

ATS-11-167

OCD-ARTESIA

Form 3160-3  
(April 2004)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

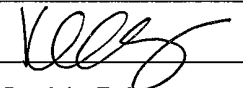
FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

1a Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No. NMLC-029418A
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 COG Operating LLC		7 If Unit or CA Agreement, Name and No. NMNM-71030C; Skelly Unit
3a Address 550 W. Texas Ave., Suite 1300 Midland, TX 79701		8 Lease Name and Well No. SKELLY UNIT #794
3b Phone No. (include area code) 432-685-4384		9 API Well No. 30-015- 39700
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface 1650 FNL & 590 FEL, Unit H At proposed prod. zone 1650 FNL & 330 FEL, Unit H		10 Field and Pool, or Exploratory Field: Glorieta-Yeso 26770 92866
14 Distance in miles and direction from nearest town or post office* 6 miles East of Loco Hills, NM		11 Sec., T. R. M. or Blk. and Survey or Area Sec 23 T17S R31E
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 590'	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. 500'	19 Proposed Depth TVD: 6700' MD: 6708'	20 BLM/BIA Bond No on file NMB000740 +25
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 3888' GL	22 Approximate date work will start* 08/31/2011	23 Estimated duration 15 days JL 8/5

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) Kelly J. Holly	Date 06/13/2011
Title Permitting Tech		

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date AUG - 5 2011
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

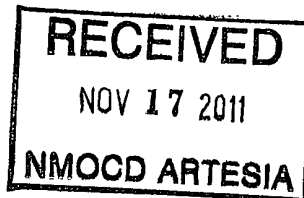
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

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



Witness Surface Casing

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	628'
Top of Salt	801'
Base of Salt	1771'
Yates	1958'
Seven Rivers	2293'
Queen	2915'
Grayburg	3345'
San Andres	3697'
Glorietta	5240'
Paddock	5299'
Blinbry	5736'
Tubb	6700'

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

Water Sand	150'	Fresh Water
Grayburg	3345'	Oil/Gas
San Andres	3697'	Oil/Gas
Glorieta	5240'	Oil/Gas
Paddock	5299'	Oil/Gas
Blinebry	5736'	Oil/Gas
Tubb	6700'	Oil/Gas

See  
COA

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 650' 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, (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 the environment.

See  
COA

#### 4. Casing Program

see  
COA  
600  
1875  
6708

Hole Size	Interval	OD Casing	Weight	Grade	Jt., Condition	Jt.	burst/collapse/tension
17 1/2"	0-650'	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 or 17#	J-55orL80	New	LT&C	1.71/1.574/2.20

#### 5. Cement Program

13 3/8" Surface Casing:

Class C, 475 sx w/ 2% CaCl<sub>2</sub>, 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% CaCl<sub>2</sub>, yield-1.32, back to surface. 145% excess

**Multi-Stage:** Stage 1: 350 sx Class C, w/2% CaCl<sub>2</sub>, yield - 1.32. 40% excess  
Stage 2: 200 sx Class C w/2% CaCl<sub>2</sub>, yield - 1.32, back to surface, 108% excess  
Multi stage tool to be set at approximately, depending on hole conditions, 700' (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

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 nipped 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 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.

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- <del>650'</del> 1600'	Fresh Water	8.5	28	N.C.
<del>650-1800'</del> 1875'	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 1/2" 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.



## COG Operating LLC

Eddy County, NM (NAN27 NME)

Skelly Unit #794

Skelly Unit #794

OH

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

SHL = 1650' FNL & 590' FEL

BHL = 1660' FNL & 380' FEL

Top of Paddock = 1660' FNL & 380' FEL @ 4900' TVD

## Standard Planning Report

11 April, 2011





# Scientific Drilling

## Planning Report



Database: EDM-Julio  
Company: COG Operating LLC  
Project: Eddy County, NM (NAN27 NME)  
Site: Skelly Unit #794  
Well: Skelly Unit #794  
Wellbore: OH  
Design: Plan #1 7-7/8" Hole

Local Co-ordinate Reference: Site Skelly Unit #794  
TVD Reference: GL Elev @ 3888 00usft  
MD Reference: GL Elev @ 3888 00usft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

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	Skelly Unit #794		
Site Position:		Northing:	663,389 70 usft
From:	Map	Easting:	653,668 80 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 49' 21 886 N
		Longitude:	103° 49' 59 173 W
		Grid Convergence:	0 27 °

