

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 ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM-98120
1b. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ 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 #813 305607
3b. Phone No. (include area code) 229137 432-685-4384		9. API Well No 30-015- 39701
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface 2175' FSL & 505' FEL, Unit 1 At proposed prod zone 2310' FSL & 330' FEL, Unit 1		10. Field and Pool, or Exploratory Marlowe; Glorieta-Yeso 26770 97866
11. Sec., T R. M or Blk and Survey or Area Sec 23 T17S R31E		12. County or Parish EDDY
13. State NM		14. Distance in miles and direction from nearest town or post office* 9 miles East of Loco Hills, NM
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg unit line, if any) 505'	16. No. of acres in lease 720	17. Spacing Unit dedicated to this well 40
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 75'	19. Proposed Depth TVD: 6700' MD: 6706'	20. BLM/BIA Bond No on file NMB000740
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3878' GL	22. Approximate date work will start* 08/31/2011	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 06/13/2011
Title Permitting Tech			
Approved by (Signature) /s/ Don Peterson		Name (Printed/Typed)	Date
Title FIELD MANAGER		Office CARLSBAD FIELD OFFICE	AUG - 5 2011

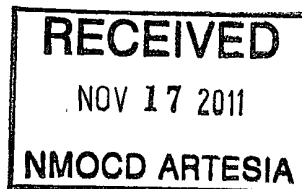
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

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

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

GH

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'
Blinberry	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
Blinberry	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

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% 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, 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
0-650' <i>600</i>	Fresh Water	8.5	28	N.C.
650-1800' <i>1875</i>	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 #813

Skelly Unit #813

OH

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

SHL = 2175' FSL & 505' FEL

BHL = 2300' FSL & 380' FEL

Top of Paddock = 2300' FSL & 380' FEL @ 4900' TVD

Standard Planning Report

11 April, 2011



Scientific Drilling
Directional Drilling Operations



Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Skelly Unit #813
Well: Skelly Unit #813
Wellbore: OH
Design: Plan #1 7-7/8" Hole

Local Co-ordinate Reference: Site Skelly Unit #813
TVD Reference: GL Elev. @ 3878 00usft
MD Reference: GL Elev @ 3878 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 #813		
Site Position:	Map	Northings:	661,935 20 usft
From:	Map	Easting:	653,760 90 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 49' 7 489 N
		Longitude:	103° 49' 58 174 W
		Grid Convergence:	0 27 °

Well:	Skelly Unit #813		
Well Position	+N/-S	0 00 usft	Northings:
	+E/-W	0 00 usft	Easting:
Position Uncertainty	0 00 usft	Wellhead Elevation:	Ground Level:
			3,878 00 usft

Wellbore:	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	2011/04/11	7 77
			Dip Angle
			(°)
			60 70
			Field Strength
			(nT)
			48,961

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
			(°)
			44 57

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 (°)
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
2,133 16	3 66	44 57	2,133.04	4 17	4 11	2 00	2 00	0 00	44 57
4,722 38	3 66	44 57	4,716 96	122 03	120.19	0 00	0 00	0 00	0 00
4,905 54	0 00	0 01	4,900 00	126 20	124 30	2 00	-2 00	0 00	180 00 TG1-Skelly #813
6,705 54	0 00	0 01	6,700 00	126 20	124 30	0 00	0 00	0 00	0 01 PBHL-Skelly #813



Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Skelly Unit #813
Well: Skelly Unit #813
Wellbore: OH
Design: Plan #1 7-7/8" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Site Skelly Unit #813
GL Elev @ 3878.00usft
GL Elev @ 3878.00usft
Grid
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	
North HL-Skelly #813 - East HL-Skelly #813										
1,850 00	0 00	0 00	1,850.00	0 00	0.00	0 00	0 00	0 00	0 00	
8-5/8" Casing										
1,950 00	0 00	0 00	1,950 00	0 00	0 00	0 00	0 00	0 00	0 00	
KOP Start Build 2.00°/100'										
2,000 00	1 00	44 57	2,000 00	0 31	0 31	0 44	2 00	2 00	0 00	
2,100 00	3 00	44 57	2,099 93	2.80	2 76	3 93	2 00	2.00	0 00	
2,133 16	3 66	44 57	2,133 04	4 17	4 11	5 85	2 00	2 00	0.00	
EOC hold 3.66°										
2,200 00	3 66	44 57	2,199 74	7 21	7 10	10 12	0 00	0 00	0 00	
2,300 00	3 66	44 57	2,299 53	11 76	11 59	16 51	0 00	0 00	0 00	
2,400.00	3 66	44 57	2,399 33	16 32	16 07	22 90	0 00	0.00	0 00	
2,500 00	3 66	44 57	2,499 13	20 87	20 55	29 29	0.00	0 00	0 00	
2,600 00	3 66	44 57	2,598 92	25 42	25 04	35 68	0 00	0 00	0 00	
2,700 00	3 66	44 57	2,698.72	29 97	29 52	42.07	0 00	0 00	0 00	
2,800 00	3 66	44 57	2,798 51	34 52	34 00	48 46	0 00	0 00	0 00	
2,900 00	3 66	44.57	2,898 31	39 08	38 49	54 85	0 00	0 00	0 00	
3,000 00	3 66	44.57	2,998 10	43 63	42 97	61 24	0 00	0 00	0 00	
3,100 00	3 66	44 57	3,097 90	48 18	47 45	67 63	0 00	0 00	0 00	
3,200 00	3 66	44 57	3,197 70	52 73	51.94	74.02	0 00	0 00	0 00	
3,300.00	3 66	44 57	3,297 49	57 28	56 42	80 40	0 00	0 00	0 00	
3,400 00	3 66	44 57	3,397 29	61 84	60 90	86 79	0.00	0 00	0 00	
3,500 00	3 66	44 57	3,497 08	66 39	65 39	93 18	0 00	0 00	0 00	
3,600 00	3 66	44 57	3,596 88	70 94	69 87	99.57	0 00	0 00	0 00	
3,700 00	3 66	44.57	3,696 67	75 49	74 36	105 96	0 00	0 00	0 00	
3,800 00	3 66	44 57	3,796 47	80 04	78 84	112 35	0 00	0 00	0 00	
3,900 00	3 66	44 57	3,896 27	84 60	83 32	118 74	0 00	0 00	0 00	
4,000 00	3 66	44 57	3,996 06	89 15	87.81	125 13	0.00	0 00	0 00	
4,100 00	3 66	44.57	4,095 86	93.70	92 29	131 52	0 00	0 00	0 00	
4,200 00	3 66	44 57	4,195 65	98 25	96 77	137 91	0 00	0 00	0 00	
4,300 00	3 66	44 57	4,295 45	102 80	101 26	144 30	0 00	0 00	0 00	
4,400 00	3 66	44 57	4,395.24	107.36	105 74	150 68	0 00	0 00	0 00	
4,500 00	3 66	44 57	4,495 04	111 91	110 22	157 07	0 00	0 00	0 00	
4,600 00	3 66	44.57	4,594 84	116 46	114 71	163 46	0 00	0 00	0 00	
4,700 00	3 66	44 57	4,694 63	121 01	119 19	169.85	0 00	0.00	0 00	
4,722 38	3 66	44 57	4,716 97	122 03	120 19	171 28	0 00	0 00	0 00	
Start Drop 2.00°/100'										
4,800 00	2 11	44 57	4,794 48	124 82	122 94	175 19	2 00	-2 00	0 00	
4,900 00	0 11	44 57	4,894 46	126 20	124 30	177 13	2 00	-2 00	0 00	
4,905 54	0 00	0 00	4,900 00	126 20	124 30	177 14	2 00	-2 00	-804 48	
EOC hold 0.00° - TG1-Skelly #813										
6,705 54	0 00	0 01	6,700 00	126 20	124 30	177 14	0.00	0 00	0 00	
PBHL-Skelly #813										



Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Skelly Unit #813
Well: Skelly Unit #813
Wellbore: OH
Design: Plan #1 7-7/8" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Site Skelly Unit #813
GL Elev. @ 3878 00usft
GL Elev. @ 3878 00usft
Grid
Minimum Curvature

Design Targets

Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
North HL-Skelly #813		0 00	0 00	0 00	136 20	174 30	662,071 40	653,935 20	32° 49' 8 828 N	103° 49' 56 124 W
- plan misses target center by 221 20usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E)										
- Rectangle (sides W150 00 H0 00 D0 00)										
East HL-Skelly #813		0 00	0 00	0 00	136 20	174 30	662,071 40	653,935 20	32° 49' 8 828 N	103° 49' 56 124 W
- plan misses target center by 221 20usft at 0 00usft MD (0 00 TVD, 0 00 N, 0 00 E)										
- Rectangle (sides W0 00 H100 00 D0 00)										
TG1-Skelly #813		0 00	0 00	4,900 00	126 20	124 30	662,061 40	653,885 20	32° 49' 8 732 N	103° 49' 56 711 W
- plan hits target center										
- Point										
PBHL-Skelly #813		0 00	0 01	6,700 00	126 20	124 30	662,061 40	653,885 20	32° 49' 8 732 N	103° 49' 56 711 W
- plan hits target center										
- Circle (radius 50 00)										

