ATS-13-66

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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.: **NMLC-064150**

6. If Indian, Allotee or Tribe Name: **N/A**

7. If Unit or CA Agreement, Name and No.: **N/A**

8. Lease Name and Well No.: **Nelson Federal #3** (40121)

1a. Type of work: ☑ DRILL ☐ REENTER

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

2. Name of Operator: **COG Operating LLC** (229137)

9. API Well No.: **30-025-** 41387

3a. Address: **One Concho Center, 600 W. Illinois Ave, Midland, TX 79701**

3b. Phone No. *(include area code)*: **(432) 685-4384**

10. Field and Pool, or Exploratory: **Maljamar; Yeso, West** (44500)

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

At surface: **2115' FNL & 1650' FWL, UL F**

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area: **Sec 10, T17S, R32E**

14. Distance in miles and direction from nearest town or post office*: **1.3 miles Southwest of Maljamar**

12. County or Parish: **Lea**

13. State: **NM**

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any): ~~1650'~~ 330'

16. No. of acres in lease: ~~640~~ 240.01

17. Spacing Unit dedicated to this well: **40**

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: ~~488'~~ 270

19. Proposed Depth: **7100'**

20. BLM/BIA Bond No. on file: **NMB000740; NMB000215**

21. Elevations (Show whether DF, KDB, RT, GL, etc.): **4150' GL**

22. Approximate date work will start*: **11/30/2012**

23. Estimated duration: **15 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: Kacie Connally — Name *(Printed/Typed)*: **Kacie Connally** — Date: **09/26/2012**

Title: **Permitting Tech**

Approved by *(Signature)*: /s/ James Stovall — Name *(Printed/Typed)*: — Date: **SEP 3 - 2013**

Title: **FIELD MANAGER** — Office: **CARLSBAD FIELD OFFICE**

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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

(Instructions on page 2)

KZ 09/10/13

Roswell Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

PM

SEP 12 2013

COG Operating LLC
Master Drilling Plan Revised 8-31-12
West Maljamar Area: Maljamar; Yeso, West
Use for Sections 3-35, T17S, R32E
Lea County, NM

MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Rustler	918'
Top of Salt	1470'
Base of Salt	2064'
Yates	2236'
Seven Rivers	2581'
Queen	3212'
Grayburg	3631'
San Andres	3964'
Glorietta	5450'
Paddock	5497'
Blinebry	5937'
Tubb	6870'

3. Estimated Depths of Anticipated Fresh Water, Oil and Gas

Water Sand	150'	Fresh Water
Grayburg	3631'	Oil/Gas
San Andres	3964'	Oil/Gas
Glorietta	5450'	Oil/Gas
Paddock	5497'	Oil/Gas
Blinebry	5937'	Oil/Gas
Tubb	6870'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to ~~943'~~ 1129' and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 8 5/8" casing to ~~2250'~~ 2950' and circulating cement, in a single or multi-stage job and/or with an ECP, back to the surface. Any shallower zones above TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them. This will be achieved by cementing, with a single or multi-stage job, the 5 1/2" production casing back 200' into the intermediate casing, to be run at TD. If wellbore conditions arise that require immediate action and/or a change to this program, COG Operating LLC personnel will always react to protect the wellbore and/or the environment.

see COA

4. Casing Program

see COA

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	burst/collapse/tension
17 ½"	0-~~943'~~ 1120	13 3/8"	48#	H-40/J-55 hybrid	ST&C/New	6.03/1.85/10.32
11"	0-~~2250'~~ 2450	8 5/8"	32#	J-55	ST&C/New	1.75/2.03/6.07
7 7/8"	0-T.D.	5 1/2"	15.5	J-55	LT&C/New	2.00/1.21/2.68

5. Cement Program

13 3/8" Surface Casing:

LEAD: 600 sks Class C + 4% Gel+ 2% CaCl2 + 0.25 pps CF, yield-1.75 cf/sk, 13.5 ppg + **TAIL:** 250 sx w/ 2% CaCl2+ 0.25 pps CF, yield-1.32 cf/sk, 14.8 ppg. Combined excess 100%. Circulate cement to surface.