Well	Skelly Unit #794		
Well Position	+N/-S	0 00 usft	Northing:
	+E/-W	0 00 usft	Easting:
Position Uncertainty	0 00 usft	Wellhead Elevation:	
		Latitude:	32° 49' 21 886 N
		Longitude:	103° 49' 59 173 W
		Ground Level:	3,888 00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	2011/04/11	(°)
			7 77
			Dip Angle
			(°)
			60 70
			Field Strength
			(nT)
			48,963

Design	Plan #1 7-7/8" Hole		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0 00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0 00	0 00	0 00
			Direction
			(°)
			92 26

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	
1,950 00	0 00	0 00	1,950 00	0 00	0 00	0 00	0 00	0 00	0 00	
2,170 13	4 40	92 26	2,169 91	-0 33	8 45	2 00	2 00	0 00	92 26	
4,687 74	4 40	92 26	4,680 09	-7 97	201 55	0 00	0 00	0 00	0 00	
4,907 86	0 00	0 00	4,900 00	-8 30	210 00	2 00	-2 00	0 00	180 00	TG1-Skelly #794
6,707 86	0 00	0 00	6,700 00	-8 30	210 00	0 00	0 00	0 00	0 00	PBHL-Skelly #794





# Scientific Drilling

## Planning Report



Database: EDM-Julio  
Company: COG Operating LLC  
Project: Eddy County, NM (NAN27 NME)  
Site: Skelly Unit #794  
Well: Skelly Unit #794  
Wellbore: OH  
Design: Plan #1 7-7/8" Hole

Local Co-ordinate Reference: Site Skelly Unit #794  
TVD Reference: GL Elev @ 3888 00usft  
MD Reference: GL Elev @ 3888 00usft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

### 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
<b>North HL-Skelly #794 - East HL-Skelly #794</b>									
1,850 00	0 00	0 00	1,850 00	0 00	0 00	0 00	0 00	0 00	0 00
<b>8-5/8" Casing</b>									
1,950 00	0 00	0 00	1,950 00	0 00	0 00	0 00	0 00	0 00	0 00
<b>KOP Start Build 2.00°/100'</b>									
2,000 00	1 00	92 26	2,000 00	-0 02	0 44	0 44	2 00	2 00	0 00
2,100 00	3 00	92 26	2,099 93	-0 16	3 92	3 93	2 00	2 00	0 00
2,170 13	4 40	92 26	2,169 91	-0 33	8 45	8 45	2 00	2 00	0 00
<b>EOC hold 4.40°</b>									
2,200 00	4 40	92 26	2,199 70	-0 42	10 74	10 75	0 00	0 00	0 00
2,300 00	4 40	92 26	2,299 40	-0 73	18 41	18 42	0 00	0 00	0 00
2,400 00	4 40	92 26	2,399 11	-1 03	26 08	26 10	0 00	0 00	0 00
2,500 00	4 40	92 26	2,498 81	-1 33	33 75	33 77	0 00	0 00	0 00
2,600 00	4 40	92 26	2,598 52	-1 64	41 42	41 45	0 00	0 00	0 00
2,700 00	4 40	92 26	2,698 22	-1 94	49 09	49 13	0 00	0 00	0 00
2,800 00	4 40	92 26	2,797 93	-2 24	56 76	56 80	0 00	0 00	0 00
2,900 00	4 40	92 26	2,897 63	-2 55	64 43	64 48	0 00	0 00	0 00
3,000 00	4 40	92 26	2,997 33	-2 85	72 10	72 16	0 00	0 00	0 00
3,100 00	4 40	92 26	3,097 04	-3 15	79 77	79 83	0 00	0 00	0 00
3,200 00	4 40	92 26	3,196 74	-3 46	87 44	87 51	0 00	0 00	0 00
3,300 00	4 40	92 26	3,296 45	-3 76	95 11	95 18	0 00	0 00	0 00
3,400 00	4 40	92 26	3,396 15	-4 06	102 78	102 86	0 00	0 00	0 00
3,500 00	4 40	92 26	3,495 86	-4 37	110 45	110 54	0 00	0 00	0 00
3,600 00	4 40	92 26	3,595 56	-4 67	118 12	118 21	0 00	0 00	0 00
3,700 00	4 40	92 26	3,695 27	-4 97	125 79	125 89	0 00	0 00	0 00
3,800 00	4 40	92 26	3,794 97	-5 27	133 46	133 57	0 00	0 00	0 00
3,900 00	4 40	92 26	3,894 68	-5 58	141 13	141 24	0 00	0 00	0 00
4,000 00	4 40	92 26	3,994 38	-5 88	148 80	148 92	0 00	0 00	0 00
4,100 00	4 40	92 26	4,094 09	-6 18	156 47	156 59	0 00	0 00	0 00
4,200 00	4 40	92 26	4,193 79	-6 49	164 14	164 27	0 00	0 00	0 00
4,300 00	4 40	92 26	4,293 50	-6 79	171 81	171 95	0 00	0 00	0 00
4,400 00	4 40	92 26	4,393 20	-7 09	179 48	179 62	0 00	0 00	0 00
4,500 00	4 40	92 26	4,492 91	-7 40	187 15	187 30	0 00	0 00	0 00
4,600 00	4 40	92 26	4,592 61	-7 70	194 82	194 98	0 00	0 00	0 00
4,687 74	4 40	92 26	4,680 10	-7 97	201 55	201 71	0 00	0 00	0 00
<b>Start Drop 2.00°/100'</b>									
4,700 00	4 16	92 26	4,692 32	-8 00	202 47	202 63	2 00	-2 00	0 00
4,800 00	2 16	92 26	4,792 16	-8 22	207 97	208 13	2 00	-2 00	0 00
4,900 00	0 16	92 26	4,892 14	-8 30	209 99	210 15	2 00	-2 00	0 00
4,907 86	0 00	0 00	4,900 00	-8 30	210 00	210 16	2 00	-2 00	-1,173 83
<b>EOC hold 0.00° - TG1-Skelly #794</b>									
6,707 86	0 00	0 00	6,700 00	-8 30	210 00	210 16	0 00	0 00	0 00
<b>PBHL-Skelly #794</b>									



