ATS-11-268

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

1a Type of work: ☑ DRILL ✓ ☐ REENTER	5 Lease Serial No. **NMLC-028784C**
	6 If Indian, Allotee or Tribe Name **N/A**
	7 If Unit or CA Agreement, Name and No **NMNM - 88525X, Burch Keely Unit**
1b Type of Well: ☑ Oil Well ✓ ☐ Gas Well ☐ Other ☐ Single Zone ✓ ☐ Multiple Zone	8 Lease Name and Well No. **BURCH KEELY UNIT #513** ✓
2 Name of Operator **COG Operating LLC** ✓	9 API Well No **30-015-** 39440 ✓
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**
4. Location of Well *(Report location clearly and in accordance with any State requirements *)* At surface **SHL: 710' FNL & 2310' FEL, Unit B** At proposed prod. zone **BHL: 330' FNL & 2310' FEL, Unit B**	11 Sec., T. R. M. or Blk. and Survey or Area **Sec 13 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 drig unit line, if any)	**710'**	16 No. of acres in lease **1440**	17 Spacing Unit dedicated to this well **40**
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	**500'**	19 Proposed Depth ✓ **4800' TVD; 4820' MD**	20 BLM/BIA Bond No on file **NMB000740**
21 Elevations (Show whether DF, KDB, RT, GL, etc.) **3638' GL** ✓		22 Approximate date work will start* **09/30/2011**	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)* **Kelly J. Holly**	Date **07/05/2011**
Title **Permitting Tech**		

Approved by *(Signature)* /s/ Don Peterson	Name *(Printed/Typed)*	Date SEP 20 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)

RECEIVED
SEP 22 2011
NMOCD ARTESIA

Roswell Controlled Water Basin

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	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' 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~~' 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 COA

See COA

4. Casing Program

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

310
1010
4820

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 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. 75% excess back to surface.

Multi-Stage: Stage 1: (Assumed TD of 5450') 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, 500 sx, yield - 1.37, 35% excess; Stage 2:

See COA

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, 250sx, yield – 1.02 100% excess 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'~~ 310	Fresh Water	8.5	28	N.C.
~~300-850'~~ 1010	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 #513
Burch Keely Unit #513

OH

Plan: Plan #3 7-7/8" Hole
SHL = 710' FNL & 2310' FEL
BHL = 380' FNL & 2260' FEL
Top of Paddock = 380' FNL & 2260' FEL @ 4200' TVD

Standard Planning Report

05 July, 2011

Scientific Drilling
Directional Drilling Operations

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #513
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3638.00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev. @ 3638 00usft
Site:	Burch Keely Unit #513	**North Reference:**	Grid
Well:	Burch Keely Unit #513	**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 Burch Keely Unit #513

Site Position:		**Northing:**	669,339 30 usft	**Latitude:**	32° 50' 23 005 N
From:	Map	**Easting:**	594,187 20 usft	**Longitude:**	104° 1' 36 017 W
Position Uncertainty:	0 00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0 17 °

Well Burch Keely Unit #513

Well Position	**+N/-S**	0 00 usft	**Northing:**	669,339 30 usft	**Latitude:**	32° 50' 23 005 N
	+E/-W	0 00 usft	**Easting:**	594,187 20 usft	**Longitude:**	104° 1' 36 017 W
Position Uncertainty		0 00 usft	**Wellhead Elevation:**		**Ground Level:**	3,638 00 usft

Wellbore -OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/06/14	7 84	60 68	48,935

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)	Direction (°)
	0 00	0 00	0.00	8 40

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	
1,502 41	7.05	8 40	1,501 52	21 42	3 16	2 00	2 00	0 00	8 40	
3,867.25	7 05	8 40	3,848 49	308 48	45 54	0 00	0 00	0 00	0 00	
4,219.65	0 00	351 16	4,200 00	329 90	48.70	2.00	-2 00	-4 89	-180 00	TG1-BK #513
4,819 65	0 00	351 16	4,800 00	329 90	48 70	0 00	0 00	0 00	0.00	PBHL-BK #513