Casing Points

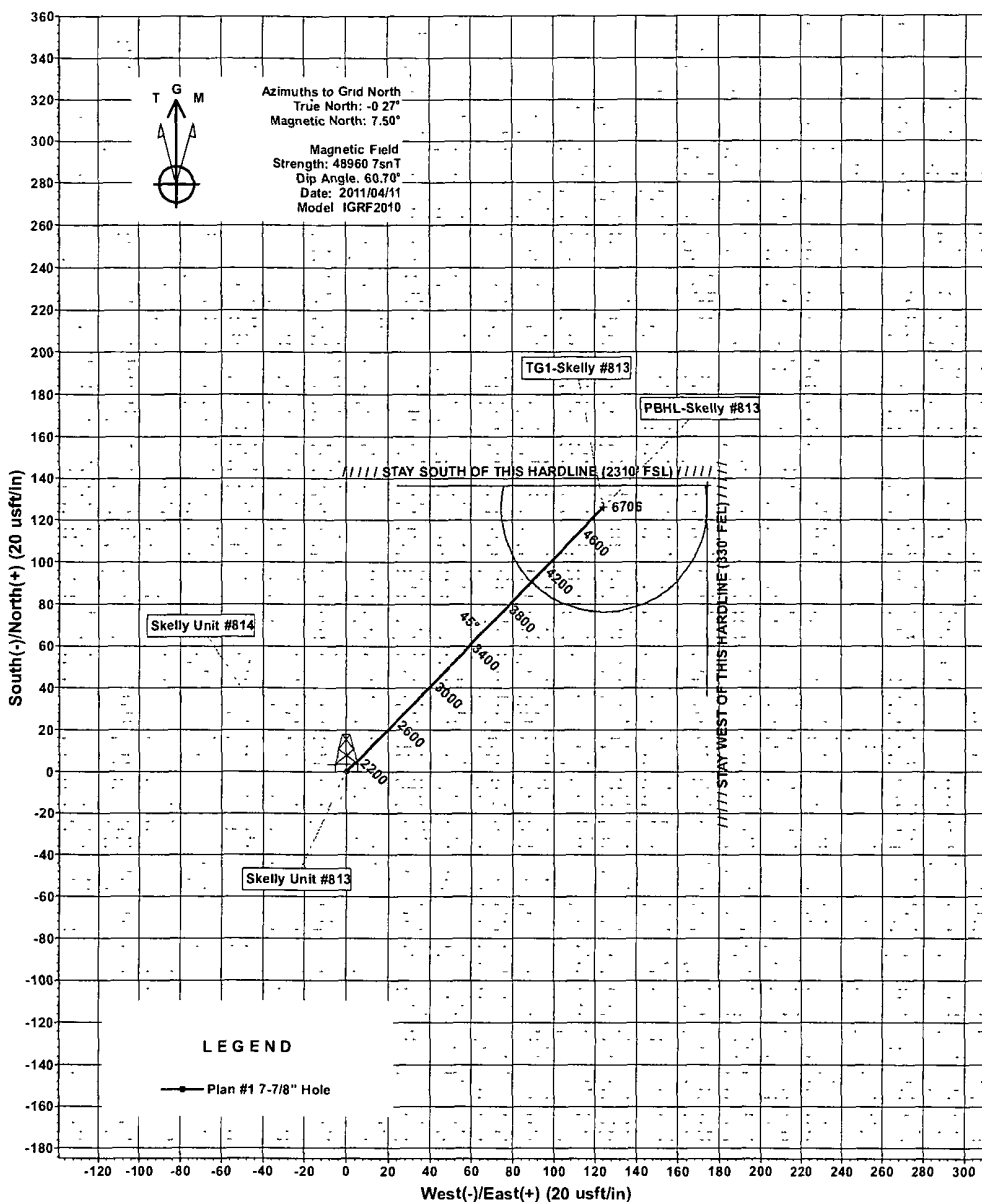
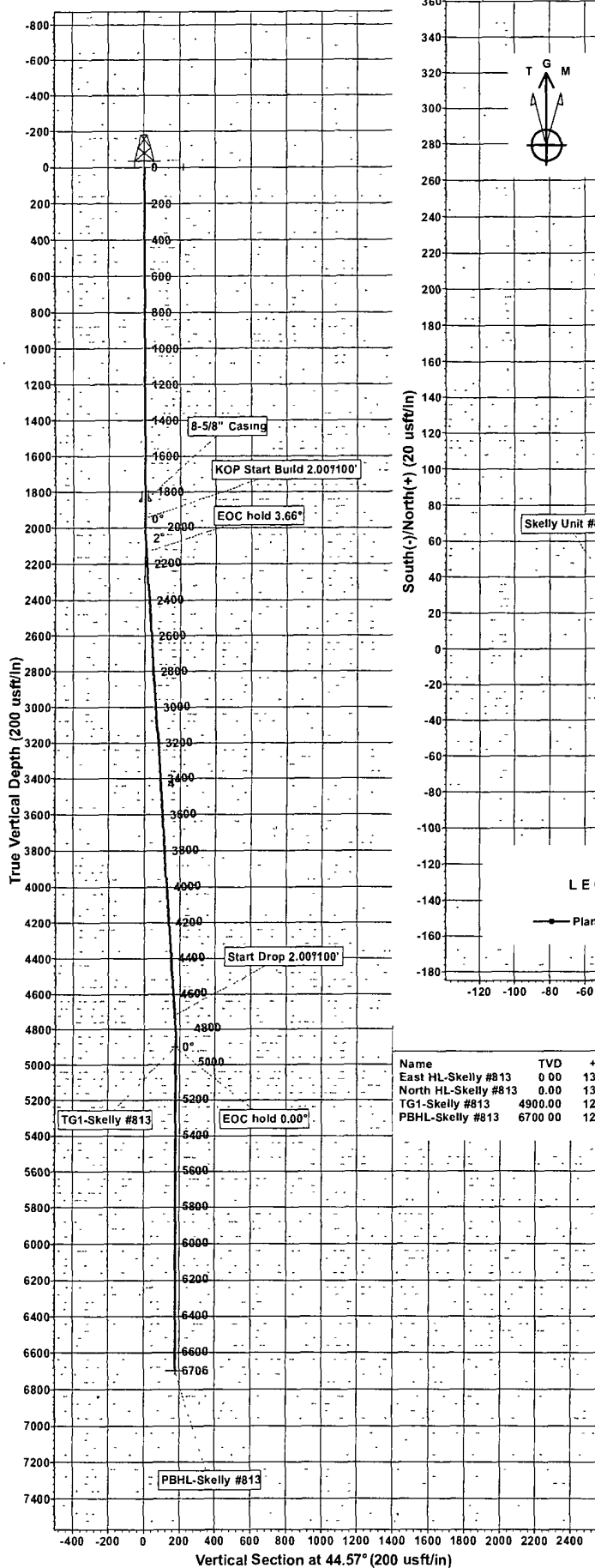
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,850 00	1,850 00	8-5/8" Casing	8-5/8	12-1/4

