OCD Hobbs

HOBBS OCD

AUG 11 2011

RECEIVED

ATS-11-707

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.
NMLC-029405A

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

1a. Type of work ☑ DRILL ☐ REENTER

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

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

8. Lease Name and Well No. (302456)
BC Federal #30

2. Name of Operator
COG Operating LLC (229137)

9 API Well No.
30-025- 40236

3a. Address
550 W. Texas, Suite 1300 Midland TX 79701

3b. Phone No. *(include area code)*
(432) 685-4385

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 **2310' FNL & 2437' FEL, UL G**
At proposed prod. zone **2310' FNL & 2310' FWL, UL F**

11. Sec., T R M or Blk and Survey or Area
Sec 20, T17S, R32E

14. Distance in miles and direction from nearest town or post office*
2.5 miles SW of Maljamar, NM

12 County or Parish
Lea

13 State
NM

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) **2310'**	16. No of acres in lease **640**	17 Spacing Unit dedicated to this well **40**
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft **700'**	19 Proposed Depth **TVD: 7000' MD: 7035'**	20 BLM/BIA Bond No on file **NMB000740; NMB000215**
21 Elevations (Show whether DF, KDB, RT, GL, etc.) **3992' GL**	22 Approximate date work will start* **07/31/2011**	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	Name *(Printed/Typed)*	Date
Robyn Odom	**Robyn M. Odom**	**06/03/2011**

Title
Regulatory Analyst

Approved by *(Signature)* /s/ Don Peterson	Name *(Printed/Typed)*	Date AUG - 9 2011
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.

CARLSBAD FIELD OFFICE

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).

Roswell Controlled Water Basin

CONDITIONS OF APPROVAL BY THE OCD
-- Approval for drilling only, CANNOT produce uniti OCD Santa Fe approve Simultaneous Dedication of Acreage and Pool/Formation.

KZ 06/16/11

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

AUG 17 2011

COG Operating LLC
Master Drilling Plan Revised 1-31-11
West 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	680'
Top of Salt	900'
Base of Salt	1700'
Yates	2010'
Seven Rivers	2375'
Queen	2980'
Grayburg	3355'
San Andres	3700'
Glorietta	5260'
Paddock	5310'
Blinebry	5870'
Tubb	6810'

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

Water Sand	150'	Fresh Water
Grayburg	3355'	Oil/Gas
San Andres	3700'	Oil/Gas
Glorietta	5260'	Oil/Gas
Paddock	5310'	Oil/Gas
Blinebry	5870'	Oil/Gas
Tubb	6810'	Oil/Gas

See COAs
740' *

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to ~~720'~~ 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 ~~2100'~~ 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

* See COA

4. Casing Program

* See COA

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	burst/collapse/tension
17 ½"	0-720'	13 3/8"	48#	H-40orJ-55	ST&C/New	6.03/2.578/10.32
11"	0-2100'	8 5/8"	24or32#	J-55	ST&C/New	1.85/1.241/4.78
7 7/8"	0-T.D.	5 1/2"	15.5or17#	J-55orL-80	LT&C/New	1.59/1.463/2.05

740
1990
7035

5. Cement Program

* See COA

13 3/8" Surface Casing:

LEAD Class C, 4% Gel, 2% CaCl2, .25 pps CF, 325 sx, yield-1.75 + TAIL 200 sx w/ 2% CaCl2, 0.25 pps CF, yield-1.32. 133% excess

8 5/8" Intermediate Casing:

11" Hole:

Single Stage: LEAD 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, 375 sx, yield-2.45 + TAIL Class C w/2% CaCl2, 200 sx, yield-1.32, back to surface. 133% excess

Multi-Stage: Stage 1: Class C w/2% CaCl2, 400 sx, yield - 1.32; 48% excess Stage 2: Class C w/2% CaCl2, 200 sx, yield – 1.32, back to surface, 48% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 770' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

See COA's

5 1/2" Production Casing:

Single Stage: LEAD 35:65:6 C:Poz:Gel w/ 5% Salt + 5 pps LCM + 0.2% SMS + 0.3% FL-52A + 0.125 pps CF, 500 sx, yield-2.05 + TAIL 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, 400 sx, yield-1.37, to 200' minimum tie back to intermediate casing. 30% excess back to surface (no need for excess in casing overlap).

Multi-Stage: Stage 1: (Assumed TD of 7200' to DV at 3500') 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, 550 sx, yield - 1.37, 13% excess; **this is a minimum volume and will be adjusted up after caliper is run**. Stage 2: LEAD 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, 450 sx, yield - 1.37, + TAIL Class C w/ 0.3% R-3 + 1.5% CD-32, 250 sx, yield – 1.02 43% excess calculated back to surface (no need for excess in casing overlap). Multi stage tool to be set at approximately, depending on hole conditions, 3500'. Cement volumes will be adjusted proportionately for depth changes of multi stage tool, assumption for tool is water flow.

See COA

6. Minimum Specifications for Pressure Control

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 (Exhibit #10) will include a Kelly cock and floor safety valve, choke lines and a choke manifold (Exhibit #11) with a 2000 psi WP rating.

See COA

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

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:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-720'	Fresh Water	8.5	28	N.C.
720-2100'	Brine	10	30	N.C.
2100'-TD	Cut Brine	8.7-9.1	29	N.C.

* See COA

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 * See COA

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 * See COA

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. The estimated bottom hole at TD is 110 degrees and the estimated maximum bottom hold pressure is 2300 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, although a Hydrogen Sulfide

Drilling Operation Plan is attached to this program. 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.

CONCHO

COG Operating LLC

Lea County, NM (NAD27 NME)
BC Federal #30
BC Federal #30

OH

Plan: Plan #2 7-7/8" Hole
SHL = 2310' FNL & 2437' FEL
BHL = 2300' FNL & 2300' FWL
Paddock Top = 6' North of Surface & 438' West of Surface @ 5375' TVD

Standard Planning Report

25 July, 2011

Scientific Drilling
Directional Drilling Operations

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Well BC Federal #30
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3992 00usft
Project:	Lea County, NM (NAD27 NME)	**MD Reference:**	GL Elev @ 3992 00usft
Site:	BC Federal #30	**North Reference:**	Grid
Well:	BC Federal #30	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 7-7/8" Hole		

Project Lea County, NM (NAD27 NME)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site BC Federal #30

Site Position:		**Northing:**	662,802 50 usft	**Latitude:**	32° 49' 15 388 N
From:	Map	**Easting:**	667,694 90 usft	**Longitude:**	103° 47' 14 844 W
Position Uncertainty:	0 00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0 30 °

Well BC Federal #30

Well Position	**+N/-S**	0 00 usft	**Northing:**	662,802 50 usft	**Latitude:**	32° 49' 15 388 N
	+E/-W	0 00 usft	**Easting:**	667,694 90 usft	**Longitude:**	103° 47' 14 844 W
Position Uncertainty		0 00 usft	**Wellhead Elevation:**		**Ground Level:**	3,992 00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2010/12/20	7 79	60 71	48,997

Design Plan #2 7-7/8" Hole

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0 00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0 00	0 00	0 00	270 82

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 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
2,200 00	0 00	0 00	2,200 00	0 00	0 00	0 00	0 00	0.00	0 00	
2,632 52	8 65	270 82	2,630 87	0 47	-32 58	2 00	2.00	0 00	270 82	
5,150 36	8 65	270 82	5,120 08	5 88	-411 24	0.00	0 00	0.00	0 00	
5,406 81	3 52	270 82	5,375 00	6 27	-438 42	2 00	-2 00	0 00	-180 00	TG1-BC #30
7,034 89	3 52	270 82	7,000 00	7 70	-538 40	0 00	0 00	0 00	0 00	PBHL-BC #30

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Well BC Federal #30
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3992 00usft
Project:	Lea County, NM (NAD27 NME)	**MD Reference:**	GL Elev @ 3992 00usft
Site:	BC Federal #30	**North Reference:**	Grid
Well:	BC Federal #30	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 7-7/8" Hole		

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)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0.00
North HL-BC #30 - West HL-BC #30									
2,100.00	0 00	0 00	2,100 00	0 00	0 00	0 00	0 00	0 00	0 00
8-5/8" Casing									
2,200 00	0 00	0 00	2,200 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 2.00°/100'									
2,300 00	2 00	270 82	2,299 98	0 02	-1 74	1 75	2 00	2 00	0 00
2,400 00	4 00	270 82	2,399 84	0 10	-6 98	6 98	2 00	2 00	0 00
2,500 00	6 00	270 82	2,499.45	0 22	-15 69	15 69	2 00	2 00	0 00
2,600 00	8 00	270 82	2,598 70	0 40	-27 88	27 88	2 00	2 00	0 00
2,632 52	8 65	270 82	2,630 88	0.47	-32 59	32 59	2 00	2 00	0 00
EOC hold 8.65°									
2,700 00	8 65	270 82	2,697 59	0 61	-42 73	42 74	0 00	0 00	0 00
2,800 00	8 65	270 82	2,796 45	0 83	-57 77	57 78	0 00	0 00	0 00
2,900 00	8 65	270 82	2,895 32	1 04	-72 81	72 82	0 00	0 00	0 00
3,000 00	8 65	270 82	2,994 18	1 26	-87 85	87 86	0 00	0 00	0 00
3,100 00	8 65	270 82	3,093 04	1 47	-102.89	102 90	0 00	0 00	0 00
3,200.00	8 65	270 82	3,191 90	1 69	-117 93	117 94	0 00	0.00	0 00
3,300 00	8 65	270 82	3,290 77	1 90	-132 97	132 98	0 00	0 00	0 00
3,400 00	8 65	270 82	3,389 63	2 12	-148 01	148 02	0 00	0 00	0 00
3,500 00	8 65	270 82	3,488 49	2 33	-163 04	163 06	0 00	0.00	0 00
3,600 00	8 65	270.82	3,587 35	2 55	-178 08	178 10	0 00	0 00	0 00
3,700.00	8 65	270 82	3,686 22	2 76	-193 12	193 14	0 00	0 00	0 00
3,800.00	8 65	270 82	3,785.08	2 98	-208.16	208 18	0 00	0 00	0.00
3,900 00	8 65	270 82	3,883 94	3 19	-223 20	223 22	0 00	0 00	0.00
4,000.00	8.65	270.82	3,982 80	3 41	-238 24	238 26	0 00	0 00	0 00
4,100 00	8 65	270 82	4,081 67	3 62	-253 28	253 30	0 00	0 00	0 00
4,200 00	8 65	270 82	4,180 53	3 84	-268 32	268 34	0 00	0 00	0 00
4,300 00	8 65	270 82	4,279 39	4 05	-283 35	283 38	0 00	0 00	0 00
4,400 00	8 65	270 82	4,378 25	4 27	-298 39	298 42	0 00	0 00	0 00
4,500 00	8 65	270 82	4,477 12	4 48	-313 43	313 46	0 00	0 00	0.00
4,600 00	8 65	270 82	4,575.98	4.70	-328.47	328 50	0 00	0 00	0 00
4,700 00	8 65	270 82	4,674 84	4 91	-343 51	343 54	0.00	0 00	0 00
4,800 00	8 65	270 82	4,773 70	5 13	-358 55	358 59	0 00	0 00	0 00
4,900 00	8 65	270 82	4,872 57	5 34	-373 59	373 63	0 00	0 00	0 00
5,000 00	8 65	270 82	4,971 43	5 56	-388 63	388 67	0 00	0 00	0 00
5,100 00	8 65	270 82	5,070 29	5 77	-403 66	403 71	0 00	0 00	0 00
5,150 36	8 65	270 82	5,120 08	5 88	-411 24	411 28	0 00	0 00	0 00
Start Drop 2.00°/100'									
5,200 00	7 66	270 82	5,169 22	5 98	-418 28	418 32	2 00	-2 00	0 00
5,300 00	5 66	270 82	5,268 54	6 15	-429 87	429 91	2 00	-2.00	0 00
5,400 00	3 66	270 82	5,368 20	6 26	-437 99	438 03	2 00	-2 00	0 00
5,406 81	3 52	270 82	5,375 00	6.27	-438 42	438 46	2 00	-2 00	0 00
EOC hold 3.52° - TG1-BC #30									
5,500 00	3 52	270 82	5,468 01	6 35	-444 14	444 18	0 00	0 00	0 00
5,600 00	3 52	270 82	5,567 82	6 44	-450 28	450 33	0 00	0 00	0 00
5,700 00	3 52	270 82	5,667 63	6 53	-456 42	456.47	0 00	0 00	0 00
5,800 00	3.52	270 82	5,767 44	6 62	-462 56	462 61	0 00	0 00	0 00
5,900 00	3 52	270 82	5,867 26	6 70	-468.70	468 75	0 00	0 00	0 00
6,000 00	3 52	270 82	5,967 07	6 79	-474 84	474 89	0 00	0.00	0 00
6,100 00	3 52	270 82	6,066 88	6 88	-480 99	481 04	0 00	0 00	0 00
6,200 00	3.52	270 82	6,166 69	6 97	-487 13	487 18	0 00	0 00	0 00
6,300 00	3.52	270 82	6,266 50	7 05	-493 27	493 32	0.00	0 00	0.00

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Well BC Federal #30
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3992 00usft
Project:	Lea County, NM (NAD27 NME)	**MD Reference:**	GL Elev @ 3992 00usft
Site:	BC Federal #30	**North Reference:**	Grid
Well:	BC Federal #30	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2 7-7/8" Hole		

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)
6,400 00	3 52	270 82	6,366 31	7 14	-499 41	499 46	0 00	0 00	0 00
6,500 00	3 52	270 82	6,466 12	7 23	-505 55	505 60	0 00	0 00	0 00
6,600 00	3 52	270 82	6,565 93	7 32	-511 69	511 74	0 00	0.00	0 00
6,700 00	3 52	270 82	6,665 75	7 41	-517 83	517 89	0 00	0.00	0 00
6,800 00	3 52	270 82	6,765 56	7 49	-523 97	524.03	0 00	0 00	0 00
6,900 00	3 52	270 82	6,865 37	7 58	-530 12	530.17	0 00	0 00	0 00
7,000 00	3 52	270 82	6,965 18	7 67	-536 26	536 31	0 00	0 00	0 00
7,034 89	3 52	270 82	7,000 00	7 70	-538 40	538 46	0 00	0 00	0 00
PBHL-BC #30									

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
North HL-BC #30 - plan misses target center by 528 41usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W100 00 H0 00 D0 00)	0.00	0 00	0.00	-2 30	-528 40	662,800 20	667,166 50	32° 49' 15 393 N	103° 47' 21 036 W
West HL-BC #30 - plan misses target center by 528 41usft at 0 00usft MD (0.00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W0 00 H100 00 D0 00)	0 00	0 00	0 00	-2 30	-528 40	662,800 20	667,166 50	32° 49' 15 393 N	103° 47' 21 036 W
TG1-BC #30 - plan hits target center - Point	0 00	0 00	5,375 00	6 27	-438 42	662,808 77	667,256 49	32° 49' 15 473 N	103° 47' 19 981 W
PBHL-BC #30 - plan hits target center - Circle (radius 10 00)	0 00	0 01	7,000 00	7 70	-538.40	662,810 20	667,156 50	32° 49' 15 492 N	103° 47' 21 153 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,100 00	2,100 00	8-5/8" Casing	8-5/8	12-1/4

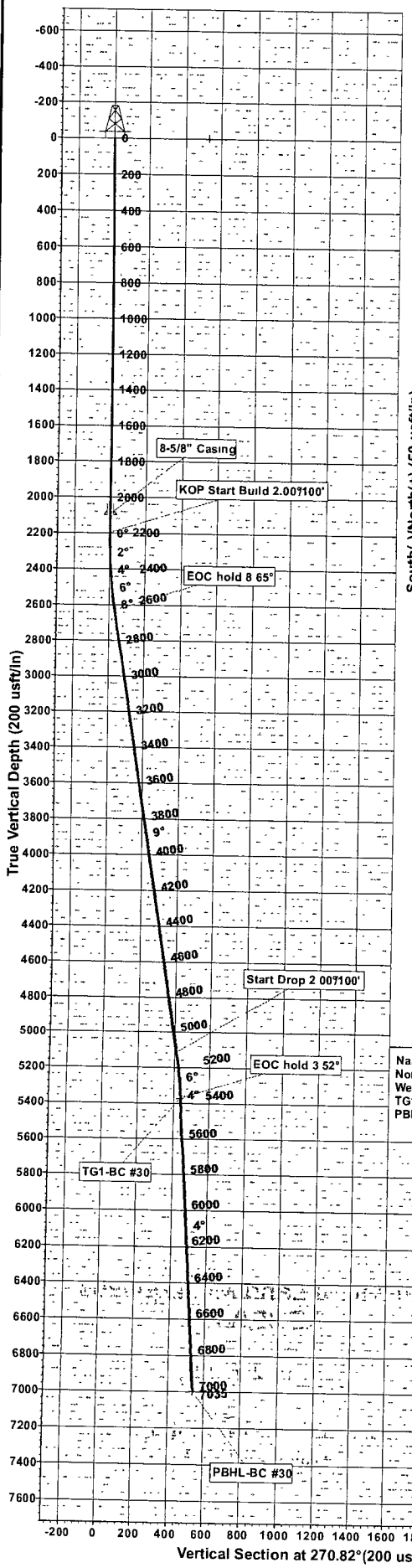
Plan Annotations

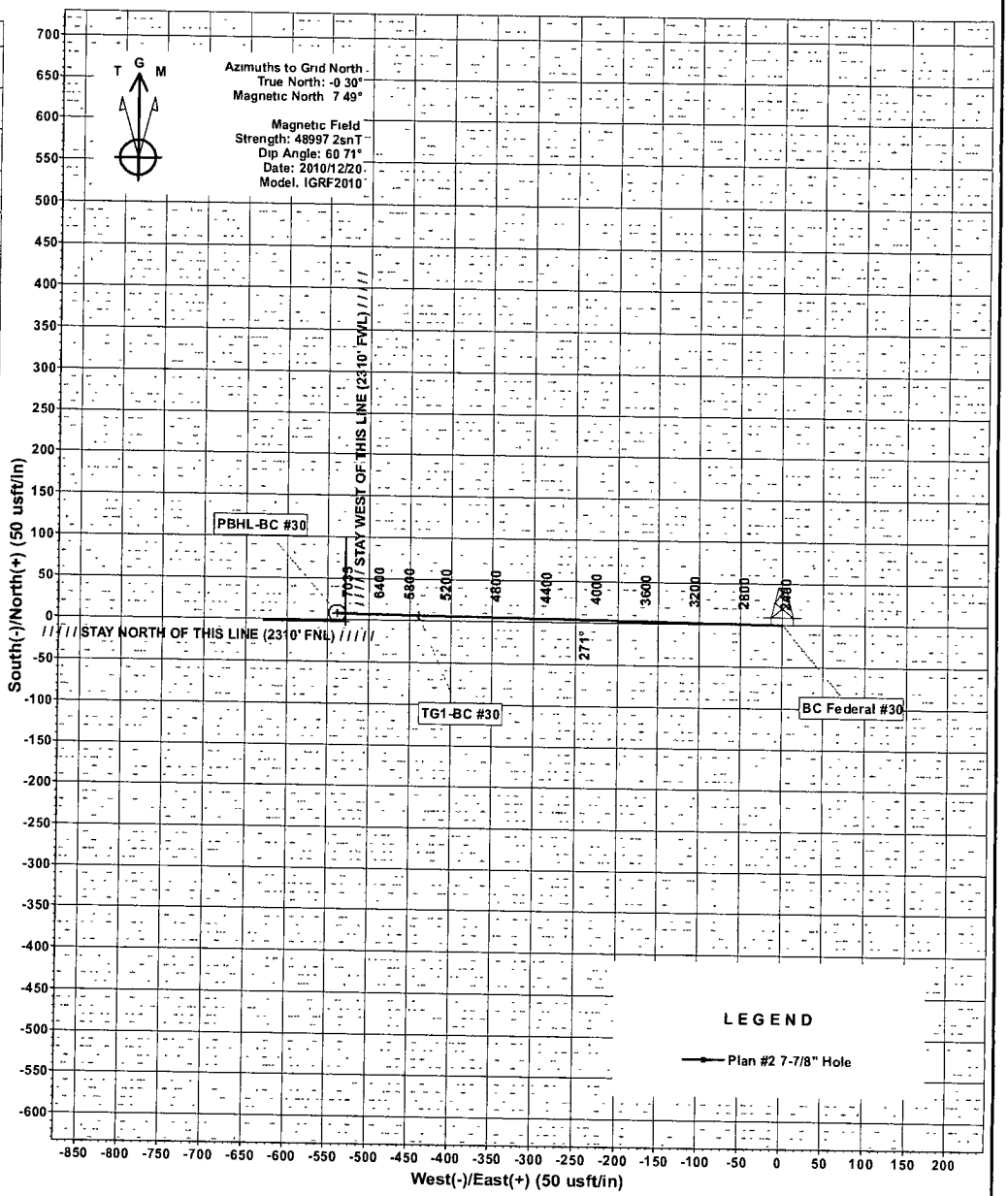
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,200 00	2,200 00	0 00	0 00	KOP Start Build 2 00°/100'
2,632 52	2,630 88	0 47	-32.59	EOC hold 8 65°
5,150 36	5,120 08	5 88	-411 24	Start Drop 2.00°/100'
5,406 81	5,375 00	6 27	-438 41	EOC hold 3 52°

CONCHO

Scientific Drilling for COG Operating LLC
Site: Lea County, NM (NAD27 NME)
Well: BC Federal #30
Wellbore: OH
Design: Plan #2 7-7/8" Hole

Scientific Drilling
Directional Drilling Operations





WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
North HL-BC #30	0.00	-2 30	-528.40	662800 20	667166.50	32°49' 15.393 N	103°47' 21.036 W	Rectangle (Sides: L0 .00 W100 00)
West HL-BC #30	0 00	-2 30	-528 40	662800.20	667166.50	32° 49' 15 393 N	103°47' 21 036 W	Rectangle (Sides: L10 0 00 W0 00)
TG1-BC #30	5375 00	6.27	-438 42	662808.77	667256.48	32°4 9' 15 473 N	103°47' 19 981 W	Point
PBHL-BC #30	7000.00	7.70	-538.40	662810.20	667156.50	32° 49' 15 492 N	103°47' 21 153 W	Circle (Radius. 10.00)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0 00	
2	2200 00	0 00	0 00	2200.00	0 00	0 00	0 00	0.00	0 00	
3	2632.52	8 65	270.82	2630.87	0 47	-32 58	2 00	270.82	32 59	
4	5150 36	8.65	270 82	5120 08	5 88	-411 24	0.00	0.00	411.28	
5	5406.81	3 52	270.82	5375.00	6.27	-438.42	2 00	-180.00	438.46	TG1-BC #30
6	7034.89	3.52	270.82	7000.00	7.70	-538 40	0.00	0 00	538 46	PBHL-BC #30

WELL DETAILS: BC Federal #30

Ground Level. 3992.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	662802 50	667694.90	32°49' 15.388 N	103°47' 14 844 W	

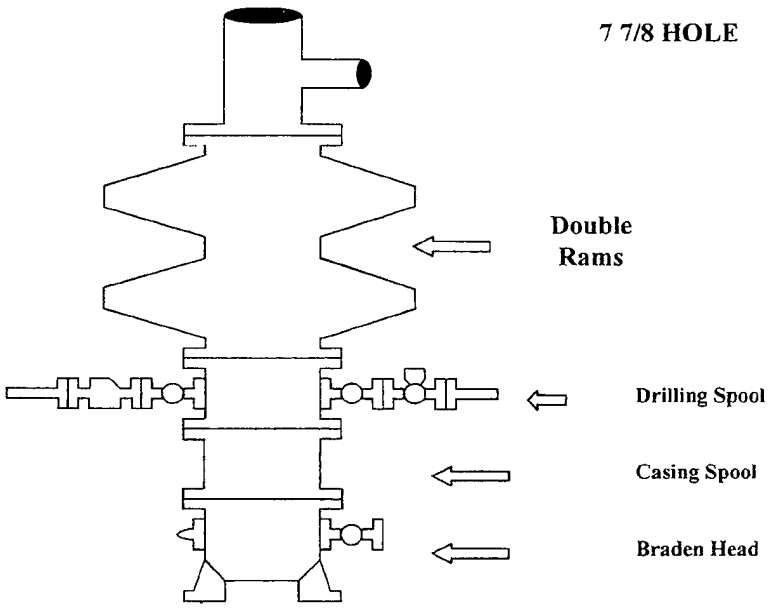
PROJECT DETAILS: Lea County, NM (NAD27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

Plan: Plan #2 7-7/8" Hole (BC Federal #30/OH)

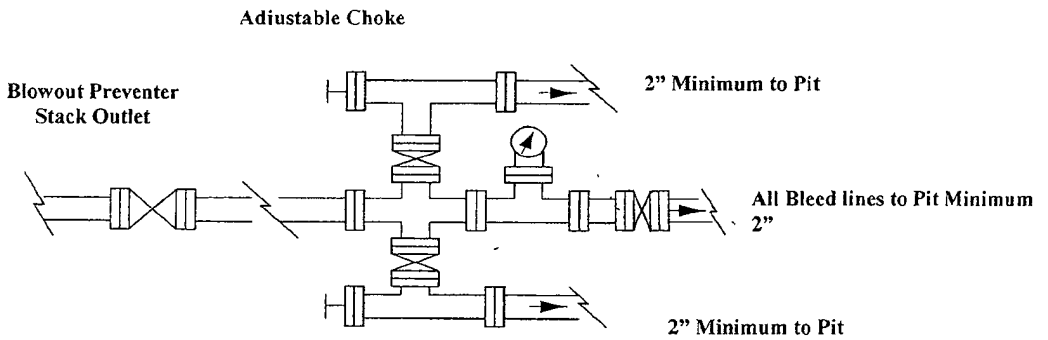
Created By: Julio Pina Date: 20-Dec-10
Checked _____ Date: _____
Reviewed: _____ Date _____
Approved: _____ Date _____

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.