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #513
Company:	COG Operating LLC	**TVD Reference:**	GL Elev @ 3638.00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev. @ 3638 00usft
Site:	Burch Keely Unit #513	**North Reference:**	Grid
Well:	Burch Keely Unit #513	**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
East HL-BK #513 - South HL-BK #513									
1,036 00	0 00	0 00	1,036.00	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	8 40	1,200.00	0 43	0.06	0 44	2 00	2.00	0.00
1,300 00	3 00	8 40	1,299 93	3 88	0 57	3 93	2 00	2 00	0 00
1,400 00	5 00	8 40	1,399.68	10 78	1 59	10 90	2 00	2.00	0.00
1,500 00	7 00	8 40	1,499 13	21 12	3.12	21 35	2.00	2 00	0 00
1,502.41	7 05	8 40	1,501 52	21 42	3 16	21 65	2 00	2.00	0.00
EOC hold 7.05°									
1,600 00	7 05	8 40	1,598 37	33 26	4.91	33 62	0 00	0.00	0 00
1,700 00	7 05	8 40	1,697 62	45.40	6 70	45.89	0 00	0 00	0 00
1,800 00	7 05	8 40	1,796 86	57 54	8 49	58 16	0 00	0 00	0 00
1,900 00	7 05	8.40	1,896 11	69.68	10 29	70 43	0 00	0 00	0 00
2,000.00	7 05	8 40	1,995 35	81 82	12 08	82 70	0 00	0.00	0 00
2,100.00	7 05	8 40	2,094 60	93 96	13.87	94.97	0 00	0 00	0 00
2,200.00	7 05	8.40	2,193 84	106 10	15 66	107 25	0 00	0.00	0 00
2,300.00	7 05	8 40	2,293 08	118 23	17 45	119 52	0 00	0.00	0.00
2,400 00	7 05	8 40	2,392.33	130 37	19 25	131 79	0 00	0 00	0 00
2,500 00	7 05	8 40	2,491 57	142 51	21.04	144 06	0 00	0 00	0 00
2,600.00	7.05	8 40	2,590 82	154.65	22 83	156 33	0 00	0 00	0 00
2,700 00	7.05	8 40	2,690 06	166 79	24.62	168 60	0 00	0 00	0.00
2,800 00	7 05	8 40	2,789 31	178 93	26 41	180.87	0 00	0 00	0 00
2,900 00	7 05	8 40	2,888 55	191 07	28 21	193 14	0 00	0 00	0 00
3,000 00	7.05	8 40	2,987 80	203 21	30 00	205 41	0 00	0 00	0 00
3,100 00	7 05	8.40	3,087 04	215 34	31 79	217 68	0 00	0 00	0 00
3,200 00	7 05	8 40	3,186 28	227 48	33.58	229 95	0.00	0.00	0 00
3,300.00	7 05	8 40	3,285.53	239.62	35 37	242 22	0 00	0 00	0.00
3,400 00	7 05	8 40	3,384 77	251.76	37 17	254 49	0 00	0 00	0 00
3,500 00	7 05	8 40	3,484 02	263 90	38 96	266 76	0 00	0.00	0 00
3,600 00	7 05	8 40	3,583 26	276 04	40 75	279 03	0 00	0 00	0 00
3,700 00	7 05	8 40	3,682 51	288 18	42 54	291 30	0 00	0 00	0 00
3,800 00	7 05	8 40	3,781 75	300 32	44 33	303 57	0 00	0 00	0 00
3,867 25	7 05	8 40	3,848 49	308 48	45 54	311 82	0 00	0 00	0 00
Start Drop 2.00°/100'									
3,900.00	6 39	8 40	3,881 02	312.27	46 10	315 66	2 00	-2 00	0.00
4,000.00	4 39	8 40	3,980 57	321 57	47 47	325 05	2 00	-2 00	0.00
4,100 00	2 39	8 40	4,080 39	327 42	48.34	330 97	2 00	-2 00	0 00
4,200.00	0.39	8 39	4,180 35	329.83	48 69	333 40	2 00	-2.00	-0 01
4,219 65	0 00	356 36	4,200 00	329 90	48.70	333 47	2.00	-2 00	-61 24
EOC hold 0.00° - TG1-BK #513									
4,819 65	0 00	351 16	4,800 00	329 90	48 70	333 47	0 00	0 00	-0 87
PBHL-BK #513									

Database:	EDM-Julio	**Local Co-ordinate Reference:**	Site Burch Keely Unit #513
Company:	COG Operating LLC	**TVD Reference:**	GL Elev. @ 3638.00usft
Project:	Eddy County, NM (NAN27 NME)	**MD Reference:**	GL Elev. @ 3638 00usft
Site:	Burch Keely Unit #513	**North Reference:**	Grid
Well:	Burch Keely Unit #513	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 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 #513 - plan misses target center by 379 90usft at 0 00usft MD (0.00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W0 00 H200 00 D0 00)	0 00	0 00	0 00	379 90	-1 30	669,719 20	594,185 90	32° 50' 26 764 N	104° 1' 36.020 W
South HL-BK #513 - plan misses target center by 379 90usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E) - Rectangle (sides W150.00 H0 00 D0 00)	0 00	0 00	0.00	379 90	-1 30	669,719 20	594,185 90	32° 50' 26.764 N	104° 1' 36 020 W
TG1-BK #513 - plan hits target center - Point	0 00	0.00	4,200 00	329 90	48 70	669,669 20	594,235 90	32° 50' 26 268 N	104° 1' 35 435 W
PBHL-BK #513 - plan hits target center - Circle (radius 50 00)	0.00	0 01	4,800.00	329 90	48 70	669,669 20	594,235 90	32° 50' 26 268 N	104° 1' 35 435 W

Casing Points

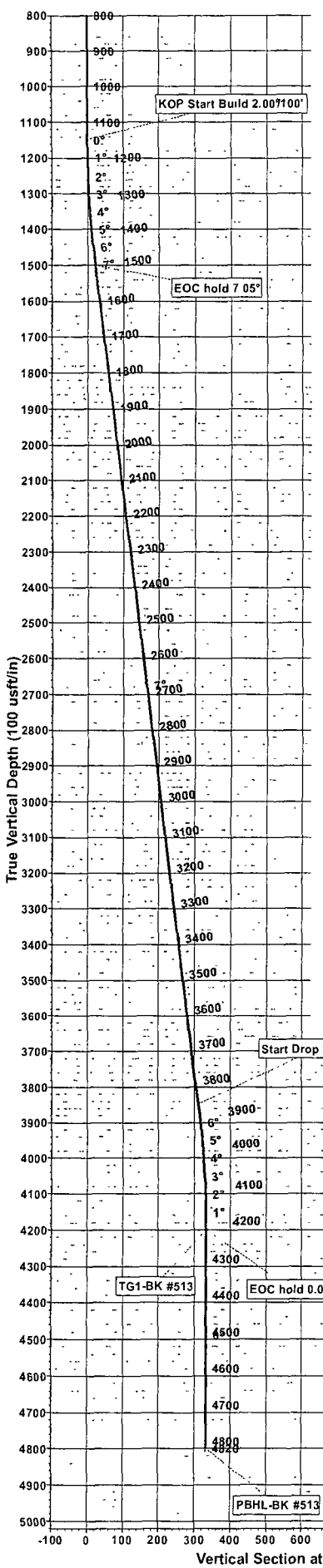
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,036 00	1,036 00	8-5/8" Casing	8-5/8	12-1/4

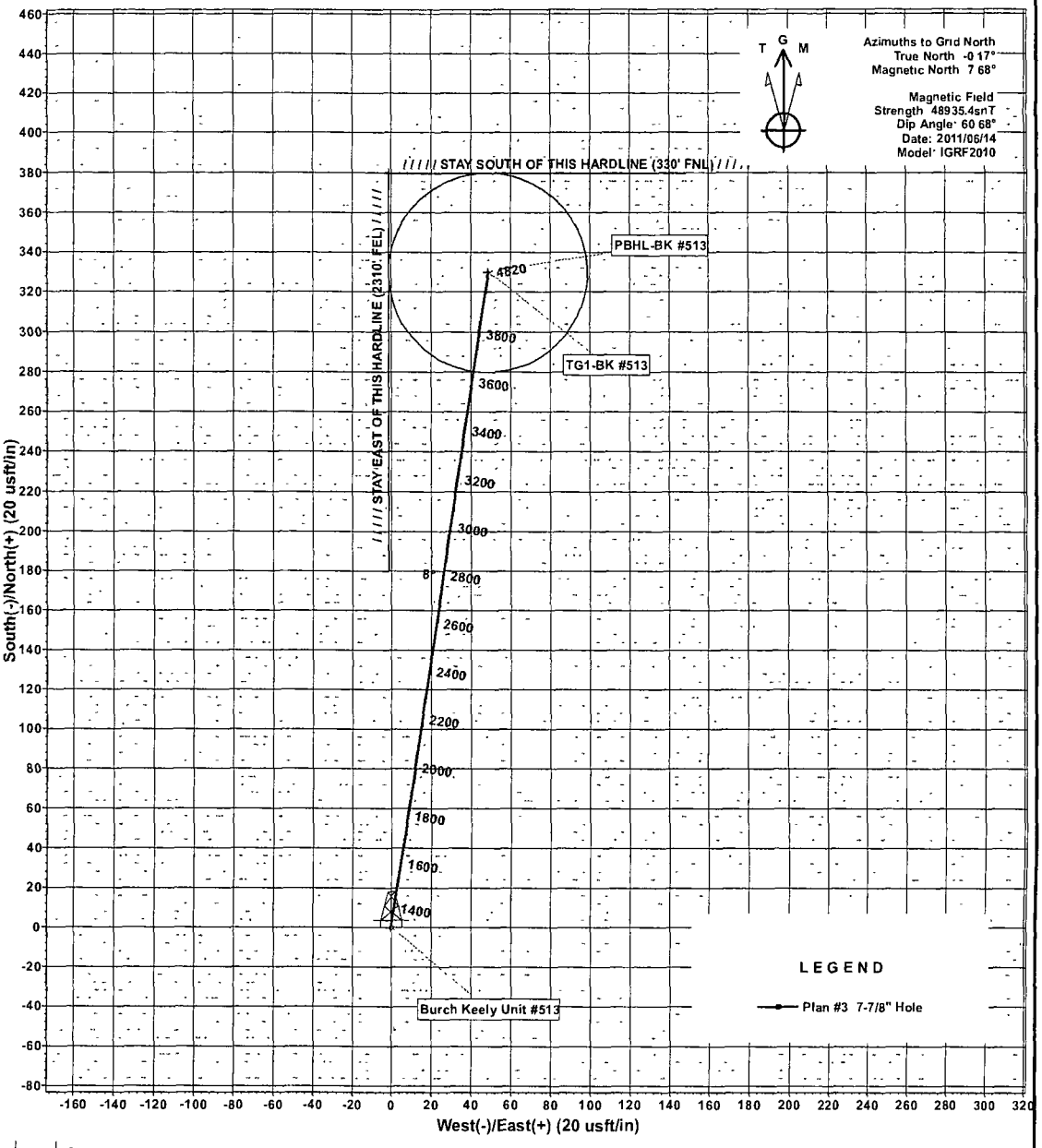
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
1,150 00	1,150 00	0 00	0.00	KOP Start Build 2 00°/100'
1,502 41	1,501 52	21 42	3 16	EOC hold 7 05°
3,867 25	3,848 49	308 48	45 54	Start Drop 2 00°/100'
4,219 65	4,200 00	329 90	48 70	EOC hold 0.00°

Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Burch Keely Unit #513
Wellbore: OH
Design: Plan #3 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 #513	0.00	379.90	-1.30	669719.20	594185.90	32° 50' 26.764 N	104°1' 36.020 W	Rectangle (Sides: L200.00 W0.00)
South HL-BK #513	0.00	379.90	-1.30	669719.20	594185.90	32° 50' 26.764 N	104°1' 36.020 W	Rectangle (Sides: L0.00 W150.00)
TG1-BK #513	4200.00	329.90	48.70	669669.20	594235.90	32° 50' 26.268 N	104°1' 35.435 W	Point
PBHL-BK #513	4800.00	329.90	48.70	669669.20	594235.90	32° 50' 26.268 N	104°1' 35.435 W	Circle (Radius 50.00)