Scientific Drilling  
Planning Report



Database: EDM-Julio  
Company: COG Operating LLC  
Project: Eddy County, NM (NAN27 NME)  
Site: Skelly Unit #794  
Well: Skelly Unit #794  
Wellbore: OH  
Design: Plan #1 7-7/8" Hole

Local Co-ordinate Reference: Site Skelly Unit #794  
TVD Reference: GL Elev @ 3888 00usft  
MD Reference: GL Elev @ 3888 00usft  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature

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-Skelly #794 - plan misses target center by 260 01usft 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	1 70	260 00	663,391 40	653,928 80	32° 49' 21 890 N	103° 49' 56 126 W
East HL-Skelly #794 - plan misses target center by 260 01usft 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	1 70	260 00	663,391 40	653,928 80	32° 49' 21 890 N	103° 49' 56 126 W
TG1-Skelly #794 - plan hits target center - Point	0 00	0 00	4,900 00	-8 30	210 00	663,381 40	653,878 80	32° 49' 21 794 N	103° 49' 56 712 W
PBHL-Skelly #794 - plan hits target center - Circle (radius 50 00)	0 00	0 01	6,700 00	-8 30	210 00	663,381 40	653,878 80	32° 49' 21 794 N	103° 49' 56 712 W

Casing Points

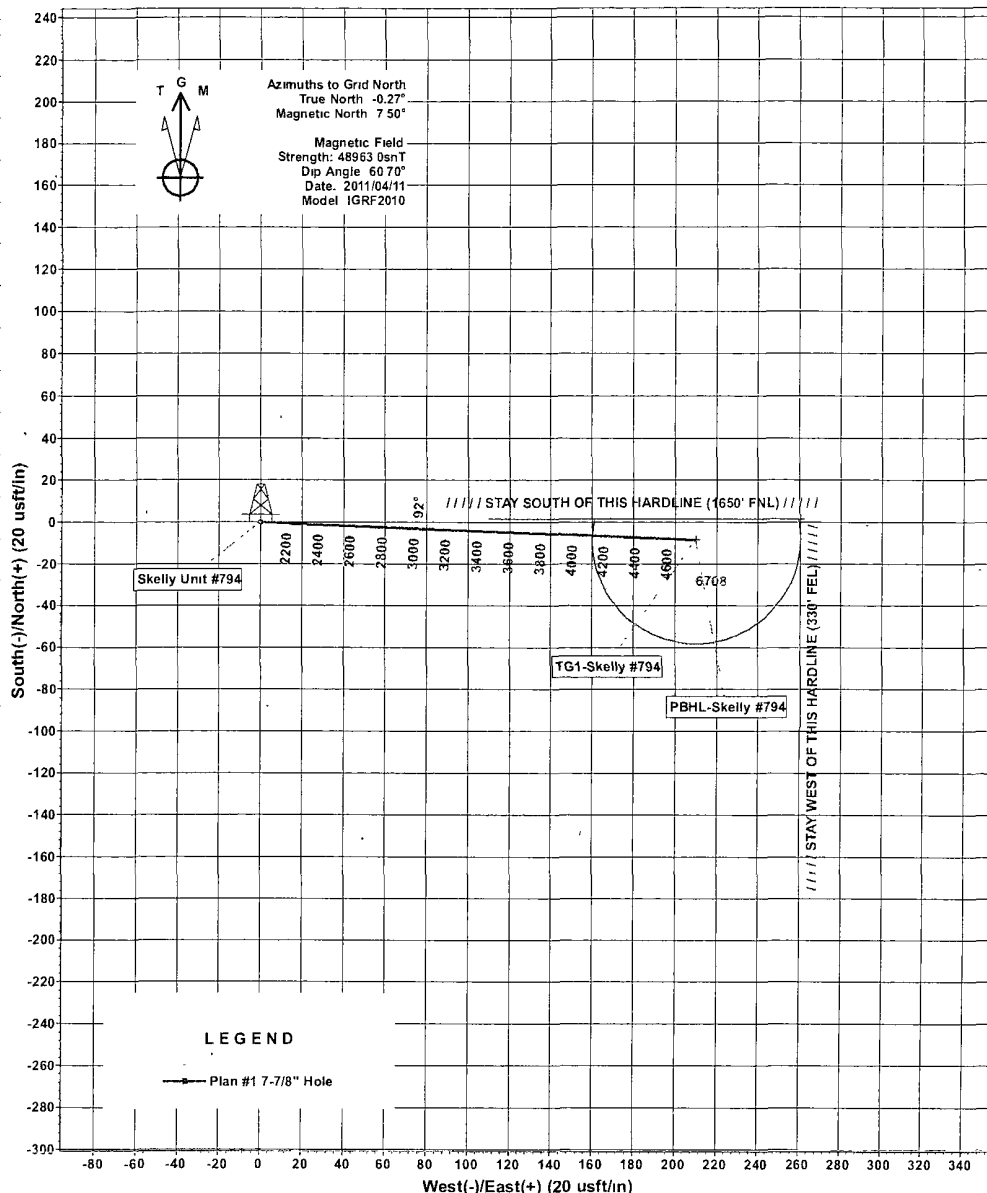
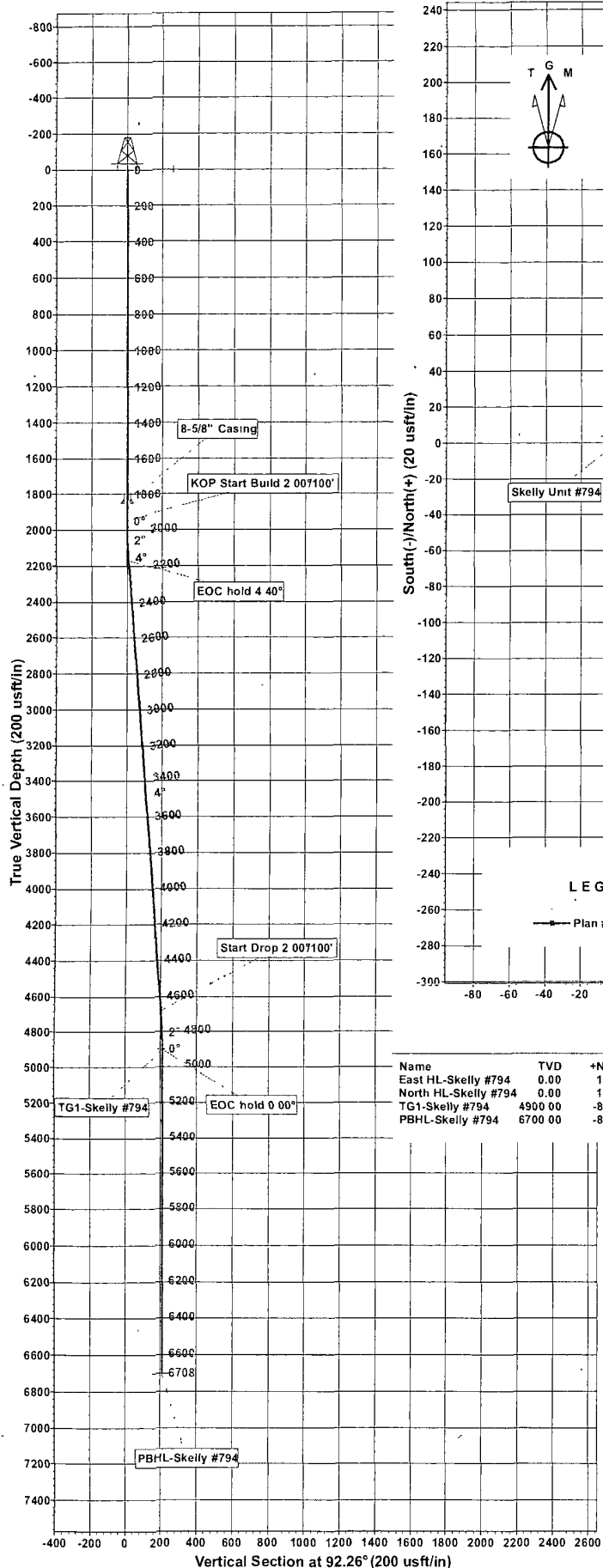
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,850 00	1,850 00	8-5/8" Casing	8-5/8	12-1/4

