

ATS-10-719  
EA-10-1009

# OCD-ARTESIA

Form 3160-3  
(April 2004)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

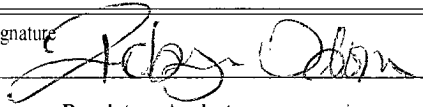
FORM APPROVED  
OMB No 1004-0137  
Expires March 31, 2007

1a. Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No. <b>NMNM-94594</b>
1b Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6 If Indian, Allottee or Tribe Name N/A
2 Name of Operator <b>COG Operating LLC</b>		7 If Unit or CA Agreement, Name and No N/A
3a Address <b>550 W. Texas, Suite 1300 Midland TX 79701</b>	3b Phone No. (include area code) <b>(432) 685-4385</b>	8 Lease Name and Well No. <b>Dogwood Federal #2</b>
9 API Well No. <b>30-015- 39132</b>		10 Field and Pool, or Exploratory <b>Red Lake; Glorieta-Yeso, Northeast</b>
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface <b>SHL: 1958' FNL &amp; 2310' FWL, Unit F</b> At proposed prod zone <b>BHL: 1650' FNL &amp; 2310' FWL, Unit F</b>		11 Sec, T R M or Blk and Survey or Area <b>Sec 25, T17S, R27E</b>
14 Distance in miles and direction from nearest town or post office* <b>9 miles East of Artesia, New Mexico</b>		12 County or Parish <b>Eddy</b>
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) <b>1958'</b>		13 State <b>NM</b>
16 No. of acres in lease <b>40</b>		17 Spacing Unit dedicated to this well <b>40</b>
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft <b>700'</b>		20 BLM/BIA Bond No on file <b>NMB000215</b>
21 Elevations (Show whether DF, KDB, RT, GL, etc) <b>3557' GL</b>		22 Approximate date work will start* <b>09/30/2010</b>
		23 Estimated duration <b>10 days</b>

### 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  | 4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)    |
| 2 A Drilling Plan   | 5 Operator certification   |
| 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) | 6 Such other site specific information and/or plans as may be required by the authorized officer |

25. Signature 	Name (Printed/Typed) <b>Robyn M. Odom</b>	Date <b>06/21/2010</b>
Title <b>Regulatory Analyst</b>		

Approved by (Signature) <b>/s/ Don Peterson</b>	Name (Printed/Typed)	Date <b>MAY 4 2011</b>
Title <b>FIELD MANAGER</b>	Office <b>CARLSBAD FIELD OFFICE</b>	

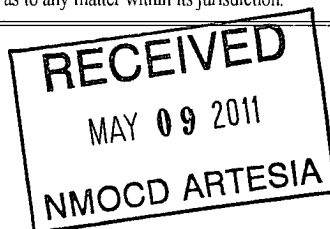
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached

**APPROVAL FOR TWO YEARS**

Title 18 USC Section 1001 and Title 43 USC 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



Approval Subject to General Requirements  
& Special Stipulations Attached

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

## DRILLING PROGRAM

### 1. Geologic Name of Surface Formation

Quaternary

### 2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Top of Salt	0'
Base of Salt	100'
Yates	250'
Seven Rivers	450'
Queen	950'
Grayburg	1400'
San Andres	1750'
Glorieta	3100'
Yeso Group	3200'
Tubb	4600'

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

Water Sand	150'	Fresh Water
Grayburg	1400'	Oil/Gas
San Andres	1750'	Oil/Gas
Glorieta	3100'	Oil/Gas
Yeso Group	3200'	Oil/Gas
Tubb	4600'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 300' 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 1000' 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 environment.

See  
COP

See  
COP

#### 4. Casing Program

See  
COA

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	brst/clps/ten
17 1/2"	0- <del>300'</del> 300'	13 3/8"	48#	H-40orJ-55	ST&C/New	ST&C	9.22/3.943/15.8
11"	0-1000'	8 5/8"	24or32#	J-55orK-55	ST&C/New	ST&C	3.03/2.029/7.82
7 7/8"	0-TD	5 1/2"	15.5or17#	J-55orL-80	LT&C/New	LT&C	1.88/1.731/2.42

#### 5. Cement Program

13 3/8" Surface Casing:

Class C w/ 2% CaCl<sub>2</sub>, 350 sx, yield 1.32, back to surface

8 5/8" Intermediate Casing:

**11" Hole:**

**Single Stage:** 50:50:10, 200 sx lead, yield-2.45 + Class C, 200 sx tail, yield-1.32, back to surface.

**Multi-Stage:** Stage 1: Class C, 200 sx, yield - 1.32; Stage 2: Class C, 200 sx, yield - 1.32. Multi stage tool to be set at approximately, depending on hole conditions, ~~300'~~ See COA

5 1/2" Production Casing:

**Single Stage:** 35:65:6, 400 sx Lead, yield-2.05 + 50:50:2, 400 sx Tail, yield-1.37, to 200' minimum tie back to intermediate casing.

**Multi-Stage:** Stage 1: 50:50:2, 400 sx, yield - 1.37; Stage 2: 35:65:6, 400 sx, yield - 2.05, to 200' minimum tie back to intermediate casing. Multi stage tool to be set at approximately, depending on hole conditions, ~~TD - 2000'~~ 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. 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. The BOP will be nipped up on the 13 3/8" surface casing with BOP equipment and tested together to 2000 psi ~~by rig pump in one test~~. The BOP will then be nipped 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

## 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
0-300' <del>380'</del>	Fresh Water	8.5	28	N.C.
300-1000'	Brine	10	30	N.C.
1000'-TD'	Cut Brine	8.7-9.2	30	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

- 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 Surface. - See COA
- 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 hole 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. - See COA

**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 10 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.



## **COG Operating LLC**

Eddy County, NM (NAN27 NME)

Dogwood Federal #2

Dogwood Federal #2

OH

Plan: Plan #3 - 7-7/8" Hole

SHL = 1991' FNL & 2310' FWL

BHL = 1660' FNL & 2300' FWL

Top of Paddock = 231' N of Surface & 7' W of Surface @ 3200' TVD

## **Standard Planning Report**

15 April, 2011



**Scientific Drilling**  
Directional Drilling Operations



# Scientific Drilling Planning Report



Database	EDM-Julio	Local Co-ordinate Reference:	Site Dogwood Federal #2
Company	COG Operating LLC	TVD Reference:	GL Elev @ 3556.00usft
Project	Eddy County, NM (NAN27.NME)	MD Reference:	GL Elev @ 3556.00usft
Site	Dogwood Federal #2	North Reference:	Grid
Well	Dogwood Federal #2	Survey Calculation Method:	Minimum Curvature
Wellbore	OH		
Design	Plan #3 - 7-7/8" Hole		

Project	Eddy County, NM (NAN27.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	Dogwood Federal #2		
Site Position:	Northing:	657,226 20 usft	Latitude: 32° 48' 24 348 N
From: Map	Easting:	530,888.90 usft	Longitude: 104° 13' 58 079 W
Position Uncertainty:	0 00 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0 05 °

Well	Dogwood Federal #2		
Well Position	+N/-S	0 00 usft	Northing: 657,226 20 usft
	+E/-W	0 00 usft	Easting: 530,888 90 usft
Position Uncertainty	0 00 usft	Wellhead Elevation:	Ground Level: 3,556 00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010	2011/04/15	7 96
			Dip Angle (°)
			60 61
			Field Strength (nT)
			48,909

Design	Plan #3 - 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)
	0 00	0.00	0 00
			Direction (°)
			358.20

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	
1,100 00	0 00	0 00	1,100 00	0 00	0 00	0 00	0 00	0 00	0 00	
1,449 18	6 98	358 20	1,448 31	21 24	-0 67	2 00	2 00	0 00	358 20	
3,048 87	6 98	358 20	3,036 13	215 64	-6 78	0 00	0 00	0 00	0 00	
3,213 47	3 69	358.20	3,200.00	230 95	-7 26	2 00	-2 00	0 00	180 00	TG1-DF #2
4,766 69	3 69	358 20	4,750 00	330 90	-10 40	0 00	0.00	0 00	0 00	PBHL-DF #2



Scientific Drilling  
Planning Report



Database:	EDM-Julio	Local Co-ordinate Reference:	Site Dogwood Federal #2
Company:	COG Operating LLC	TVD Reference:	GL Elev @ 3556.00usft
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	GL Elev @ 3556.00usft
Site:	Dogwood Federal #2	North Reference:	Grid
Well:	Dogwood Federal #2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 - 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	
West HL-DF #2 - North HL-DF #2										
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
8-5/8" Casing										
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
KOP Start Build 2.00°/100'										
1,200.00	2.00	358.20	1,199.98	1.74	-0.05	1.75	2.00	2.00	0.00	
1,300.00	4.00	358.20	1,299.84	6.98	-0.22	6.98	2.00	2.00	0.00	
1,400.00	6.00	358.20	1,399.45	15.69	-0.49	15.69	2.00	2.00	0.00	
1,449.18	6.98	358.20	1,448.32	21.24	-0.67	21.25	2.00	2.00	0.00	
EOC hold 6.98°										
1,500.00	6.98	358.20	1,498.76	27.42	-0.86	27.43	0.00	0.00	0.00	
1,600.00	6.98	358.20	1,598.02	39.57	-1.24	39.59	0.00	0.00	0.00	
1,700.00	6.98	358.20	1,697.28	51.72	-1.63	51.75	0.00	0.00	0.00	
1,800.00	6.98	358.20	1,796.53	63.88	-2.01	63.91	0.00	0.00	0.00	
1,900.00	6.98	358.20	1,895.79	76.03	-2.39	76.07	0.00	0.00	0.00	
2,000.00	6.98	358.20	1,995.05	88.18	-2.77	88.22	0.00	0.00	0.00	
2,100.00	6.98	358.20	2,094.31	100.33	-3.15	100.38	0.00	0.00	0.00	
2,200.00	6.98	358.20	2,193.57	112.49	-3.54	112.54	0.00	0.00	0.00	
2,300.00	6.98	358.20	2,292.82	124.64	-3.92	124.70	0.00	0.00	0.00	
2,400.00	6.98	358.20	2,392.08	136.79	-4.30	136.86	0.00	0.00	0.00	
2,500.00	6.98	358.20	2,491.34	148.94	-4.68	149.02	0.00	0.00	0.00	
2,600.00	6.98	358.20	2,590.60	161.10	-5.06	161.18	0.00	0.00	0.00	
2,700.00	6.98	358.20	2,689.86	173.25	-5.45	173.33	0.00	0.00	0.00	
2,800.00	6.98	358.20	2,789.11	185.40	-5.83	185.49	0.00	0.00	0.00	
2,900.00	6.98	358.20	2,888.37	197.55	-6.21	197.65	0.00	0.00	0.00	
3,000.00	6.98	358.20	2,987.63	209.71	-6.59	209.81	0.00	0.00	0.00	
3,048.87	6.98	358.20	3,036.14	215.64	-6.78	215.75	0.00	0.00	0.00	
Start DLS 2.00°/100'										
3,100.00	5.96	358.20	3,086.94	221.40	-6.96	221.51	2.00	-2.00	0.00	
3,200.00	3.96	358.20	3,186.56	230.05	-7.23	230.16	2.00	-2.00	0.00	
3,213.47	3.69	358.20	3,200.00	230.95	-7.26	231.06	2.00	-2.00	0.00	
EOC hold 3.69° - TG1-DF #2										
3,300.00	3.69	358.20	3,286.35	236.51	-7.43	236.63	0.00	0.00	0.00	
3,400.00	3.69	358.20	3,386.14	242.95	-7.64	243.07	0.00	0.00	0.00	
3,500.00	3.69	358.20	3,485.94	249.39	-7.84	249.51	0.00	0.00	0.00	
3,600.00	3.69	358.20	3,585.73	255.82	-8.04	255.95	0.00	0.00	0.00	
3,700.00	3.69	358.20	3,685.52	262.26	-8.24	262.39	0.00	0.00	0.00	
3,800.00	3.69	358.20	3,785.32	268.69	-8.44	268.82	0.00	0.00	0.00	
3,900.00	3.69	358.20	3,885.11	275.13	-8.65	275.26	0.00	0.00	0.00	
4,000.00	3.69	358.20	3,984.90	281.56	-8.85	281.70	0.00	0.00	0.00	
4,100.00	3.69	358.20	4,084.69	288.00	-9.05	288.14	0.00	0.00	0.00	
4,200.00	3.69	358.20	4,184.49	294.43	-9.25	294.58	0.00	0.00	0.00	
4,300.00	3.69	358.20	4,284.28	300.87	-9.46	301.02	0.00	0.00	0.00	
4,400.00	3.69	358.20	4,384.07	307.30	-9.66	307.45	0.00	0.00	0.00	
4,500.00	3.69	358.20	4,483.86	313.74	-9.86	313.89	0.00	0.00	0.00	
4,600.00	3.69	358.20	4,583.66	320.17	-10.06	320.33	0.00	0.00	0.00	
4,700.00	3.69	358.20	4,683.45	326.61	-10.27	326.77	0.00	0.00	0.00	
4,766.69	3.69	358.20	4,750.00	330.90	-10.40	331.06	0.00	0.00	0.00	
PBHL-DF #2										





Scientific Drilling  
Planning Report



Database:	EDM-Julio	Local Co-ordinate Reference:	Site Dogwood Federal #2
Company:	COG Operating LLC	TVD Reference:	GL Elev @ 3556 00usft
Project:	Eddy County, NM (NAN27 NME)	MD Reference:	GL Elev @ 3556 00usft
Site:	Dogwood Federal #2	North Reference:	Grid
Well:	Dogwood Federal #2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 - 7-7/8" Hole		

Design Targets

Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
West HL-DF #2		0 00	0 00	0 00	340 90	-0 40	657,567 10	530,888 50	32° 48' 27 721 N	104° 13' 58 080 W
- plan misses target center by 340 90usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E)										
- Rectangle (sides W0 00 H200 00 D0 00)										
North HL-DF #2		0 00	0 00	0 00	340 90	-0 40	657,567 10	530,888 50	32° 48' 27 721 N	104° 13' 58 080 W
- plan misses target center by 340 90usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E)										
- Rectangle (sides W200 00 H0 00 D0 00)										
TG1-DF #2		0 00	0 01	3,200 00	230 95	-7.26	657,457 15	530,881 64	32° 48' 26.633 N	104° 13' 58.162 W
- plan hits target center										
- Point										
PBHL-DF #2		0 00	0 01	4,750 00	330 90	-10.40	657,557 10	530,878 50	32° 48' 27 622 N	104° 13' 58 198 W
- plan hits target center										
- Circle (radius 10 00)										

Casing Points

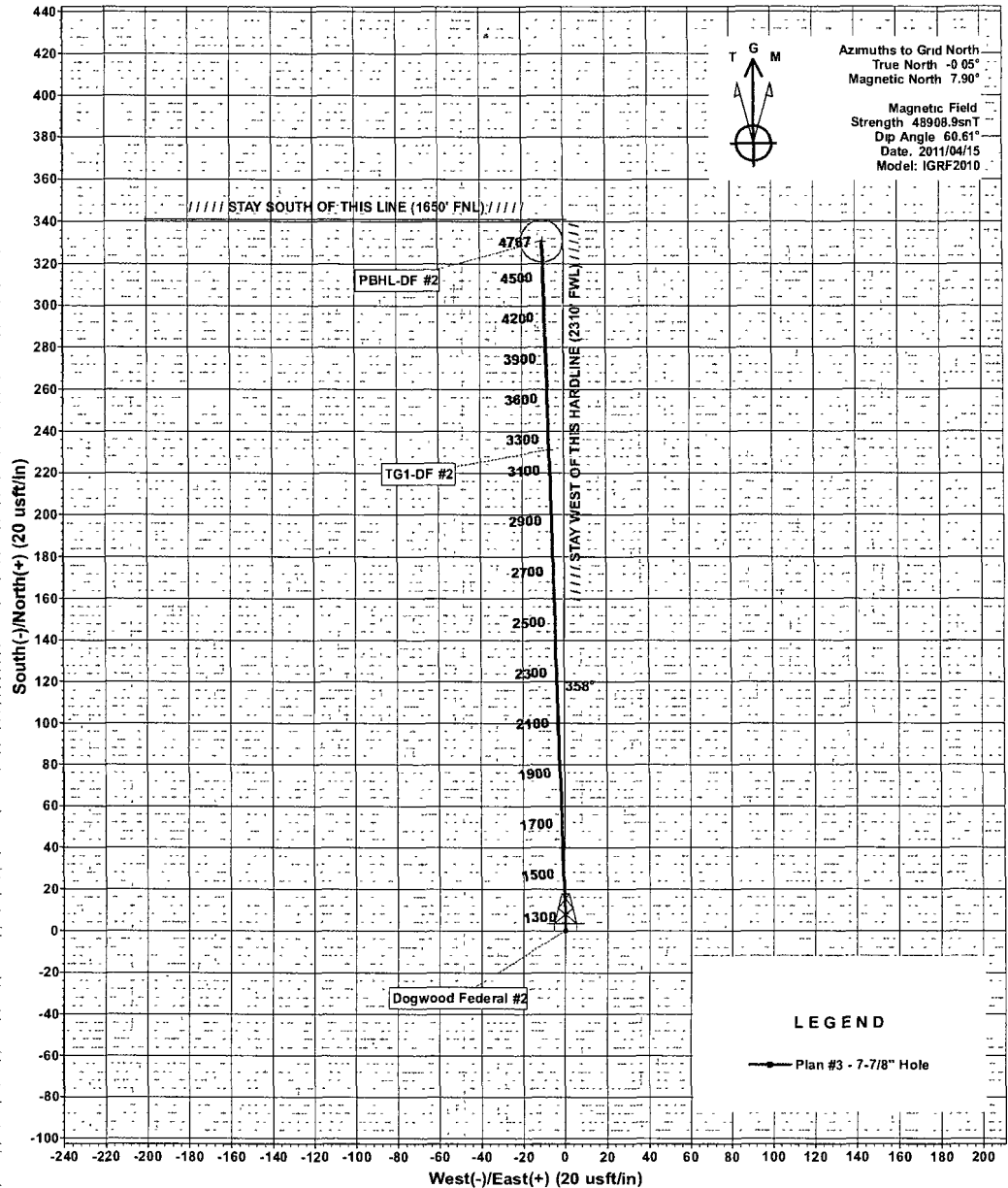
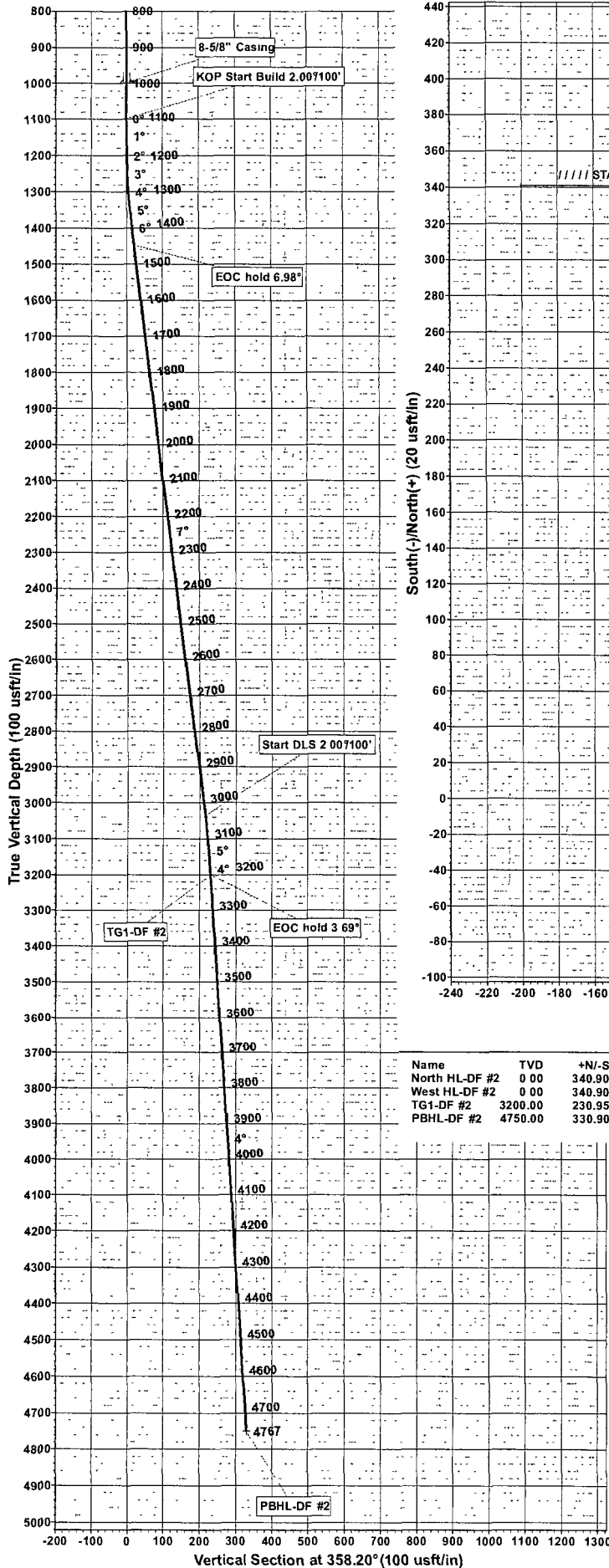
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,000 00	1,000 00	8-5/8" Casing	8-5/8	12-1/4

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
1,100.00	1,100 00	0 00	0 00	KOP Start Build 2 00°/100'
1,449 18	1,448 32	21 24	-0 67	EOC hold 6 98°
3,048 87	3,036 12	215 76	-6 78	Start DLS 2 00°/100'
3,213 47	3,199 99	231 01	-7 26	EOC hold 3 69°



Scientific Drilling for COG Operating LLC  
Site: Eddy County, NM (NAN27 NME)  
Well: Dogwood Federal #2  
Wellbore: OH  
Design: Plan #3 - 7-7/8" Hole



WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
North HL-DF #2	0.00	340.90	-0.40	657567.10	530888.50	32° 48' 27.721 N	104° 13' 58.080 W	Rectangle (Sides: L0.0 0 W200.00)
West HL-DF #2	0.00	340.90	-0.40	657567.10	530888.50	32° 48' 27.721 N	104° 13' 58.080 W	Rectangle (Sides: L200.00 W0.00)
TG1-DF #2	3200.00	230.95	-7.26	657457.15	530881.64	32° 48' 26.633 N	104° 13' 58.162 W	Point
PBHL-DF #2	4750.00	330.90	-10.40	657557.10	530878.50	32° 48' 27.622 N	104° 13' 58.198 W	Circle (Radius 10.00)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
3	1449.18	6.98	358.20	1448.31	21.24	-0.67	2.00	358.20	21.25	
4	3048.87	6.98	358.20	3036.13	215.64	-6.78	0.00	0.00	215.75	
5	3213.47	3.69	358.20	3200.00	230.95	-7.26	2.00	180.00	231.06	TG1-DF #2
6	4766.69	3.69	358.20	4750.00	330.90	-10.40	0.00	0.00	331.06	PBHL-DF #2

WELL DETAILS: Dogwood Federal #2

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	657226.20	530888.90	32° 48' 24.348 N	104° 13' 58.079 W

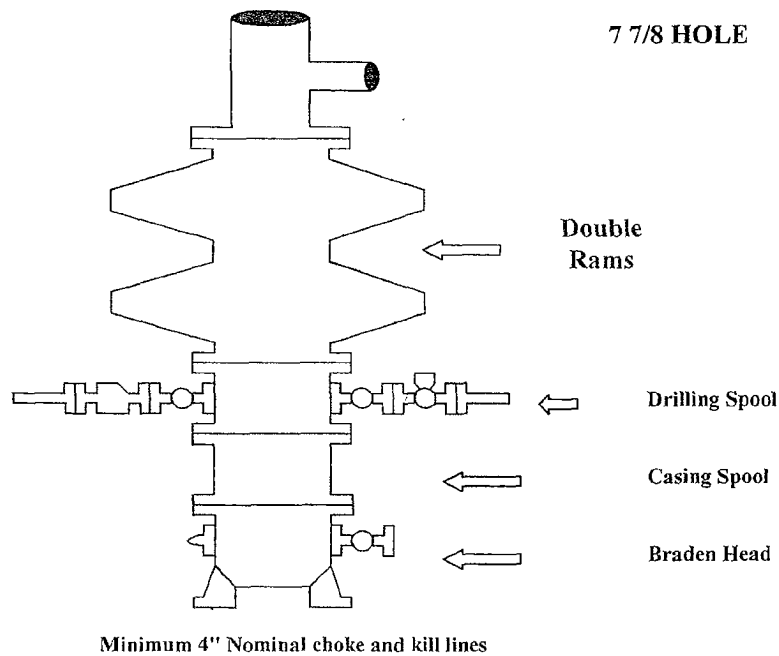
PROJECT DETAILS: Eddy County, NM (NAN27 NME) Plan: Plan #3 - 7-7/8" Hole (Dogwood Federal #2/OH)

Geodetic System: US State Plane 1927 (Exact solution) Created By: Julio Pina Date: 15-Apr-11  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: New Mexico East 3001  
System Datum: Mean Sea Level  
Checked: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_  
Approved: \_\_\_\_\_ Date: \_\_\_\_\_

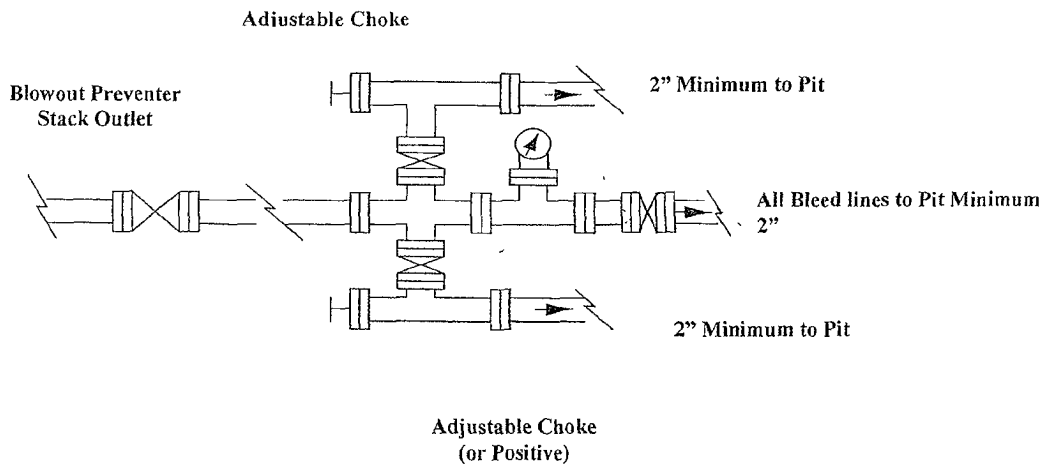
# COG Operating LLC

## Exhibit #9

### BOPE and Choke Schematic



Choke Manifold Requirement (2000 psi WP)  
No Annular Required



**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.