



OCD-ARTESIA

JUL 30 2007  
OCD-ARTESIAATS-07-506  
EA-07-1006Form 3160-3  
(April 2004)

HIGH CAVEKARST

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: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No NM-015007
1b Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6 If Indian, Allottee or Tribe Name
2 Name of Operator Cimarex Energy Co. of Colorado		7 If Unit or CA Agreement, Name and No
3a Address PO Box 140907 Irving, TX 75014		8 Lease Name and Well No Glenwood 28 Federal No. 1
3b. Phone No (include area code) 972-401-3111		9 API Well No 30-015- 35735
4 Location of Well (Report location clearly and in accordance with any State requirements *) At Surface 760' FNL & 760' FEL At proposed prod Zone 760' FNL & 760' FEL <b>ROSWELL CONTROLLED WATER BASIN</b>		10. Field and Pool, or Exploratory Wildcat Morrow
11. Sec., T. R. M. or Bk and Survey or Area 28-16S-29E		12 County or Parish Eddy
13. State NM		14 Distance in miles and direction from nearest town or post office* 2 miles Northeast of Loco Hills
15 Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig unit line if any) 760'	16 No of acres in lease 920	17. Spacing Unit dedicated to this well E2 320
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft n/a	19 Proposed Depth 10,800	20. BLM/BIA Bond No on File NM-2575
21 Elevations (Show whether DF, KDB, RT, GL, etc ) 3645' GR	22. Approximate date work will start* 8/1/2007	23 Estimated duration 35-45 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 <i>Zeno Farris</i>	Name (Printed/Typed) Zeno Farris	Date 06.18.07
---------------------------------	-------------------------------------	------------------

Title

Manager Operations Administration

Approved By (Signature) <i>/s/ James Stovall</i>	Name (Printed/Typed) <i>/s/ James Stovall</i>	Date JUL 27 2007
--	--	---------------------

Title

FIELD MANAGER

Office

CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds local, state, or federal permits to conduct operations thereon

Conditions of approval, if any, are attached

Title 18 U S S Section 1001 and Title 43 U

States any false, fictitious, or fraudulent statement

\* (Instructions on page 2)

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

ject lease which would entitle the applicant to

APPROVAL FOR TWO YEARS

to make to any department or agency of the United States

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS  
ATTACHEDSEE ATTACHED FOR  
CONDITIONS OF APPROVAL

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  
1820 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised October 12, 2005

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 00000	Pool Name Morrow
Property Code 36648	Property Name GLENWOOD "28" FEDERAL	Well Number 1
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3645'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	28	16 S	29 E		760	NORTH	760	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 320	Joint or Infill N	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>Glenwood 28 Fed #1</p> <p>Lot - N32°53'52.21" Lon - W104°04'25.46" NMSPCEN 690464.422 E 621022.041 (NAD-83)</p> <p>NM-015007</p>		<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or 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.</p> <p><u>Zeno Farris</u> 06-18-07 Signature Date</p> <p>Zeno Farris Printed Name</p> <p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>JUNE 15, 2007 Date</p> <p><u>[Signature]</u> Signature of ME or Professional Surveyor</p> <p>18234 Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS</p>
---	--	--



**Cimarex Energy Co. of Colorado**

5215 North O'Connor Blvd • Suite 1500 • Irving, TX 75039 • (972) 401-3111 • Fax (972) 443-6486

Mailing Address: P O. Box 140907 • Irving, TX 75014-0907

*A wholly-owned subsidiary of Cimarex Energy Co., a NYSE Listed Company, "XEC"*

**STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS**

Bureau of Land Management  
620 East Greene Street  
Carlsbad, NM 88220  
Attn: Ms. Linda Denniston

Cimarex Energy Co. of Colorado accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land, or portion thereof, as described below:

Lease No.: NM-~~01~~<sup>01</sup>5007 E2 28-16S-29E 320 acres

County: Eddy County, NM

Formation(s): Morrow

Bond Coverage: Statewide BLM Bond

BLM Bond File No.: NM-2575

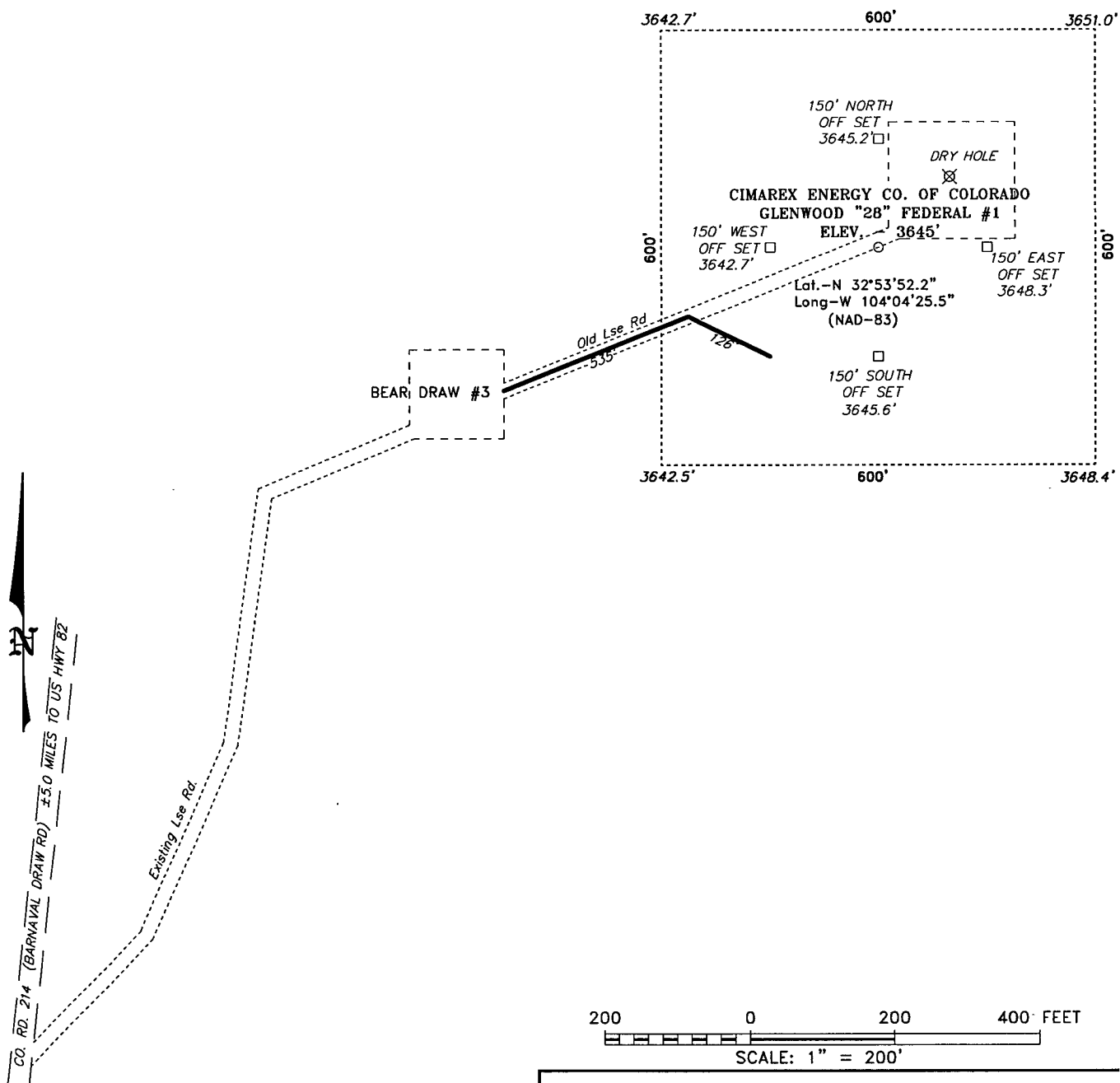
Authorized Signature: Zeno Farris  
Representing Cimarex Energy Co. of Colorado

Name: Zeno Farris

Title: Manager Operations Administration

Date: June 18, 2007

SECTION 28, TOWNSHIP 16 SOUTH, RANGE 29 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF CO. RD. 214 (BARNAVAL DRAW RD) AND U.S. HWY 82, GO NORTH ON CO. RD. 214 FOR APPROX. 5.0 MILES TO PROPOSED LEASE ROAD.