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
1,950 00	1,950 00	0 00	0 00	KOP Start Build 2 00°/100'
2,133 16	2,133 04	4 17	4 11	EOC hold 3 66°
4,722 38	4,716 97	122 03	120 19	Start Drop 2 00°/100'
4,905 54	4,900 00	126 20	124 30	EOC hold 0 00°



Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Skelly Unit #813
Wellbore: OH
Design: Plan #1 7-7/8" Hole



Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
East HL-Skelly #813	0.00	136.20	174.30	662071.40	653935.20	32°49' 8.828 N	103°49' 56.124 W	Rectangle (Sides: L100.00 W0.00)
North HL-Skelly #813	0.00	136.20	174.30	662071.40	653935.20	32°49' 8.828 N	103°49' 56.124 W	Rectangle (Sides: L0.00 W150.00)
TG1-Skelly #813	4900.00	126.20	124.30	662061.40	653885.20	32°49' 8.732 N	103°49' 56.711 W	Point
PBHL-Skelly #813	6700.00	126.20	124.30	662061.40	653885.20	32°49' 8.732 N	103°49' 56.711 W	Circle (Radius: 5 0.00)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1950.00	0.00	0.00	1950.00	0.00	0.00	0.00	0.00	0.00	
3	2133.16	3.66	44.57	2133.04	4.17	4.11	2.00	44.57	5.85	
4	4722.38	3.66	44.57	4716.96	122.03	120.19	0.00	0.00	171.28	
5	4905.54	0.00	0.00	4900.00	126.20	124.30	2.00	180.00	177.14	TG1-Skelly #813
6	6705.54	0.00	0.00	6700.00	126.20	124.30	0.00	0.00	177.14	PBHL-Skelly #813

WELL DETAILS: Skelly Unit #813

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	661935.20	653760.90	32°49' 7.489 N	103°49' 5 8.174 W	

