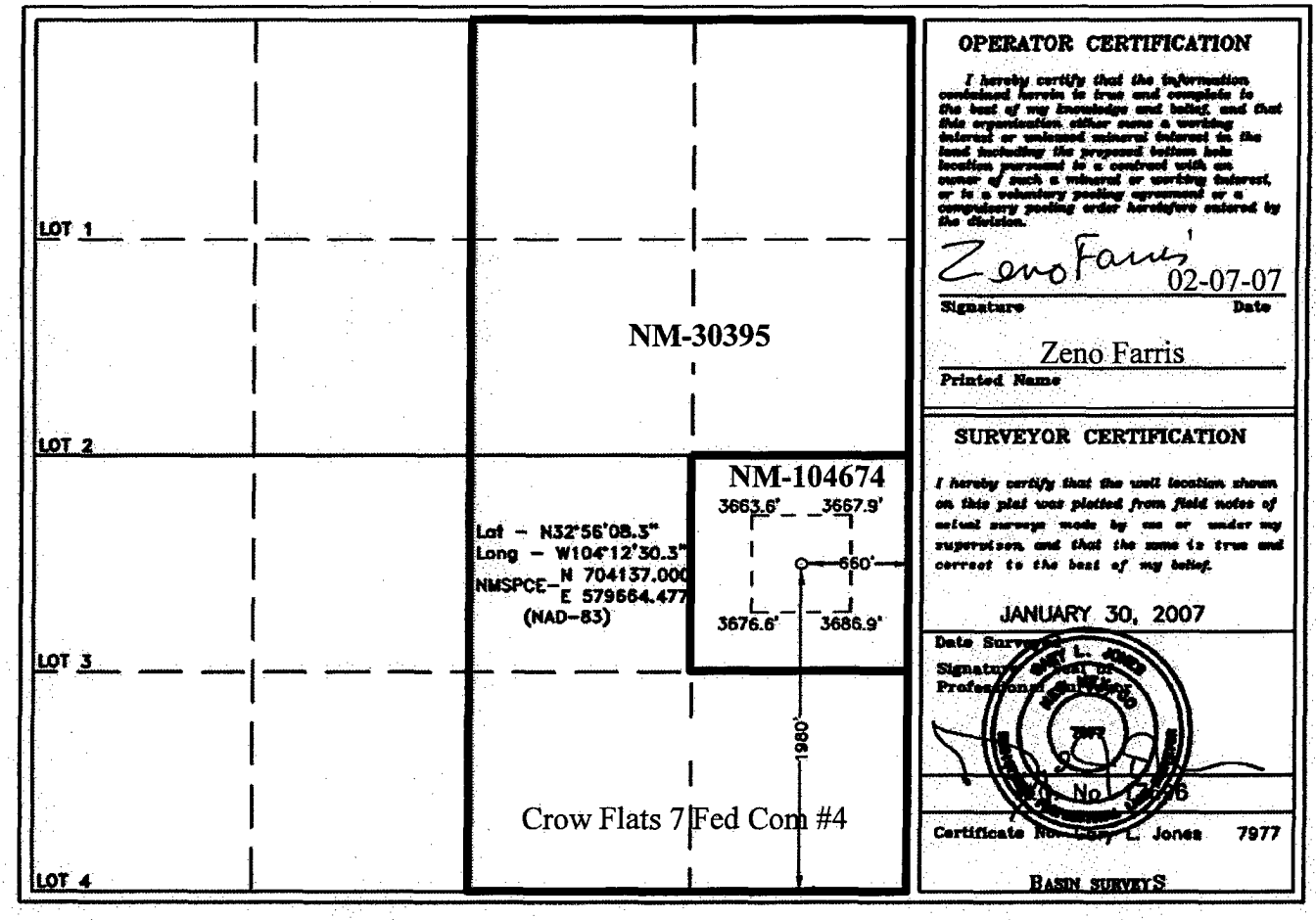
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	7	16 S	28 E		1980	SOUTH	660	EAST	EDDY

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320		P	

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



OPERATOR CERTIFICATION

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 unleased mineral interest in the land including the proposed bottom hole 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.

Zeno Farris 02-07-07
Signature Date

Zeno Farris
Printed Name

SURVEYOR CERTIFICATION

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 supervison, and that the same is true and correct to the best of my belief.

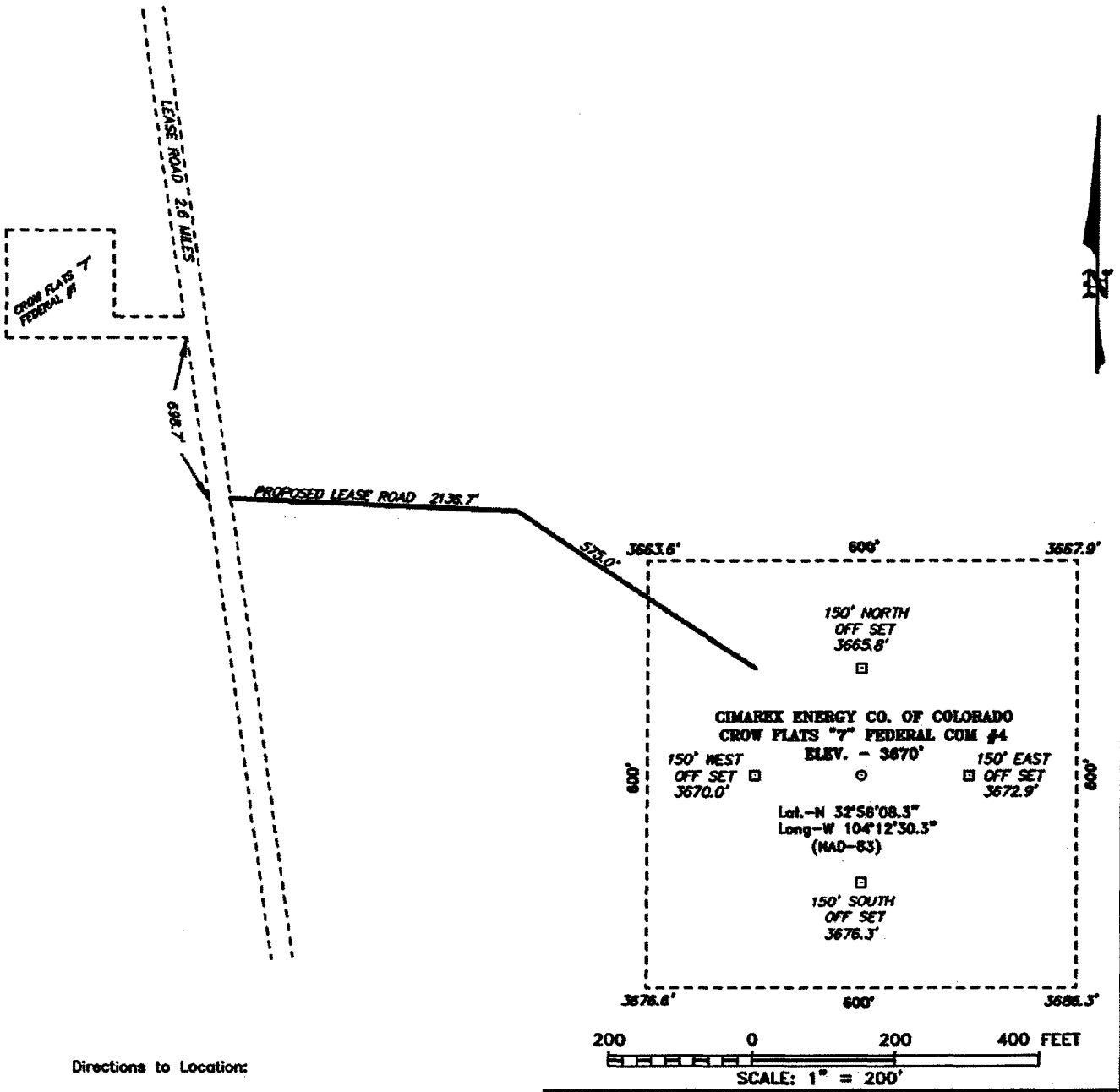
JANUARY 30, 2007
Date Surveyed

Signature & Seal of Professional Surveyor

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

SECTION 7, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY, **NEW MEXICO.**



Directions to Location:

FROM THE JUNCTION OF STATE HWY 2 AND CO. RD. C-3-31, PROCEED SOUTHEAST ON CO. RD. C-3-31 FOR 5.3 MILES TO A "Y", TURN RIGHT ON RAT COMP ROAD AND GO SOUTHEAST FOR 3.9 MILES TO A "Y" AT MERRIT RANCH, TURN RIGHT AND GO 0.6 MILES THEN SOUTH 2.6 MILES TO PROPOSED LEASE ROAD.

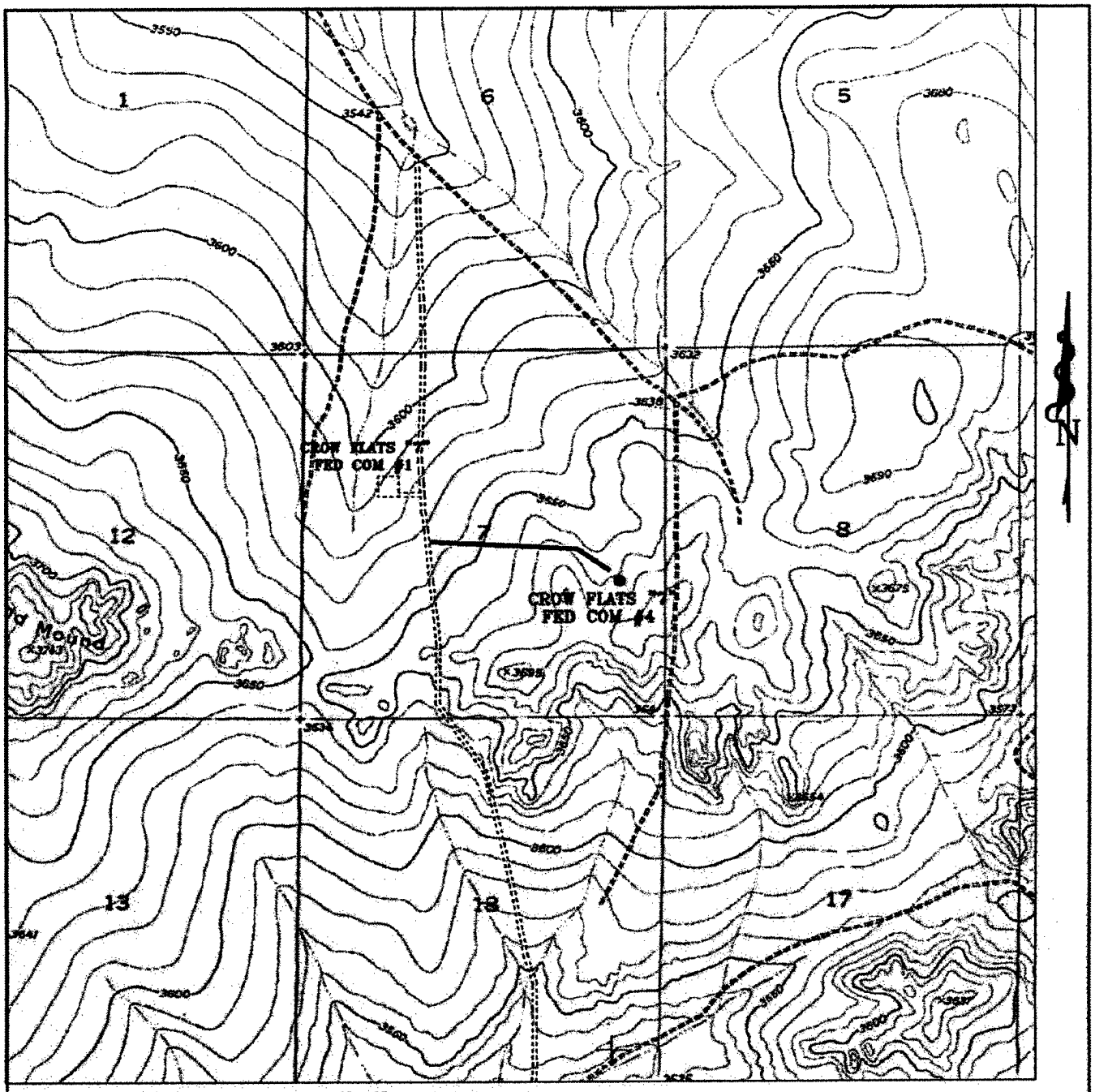
CIMAREX ENERGY CO. OF COLORADO

REF: CROW FLATS "7" FEDERAL COM #4 / WELL PAD TOPO

THE CROW FLATS "7" FEDERAL COM #4 LOCATED 1980' FROM THE SOUTH LINE AND 660' FROM THE EAST LINE OF SECTION 7, TOWNSHIP 16 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 17696	Drawn By: J. M. SMALL		
Date: 01-31-2006	Disk: JMS 17696W	Survey Date: 01-30-2006	Sheet 1 of 1 Sheets



CROW FLATS "7" FEDERAL COM #4
Located 1980' FSL and 660' FEL
Section 7, Township 16 South, Range 28 East,
N.M.P.M., Eddy County, New Mexico.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(505) 393-7316 - Office
(505) 392-3074 - Fax
basinsurveys.com

W.O. Number:	JMS 17696T
Survey Date:	01-30-2007
Scale:	1" = 2000'
Date:	01-31-2007

CIMAREX ENERGY CO. OF COLORADO

Exhibit C

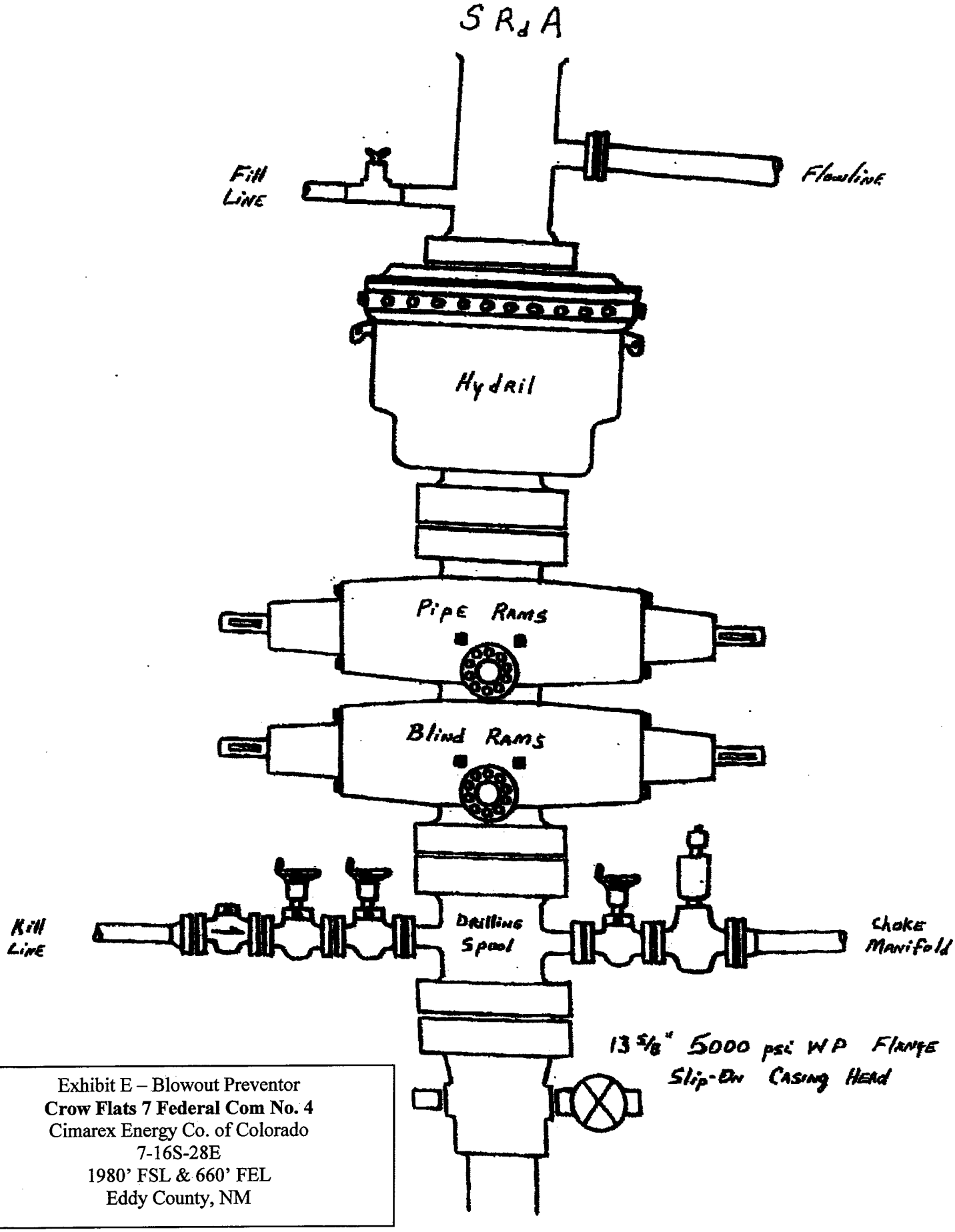


Exhibit E – Blowout Preventor
Crow Flats 7 Federal Com No. 4
Cimarex Energy Co. of Colorado
7-16S-28E
1980' FSL & 660' FEL
Eddy County, NM

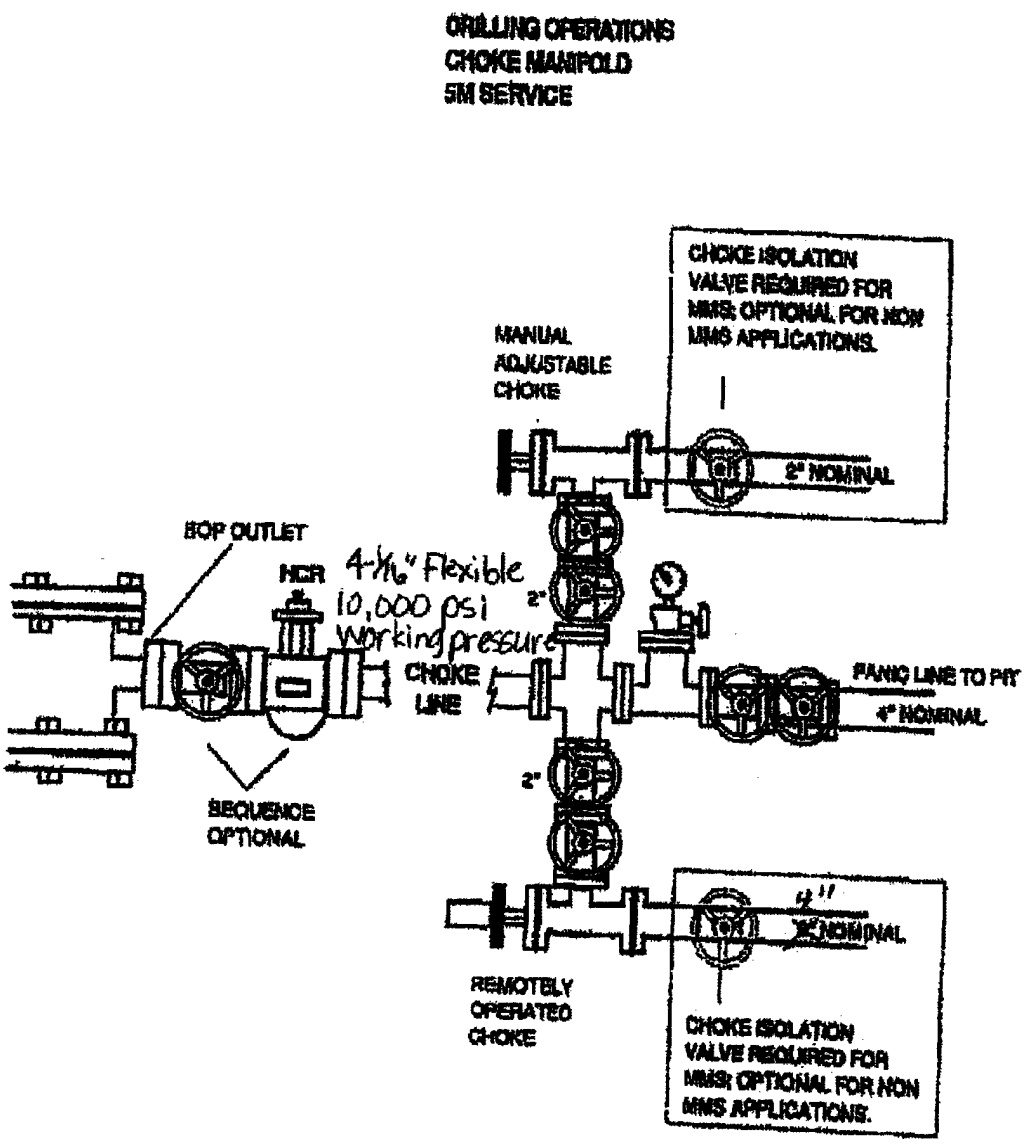


Exhibit E-1 – Choke Manifold Diagram
Crow Flats 7 Federal Com No. 1
Cimarex Energy Co. of Colorado
7-16S-28E
1980' FSL & 660' FEL
Eddy County, NM

CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Cimarex Energy Co
Well Name & No. Crow Flats 7 Federal Com # 4
Location: 1980'FSL, 660'FEL, SEC7, T16S, R28E, Eddy County, NM
Lease: NM-104674

I. DRILLING OPERATIONS REQUIREMENTS:

A. The Bureau of Land Management (BLM) is to be notified a minimum of 4 hours in advance, at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 - for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

1. Spudding
2. Cementing casing: **13.375** inch **9.625** inch **5.5** inch
3. BOP tests

B. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 FEET prior to drilling out of the surface casing. A copy of the plan shall be posted at the drilling site.

C. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

D. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute. (R-111-P area only)

E. If floor controls are required, (3M or Greater) controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

II. CASING:

A. The **13.375** inch surface casing shall be set at **430 feet** and cement circulated to the surface.

1. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
2. Wait on Cement (WOC) time for a primary cement job will be a minimum of 12 hours for a non-water basin, 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compression strength, which ever is greater. (This is to include the lead cement)
3. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds of compression strength, which ever is greater.
4. If cement falls back, Remedial cementing shall be completed prior to drilling out that string.

B. The minimum required fill of cement behind the **9.625** inch intermediate casing is **circulate cement to the surface.** If cement does not circulate see A.1 thru 4.