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

W.O. Number: 18234 Drawn By: K. GOAD

Date: 06-15-2007 Disk: KJG - 18234W.DWG

200 0 200 400 FEET  
SCALE: 1" = 200'

**CIMAREX ENERGY CO. OF COLORADO**

REF: GLENWOOD "28" FEDERAL #1 / WELL PAD TOPO

THE GLENWOOD "28" FEDERAL #1 LOCATED 760' FROM  
THE NORTH LINE AND 760' FROM THE EAST LINE OF  
SECTION 28, TOWNSHIP 16 SOUTH, RANGE 29 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 06-15-2007 Sheet 1 of 1 Sheets

## Application to Drill

Cimarex Energy Co. of Colorado  
Glenwood 28 Federal No. 1  
Unit A Section 28  
T16S R29E 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: 760' FNL & 760' FEL
- 2 Elevation above sea level: 3645' 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: 10,800
- 6 Estimated tops of geological markers:

Grayburg	2,050
San Andres	2,500
Abo	5,950
Wolfcamp	7,270
Strawn LS	9,500
Atoka Clastics	9,950
Morrow Clastics	10,325
Miss Unconf	10,450
- 7 Possible mineral bearing formation:

Morrow	Gas
Atoka	Gas
Strawn LS	Gas
Lower Abo	Oil

Fresh water will be protected by setting 13 3/8" casing at 400' and cementing to surface. Hydrocarbon zones will be protected by setting 8 5/8" casing cemented to surface and 5 1/2" casing cemented to 2450'.

8 Casing program:

see COA

Hole Size	Interval	Casing OD	Weight	Thread	Collar	Grade
17-1/2"	0-400'	New 13-3/8"	48	8-R	ST&C	H-40
11"	0-2650'	New 8-5/8"	32	8-R	LT&C	J-55
7-7/8"	0-10800'	New 5-1/2"	17	8-R	LT&C	P-110

Cimarex uses the following minimum safety factors:

Burst	Collapse	Tension
1.125	1.0	1.80

## Application to Drill

Cimarex Energy Co. of Colorado  
Glenwood 28 Federal No. 1  
Unit A Section 28  
T16S R29E Eddy County, NM

### 9 Cementing & Setting Depth:

13-3/8" Surface

see  
COA

Set 400' of 13-3/8" H-40 48# STC casing.

Lead: 200 sx Halliburton Light Prem Plus + 1% CaCl + 0.125# Poly-E-Flake (wt 12.5, yld 1.97)

Tail: 220 sx Prem Plus + 2% CaCl (wt 14.8, yld 1.35). Circulate cement to surface.

8-5/8" Intermediate

Set 2650' 8-5/8" 32# J-55 LTC casing.

Lead: 1500 sx Interfill C + 0.125# Poly-E-Flake (wt 11.9, yld 2.45)

Tail: 200 sx Prem Plus + 1% CaCl (wt 14.8, yld 1.33) Circulate cement to surface.

5-1/2" Production

Set 10800' of 5-1/2" 17# P-110 LTC casing.

Lead: 650 sx Interfill H + 0.125# Poly-E-Flake (wt 11.5, yld 2.76)

Tail: 600 sx Super H + 0.5% Halad + 0.4% CFR-3 + 1# Salt + 5# Gilsonite + 0.125# Poly-E + 0.35% HR-7 (wt 13.0, yld 1.68)  
TOC 2450'

### 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 nipped 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. From the base of the surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system.

We are requesting a variance for testing the 13-3/8" surface casing 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. We are requesting to test the 13-3/8" casing to 1000 psi using rig pumps. The BOP will be tested to 5000 PSI by an independent service company. We are also requesting a variance from Onshore Order No. 2 to use flexible choke line instead of hard choke line due to rig design. Line is approximately 20' long and has a 10000 psi working pressure with 15000 psi test pressure per attached spec sheet.

### 11 Proposed Mud Circulating System:

Depth	Mud Wt	Viscosity	Fluid Loss	Type Mud
0 - 400'	8.4 - 8.6	30 - 32	May lose circ	Fresh water spud mud
400' - 2650'	10.0	28 - 29	May lose circ	Brine Water
2650' - 10800'	8.4-9-5	28 - 29	NC	Fresh water and brine, use hi-vis sweeps to keep hole clean

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  
Glenwood 28 Federal No. 1  
Unit A Section 28  
T16S R29E Eddy County, NM

12 Testing, Logging and Coring Program:

- A. Mud logging program: Two-man unit from 2650' 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 potential 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 155.

