

OCD-ARTESIA

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. SL:NM029415B BL:NM029415A
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 N/A
3a. Address 550 W. Texas Ave., Suite 1300 Midland, TX 79701	3b. Phone No. (include area code) 432-685-4384	8. Lease Name and Well No. Puckett 13 Federal #5H [38922]
4. Location of Well (Report location clearly and in accordance with any State requirements *) At surface SHL: 140' FNL & 1907' FEL, UL B At proposed prod zone BHL: 330' FSL & 1980' FEL, UL O		9. API Well No. 30-015- 39657
14. Distance in miles and direction from nearest town or post office* 9 miles East of Loco Hills, NM		10. Field and Pool, or Exploratory Glorieta-Yeso, East [2978466]
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 140'		11. Sec, T R. M or Blk and Survey or Area Sec 13 T17S R31E [2978466]
16. No of acres in lease SHL: 1920 BHL:640		12. County or Parish EDDY
17. Spacing Unit dedicated to this well 160		13. State NM
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 280'		19. Proposed Depth TVD: 6600' MD: 11205'
20. BLM/BIA Bond No. on file NMB000740; NMB000215		21. Elevations (Show whether DF, KDB, RT, GL, etc) 3961' GL
22. Approximate date work will start* 10/30/2011		23. Estimated duration 15 days

UNORTHODOX
LOCATION

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

- Well plat certified by a registered surveyor
- A Drilling Plan
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office)
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- 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 08/04/2011
Title Permitting Tech		

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) Office	Date OCT 28 2011
Title FIELD MANAGER		

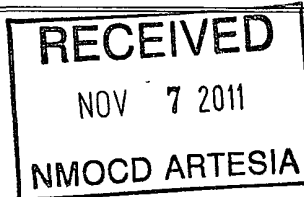
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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

Roswell Controlled Water Basin

*(Instructions on page 2)



SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

604

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Puckett 13 Federal #5H
SHL: 140' FNL & 1907' FEL, Unit B
BHL: 330' FSL & 1980' FEL, Unit O
Sec 13, T17S, R31E
Eddy County, NM

1. Proration Unit Spacing: 160 Acres
2. Ground Elevation: 3961'
3. Proposed Depths: Horizontal TVD = 6,600', MD = 11205'
4. Estimated tops of geological markers:

Quaternary	Surface
Rustler	682'
Top of Salt	900'
Base of Salt	1923'
Yates	2028'
Seven Rivers	2356'
Queen	2980'
Grayburg	3415'
San Andres	3739'
Glorieta	5247'
Paddock	5317'
Blaine	5745'
Tubb	6700'

5. Possible mineral bearing formations:

Water Sand	150'	Fresh Water
Grayburg	3415'	Oil/Gas
San Andres	3739'	Oil/Gas
Glorieta	5247'	Oil/Gas
Paddock	5317'	Oil/Gas
Blaine	5745'	Oil/Gas
Tubb	6700'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 700' and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 9 5/8" casing to 2000' 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 (although cement volume is actually 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

ATTACHMENT TO FORM 3160-3

COG Operating, LLC
Puckett 13 Federal #5H
Page 2 of 4

6. Casing Program - Proposed

Hole size	Interval	OD of Casing	Weight	Cond.	Collar	Grade
See. 10A 17-1/2"	0' - +/- 700'	740 13-3/8"	48#	New	STC	H-40 or J/K-55
Collapse sf - 3.87, Burst sf - 8.70, Tension sf - 14.91						
12-1/4"	0' - +/- 2000'	9-5/8"	36#	New	STC	J/K-55
Collapse sf - 2.88, Burst sf - 5.01, Tension sf - 8.11						
8-3/4"	0' - 11205'	7" x 5-1/2"	26#/17#	New	LTC	L-80
Collapse sf - 1.87, Burst sf - 2.48, Tension sf - 2.08						

Production string will be a tapered string with 7" 26# L-80 LTC ran from surface to kick off point and then crossed over to 5 1/2" 17# L-80 LTC.

7. Cement Program See 10A

13 3/8" Surface Csg: Set at +/- 700'MD, Lead Slurry: 450sx Class "C" w/ 2% CaCl₂ & .25 pps CF, 1.32 yield. 45% excess, calculated to surface.

9 5/8" Intrmd. Csg: Set at +/- 2000'MD. **Single Stage:** Lead Slurry: 300 sx 50:50:10:C:Poz:Gel w/ 5% salt, 5 pps LCM-1 .25 pps CF, 2.45 yield. Tail Slurry: 200 sx Class "C" w/ 2% CaCl₂, 1.32 yield. 76% excess, calculated to surface.