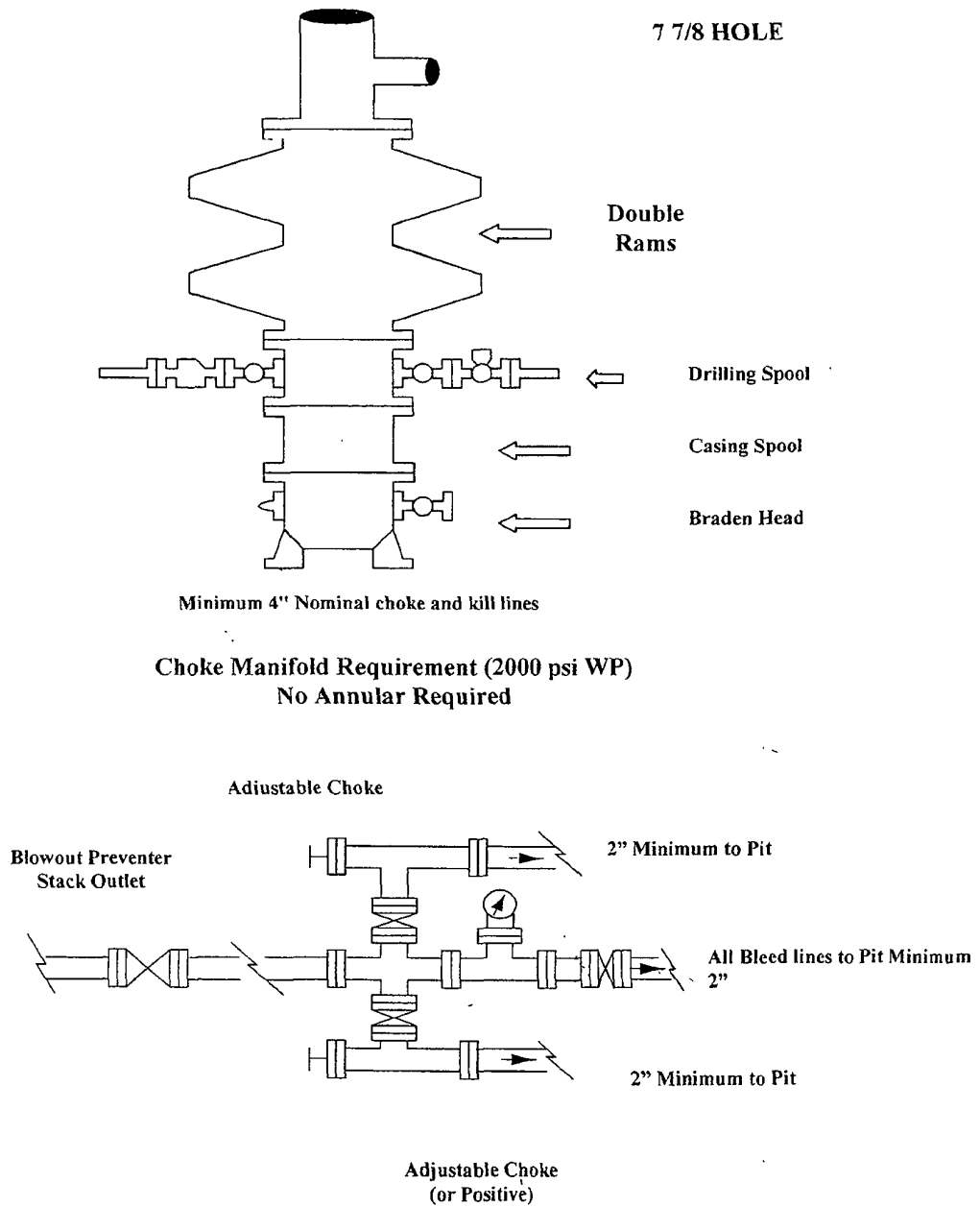
PROJECT DETAILS: Eddy County, NM (NAN27 NME) Plan: Plan #1 7-7/8" Hole (Skelly Unit #813/OH)