8 5/8" Intermediate Casing:

11" Hole:

Single Stage: LEAD: 525 sks 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, yield-2.45 cf/sk, 11.8 ppg + **TAIL:** 250 sks Class C w/2% CaCl2, yield-1.32 cf/sk, 14.8 ppg. Circulate back to surface. Combined excess 103%.

see COA

Multi-Stage: DV Tool at ~~993'~~ Stage 1 LEAD: 400 sks 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, yield-2.45 cf/sk, 11.8 ppg. **Stage 1 TAIL:** 200 sks Class C w/2% CaCl2, yield - 1.32 cf/sk, 14.8 ppg. Stage #1 Combined excess 272% **Stage 2:** 500 sks 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF , Yield 2.45 cf/sk, 11.8 ppg. Circulate to surface, Stage #2 excess 118% ; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 993' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

5 1/2" Production Casing:

Single Stage: LEAD: 600 sks 35:65:6 C:Poz:Gel w/ 5% Salt + 5 pps LCM + 0.2% SMS + 0.3% FL-52A + 0.125 pps CF, yield-2.05 cf/sk, 12.5 ppg + **TAIL:** 400 sks 50:50:2 C:Poz:Gel w/ 5% Salt + 3 pps LCM + 0.6% SMS + 1% FL-25 + 1% BA-58 + 0.3% FL-52A + 0.125 pps CF, yield-1.37 cf/sk, 14.0 ppg. 200' minimum tie back to intermediate casing. (TOC @ 2050') Combined excess 45%. Cement calculated to surface.

see COA

Multi-Stage: DV Tool at ~~2300'~~. Stage 1 Lead: (Assumed TD of 7000') 400 sks 35:65:6 C:Poz:Gel w/ 5% Salt + 5 pps LCM + 0.2% SMS + 0.3% FL-52A + 0.125 pps CF, yield – 2.05cf/sk, 12.5 ppg. **Stage 1 TAIL:** 400 sks 50:50:2, C:Poz:Gel w/5% Salt + 3pps LCM + 0.6% SMS + 1 % FL-25 + 1% BA-58 + 0.125 pps CF. Combined Stage #1 excess 50%. Minimum volume will be adjusted up after caliper is run. **Stage 2 LEAD:** 200 sks 35:65:6 C:Poz:Gel w/ 5% Salt + 5 pps LCM + 0.2% SMS + 0.3% FL-52A + 0.125 pps CF, yield – 2.05 cf/sks, 12.5 ppg **Stage 2 TAIL:** 250 sks Class C w/ 0.3% R-3 + 1.5% CD-32 yield – 1.02 cf/sks, 16.8 ppg. Combined Stage #2 excess 63% . Densified cement to control water flows if encountered. 200' minimum tie back to intermediate casing (TOC @ 2050'). Excess calculated back to surface. Multi stage tool to be set at approximately 2300', depending on hole conditions. Cement volumes will be adjusted proportionately for depth changes of multi stage tool, assumption for tool is water flow.

1.37 cf/sx
14.0 lb/gal
per COG

6. Minimum Specifications for Pressure Control

see COA →

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer, and in some cases possibly a 2000 psi Hydril type annular preventer as provided for in Onshore Order #2. This unit will be hydraulically operated and the ram type preventer will be equipped with blind

rams on top of 4 1/2" drill pipe rams on the bottom. A 13-5/8" or 11" BOP will be used, depending on the rig selected, during the drilling of the well. The BOP will be nippled up on the 13 3/8" surface casing with BOP equipment and tested to 2000 psi. When 11" BOP is used the special drilling flange will be utilized on the 13-3/8" head to allow testing the BOP with a retrievable test plug. After setting 8-5/8" the BOP will then be nippled up on the 8 5/8" intermediate casing and tested by a third party to 2000 psi and used continuously until total depth is reached. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve, choke lines and a choke manifold with a 2000 psi WP rating.