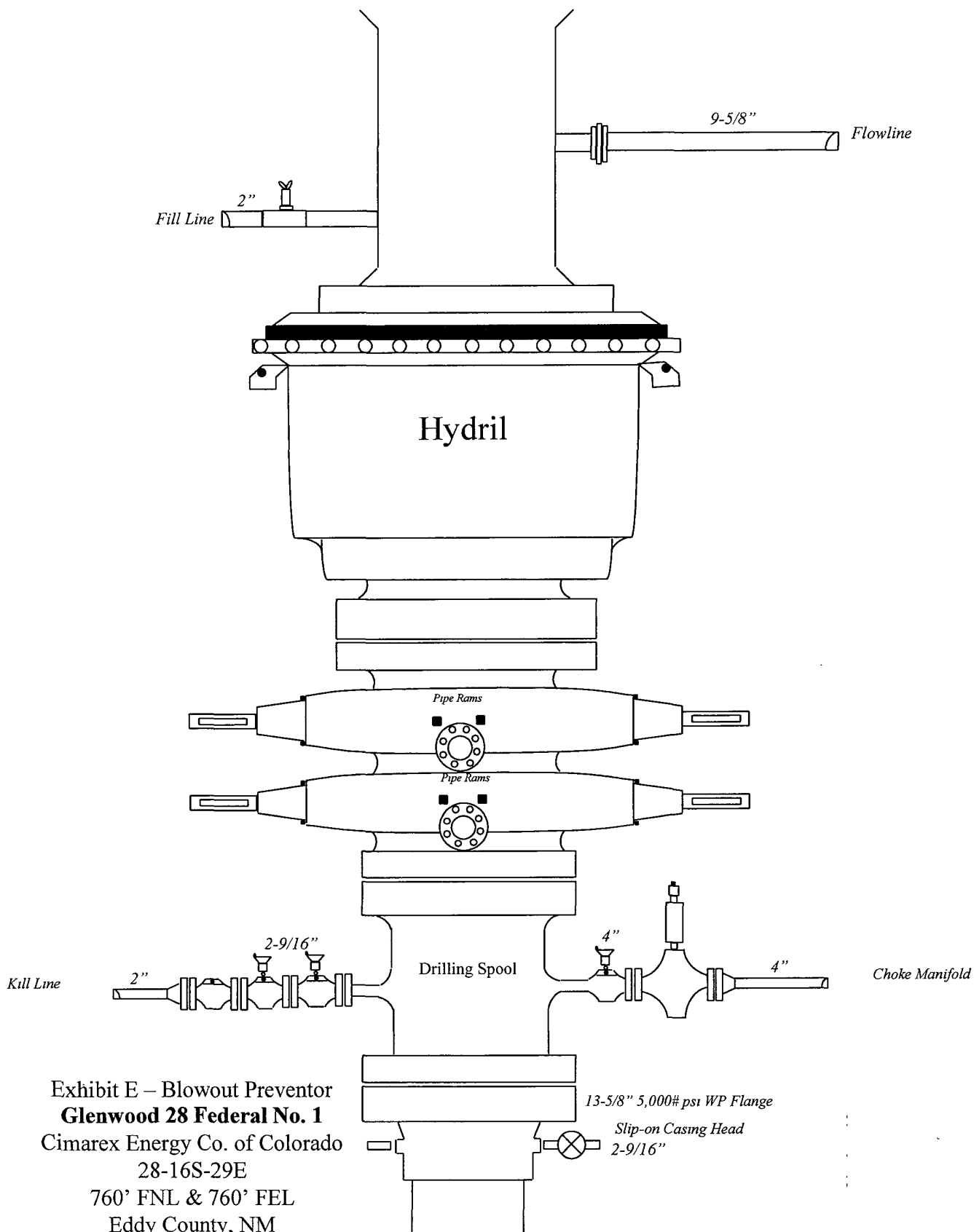
14 Anticipated Starting Date and Duration of Operations:

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 potential as a gas well.

# SR & A





**DRILLING OPERATIONS  
CHOKE MANIFOLD  
5M SERVICE**

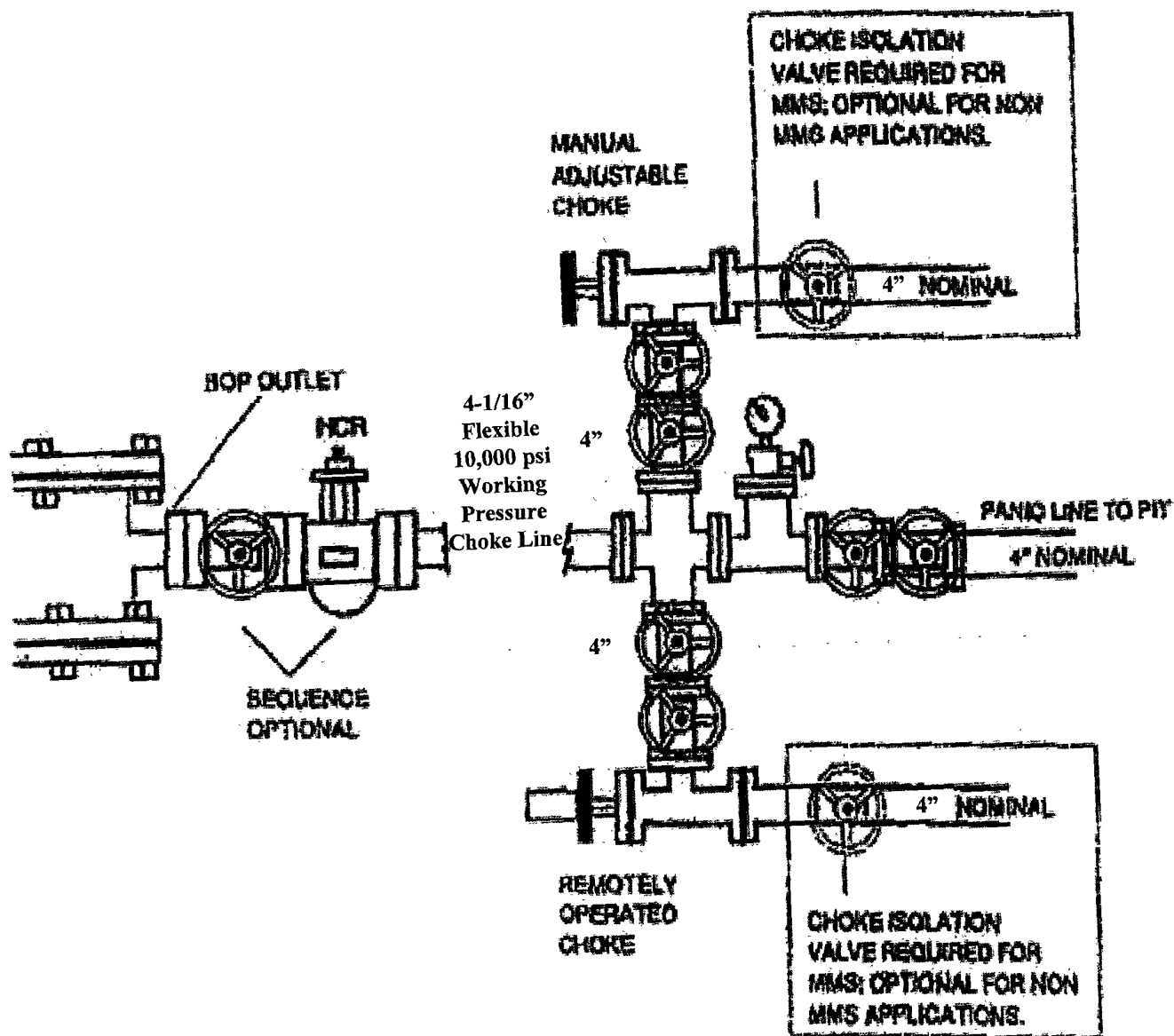


Exhibit E-1 – Choke Manifold  
**Glenwood 28 Federal No. 1**  
 Cimarex Energy Co. of Colorado  
 28-16S-29E  
 760' FNL & 760' FEL  
 Eddy County, NM



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.

<b>Working Pressure:</b>	5,000 or 10,000 psi working pressure
<b>Test Pressure:</b>	10,000 or 15,000 psi test pressure
<b>Reinforcement:</b>	Multiple steel cables
<b>Cover:</b>	Stainless Steel Armor
<b>Inner Tube:</b>	Petroleum resistant, Abrasion resistant
<b>End Fitting:</b>	API flanges, API male threads, threaded or butt weld hammer unions, unbolt and other special connections
<b>Maximum Length:</b>	110 Feet
<b>ID:</b>	2-1/2", 3", 3-1/2", 4"
<b>Operating Temperature:</b>	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

## Hydrogen Sulfide Drilling Operations Plan

Cimarex Energy Co. of Colorado  
Glenwood 28 Federal No. 1  
Unit A Section 28  
T16S R29E 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 areas.
  - 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 indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates 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 foreman's trailer or living quarters.
- 7 Drillstem Testing

One DST is planned in the Morrow zone from 10300'-10450.'

## **Hydrogen Sulfide Drilling Operations Plan**

Cimarex Energy Co. of Colorado  
Glenwood 28 Federal No. 1  
Unit A Section 28  
T16S R29E Eddy County, NM

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

## Surface Use Plan

Cimarex Energy Co. of Colorado  
Glenwood 28 Federal No. 1  
Unit A Section 28  
T16S R29E Eddy County, NM

- 1 Existing Roads: Area maps, Exhibit "B" is a reproduction of Lea Co. General Highway Map. Exhibit "C" is a reproduction of a USGS Topographic Map, showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.
  - A. Exhibit "A" shows the proposed well site as staked.
  - B. From the junction of Co Rd 214 (Barnaval Draw Rd) and US Hwy 82, go North on Co Rd 214 for approx 5.0 miles to proposed lease road.
- 2 PLANNED ACCESS ROADS: 661' of proposed lease road will be constructed on-lease.
- 3 LOCATION OF EXISTING WELLS IN A ONE-MILE RADIUS EXHIBIT "A"
  - A. Water wells - None known
  - B. Disposal wells - None known
  - C. Drilling wells - None known
  - D. Producing wells - As shown on Exhibit "A"
  - E. Abandoned wells - As shown on Exhibit "A"

## **Surface Use Plan**

Cimarex Energy Co. of Colorado  
Glenwood 28 Federal No. 1  
Unit A Section 28  
T16S R29E Eddy County, NM

- 4 If on completion this well is a producer Cimarex Energy Co. of Colorado will furnish maps and/or plats showing on site facilities or off site facilities if needed. This will be accompanied by a Sundry Notice.

5 LOCATION AND TYPE OF WATER SUPPLY:

Water will be purchased locally from a commercial source and trucked over the access roads or piped in flexible lines laid on top of the ground.

6 SOURCE OF CONSTRUCTION MATERIAL:

If possible, construction will be obtained from the excavation of drill site. If additional material is needed, it will be purchased from a local source and transported over the access route as shown on Exhibit "C".

7 METHODS OF HANDLING WASTE MATERIAL:

- A. Drill cuttings will be separated by a series of solids removal equipment and hauled to the cuttings drying area and then disposed of in the cuttings burial cell.
- B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
- C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
- D. Sewage from living quarters will drain into holding tanks and be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
- E. Drilling fluids will be contained in steel pits in a closed circulating system. Fluids will be cleaned and reused. Water produced during testing will be contained in the steel pits and disposed of at a state approved disposal facility. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

8 ANCILLARY FACILITIES:

- A. No camps or airstrips to be constructed.

## Surface Use Plan

Cimarex Energy Co. of Colorado  
Glenwood 28 Federal No. 1  
Unit A Section 28  
T16S R29E Eddy County, NM

### 9 WELL SITE LAYOUT

- A. Exhibit "D" shows location and rig layout.
- B. This exhibit indicates proposed location of the 100' X 100' cuttings drying area.
- C. Mud pits in the closed circulating system will be steel pits and the cuttings drying area will be surrounded by a 2' X 2' ring levee and a 2' earthen berm. A 12 mil liner will cover the cuttings drying area and extend a minimum of 2' over the earthen berm where it will be anchored down. A pump off system will pump any accumulated fluids in the ring levee to the rig holding tanks to be cleaned and reused.
- D. After drying cuttings will be disposed of in a 50' X 50' cuttings burial cell. The bottom will be lined with a 12 mil liner. Drill cuttings will be hauled from the cuttings drying area and encapsulated in a 12 mil liner. The 12 mil liner will be folded over the cuttings and capped with a 20 mil membrane cap. The cell will be filled with 3' to 4' of top soil and leveled and contoured to conform to the original surrounding area.
- E. If the well is a producer, the cuttings burial area and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