Multi Stage: **Stage 1:** 200 sx Class "C" w/ 2% CaCl₂, 1.32 yield. 80% excess. **Stage 2:** 300 sx 50:50:10:C:Poz:Gel w/ 5% salt, 5 pps LCM-1 .25 pps CF, 2.45 yield, back to surface, 166% excess; assumption for tool is lost circulation. Multi stage tool to be set at approximately, depending on hole conditions, 750' (50' below the surface casing). Cement volumes will be adjusted proportionately for depth changes of multi stage tool.

7 x 5 1/2" Production Csg: Set at +/- 11205'MD. **Single Stage:** Lead Slurry: 400 sx 35:65:6:C:Poz:Gel w/ 5% salt, 5 pps LCM, .2% SMS, .3% FL-52A, .125 pps CF, 2.01 yd. Inter. Slurry: 300 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, .6% SMS, 1% FL-25, 1% BA-58, .125 pps CF, .3% FL-52A; 1.37 yield Tail Slurry: 450 sx Class "H" SOLUCEM-H w/ .7% HR-601, 2.62 yield 61% excess in open hole, calculated to surface. **This is a minimum volume and will be adjusted up after caliper is run.**

Multi Stage: **Stage 1:** (Assumed TD of 11205'MD to DV at 3550') Lead Slurry: 450 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, .6% SMS, 1% FL-25, 1% BA-58, .125 pps CF, .3% FL-52A; 1.37 yield Tail Slurry: 450 sx Class "H" SOLUCEM-H w/ .7% HR-601, 2.62 yield; 7% excess. **This is a minimum volume and will be adjusted up after caliper is run.** **Stage 2:** Lead Slurry: 350 sx 50:50:2:C:Poz:Gel w/ 5% salt, 3 pps LCM, .6% SMS, 1% FL-25, 1% BA-58, .125 pps CF, .3% FL-52A; 1.37 yield. Tail Slurry: 150 sx Class C w/ 0.3% R-3 + 1.5% CD-32, 1.02 yield. 28% excess calculated back to surface (no need for excess in casing overlap). **This is a minimum volume and will be adjusted up after caliper is run.**

Multi stage tool to be set at approximately, depending on hole conditions, 3550'. Cement volumes will be adjusted proportionately for depth changes of multi stage tool; assumption for use of tool is water flow.

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Puckett 13 Federal #5H
Page 3 of 4

8. Pressure Control Equipment:

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" will be used 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. After setting 9-5/8" the BOP will then be nipped up on the 9-5/8" 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.

9. Proposed Mud Circulating System

Interval	Mud Wt.	Visc.	FL	Type Mud System
0' - 700' 740	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
700' - 2000'	10	30	NC	Brine mud, lime for PH and paper for seepage and sweeps.
2000' - 11205'	9.1	29	NC	Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

10. Production Hole Drilling Summary:

Drill 8 3/4" hole and kick off at +/- 6123', building curve over +/- 750' to horizontal at 6600' TVD. Drill horizontal section in a Easterly direction for +/-4332' lateral to TD at +/-11205' MD, 6600' TVD. Run 7" x 5-1/2" production casing in Open hole lateral and cement to surface.

11. 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.

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Ruckett 13 Federal #5H
Page 4 of 4

See COA

12. Logging, Testing and Coring Program:

- A. No electric logging to be performed on this well.
- B. The mud logging program will consist of lagged 10' samples from intermediate casing point to T.D. in vertical pilot hole and from Kick off point to TD in Horizontal hole.
- C. Drill Stem test is not anticipated.
- D. No conventional coring is anticipated.
- E. Further testing procedures will be determined after the 7" x 5 1/2" production casing has been cemented at T.D based on drill shows and log evaluation.

13. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 90 degrees and estimated maximum bottom hole pressure is 1800 psig. Measurable gas volumes or Hydrogen Sulfide levels have not been encountered during drilling operations in this area, however an H2S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

14. Anticipated Starting Date

Drilling operations will commence approximately on October 30, 2011 with drilling and completion operations lasting approximately 90 days.



COG Operating LLC

Eddy County, NM (NAN27 NME)

Puckett 13 Federal #5H

Puckett 13 Federal #5H

OH

Plan: Plan #1 8-3/4" Hole

SHL = 140' FNL & 1907' FEL

PP = 330' FNL & 1909' FWL

BHL = 330' FSL & 1980' FEL

Standard Planning Report

03 August, 2011



Scientific Drilling
Directional Drilling Operations



Scientific Drilling Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Puckett 13 Federal #5H
Well: Puckett 13 Federal #5H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Site Puckett 13 Federal #5H
GL Elev @ 3961 00usft
GL Elev @ 3961 00usft
Grid
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:	Puckett 13 Federal #5H		
Site Position:	Map	Northing:	670,206 30 usft
From:		Easting:	657,597 50 usft
Position Uncertainty:	0 00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 50' 29 150 N
		Longitude:	103° 49' 12.747 W
		Grid Convergence:	0 28 °