The majority of the rigs currently in use have a 13-5/8" BOP, so no special provision is needed for most wells in the area for conventionally testing the BOP with a test plug. However, due to the vagaries of rig scheduling, it might be that one of the few rigs with 11" BOP's might be called upon to drill any specific well in the area. Note that intermediate hole size is always 11". Therefore, COG Operating LLC respectfully requests a variance to the requirement of 13-5/8" BOP on 13-3/8" casing. When that circumstance is encountered the special flange will be utilized to allow testing the entire BOP with a test plug, without subjecting the casing to test pressure. The special flange also allows the return to full-open capability if desired.

7. Types and Characteristics of the Proposed Mud System

The well will be drilled to TD with a combination of brine, cut brine and polymer mud system. The applicable depths and properties of this system are as follows:

See COA

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-~~943'~~ 1120'	Fresh Water	8.5	28	N.C.
~~943~~-~~2250~~2450'	Brine	10	30	N.C.
~~2250~~'-TD	Cut Brine	8.7-9.1	29	N.C.

1120'
2450'

Sufficient mud materials will be kept at the well site to maintain mud properties and meet minimum lost circulation and weight increase requirements at all times.

8. Auxiliary Well Control and Monitoring Equipment

A. Kelly cock will be kept in the drill string at all times.

B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

9. Logging, Testing and Coring Program

A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be run from TD to 8 5/8" casing shoe.

B. Drill Stem test is not anticipated.

C. No conventional coring is anticipated.

D. Further testing procedures will be determined after the 5 ½" production casing has been cemented at TD, based on drill shows and log evaluation.

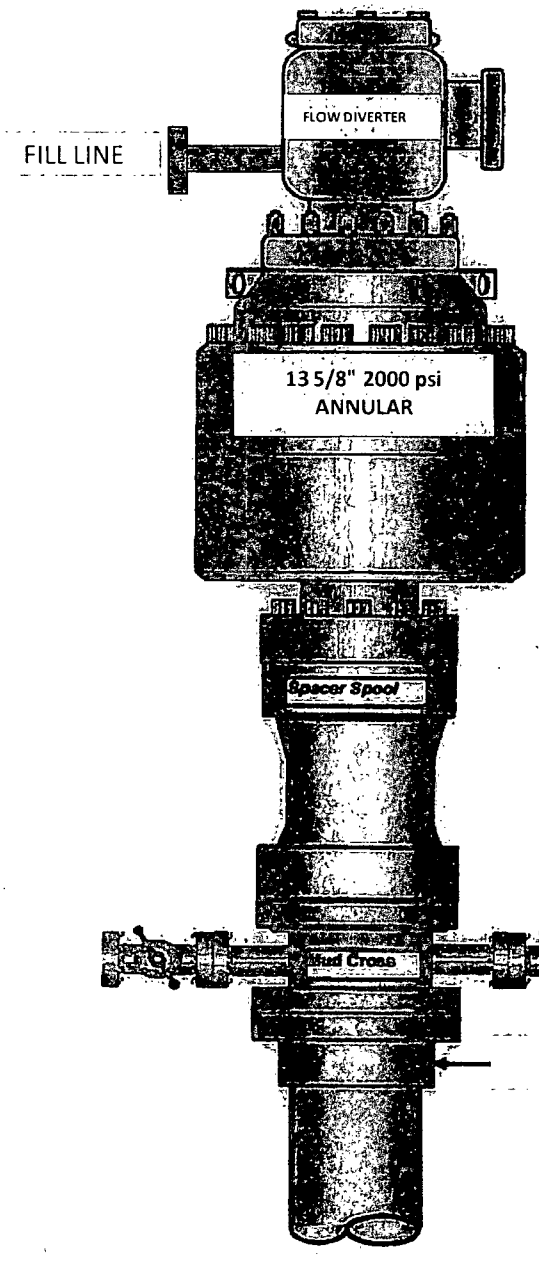
10. Abnormal Conditions, Pressure, Temperatures and Potential Hazards

No abnormal pressures or temperatures are anticipated. Based on BHP tests in this area, the estimated bottom hole temperature at TD is 110° Fahrenheit and the estimated maximum bottom hole pressure is 3080 psi. Wells in the Maljamar area will penetrate formations that are known or could reasonably be expected to contain Hydrogen Sulfide. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area. However as per Onshore order No. 6 a Hydrogen Sulfide Drilling Operation Plan is included with this APD. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations

Road and location work will not begin until approval has been received from the BLM. As this is a Master Drilling plan, please refer to the Form 3160-3 for the anticipated start date. Once commenced, drilling operations should be finished in approximately 15 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.