### 10 PLANS FOR RESTORATION OF SURFACE

Rehabilitation of the location and cuttings burial cell will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

However, in either event, the drill cuttings will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.B as previously noted. The cuttings burial area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be recountoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

## Surface Use Plan

Cimarex Energy Co. of Colorado  
Glenwood 28 Federal No. 1  
Unit A Section 28  
T16S R29E Eddy County, NM

### 11 OTHER INFORMATION:

- A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly yucca, mesquite and shin oak.
- B. The wellsite is on surface owned by US Department of the Interior's Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.
- C. An Archaeological survey will be conducted on the location and proposed roads, and this report will be filed with the Bureau of Land Management in the Carlsbad BLM office.
- D. There are no know dwellings within 1 1/2 miles of this location.

### 12 OPERATOR'S REPRESENTATIVE:

Cimarex Energy Co. of Colorado  
P.O. Box 140907  
Irving, TX 75014  
Office Phone: (972) 443-6489  
Zeno Farris

- 13 **CERTIFICATION:** I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Cimarex Energy Co. of Colorado and/or its contractors/subcontractors and is in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of U.S.C. 1001 for the filing of a false statement.

NAME: Zeno Farris

DATE: June 18, 2007

TITLE: Manager Operations Administration



## **Conditions of Approval Cave and Karst**

EA#: NM-520-07-1006

Lease #: NM-15007

**Cimarex Energy Co. of Colorado  
Glenwood 28 Federal # 1**

### **Cave/Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production.

#### **Berming:**

Any tank batteries will be constructed and bermed large enough to contain any spills that may occur.

Bermed areas will be lined with rip-stop padding to prevent tears or punctures in liners and lined with a permanent 20 mil plastic liner.

### **Cave/Karst Subsurface Mitigation**

The following stipulations will be applied to protect cave/karst and ground water concerns:

#### **Rotary Drilling with Fresh Water:**

Rotary drilling techniques in cave or karst areas will include the use of fresh water as a circulating medium in zones where caves or karst features are expected. Use depth to the deepest expected fresh water as listed in the geologist report.

#### **Casing:**

All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run to American Petroleum Institute and BLM standards.

#### **Lost Circulation:**

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported.

Regardless of the type of drilling machinery used, if a void (bit drops) of four feet or more and circulation losses greater than 75 percent occur simultaneously while drilling in any cave-bearing zone, drilling operations will immediately stop and the BLM will be notified by the operator. The BLM will assess the consequences of the situation and work with operator on corrective actions to resolve the problem.

**Record Keeping:**

The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence or absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.

## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Cimarex Energy Co. of Colorado  
Well Name & No. Glenwood 28 Federal # 1  
Location: 760'FNL, 760'FEL, SEC28, T16S, R29E, Eddy County, NM  
Lease: NM-15007

.....

### I. DRILLING OPERATIONS REQUIREMENTS:

- A. The Bureau of Land Management (BLM) is to be notified a minimum of 4 hours in advance for a representative to witness:
1. Spudding well
  2. Setting and/or Cementing of all casing strings
  3. BOPE tests
- Eddy County call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822
- B. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan should be activated 500 feet prior to drilling into the Canyon formation.
- 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. 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 least 25 feet above the salt, should it occur more shallow @ approximately 400 feet and cemented 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 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compression strength, whichever is greater. (This is to include the lead cement)
  3. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compression strength, whichever is greater.
  4. If cement falls back, remedial action will be done prior to drilling out that string.
- B. The minimum required fill of cement behind the 8.625 inch intermediate casing is circulating 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 circulate cement to at least 200 feet above the shoe of the 8.625 inch casing, **unless circulation is lost while drilling the well bore for that casing string, in which case cement will be circulated to at least 200 feet above the most shallow lost circulation zone of the 8.625 inch well bore.**
- 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 joint 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 (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **\_2000\_ psi.**
- C. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8.625** Intermediate casing shoe shall be **\_3000\_ psi.**
- D. 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 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, section 17. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.
  5. A variance to test the surface casing to the reduced pressure of **1000 psi** with the rig pumps is approved.
  6. A variance to use steel flexible line between the BOP and choke manifold is granted.

### **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.

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.
3. Our geologist has indicated that there is potential for abnormal pressure in the Wolfcamp formation and the Pennsylvanian System.

**Engineering can be reached at 505-706-2779 for variances.**

**FWright 6/21/07**