AT S-11-65

OCD Artesia

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.
NMLC049998A

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.
FOSTER EDDY #23

2 Name of Operator
COG Operating LLC

9 API Well No.
30-015- 39123

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

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

10 Field and Pool, or Exploratory
Cedar Lake; Glorieta-Yeso

4. Location of Well *(Report location clearly and in accordance with any State requirements *)*
At surface **1100' FNL & 1205' FEL, Unit A**
At proposed prod zone **990' FNL & 990' FEL, Unit A**

UNORTHODOX LOCATION

11 Sec , T R M or Blk and Survey or Area
Sec 17 T17S R31E

14 Distance in miles and direction from nearest town or post office*
9 miles East of Loco Hills, NM

12 County or Parish
EDDY

13 State
NM

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any)	16 No. of acres in lease	17 Spacing Unit dedicated to this well
1100'	**280**	**40**
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	19 Proposed Depth	20 BLM/BIA Bond No. on file
500'	**TVD: 6600' MD: 6612'** 6300 6312	**NMB000215**
21 Elevations (Show whether DF, KDB, RT, GL, etc)	22 Approximate date work will start*	23 Estimated duration
3758' GL	**01/31/2011**	**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
Title **Permitting Tech**	**Kelly J. Holly**	**12/15/2010**

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ James A. Amos		MAY 18 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.

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

RECEIVED
MAY 20 2011
NMOCD ARTESIA

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Rustler	375'
Top of Salt	600'
Base of Salt	1200'
Yates	1525'
Seven Rivers	1850'
Queen	2475'
Grayburg	2875'
San Andres	3175'
Glorietta	4700'
Paddock	4775'
Blinebry	5250'
Tubb	6200'

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

Water Sand	150'	Fresh Water
Grayburg	2875'	Oil/Gas
San Andres	3175'	Oil/Gas
Glorieta	4700'	Oil/Gas
Paddock	4775'	Oil/Gas
Blinebry	5250'	Oil/Gas
Tubb	6200'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 450' 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 1800' 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

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	burst/collapse/tension
17 ½"	0-450'40	13 3/8"	48#	H-40orJ-55	New	ST&C	8.71/3.724/14.91
11"	0-1800'	8 5/8"	24or32#	J-55	New	ST&C	2.91/1.46/5.65
7 7/8"	0-T.D.	5 1/2"	15.5 or17#	J-55orL80	New	LT&C	1.71/1.574/2.20

See COA

5. Cement Program See COA

13 3/8" Surface Casing: Class C, 475 sx w/ 2% CaCl2, 0.25 pps CF, yield-1.32, back to surface 100% excess

8 5/8" Intermediate Casing:

11" Hole:
Single Stage: LEAD 350 sx 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, yield-2.45 + TAIL 200 sx Class C w/2% CaCl2, yield-1.32, back to surface. 145% excess
Multi-Stage: Stage 1: 350 sx Class C, w/2% CaCl2, yield - 1.32. 40% excess Stage 2: 200 sx Class C w/2% CaCl2, yield – 1.32, back to surface, 108% excess Multi stage tool to be set at approximately, depending on hole conditions, 500' (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 500 sx 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 + TAIL 400 sx 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, to 200' minimum tie back to intermediate casing. 44.4% open hole excess, cement calculated back to surface.
Multi-Stage: Stage 1: (Assumed TD of 6700') 500 sx 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, 7% excess; minimum volume, will be adjusted up after caliper is

See COA

run. Stage 2: LEAD 450 sx 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, + TAIL 250 sx Class C w/ 0.3% R-3 + 1.5% CD-32, yield – 1.02 152% open hole excess, cement calculated back to surface. Multi stage tool to be set at approximately, depending on hole conditions, 3000'. Cement volumes will be adjusted proportionately for depth changes of multi stage tool, assumption for tool is water flow.

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.

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. 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
0-450' 410	Fresh Water	8.5	28	N.C.
450-1800'	Brine	10	30	N.C.
1800'-TD	Cut Brine	8.7-9.1	29	N.C.

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 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 12 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

Eddy County, NM (NAN27 NME)
Foster Eddy #23
Foster Eddy #23

OH

Plan: Plan #1 Rev 1 7-7/8" Hole

Standard Planning Report

28 March, 2011

Scientific Drilling
Directional Drilling Operations

Database:	EDM Julio	**Local Co-ordinate Reference:**	Site Foster Eddy #23
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3758 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3758 00usft
Site:	Foster Eddy #23	**North Reference:**	Grid
Well:	Foster Eddy #23	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 Rev 1 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 Foster Eddy #23

Site Position:		**Northing:**	669,104 30 usft	**Latitude:**	32° 50' 19 163 N
From:	Map	**Easting:**	637,180 30 usft	**Longitude:**	103° 53' 12 111 W
Position Uncertainty:	0 00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0 24 °

Well Foster Eddy #23

Well Position	**+N/-S**	0 00 usft	**Northing:**	669,104 30 usft	**Latitude:**	32° 50' 19 163 N
	+E/-W	0 00 usft	**Easting:**	637,180 30 usft	**Longitude:**	103° 53' 12.111 W
Position Uncertainty		0 00 usft	**Wellhead Elevation:**		**Ground Level:**	3,758.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/03/28	7 81	60 71	48,971

Design Plan #1 Rev 1 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	61 59

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	
2,000 00	0 00	0 00	2,000 00	0 00	0.00	0 00	0 00	0 00	0 00	
2,278 17	5 56	61.59	2,277 73	6 42	11 87	2 00	2 00	0 00	61 59	
4,633 80	5 56	61 59	4,622 27	115 08	212 73	0.00	0 00	0.00	0 00	
4,911 97	0 00	0 00	4,900 00	121 50	224 60	2.00	-2 00	0 00	180 00	TG1-Foster #23
6,311 97	0 00	0 00	6,300 00	121.50	224 60	0 00	0 00	0.00	0 00	PBHL-Foster #23

Database:	EDM Julio	**Local Co-ordinate Reference:**	Site Foster Eddy #23
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3758 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3758 00usft
Site:	Foster Eddy #23	**North Reference:**	Grid
Well:	Foster Eddy #23	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 Rev 1 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
East HL-Foster #23 - North HL-Foster #23									
1,900 00	0 00	0 00	1,900 00	0 00	0 00	0 00	0 00	0 00	0 00
8-5/8" Casing									
2,000 00	0 00	0 00	2,000 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 2.00°/100'									
2,100 00	2 00	61 59	2,099 98	0 83	1 53	1 75	2 00	2 00	0 00
2,200 00	4.00	61 59	2,199.84	3.32	6 14	6 98	2 00	2 00	0 00
2,278 17	5.56	61 59	2,277 73	6 42	11 87	13 49	2 00	2 00	0 00
EOC hold 5.56°									
2,300 00	5 56	61.59	2,299 46	7 43	13 73	15 61	0 00	0 00	0.00
2,400 00	5 56	61.59	2,398 99	12 04	22 26	25 31	0 00	0.00	0 00
2,500 00	5.56	61.59	2,498 52	16 65	30 78	35 00	0 00	0 00	0 00
2,600 00	5 56	61.59	2,598 05	21 27	39 31	44 69	0 00	0 00	0 00
2,700 00	5 56	61 59	2,697 58	25 88	47 84	54 39	0 00	0 00	0 00
2,800 00	5 56	61.59	2,797 11	30 49	56 36	64 08	0 00	0 00	0 00
2,900 00	5 56	61.59	2,896 63	35 10	64 89	73 78	0 00	0 00	0 00
3,000 00	5 56	61 59	2,996 16	39 72	73.42	83 47	0.00	0 00	0.00
3,100 00	5 56	61 59	3,095 69	44 33	81 95	93 17	0 00	0.00	0 00
3,200 00	5 56	61.59	3,195 22	48 94	90 47	102 86	0 00	0 00	0 00
3,300 00	5 56	61.59	3,294 75	53 55	99 00	112 56	0 00	0 00	0.00
3,400 00	5 56	61 59	3,394 28	58 17	107.53	122 25	0 00	0 00	0 00
3,500 00	5.56	61 59	3,493 81	62 78	116.05	131 95	0 00	0 00	0.00
3,600 00	5 56	61 59	3,593.34	67 39	124.58	141 64	0 00	0.00	0 00
3,700.00	5 56	61 59	3,692 87	72 01	133 11	151 33	0 00	0.00	0 00
3,800 00	5 56	61 59	3,792 39	76 62	141 63	161 03	0 00	0 00	0 00
3,900 00	5.56	61.59	3,891 92	81.23	150 16	170 72	0 00	0 00	0 00
4,000.00	5 56	61.59	3,991 45	85 84	158 69	180 42	0 00	0 00	0 00
4,100 00	5 56	61 59	4,090 98	90 46	167 21	190.11	0 00	0 00	0 00
4,200 00	5 56	61 59	4,190 51	95 07	175 74	199 81	0.00	0 00	0 00
4,300.00	5 56	61.59	4,290 04	99 68	184 27	209 50	0.00	0.00	0 00
4,400.00	5 56	61.59	4,389.57	104 29	192 80	219 20	0 00	0 00	0 00
4,500 00	5 56	61 59	4,489 10	108 91	201.32	228 89	0.00	0 00	0 00
4,600 00	5.56	61.59	4,588 63	113 52	209 85	238.59	0 00	0 00	0.00
4,633 80	5.56	61 59	4,622.27	115 08	212 73	241 86	0 00	0 00	0.00
Start Drop 2.00°/100'									
4,700 00	4 24	61 59	4,688.22	117 77	217 71	247 52	2 00	-2 00	0 00
4,800 00	2 24	61 59	4,788 06	120 46	222 68	253 17	2 00	-2 00	0 00
4,900.00	0 24	61 59	4,888 03	121 49	224.58	255 33	2 00	-2 00	0 00
4,911.97	0 00	0 00	4,900 00	121 50	224 60	255 36	2 00	-2 00	-514 54
EOC hold 0.00° - TG1-Foster #23									
6,311 97	0 00	0 00	6,300 00	121 50	224.60	255 36	0.00	0 00	0 00
PBHL-Foster #23									