13 5/8" 2K ANNULAR



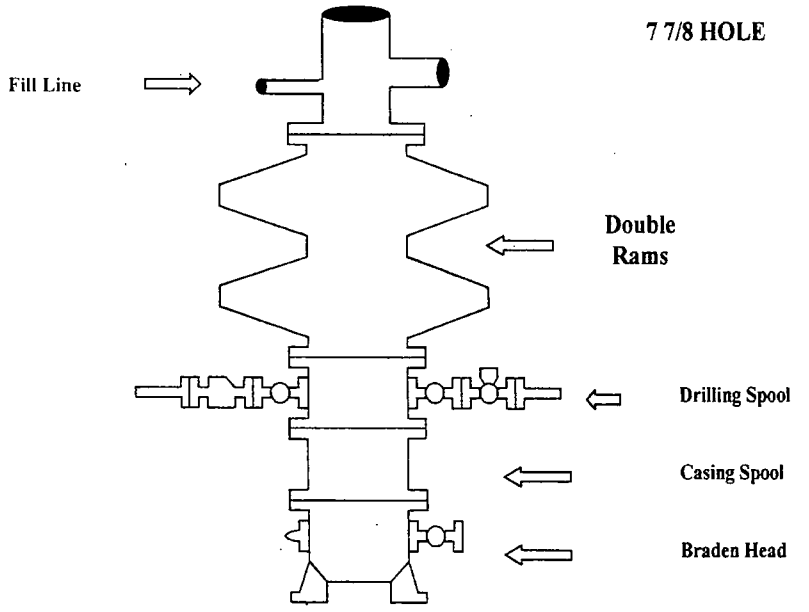
4-1/16",2K VALVES

13 5/8" 3K "A" SECTION

COG Operating LLC

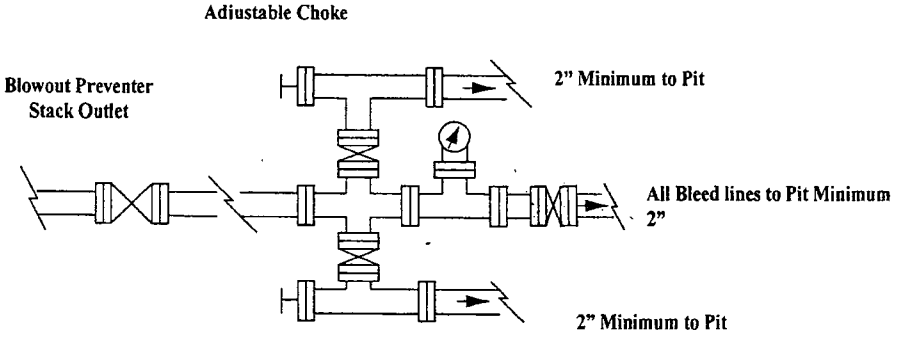
Exhibit #9

BOPE and Choke Schematic



Minimum 4" Nominal choke and kill lines

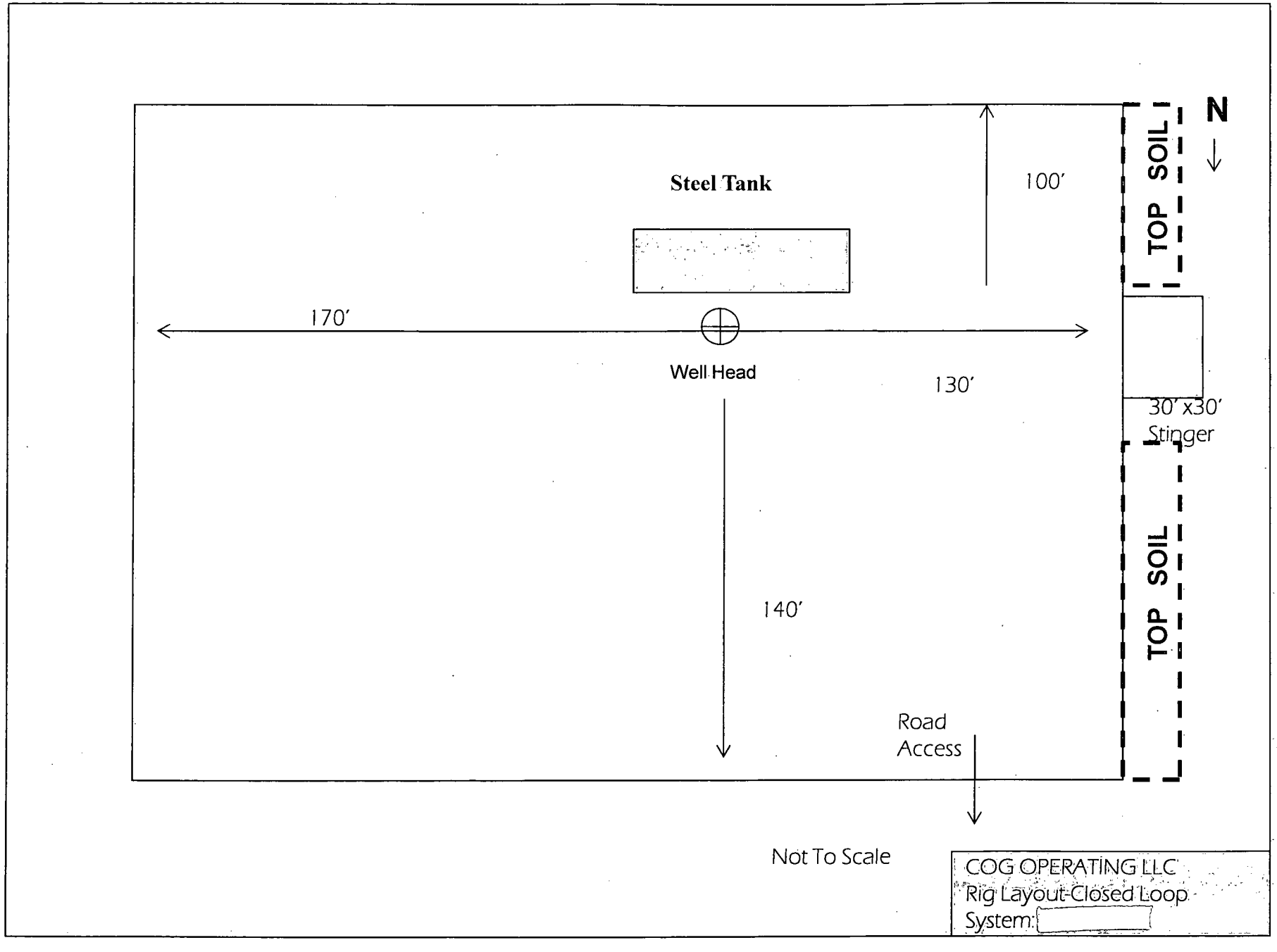
Choke Manifold Requirement (2000 psi WP)
No Annular Required



Adjustable Choke
(or Positive)

NOTES REGARDING THE BLOWOUT PREVENTERS
Master Drilling Plan
Eddy County, New Mexico

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
2. Wear ring to be properly installed in head.
3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
4. All fittings to be flanged.
5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
6. All choke and fill lines to be securely anchored especially ends of choke lines.
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
8. Kelly cock on Kelly.
9. Extension wrenches and hands wheels to be properly installed.
10. Blow out preventer control to be located as close to driller's position as feasible.
11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.


Steel Tank
100'
N
TOP SOIL
170'
Well Head
130'
30' x30'
Stinger
TOP SOIL
140'
Road
Access
Not To Scale
COG OPERATING LLC
Rig Layout-Closed Loop
System: