11-1012

OCD-ARTESIA

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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-028784C

6 If Indian, Allotee or Tribe Name
N/A

1a. Type of work ☑ DRILL ✓ ☐ REENTER NOS RCVD 9/8/11

7 If Unit or CA Agreement, Name and No
NMNM-88525X; Burch Keely Unit [38509]

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

8. Lease Name and Well No.
BURCH KEELY UNIT #667

2 Name of Operator
COG Operating LLC [229137]

9 API Well No.
30-015- 39548

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
Grayburg Jackson; SR-Q-Grbg-SA [30806]

4. Location of Well *(Report location clearly and in accordance with any State requirements *)*
At surface **SHL: 2395' FSL & 630' FWL, Unit L**
At proposed prod. zone **BHL: 2310' FSL & 990' FWL, Unit L**

11. Sec., T R M or Blk and Survey or Area
Sec 26 T17S R29E

14 Distance in miles and direction from nearest town or post office*
2 miles from 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 drlg. unit line, if any)	16 No. of acres in lease	17 Spacing Unit dedicated to this well
630'	**1440**	**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
338'	**TVD:4800' MD:4818'**	**NMB000740; NMB000215**
21 Elevations (Show whether DF, KDB, RT, GL, etc.)	22 Approximate date work will start*	23 Estimated duration
3577' GL	**11/30/2011**	**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
	Kelly J. Holly	**09/13/2011**

Title **Permitting Tech**

Approved by *(Signature)* /s/ Don Peterson	Name *(Printed/Typed)* /s/ Don Peterson	Date OCT 24 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)*

WITNESS SURFACE CASING

ROSWELL CONTROLLED WATER BASIN

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

MASTER DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Quaternary	Surface
Rustler	220'
Salt	360'
Base of Salt	780'
Yates	950'
Seven Rivers	1235'
Queen	1845'
Grayburg	2220'
San Andres	2540'
Glorieta	4000'
Paddock	4075'
Blinebry	4620'
Tubb	5520'

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

Water Sand	150'	Fresh Water
Grayburg	2150'	Oil/Gas
San Andres	2450'	Oil/Gas
Glorieta	3900'	Oil/Gas
Paddock	4075'	Oil/Gas
Blinebry	4620'	Oil/Gas
Tubb	5520'	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~~ 400' 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 ~~850~~ 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, (but calculated to surface) 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 COA

See COA

4. Casing Program

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	brst/clps/ten
17 ½"	0-~~300'~~ 345	13 3/8"	48#	H-40orJ-55	ST&C/New	ST&C	9.22/3.943/15.8
11"	0-~~850'~~ 1350	8 5/8"	24or32#	J-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

See COA

5. Cement Program

13 3/8" Surface Casing:

Class C w/ 2% Cacl2 + 0.25 pps CF, 400 sx, yield 1.32, back to surface. 154% excess

8 5/8" Intermediate Casing:

11" Hole:
Single Stage: 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, 300 sx lead, yield-2.45 + Class C w/2% CaCl2, 200 sx tail, yield-1.32, back to surface. 363% excess
Multi-Stage: Stage 1: Class C w/2% CaCl2, 200 sx, yield - 1.32; 108% excess Stage 2: 50:50:10 C:Poz:Gel w/ 5% Salt +0.25% CF, 300 sx, yield - 2.45, back to surface, 726% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 350' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

See COA

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. 106% open hole excess, cement calculated back to surface.
Multi-Stage: Stage 1: (Assumed TD of 4800') 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, 72% excess; Stage 2: LEAD

See COA

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 – 1.02 148% open hole excess, cement calculated back to surface. Multi stage tool to be set at approximately, depending on hole conditions, 2500'. 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
0-300' 345	Fresh Water	8.5	28	N.C.
300-850' 1350	Brine	10	30	N.C.
850'-TD'	Cut Brine	8.7-9.2	30	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 Surface.

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.

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.

CONCHO

COG Operating LLC

Eddy County, NM (NAN27 NME)
Burch Keely Unit #667
Burch Keely Unit #667

OH

Plan: Plan #1 7-7/8" Hole
SHL = 2395' FSL & 630' FWL
BHL = 2300' FSL & 980' FWL
Top of Paddock = 73' South of Surface & 270' East of Surface @ 4000' TVD

Standard Planning Report

12 September, 2011

Scientific Drilling
Directional Drilling Operations

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #667
Company:	COG Operating LLC	**TVD Reference:**	GL Elev. @ 3577 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev. @ 3577 00usft
Site:	Burch Keely Unit #667	**North Reference:**	Grid
Well:	Burch Keely Unit #667	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #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 Burch Keely Unit #667

Site Position:		**Northing:**	656,595 90 usft	**Latitude:**	32° 48' 17 114 N
From:	Map	**Easting:**	586,603.40 usft	**Longitude:**	104° 3' 5 305 W
Position Uncertainty:	0 00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0 15 °

Well Burch Keely Unit #667

Well Position	**+N/-S**	0 00 usft	**Northing:**	656,595 90 usft	**Latitude:**	32° 48' 17 114 N
	+E/-W	0 00 usft	**Easting:**	586,603 40 usft	**Longitude:**	104° 3' 5 305 W
Position Uncertainty		0 00 usft	**Wellhead Elevation:**		**Ground Level:**	3,577 00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/09/12	7 82	60 63	48,887

Design Plan #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	105 16

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	
1,150 00	0 00	0 00	1,150 00	0 00	0 00	0.00	0 00	0 00	0 00	
1,445 84	5 92	105 16	1,445 31	-3 99	14.73	2 00	2 00	35 55	105 16	
4,818 49	5 92	105 16	4,800 00	-94.90	350 30	0 00	0 00	0 00	0 00	PBHL-BK #667

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #667
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3577 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3577 00usft
Site:	Burch Keely Unit #667	**North Reference:**	Grid
Well:	Burch Keely Unit #667	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #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-BK #667 - North HL-BK #667									
1,050 00	0 00	0 00	1,050 00	0 00	0 00	0 00	0 00	0 00	0 00
8-5/8" Casing									
1,150 00	0 00	0 00	1,150.00	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 2.00°/100'									
1,200 00	1 00	105 16	1,200.00	-0 11	0 42	0 44	2 00	2 00	0 00
1,300 00	3 00	105 16	1,299 93	-1 03	3 79	3 93	2 00	2.00	0 00
1,400 00	5 00	105 16	1,399.68	-2 85	10 52	10 90	2 00	2 00	0.00
1,445 84	5 92	105.16	1,445.31	-3 99	14.73	15 26	2 00	2 00	0.00
EOC hold 5.92°									
1,500 00	5 92	105 16	1,499 19	-5 45	20 12	20 84	0 00	0 00	0 00
1,600.00	5 92	105 16	1,598 65	-8.15	30 07	31 15	0 00	0.00	0 00
1,700 00	5 92	105 16	1,698 12	-10 84	40 02	41 46	0 00	0 00	0 00
1,800.00	5 92	105 16	1,797 59	-13 54	49 97	51 77	0 00	0 00	0.00
1,900 00	5 92	105 16	1,897 06	-16 23	59 92	62 08	0 00	0 00	0 00
2,000 00	5 92	105.16	1,996 52	-18 93	69 87	72 39	0 00	0.00	0 00
2,100 00	5 92	105 16	2,095 99	-21 62	79 82	82 69	0 00	0 00	0 00
2,200 00	5 92	105 16	2,195 46	-24 32	89 77	93 00	0 00	0 00	0 00
2,300 00	5 92	105 16	2,294 92	-27 01	99 72	103 31	0 00	0 00	0 00
2,400.00	5 92	105 16	2,394.39	-29 71	109 67	113 62	0.00	0 00	0 00
2,500 00	5 92	105 16	2,493.86	-32 41	119 62	123 93	0 00	0 00	0 00
2,600 00	5 92	105 16	2,593 33	-35 10	129 57	134 24	0 00	0 00	0 00
2,700 00	5 92	105 16	2,692 79	-37 80	139 52	144 55	0 00	0 00	0 00
2,800 00	5 92	105 16	2,792 26	-40 49	149 47	154 85	0 00	0 00	0 00
2,900 00	5 92	105 16	2,891 73	-43.19	159 42	165 16	0 00	0 00	0 00
3,000 00	5 92	105.16	2,991 20	-45 88	169 37	175 47	0 00	0 00	0 00
3,100 00	5 92	105 16	3,090 66	-48 58	179.31	185 78	0 00	0 00	0 00
3,200.00	5 92	105 16	3,190 13	-51 27	189 26	196 09	0 00	0 00	0 00
3,300 00	5 92	105 16	3,289 60	-53 97	199 21	206 40	0 00	0 00	0 00
3,400 00	5 92	105 16	3,389 06	-56 66	209 16	216 70	0 00	0 00	0 00
3,500 00	5 92	105 16	3,488.53	-59 36	219 11	227 01	0.00	0.00	0 00
3,600 00	5 92	105 16	3,588 00	-62 06	229 06	237 32	0 00	0 00	0 00
3,700 00	5 92	105 16	3,687 47	-64 75	239.01	247 63	0.00	0 00	0 00
3,800 00	5 92	105 16	3,786 93	-67 45	248.96	257 94	0 00	0 00	0 00
3,900 00	5.92	105 16	3,886.40	-70 14	258 91	268 25	0 00	0.00	0 00
4,000 00	5 92	105 16	3,985 87	-72 84	268 86	278.55	0 00	0 00	0 00
4,014 21	5 92	105 16	4,000 00	-73 22	270 28	280 02	0 00	0 00	0 00
Top of Paddock									
4,100 00	5 92	105 16	4,085 34	-75 53	278 81	288 86	0 00	0 00	0 00
4,200 00	5 92	105 16	4,184 80	-78 23	288 76	299 17	0 00	0.00	0 00
4,300.00	5 92	105 16	4,284 27	-80 92	298 71	309.48	0 00	0 00	0 00
4,400 00	5 92	105 16	4,383 74	-83.62	308 66	319 79	0 00	0.00	0 00
4,500 00	5 92	105 16	4,483 20	-86 32	318 61	330 10	0 00	0 00	0 00
4,600 00	5 92	105 16	4,582 67	-89 01	328 56	340 40	0.00	0 00	0 00
4,700 00	5 92	105 16	4,682 14	-91 71	338 51	350 71	0 00	0 00	0 00
4,800 00	5 92	105 16	4,781.61	-94 40	348 46	361 02	0 00	0 00	0 00
4,818 49	5 92	105 16	4,800 00	-94 90	350 30	362 93	0 00	0 00	0 00
PBHL-BK #667									

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #667
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3577 00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev @ 3577 00usft
Site:	Burch Keely Unit #667	**North Reference:**	Grid
Well:	Burch Keely Unit #667	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #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-BK #667	0 00	0.00	0 00	-84 90	360 30	656,511 00	586,963 70	32° 48' 16 264 N	104° 3' 1 087 W
- plan misses target center by 370 17usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W0 00 H100 00 D0.00)									
North HL-BK #667	0.00	0.00	0 00	-84 90	360 30	656,511 00	586,963 70	32° 48' 16 264 N	104° 3' 1 087 W
- plan misses target center by 370 17usft at 0.00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W200 00 H0 00 D0.00)									
PBHL-BK #667	0 00	0 01	4,800 00	-94 90	350 30	656,501.00	586,953 70	32° 48' 16 166 N	104° 3' 1 204 W
- plan hits target center - Circle (radius 10 00)									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,050 00	1,050 00	8-5/8" Casing	8-5/8	12-1/4

Formations

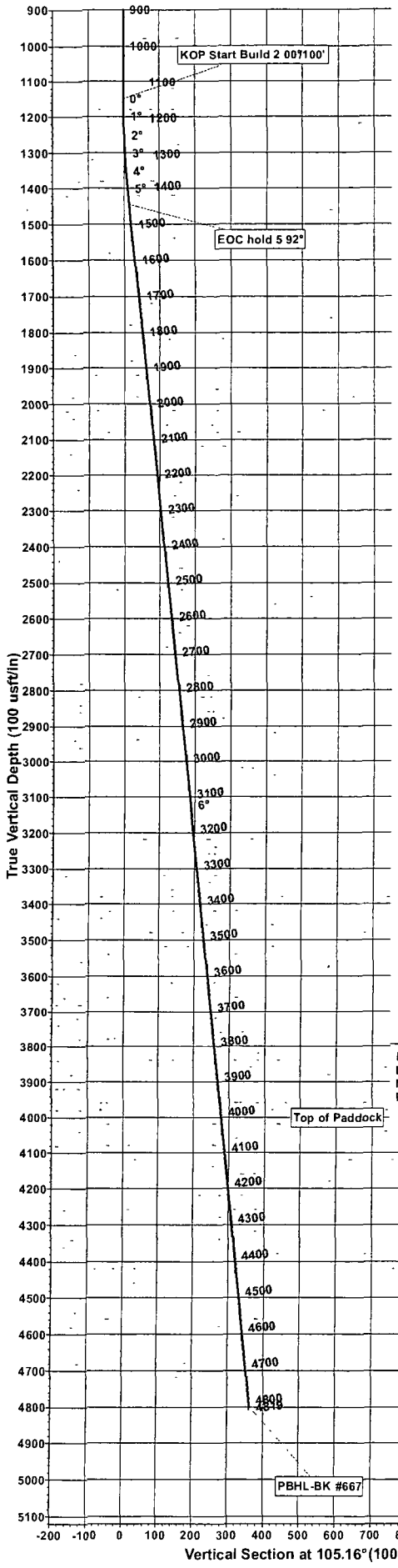
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,014 21	4,000 00	Top of Paddock		0 00	

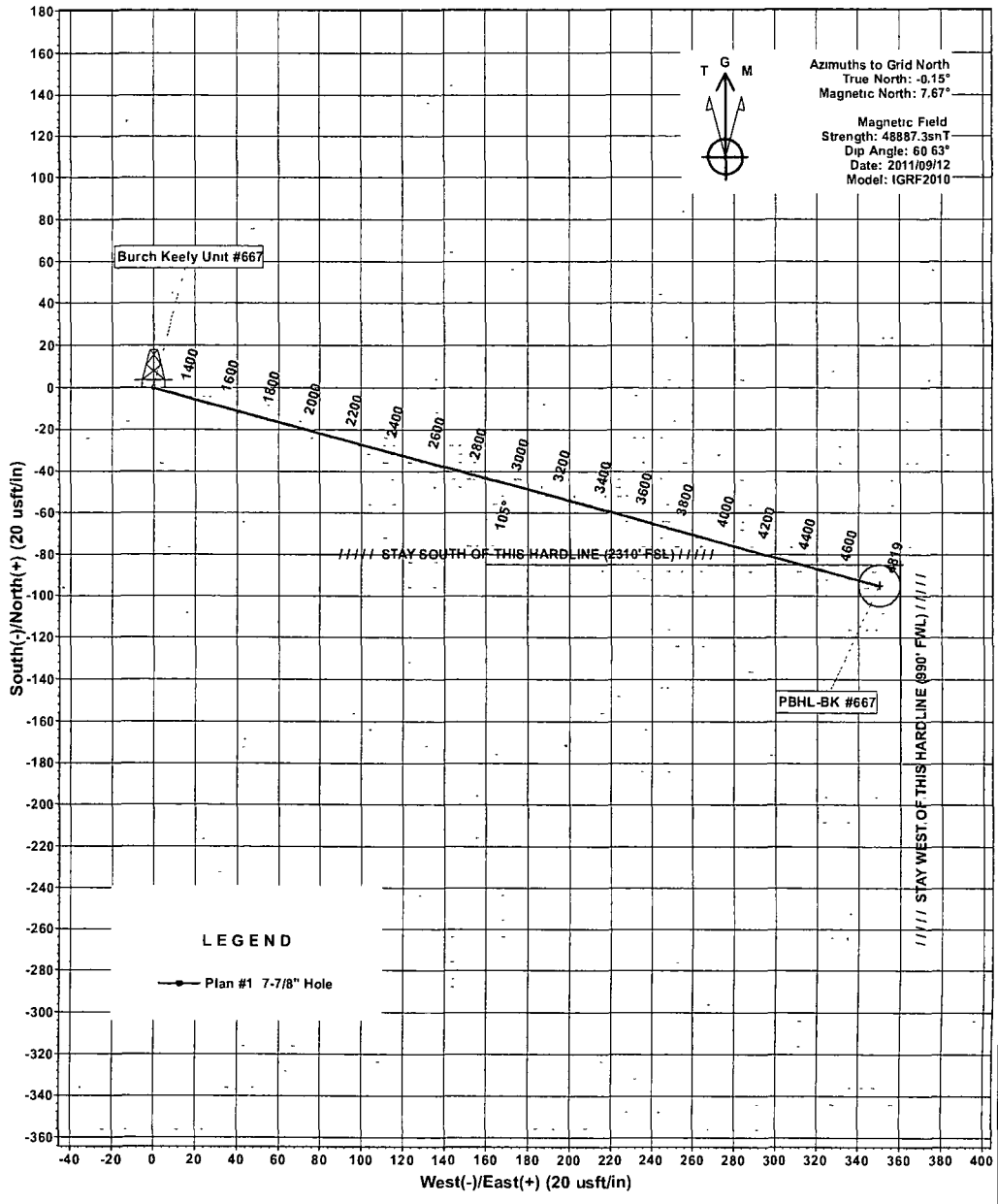
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,150.00	1,150 00	0 00	0 00	KOP Start Build 2.00°/100'
1,445 84	1,445 31	-3 99	14.73	EOC hold 5 92°

Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Burch Keely Unit #667
Wellbore: OH
Design: Plan #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-BK #667	0.00	-84.90	360 30	656511 00	586963.70	32°48' 16 264 N	104°3' 1 087 W	Rectangle (Sides· L100 .00 W0 00)
North HL-BK #667	0 00	-84 90	360.30	656511 00	586963.70	32°48' 16 264 N	104°3' 1.087 W	Rectangle (Sides· L0 00 W200 00)
PBHL-BK #667	4800 00	-94 90	350.30	656501 00	586953.70	32°48' 16.166 N	104°3' 1.204 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	1150 00	0 00	0.00	1150 00	0.00	0 00	0.00	0.00	0 00	
3	1445 84	5.92	105 16	1445.31	-3.99	14 73	2.00	105 16	15.26	
4	4818 49	5.92	105.16	4800.00	-94.90	350.30	0 00	0.00	362.93	PBHL-BK #667

WELL DETAILS: Burch Keely Unit #667

Ground Level. 3577 00

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.00	0.00	656595.90	586603.40	32°48' 17.114 N	104°3' 5 .305 W	

PROJECT DETAILS Eddy County, NM (NAN27 NME)

Plan· Plan #1 7-7/8" Hole (Burch Keely Unit #667/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: 12-Sep-11
Checked. _____ Date _____
Reviewed· _____ Date: _____
Approved· _____ Date: _____

COG OPERATING LLC
550 West Texas, Suite 1300
Midland, TX 79701

DIRECTIONAL PLAN VARIANCE REQUEST

Burch Keely Unit #667
EDDY, NM

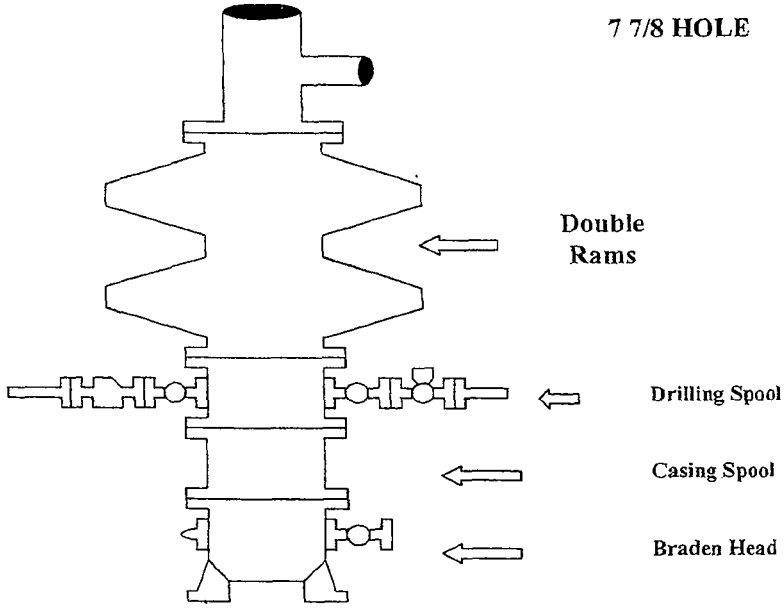
SHL	2395 FSL, 630 FWL	Sec 26, T17S, R29E, Unit L
BHL	2310 FSL, 990 FWL	Sec 26, T17S, R29E, Unit L

COG Operating LLC, as Operator, desires that the APD reflect the footages as stated on the surveyor's plat. However, Operator also desires to avoid inadvertently drilling the well to a non-standard location. Therefore, due to the proximity of the plat bottom hole location to the pro-ration unit hard line(s), the attached directional plan is designed to avoid the hard lines by as much as fifty feet; said fifty feet being in either (or both) the north-south and/or east-west directions as applicable.

COG Operating LLC

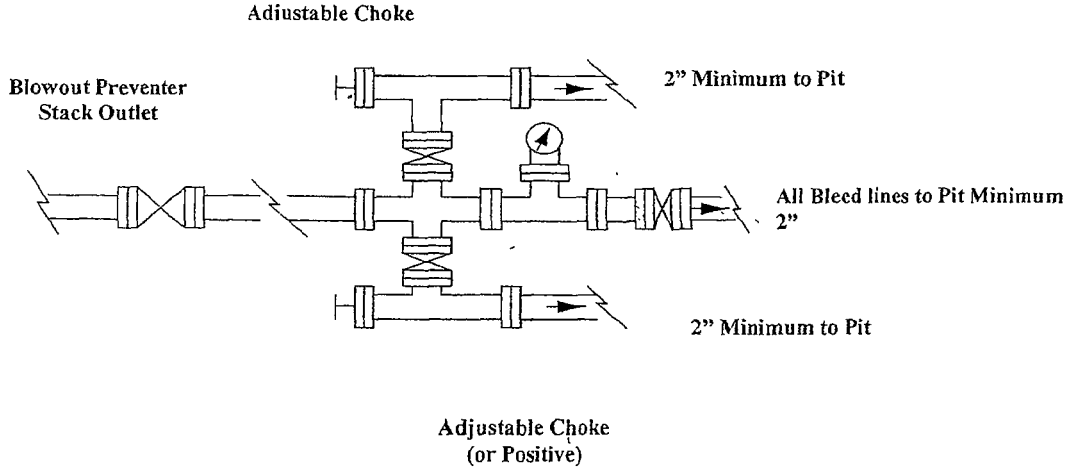
Exhibit #9

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.

DISTRICT 2 -- CHECKLIST FOR INTENTS TO DRILL

30-015-39548

Operator COG OPR OGRID # 229137
Well Name & # BURCH KOBLY UNIT #607 Surface Type (F) (S) (P)
Location: UL___, Sect ___, Twnship ___ s, RNG ___e, Sub-surface Type (F) (S) (P)

A. Date C101 rec'd 10/25/2011 C101 reviewed 10/27/2011
B. 1. Check mark, Information is OK on Forms:
OGRID___, BONDING ___, PROP CODE ___, WELL #___, SIGNATURE ___
2. Inactive Well list as of : 10/27/2011 # wells 3634, # Inactive wells 8
a. District Grant APD but see number of inactive wells:
No letter required ✓; Sent Letter to Operator ___, to Santa Fe ___
3. Additional Bonding as of: 10/27/2011
a. District Denial because operator needs addition bonding:
No Letter required ✓; Sent Letter to Operator ___, To Santa Fe___
b. District Denial because of Inactive well list and Financial Assurance:
No Letter required ✓; Sent Letter to Operator ___, To Santa Fe ___

C. C102 YES ✓, NO ___, Signature ✓
1. Pool GRAYBURG, Code 28509
a. Dedicated acreage 40, What Units L
b. SUR. Location Standard ✓: Non-Standard Location___
c. Well shares acres: Yes ___, No ___, # of wells ___ plus this well #___
2. 2nd. Operator in same acreage, Yes___, No ___
Agreement Letter ___, Disagreement letter___
3. Intent to Directional Drill Yes ✓, No ___
a. Dedicated acreage 40/40, What Units L
b. Bottomhole Location Standard ___, Non-Standard Bottomhole ___
4. Downhole Commingle: Yes___, No___
a. Pool #2___,Code___, Acres___
Pool #3___, Code ___, Acres ___
Pool #4___, Code___, Acres___
5. POTASH Area Yes ___, No ✓,
D. Blowout Preventer Yes ✓, No ___,
E. H2S Yes ✓, No ___,
F. C144 Pit Registration Yes ___, No ___,
G. Does APD require Santa Fe Approval:
1. Non-Standard Location: Yes ___, No ✓, NSL #___
2. Non-Standard Proration: Yes___, No ✓, NSP #___
3. Simultaneous Dedication: Yes ___, No ✓, SD #___
Number of wells ___ Plus #___
4. Injection order Yes ___, No ✓; PMX #___ or WFX #___
5. SWD order Yes ___, NO ✓; SWD # ___
6. DHC from SF___; DHC-HOB___; Holding___

7. OCD Approval Date 10/27/2011 API #30-015-39548
8. Reviewers TES