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,950 00	1,950 00	0 00	0 00	KOP Start Build 2 00°/100'
2,170 13	2,169 91	-0 33	8 45	EOC hold 4 40°
4,687 74	4,680 10	-7 97	201 55	Start Drop 2 00°/100'
4,907 86	4,900 00	-8 30	210 00	EOC hold 0 00°



Scientific Drilling for COG Operating LLC  
Site: Eddy County, NM (NAN27 NME)  
Well: Skelly Unit #794  
Wellbore: OH  
Design: Plan #1 7-7/8" Hole



Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
East HL-Skelly #794	0.00	1.70	260.00	663391.40	653928.80	32°49'21.890 N	103°49'56.126 W	Rectangle (Sides L100.00 W0.00)
North HL-Skelly #794	0.00	1.70	260.00	663391.40	653928.80	32°49'21.890 N	103°49'56.126 W	Rectangle (Sides L0.00 W150.00)
TG1-Skelly #794	4900.00	-8.30	210.00	663381.40	653878.80	32°49'21.794 N	103°49'56.712 W	Point
PBHL-Skelly #794	6700.00	-8.30	210.00	663381.40	653878.80	32°49'21.794 N	103°49'56.712 W	Circle (Radius 5.000)

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	1950.00	0.00	0.00	1950.00	0.00	0.00	0.00	0.00	0.00
3	2170.13	4.40	92.26	2169.91	-0.33	8.45	2.00	92.26	8.45
4	4687.74	4.40	92.26	4680.09	-7.97	201.55	0.00	0.00	201.71
5	5490.786	0.00	0.00	4900.00	-8.30	210.00	2.00	180.00	210.16 TG1-Skelly #794
6	6707.86	0.00	0.00	6700.00	-8.30	210.00	0.00	0.00	210.16 PBHL-Skelly #794

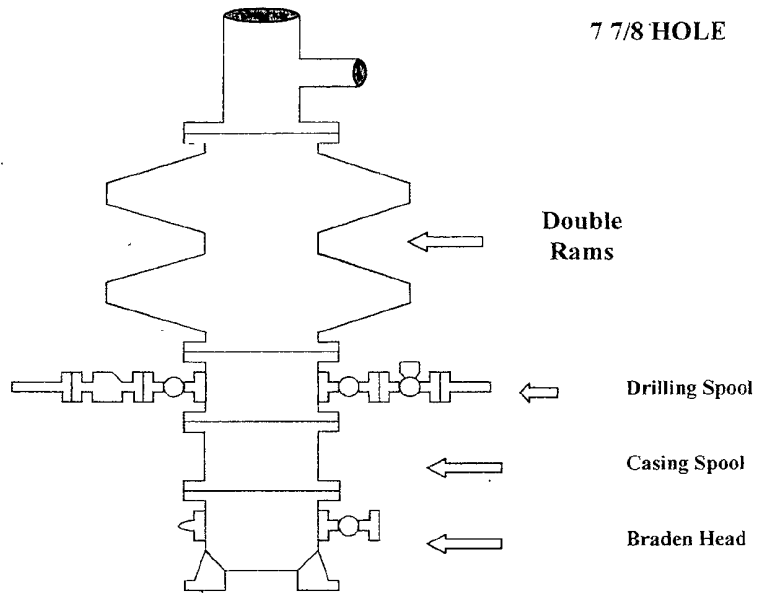
WELL DETAILS Skelly Unit #794									
Ground Level				3888.00					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot			
0.00	0.00	663389.70	653668.80	32°49'21.886 N	103°49'59.173 W				