Well:	Puckett 13 Federal #5H			
Well Position	+N/-S	0 00 usft	Northing:	670,206 30 usft
	+E/-W	0.00 usft	Easting:	657,597 50 usft
Position Uncertainty	0 00 usft	Wellhead Elevation:	Ground Level:	3,961 00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2011/07/29	7 73	60 71	48,945

Design:	Plan #1 8-3/4" Hole			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0 00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 00	0 00	0 00	180 54

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
6,122 54	0 00	0 00	6,122 54	0 00	0 00	0 00	0 00	0 00	0 00	
6,872 54	90 00	180 54	6,600 00	-477 44	-4 49	12 00	12.00	0 00	180 54	
11,205 38	90 00	180 54	6,600 00	-4,810.10	-45.20	0 00	0 00	0 00	0 00	PBHL-Puckett 13 #5H



Scientific Drilling
Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Puckett 13 Federal #5H
Well: Puckett 13 Federal #5H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Site Puckett 13 Federal #5H
GL Elev @ 3961 00usft
GL Elev @ 3961 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
6,122 54	0 00	0 00	6,122 54	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 12.00°/100'									
6,200 00	9 30	180 54	6,199 66	-6 27	-0 06	6 27	12 00	12 00	0 00
6,300 00	21 30	180 54	6,295 94	-32 60	-0 31	32 60	12 00	12 00	0 00
6,400 00	33 30	180 54	6,384 65	-78 37	-0 74	78 38	12 00	12 00	0 00
6,500 00	45 30	180 54	6,461 89	-141 59	-1 33	141 59	12 00	12 00	0 00
6,564 08	52 99	180 54	6,503 78	-190 02	-1 79	190 02	12 00	12 00	0 00
PP=330' FNL, Puckett 13 #5H									
6,600 00	57 30	180 54	6,524 31	-219 48	-2 06	219 49	12 00	12 00	0 00
6,700 00	69 30	180 54	6,569 16	-308 65	-2 90	308 66	12 00	12 00	0 00
6,800 00	81 30	180 54	6,594 50	-405 19	-3 81	405 21	12 00	12 00	0 00
6,872 54	90 00	180 54	6,600 00	-477 45	-4 49	477 47	12 00	12 00	0 00
Land EOC hold 90.00°									
6,900 00	90 00	180 54	6,600 00	-504 91	-4 74	504 93	0 00	0 00	0 00
7,000 00	90 00	180 54	6,600 00	-604 90	-5 68	604 93	0 00	0 00	0 00
7,100 00	90 00	180 54	6,600 00	-704 90	-6 62	704 93	0 00	0 00	0 00
7,200 00	90 00	180 54	6,600 00	-804 89	-7 56	804 93	0 00	0 00	0 00
7,300 00	90 00	180 54	6,600 00	-904 89	-8 50	904 93	0 00	0 00	0 00
7,400 00	90 00	180 54	6,600 00	-1,004 89	-9 44	1,004 93	0 00	0 00	0 00
7,500 00	90 00	180 54	6,600 00	-1,104 88	-10 38	1,104 93	0 00	0 00	0 00
7,600 00	90 00	180 54	6,600 00	-1,204 88	-11 32	1,204 93	0 00	0 00	0 00
7,700 00	90 00	180 54	6,600 00	-1,304 87	-12 26	1,304 93	0 00	0 00	0 00
7,800 00	90 00	180 54	6,600 00	-1,404 87	-13 20	1,404 93	0 00	0 00	0 00
7,900 00	90 00	180 54	6,600 00	-1,504 86	-14 14	1,504 93	0 00	0 00	0 00
8,000 00	90 00	180 54	6,600 00	-1,604 86	-15 08	1,604 93	0 00	0 00	0 00
8,100 00	90 00	180 54	6,600 00	-1,704 85	-16 02	1,704 93	0 00	0 00	0 00
8,200 00	90 00	180 54	6,600 00	-1,804 85	-16 96	1,804 93	0 00	0 00	0 00
8,300 00	90 00	180 54	6,600 00	-1,904 85	-17 90	1,904 93	0 00	0 00	0 00
8,400 00	90 00	180 54	6,600 00	-2,004 84	-18 84	2,004 93	0 00	0 00	0 00
8,500 00	90 00	180 54	6,600 00	-2,104 84	-19 78	2,104 93	0 00	0 00	0 00
8,600 00	90 00	180 54	6,600 00	-2,204 83	-20 72	2,204 93	0 00	0 00	0 00
8,700 00	90 00	180 54	6,600 00	-2,304 83	-21 66	2,304 93	0 00	0 00	0 00
8,800 00	90 00	180 54	6,600 00	-2,404 82	-22 60	2,404 93	0 00	0 00	0 00
8,900 00	90 00	180 54	6,600 00	-2,504 82	-23 54	2,504 93	0 00	0 00	0 00
9,000 00	90 00	180 54	6,600 00	-2,604 81	-24 48	2,604 93	0 00	0 00	0 00
9,100 00	90 00	180 54	6,600 00	-2,704 81	-25 42	2,704 93	0 00	0 00	0 00
9,200 00	90 00	180 54	6,600 00	-2,804 81	-26 36	2,804 93	0 00	0 00	0 00
9,300 00	90 00	180 54	6,600 00	-2,904 80	-27 30	2,904 93	0 00	0 00	0 00
9,400 00	90 00	180 54	6,600 00	-3,004 80	-28 24	3,004 93	0 00	0 00	0 00
9,500 00	90 00	180 54	6,600 00	-3,104 79	-29 18	3,104 93	0 00	0 00	0 00
9,600 00	90 00	180 54	6,600 00	-3,204 79	-30 12	3,204 93	0 00	0 00	0 00
9,700 00	90 00	180 54	6,600 00	-3,304 78	-31 05	3,304 93	0 00	0 00	0 00
9,800 00	90 00	180 54	6,600 00	-3,404 78	-31 99	3,404 93	0 00	0 00	0 00
9,900 00	90 00	180 54	6,600 00	-3,504 77	-32 93	3,504 93	0 00	0 00	0 00
10,000 00	90 00	180 54	6,600 00	-3,604 77	-33 87	3,604 93	0 00	0 00	0 00
10,100 00	90 00	180 54	6,600 00	-3,704 77	-34 81	3,704 93	0 00	0 00	0 00
10,200 00	90 00	180 54	6,600 00	-3,804 76	-35 75	3,804 93	0 00	0 00	0 00
10,300 00	90 00	180 54	6,600 00	-3,904 76	-36 69	3,904 93	0 00	0 00	0 00
10,400 00	90 00	180 54	6,600 00	-4,004 75	-37 63	4,004 93	0 00	0 00	0 00
10,500 00	90 00	180 54	6,600 00	-4,104 75	-38 57	4,104 93	0 00	0 00	0 00
10,600 00	90 00	180 54	6,600 00	-4,204 74	-39 51	4,204 93	0 00	0 00	0 00
10,700 00	90 00	180 54	6,600 00	-4,304 74	-40 45	4,304 93	0 00	0 00	0 00