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	1502.41	7.05	8.40	1501.52	21.42	3.16	2.00	8.40	21.65	
4	3867.25	7.05	8.40	3848.49	308.48	45.54	0.00	0.00	311.82	
5	4219.65	0.00	351.16	4200.00	329.90	48.70	2.00	-180.00	333.47	TG1-BK #513
6	4819.65	0.00	351.16	4800.00	329.90	48.70	0.00	0.00	333.47	PBHL-BK #513

WELL DETAILS: Burch Keely Unit #513

Ground Level 3638.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	669339.30	594187.20	32° 50' 23.005 N	104°1' 3.6017 W	

PROJECT DETAILS: Eddy County, NM (NAN27 NME)

Plan: Plan #3 7-7/8" Hole (Burch Keely Unit #513/OH)

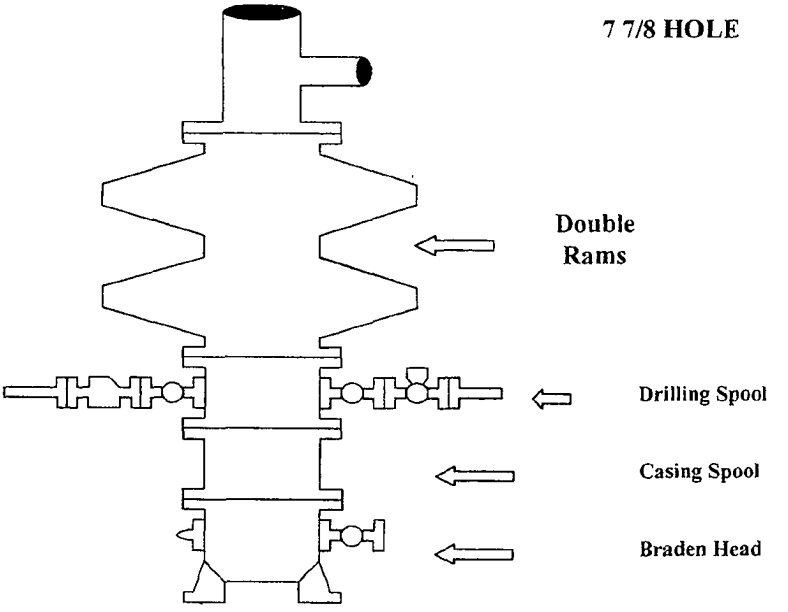
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

Created By: Julio Pina Date: 14-Jun-11
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____

COG Operating LLC

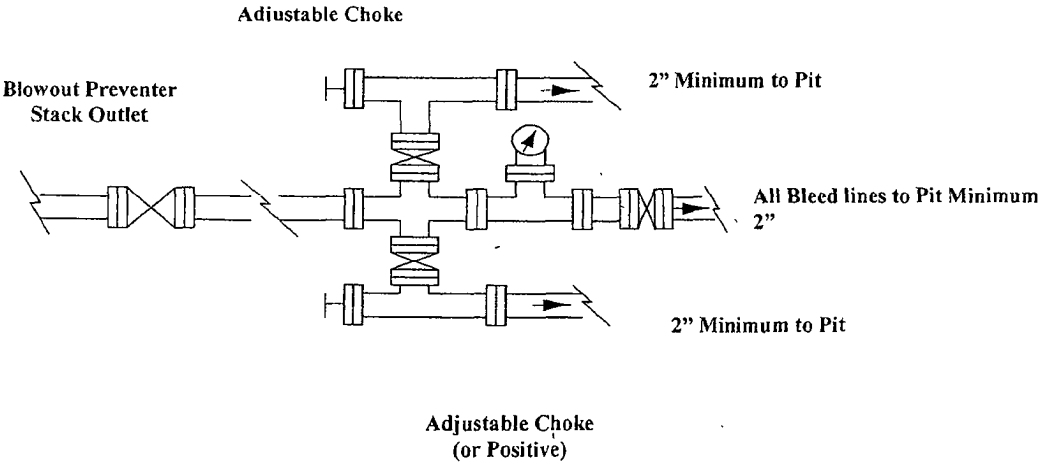
Exhibit #9

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.