PROJECT DETAILS: Eddy County, NM (NAN27 NME)			Plan Plan #1 7-7/8" Hole (Skelly Unit #794/OH)		
Geodetic System	US State Plane 1927 (Exact solution)		Created By	Julio Pina	
Datum	NAD 1927 (NADCON CONUS)			Date 11-Apr-11	
Ellipsoid	Clarke 1866		Checked	Date.	
Zone	New Mexico East 3001				
System Datum	Mean Sea Level		Reviewed.	Date	
			Approved	Date	

# COG Operating LLC

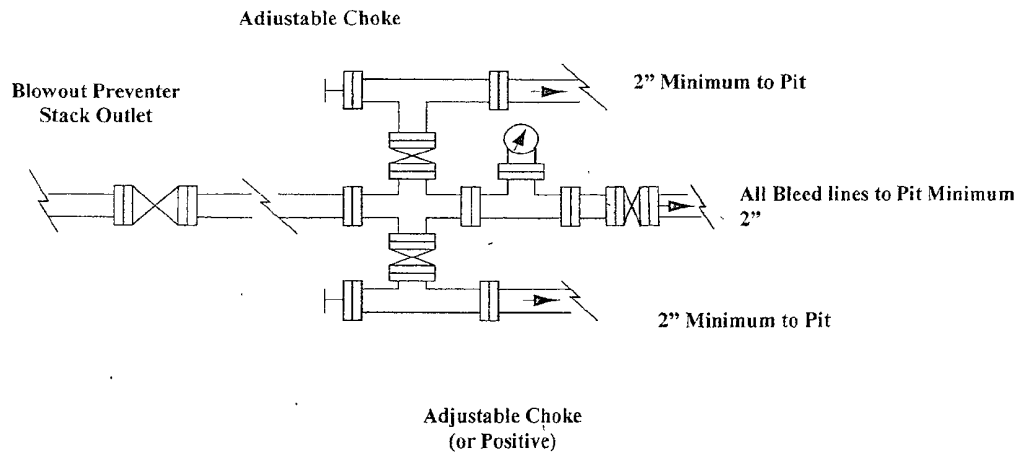
## Exhibit #9

### BOPE and Choke Schematic



Minimum 4" Nominal choke and kill lines

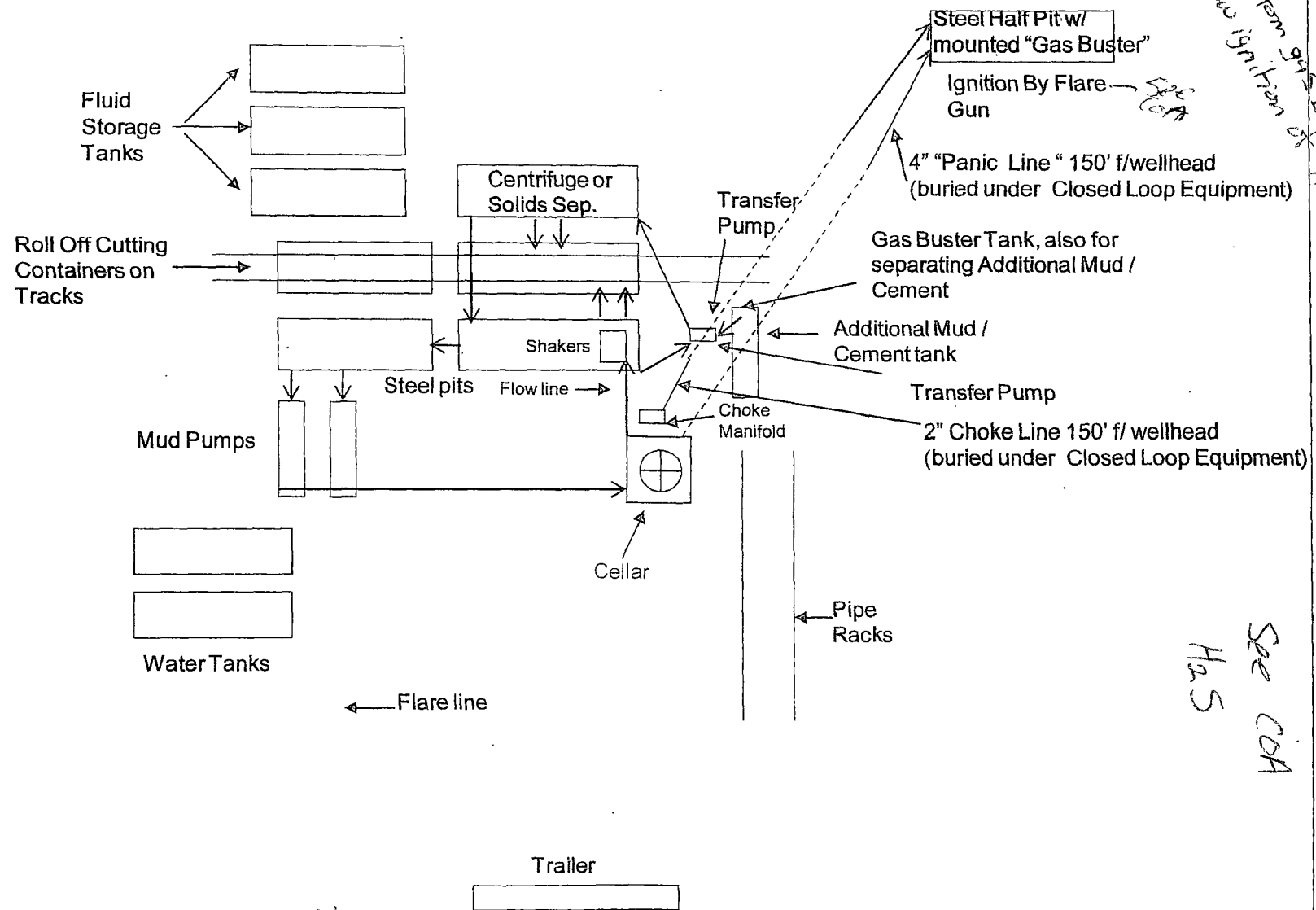
Choke Manifold Requirement (2000 psi WP)  
No Annular Required



**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.

COG Operating LLC  
Closed Loop Equipment Diagram



## Closed Loop Operation & Maintenance Procedure

All drilling fluid circulated over shaker(s) with cuttings discharged into roll off container.

Fluid and fines below shaker(s) are circulated with transfer pump through centrifuge(s) or solids separator with cuttings and fines discharged into roll off container.

Fluid is continuously re-circulated through equipment with polymer added to aid separation of cutting fines.

Roll off containers are lined and de-watered with fluids re-circulated into system.

Additional tank is used to capture unused drilling fluid or cement returns from casing jobs.

This equipment will be maintained 24 hrs./day by solids control personnel and or rig crews that stay on location.