Scientific Drilling Planning Report



Database: EDM-Julio
Company: COG Operating LLC
Project: Eddy County, NM (NAN27 NME)
Site: Puckett 13 Federal #5H
Well: Puckett 13 Federal #5H
Wellbore: OH
Design: Plan #1 8-3/4" Hole

Local Co-ordinate Reference: Site Puckett 13 Federal #5H
TVD Reference: GL Elev @ 3961 00usft
MD Reference: GL Elev @ 3961 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)
10,800 00	90 00	180 54	6,600 00	-4,404.74	-41 39	4,404 93	0 00	0 00	0 00
10,900 00	90 00	180 54	6,600 00	-4,504 73	-42 33	4,504 93	0 00	0 00	0 00
11,000 00	90 00	180 54	6,600 00	-4,604 73	-43 27	4,604 93	0 00	0 00	0 00
11,100 00	90 00	180 54	6,600 00	-4,704 72	-44 21	4,704 93	0 00	0 00	0 00
11,200 00	90 00	180 54	6,600 00	-4,804 72	-45 15	4,804 93	0 00	0 00	0 00
11,205 38	90 00	180 54	6,600 00	-4,810.10	-45 20	4,810 31	0 00	0 00	0 00

PBHL-Puckett 13 #5H

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
PP=330' FNL, Puckett 1	- plan hits target center	0 00	0.00	6,503 77	-190.00	-1 79	670,016.31	657,595 72	32° 50' 27 270 N	103° 49' 12 778 W
	- Point									
PBHL-Puckett 13 #5H	- plan hits target center	0 00	0 00	6,600 00	-4,810 10	-45 20	665,396 20	657,552 30	32° 49' 41 556 N	103° 49' 13 550 W
	- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,122 54	6,122 54	0 00	0 00	KOP Start Build 12.00°/100'
6,872 54	6,600 00	456.91	138 60	Land EOC hold 90 00°



Scientific Drilling for COG Operating LLC
Site: Eddy County, NM (NAN27 NME)
Well: Puckett 13 Federal #5H
Wellbore: OH
Design: Plan #1 8-3/4" Hole



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	6122.54	0.00	0.00	6122.54	0.00	0.00	0.00	0.00	0.00	
3	6872.54	90.00	180.54	6600.00	-477.44	-4.49	12.00	180.54	477.46	
4	11205.38	90.00	180.54	6600.00	-4810.10	-45.20	0.00	0.00	4810.31	PBHL-Puckett 13 #5H

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PP=330' FNL, Puckett 13 #5H	6503.77	-190.00	-1.79	670016.30	657595.71	32°50' 27.270 N 103°49' 12.778 W	Point	
PBHL-Puckett 13 #5H	6600.00	-4810.10	-45.20	665396.20	657552.30	32°49' 41.556 N 103°49' 13.550 W	Point	

WELL DETAILS: Puckett 13 Federal #5H

		Ground Level.		3961.00		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	670206.30	657597.50	32°50' 29.150 N	103°49' 12.747 W	

Puckett 13 Federal #5H

Created By: Julio Pina Date: 29-Jul-11

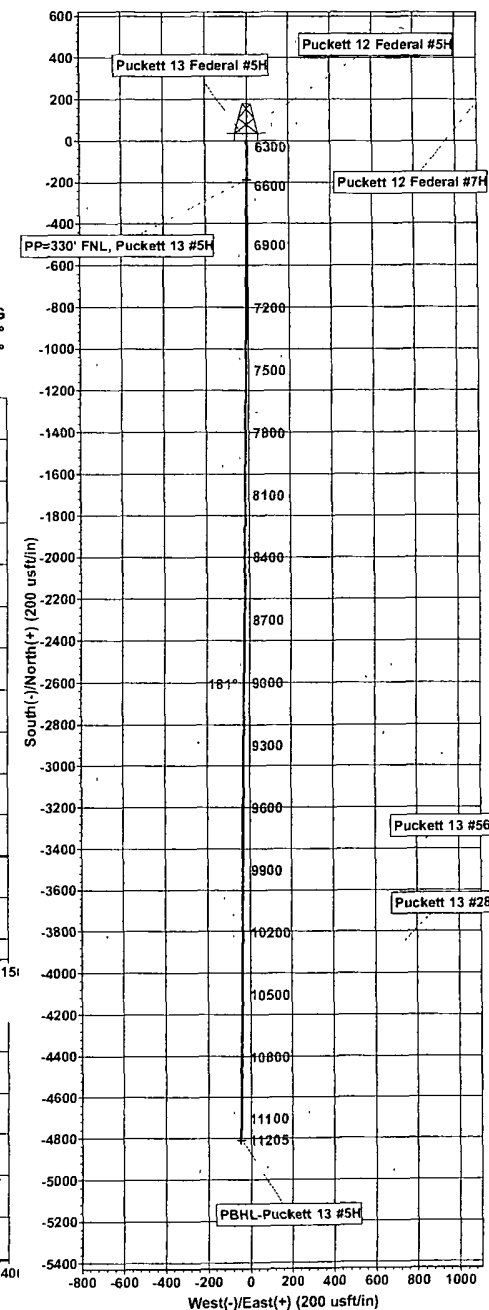
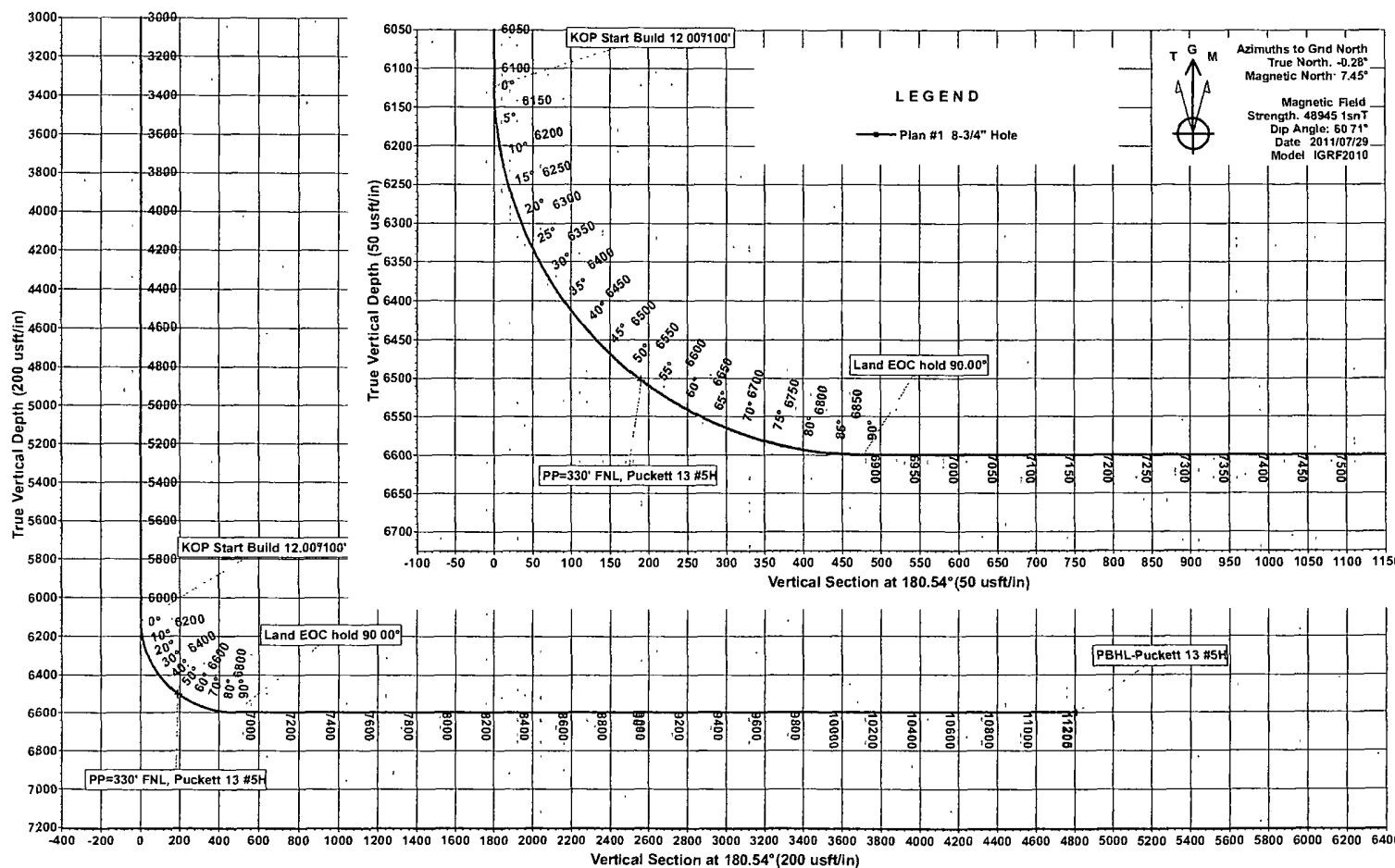
Checked: Date:

Reviewed: Date:

PROJECT DETAILS Eddy County, NM (NAN27 NME)

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

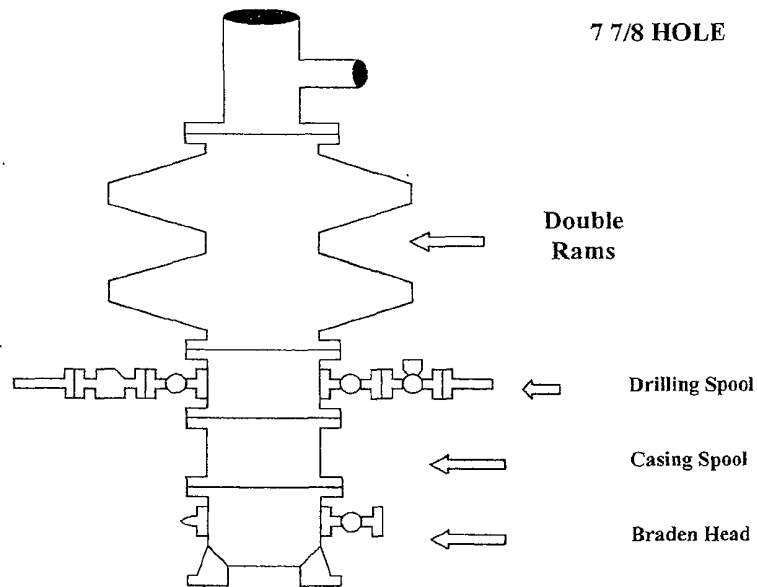
AZIMUTH CORRECTIONS
ALL AZIMUTHS MUST BE CORRECTED TO GRID
GRID CORRECTIONS MUST BE APPLIED BEFORE PLOTTING
To convert a Magnetic Direction to a Grid Direction, Add 7.45°
To convert a True Direction to a Grid Direction, Subtract 0.28°