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Foster Eddy #23
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3758 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3758.00usft
Site:	Foster Eddy #23	**North Reference:**	Grid
Well:	Foster Eddy #23	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 Rev 1 7-7/8" Hole		

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
East HL-Foster #23 - plan misses target center by 241 84usft 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	111 50	214 60	669,215 80	637,394 90	32° 50' 20 257 N	103° 53' 9 590 W
North HL-Foster #23 - plan misses target center by 241 84usft 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	111.50	214.60	669,215.80	637,394 90	32° 50' 20 257 N	103° 53' 9 590 W
TG1-Foster #23 - plan hits target center - Point	0 00	0 00	4,900 00	121.50	224 60	669,225 80	637,404 90	32° 50' 20 356 N	103° 53' 9.473 W
PBHL-Foster #23 - plan hits target center - Circle (radius 10 00)	0 00	0 01	6,300 00	121 50	224 60	669,225 80	637,404 90	32° 50' 20 356 N	103° 53' 9 473 W

Casing Points

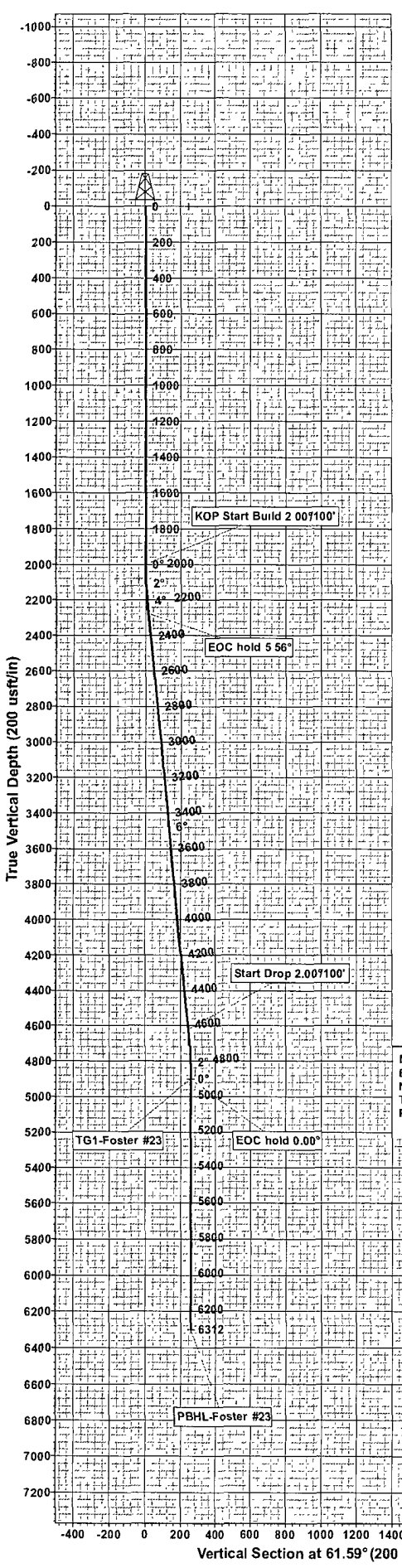
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,900 00	1,900.00	8-5/8" Casing	8-5/8	12-1/4

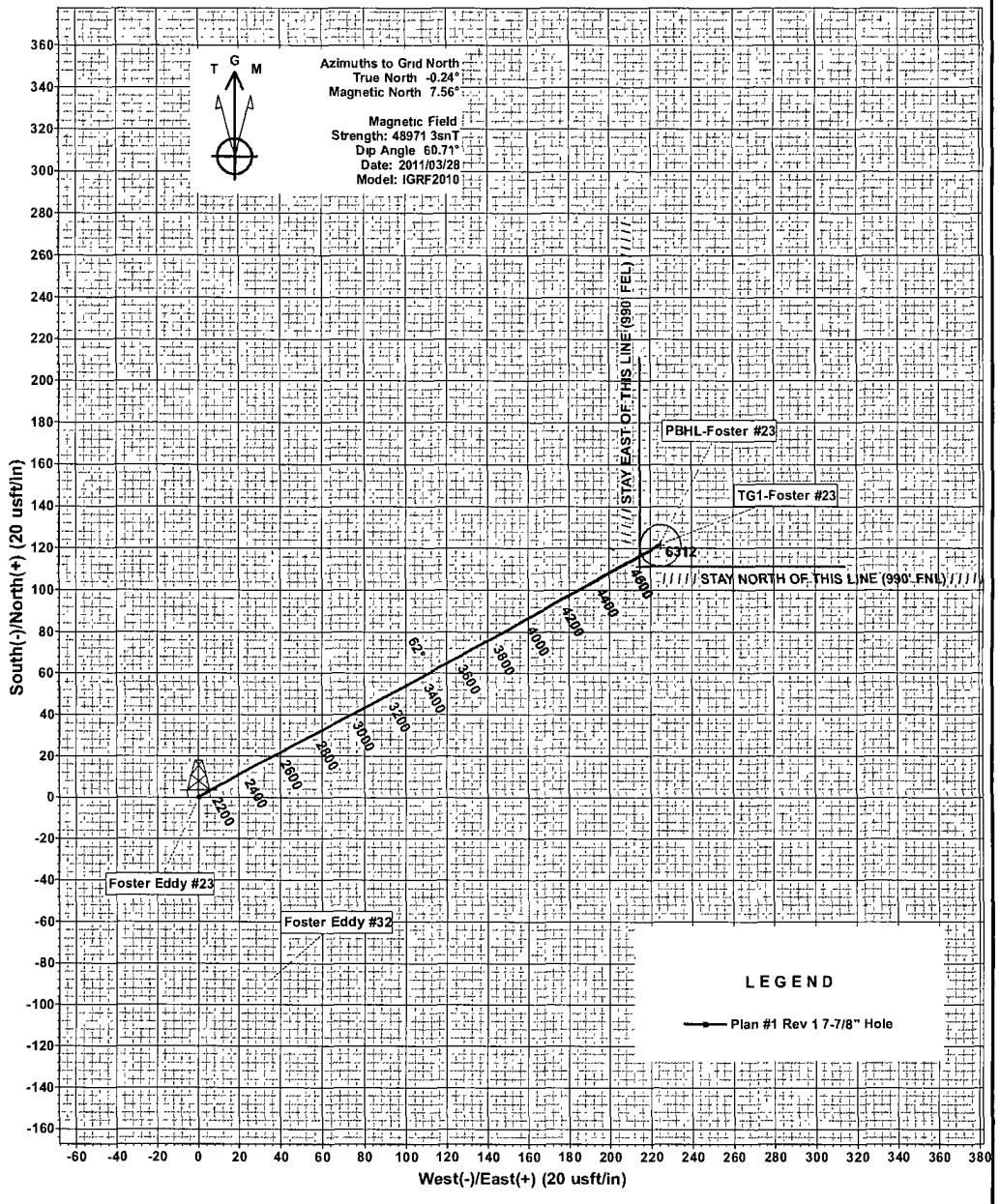
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,000 00	2,000 00	0.00	0 00	KOP Start Build 2 00°/100'
2,278 17	2,277 73	6 42	11.87	EOC hold 5 56°
4,633 80	4,622 27	115.08	212 73	Start Drop 2.00°/100'
4,911 97	4,900.00	121 50	224 60	EOC hold 0 00°

Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Foster Eddy #23
Wellbore: OH
Design: Plan #1 Rev 1 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
East HL-Foster #23	0.00	111.50	214.60	669215.80	637394.90	32° 50' 20.257 N	103° 53' 9.590 W	Rectangle (Sides: L100.00 W0.00)
North HL-Foster #23	0.00	111.50	214.60	669215.80	637394.90	32° 50' 20.257 N	103° 53' 9.590 W	Rectangle (Sides L0.00 W100.00)
TG1-Foster #23	4900.00	121.50	224.60	669225.80	637404.90	32° 50' 20.356 N	103° 53' 9.473 W	Point
PBHL-Foster #23	6300.00	121.50	224.60	669225.80	637404.90	32° 50' 20.356 N	103° 53' 9.473 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	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2278.17	5.56	61.59	2277.73	6.42	11.87	2.00	61.59	13.49	
4	4633.80	5.56	61.59	4622.27	115.08	212.73	0.00	0.00	241.86	
5	4911.97	0.00	0.00	4900.00	121.50	224.60	2.00	180.00	255.36	TG1-Foster #23
6	6311.97	0.00	0.00	6300.00	121.50	224.60	0.00	0.00	255.36	PBHL-Foster #23

WELL DETAILS: Foster Eddy #23

Ground Level: 3758.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	669104.30	637180.30	32° 50' 19.163 N	103° 53' 12.111 W	

PROJECT DETAILS: Eddy County, NM (NAN27 NME)

Plan: Plan #1 Rev 1 7-7/8" Hole (Foster Eddy #23/OH)

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

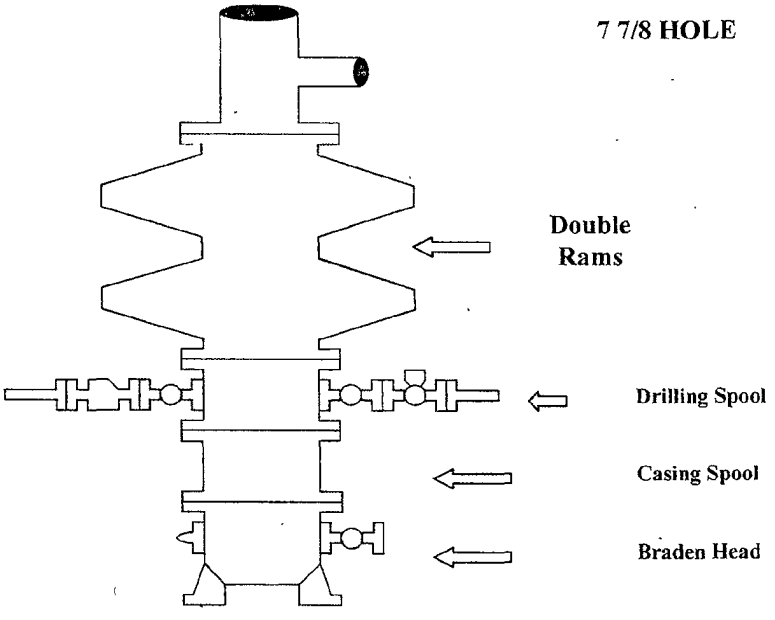
Created By: Julio Pina Date: 28-Mar-11

Checked: _____ Date: _____

Reviewed: _____ Date: _____

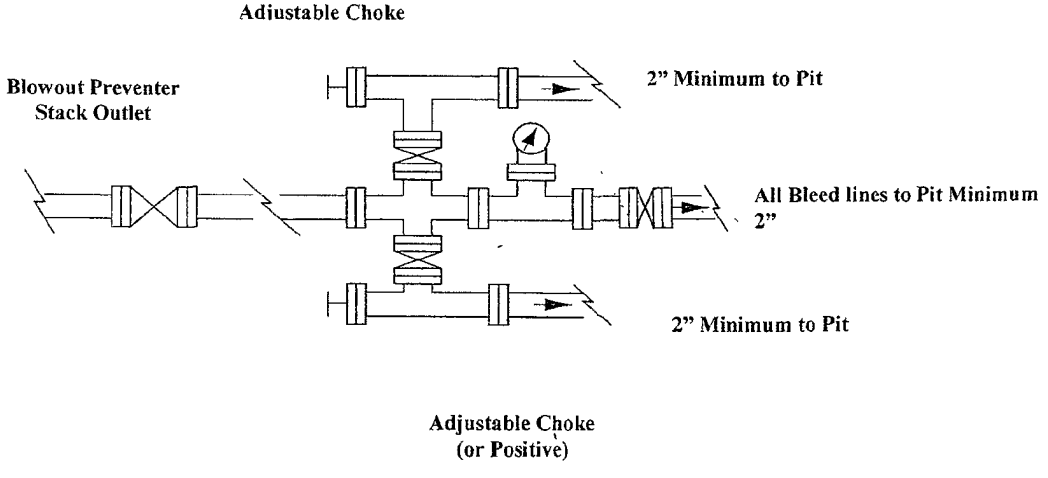
Approved: _____ Date: _____

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



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.