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

COG Operating LLC

Exhibit #9

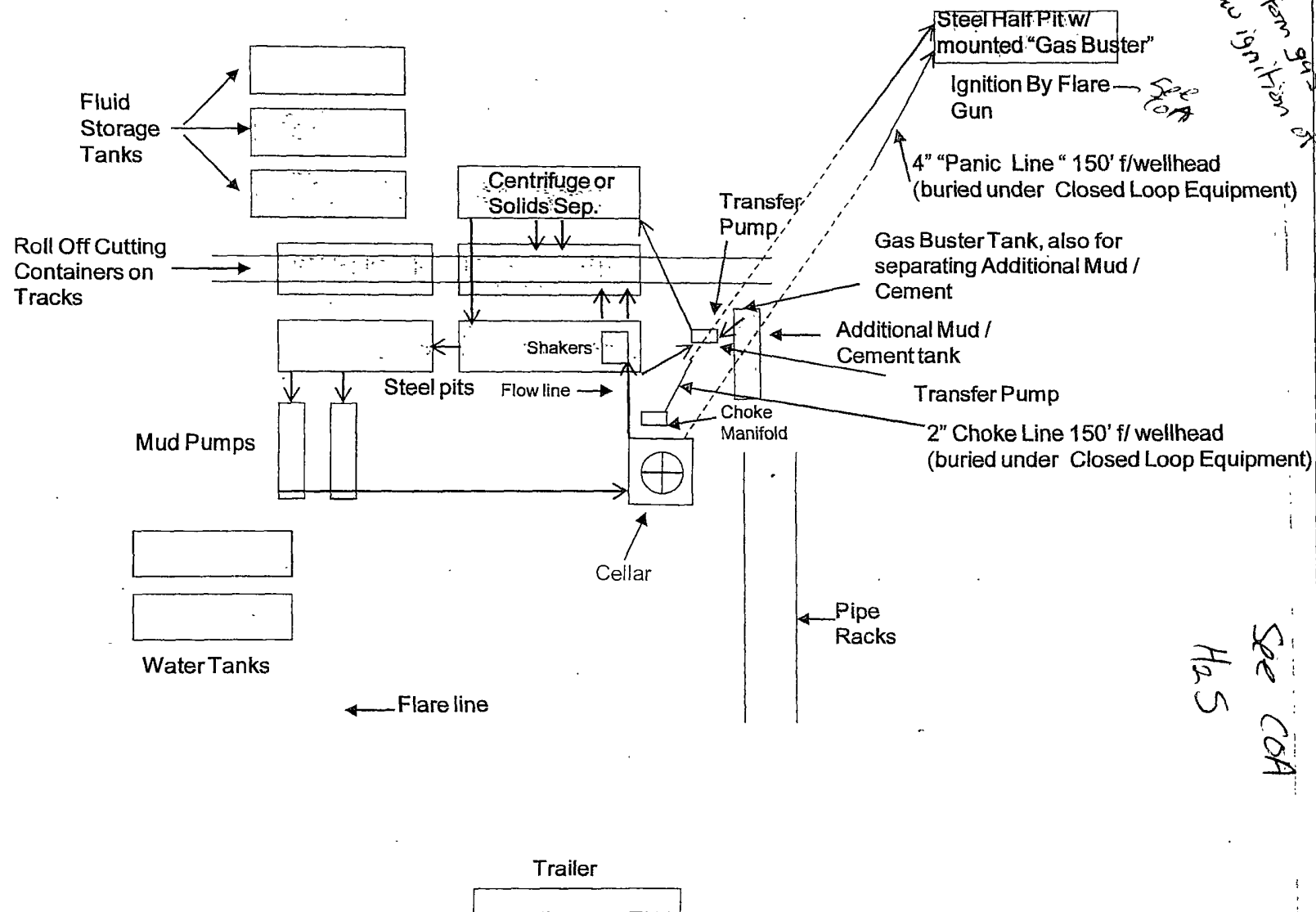
BOPE and Choke Schematic



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



*Open bottom gas pits
won't allow ignition of*

*See COA
H2S*

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.