COG Operating LLC

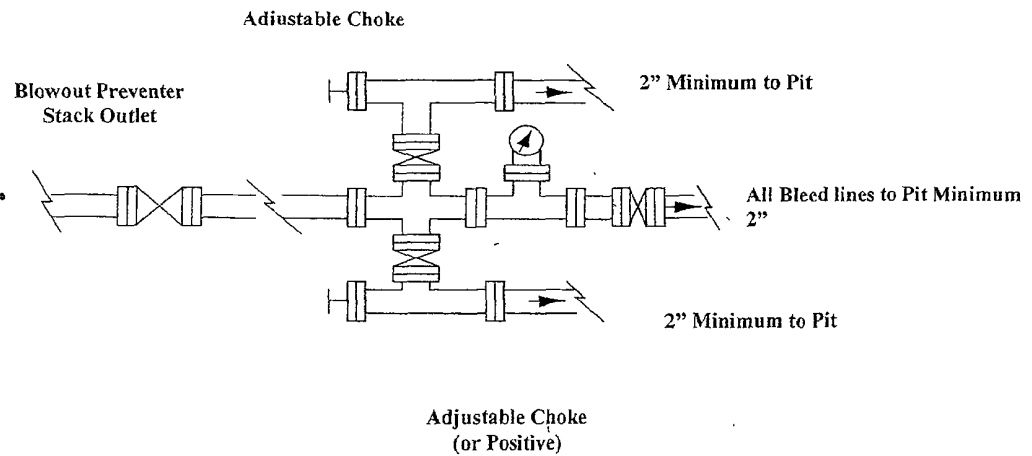
Exhibit #9

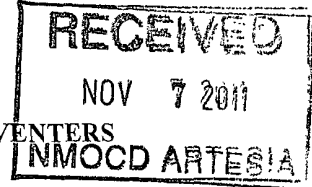
BOPE and Choke Schematic



Minimum 4" Nominal choke and kill lines

Choke Manifold Requirement (2000 psi WP)
No Annular Required

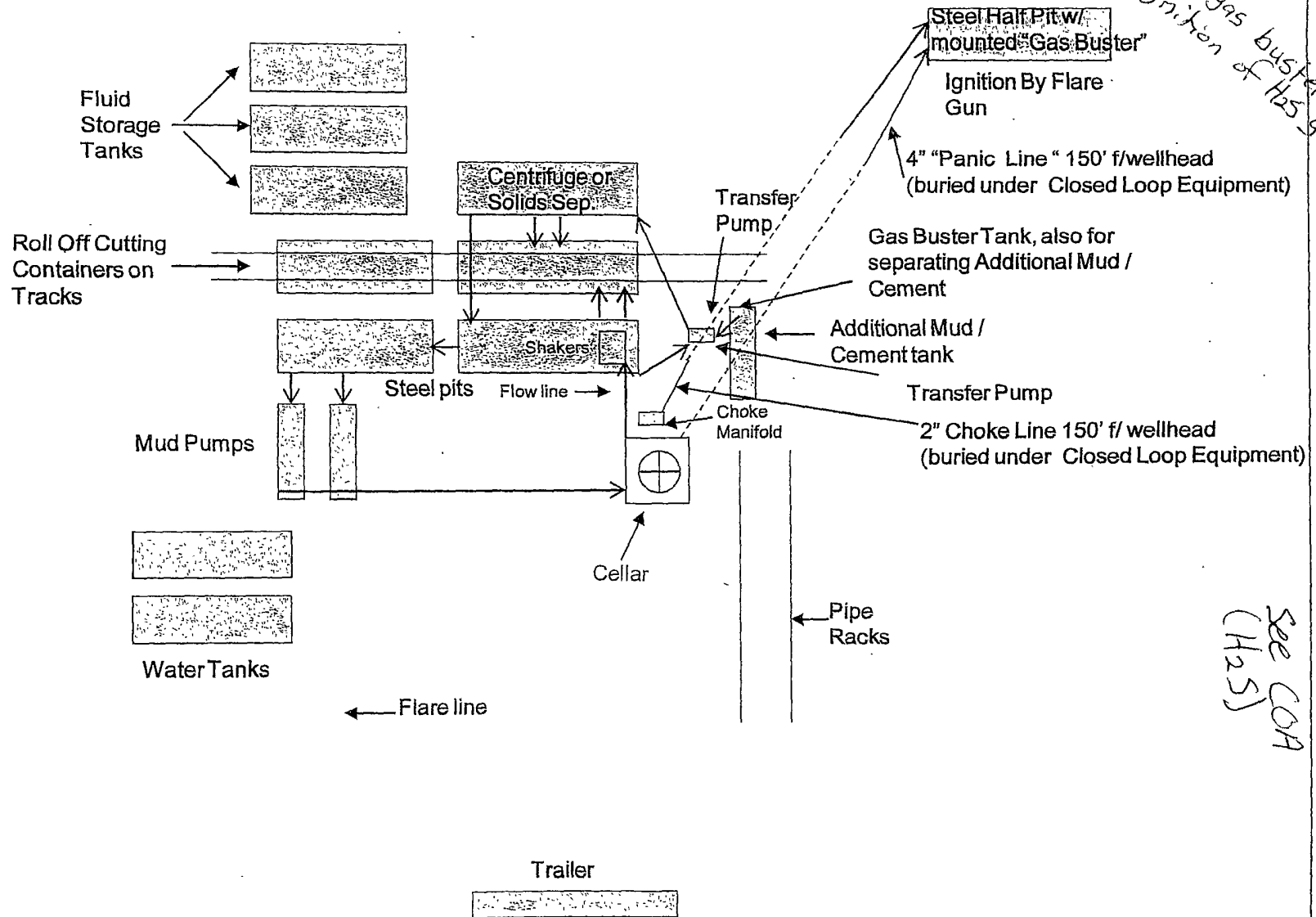




NOTES REGARDING THE BLOWOUT PREVENTERS
Master Drilling Plan
Eddy County, New Mexico

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.

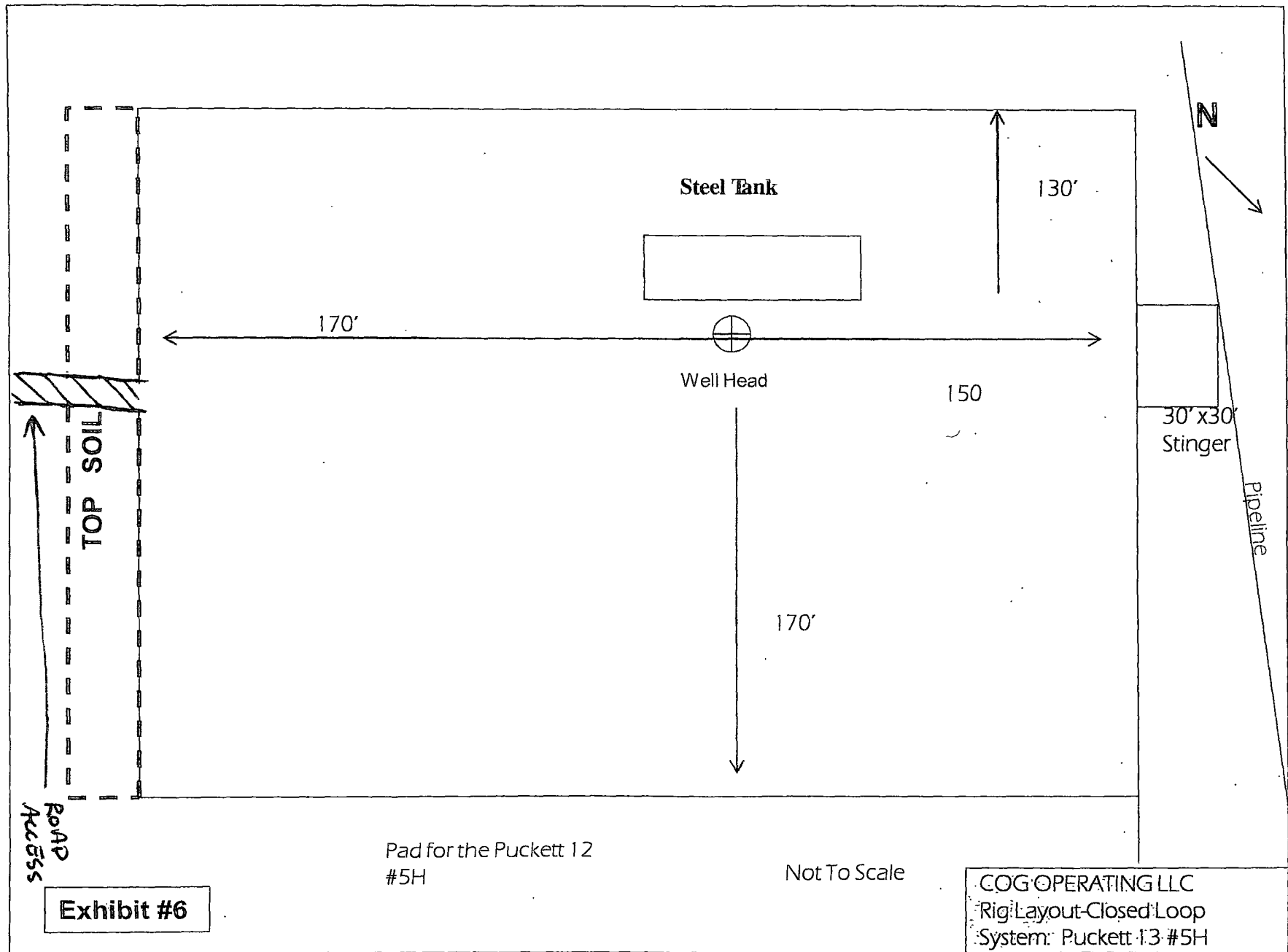


Exhibit #6

Pad for the Puckett 12
#5H

Not To Scale

COG OPERATING LLC
Rig Layout-Closed Loop
System: Puckett 13 #5H

7/27/11
8/10/11

DISTRICT 2 -- CHECKLIST FOR INTENTS TO DRILL

Operator COE OPR OGRID # 229134
 Well Name & # Docket 13 FEBRUARY 5H Surface Type (F) (S) (P)
 Location: UL 13 Sect 13 Township 17 s, RNG 34e Sub-surface Type (F) (S) (P)

A. Date C101 rec'd 11/7/2011 C101 reviewed 11/14/2011

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

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

2. Inactive Well list as of: 11/14/2011 # wells ☐ # Inactive wells ☐

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: 11/14/2011

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 Mar Loco Fm - Gloriosa - Yaso Code 97213 91866

a. Dedicated acreage ☐ What Units ☐

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 160 What Units B-G-F-O

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 11/21/2011

API #30-015 31657

8. Reviewers 105