C. The minimum required fill of cement behind the **5.5** inch production casing is **cement shall extend upward a minimum of 200 feet above the base of the intermediate casing string, UNLESS circulation is lost while drilling the well bore for the intermediate casing, in which case, the cement will be brought up to at least 200 feet above the most shallow zone where circulation was lost.**

D. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

III. PRESSURE CONTROL:

A. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2.

B. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling the intermediate casing well bore shall be 2000 psi. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the **9.625** inch casing shall be **3000** psi.

C. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

1. The tests shall be done by an independent service company.
2. The results of the test shall be reported to the appropriate BLM office.
3. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of the independent service company test will be submitted to the appropriate BLM office.
4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi in accordance with API RP 53. The test will be held for a minimum of 10 minutes if the test is done with a test plug and 30 minutes without a test plug.
5. BOP/BOPE must be tested by an independent service within 500 feet of the top of the **Wolfcamp** Formation. This test does not exclude the test prior to drilling out the casing shoe as per onshore order No. 2.
6. A variance to test the_____ to the reduced pressure of ___psi with the rig pumps is approved the BOP/BOPE must be tested by an independent service company.

IV. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** Formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

1. Recording pit level indicator to indicate volume gains and losses.
2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
3. Flow-sensor on the flow line to warn of abnormal mud returns from the well.

V. Hazards:

1. Our geologist has indicated that there is high potential for cave Karst features.
2. Our geologist has indicated that there is potential for lost circulation in the Grayburg and San Andres formations

Engineering may be contacted at 505-706-2779 for variances if necessary.

FWright 2/23/07