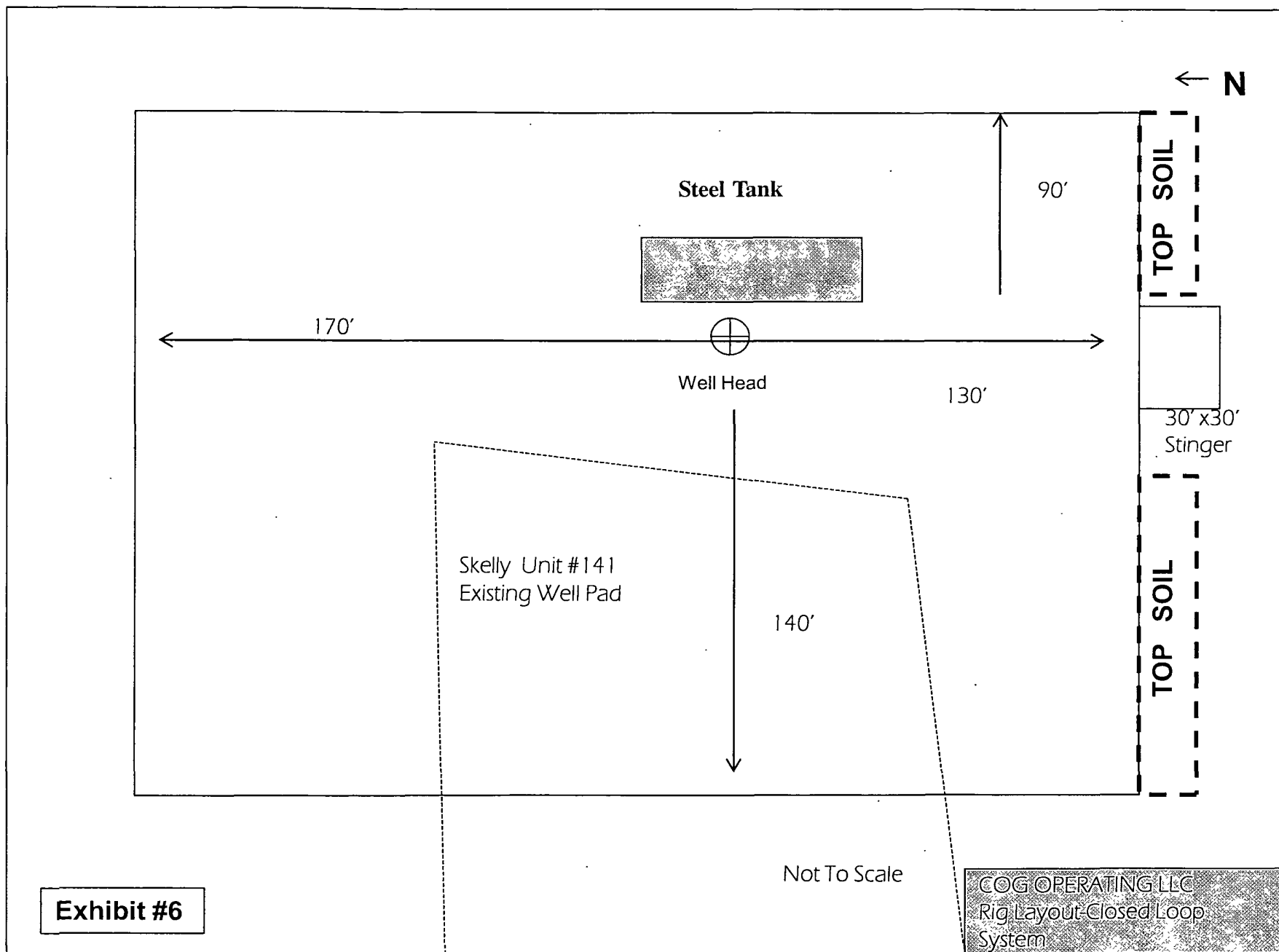


Exhibit #6

DISTRICT 2 -- CHECKLIST FOR INTENTS TO DRILL

[305607]

Operator COG-OP2 OGRID # 229134
 Well Name & # SKELLY UNIT Surface Type (F) (S) (P)
 Location: UL 1 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 369, # 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 1008 Pool FRONT: Gibraltar - 1050, Code 26770 97860

a. Dedicated acreage 40, What Units 1
 b. SUR. Location Standard 1; Non-Standard Location 1
 c. Well shares acres: Yes ☐, No ☐, # of wells 1 plus this well # 1

2. 2nd. Operator in same acreage, Yes ☐, No ☐
 Agreement Letter ☐, Disagreement letter ☐

3. Intent to Directional Drill Yes ☐, No ☐
 a. Dedicated acreage 1, What Units 1
 b. Bottomhole Location Standard 1, Non-Standard Bottomhole 1

4. Downhole Commingle: Yes ☐, No ☐
 a. Pool #2 1, Code 1, Acres 1
 Pool #3 1, Code 1, Acres 1
 Pool #4 1, Code 1, Acres 1

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 # 1

2. Non-Standard Proration: Yes ☐, No ☒, NSP # 1

3. Simultaneous Dedication: Yes ☐, No ☒, SD # 1

Number of wells 1 Plus # 1

4. Injection order Yes ☐, No ☒; PMX # 1 or WFX # 1

5. SWD order Yes ☐, NO ☒; SWD # 1

6. DHC from SF 1; DHC-HOB 1; Holding 1

7. OCD Approval Date 11/28/2011

API #30-0 15-39701

8. Reviewers 109