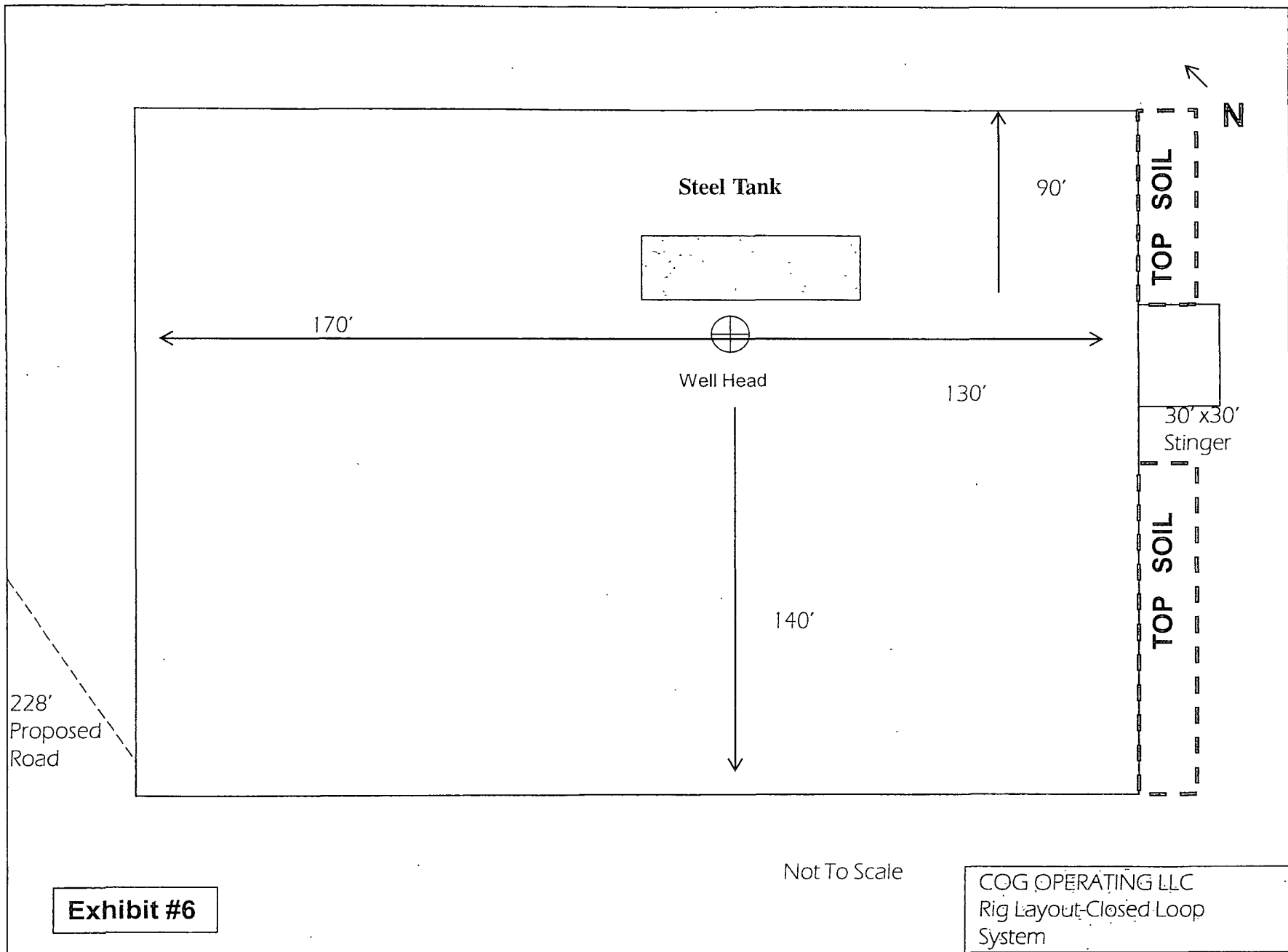
Cuttings will be hauled to either:

CRI (permit number R9166)

or

GMI (permit number 711-019-001)

dependent upon which rig is available to drill this well.





DISTRICT 2 CHECKLIST FOR INTENTS TO DRILL

[ 305607 ] Operator COE Ope OGRID # 229134  
 Well Name & # SKELLY UNIT Surface Type (F) (S) (P)  
 Location: UL H Sect 23 Township 17 s, RNG 31 e, Sub-surface Type (F) (S) (P)

A. Date C101 rec'd 11 / 17 / 2011 C101 reviewed 11 / 28 / 2011

B. 1. Check mark, Information is OK on Forms:

OGRID ☒ BONDING ☒ PROP CODE ☒ WELL # ☒ SIGNATURE ☒

2. Inactive Well list as of: 11 / 28 / 2011 # wells 379, # 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: 11 / 28 / 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 ☒

Mar 10 Pool FRANK, GIBRIATA - 1650 Code 26770 97860

a. Dedicated acreage 40, What Units H

b. SUR. Location Standard ☐: Non-Standard Location ☐

c. Well shares acres: Yes ☐ No ☐ # of wells ☐ plus this well # ☐

2. 2<sup>nd</sup>. Operator in same acreage, Yes ☐ No ☐

Agreement Letter ☐ Disagreement letter ☐

3. Intent to Directional Drill Yes ☐ No ☐

a. Dedicated acreage ☐ What Units ☐

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 11 / 28 / 2011

API #30-0 15 - 39700

8. Reviewers ☐