

HOBBS OCD

UNORTHODOX
LOCATION

OCD Hobbs

ATS-13-931
FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

Split Estate

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMLC0063645	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.	
2. Name of Operator COG Operating LLC.		8. Lease Name and Well No. <40465> Scooter Federal Com #1H	
3a. Address 2208 West Main Street Artesia, NM 88210		9. API Well No. 30-025-41732	
3b. Phone No. (include area code) 575-748-6940		10. Field and Pool, or Exploratory <13160> Corbin; Bone Spring, South	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 190' FNL & 460' FWL Unit Letter D (NWNW) SHL Sec 23-T18S-R33E At proposed prod. Zone 330' FSL & 380' FWL Unit Letter M (SWSW) BHL Sec 23-T18S-R33E		11. Sec., T.R.M. or Blk and Survey or Area Section 23 - T18S - R33E	
14. Distance in miles and direction from nearest town or post office* Approximately 8 miles from Maljamar		12. County or Parish Lea County	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. Unit line, if any) 190'		13. State NM	
16. No. of acres in lease 800		17. Spacing Unit dedicated to this well 160	
18. Distance from location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 191' BHL: 1172'		20. BLM/BIA Bond No. on file NMB000740 & NMB000215	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3896.5' GL		22. Approximate date work will start* 2/1/2013	
		23. Estimated duration 30 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. | 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 <i>Mayte Reyes</i>	Name (Printed/Typed) Mayte Reyes	Date 11/6/2013
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Title
Regulatory Analyst

Approved by (Signature)	Name (Printed/Typed)	Date
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Title
FIELD MANAGER / S/ STEPHEN J. CAFFEY 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.

(Continued on page 2)

Capitan Controlled Water Basin (Continued on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

MAR 25 2014

ONE/RBDM3 TEST 03/19/14

COG Operating LLC
DRILLING AND OPERATIONS PROGRAM
Scooter Federal Com 1H
SHL: 190' FNL & 460' FWL
BHL: 330' FSL & 380' FWL
Section 23, T18S R33E
Lea County, New Mexico

In conjunction with Form 3160-3, Application for Permit to Drill subject well, COG Operating LLC submits the following eleven items of pertinent information in accordance with BLM requirements.

1. Geological surface formation: Permian
2. The estimated tops of geologic markers & estimated depths at which anticipated water, oil or gas formations are expected to be encountered are as follows:

Fresh Water	60'	
Rustler	1,510'	
Top of Salt	1,583'	
Bottom of Salt	2,836'	
Tansill	2,902'	
Yates	3,042'	
Seven Rivers	3,532'	
Queen	4,204'	
Cherry Canyon	5,172'	Oil
Brushy Canyon	6,055'	Oil
Bone Spring	7,239'	Oil
1 st BS Sand	8,562'	Oil
2 nd BS Sand	9,161'	Oil
3 rd BS Sand	9,915'	Oil
Wolfcamp	10,288'	Will not penetrate
TD MD	14,144'	
TD TVD	9,700'	

No other formations are expected to give up oil, gas or fresh water in measurable quantities.

The surface fresh water sands will be protected by setting 13-3/8" casing at ^{10,660'}~~1,550'~~ and circulating cement back to surface.

The salt sections will be isolated by setting 9-5/8" casing at 3,100' and circulating cement back to surface.

Other intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement to surface.

See COA

17 1/2"	0' - 1,550'
---------	------------------------

- | | |
|--------|--------------|
| 7 7/8" | 0' - 14.144' |
|--------|--------------|

4. Proposed Cement Program

- | | |
|-------------------------|--|
| a. 13-3/8" Surface | Lead: 820 sx Class C + 4% Gel + 2% CaCl ₂
(13.5 ppg / 9.2 gal/sk / 1.75 cuft/sk)
Tail: 250 sx Class C + 2% CaCl ₂
(14.8 ppg / 6.35 gal/sk / 1.34 cuft/sk)
**Calculated w/60% excess on OH volumes based on
offset wells |
| b. 9 5/8" Intermediate: | Lead: 645 sx Class C + 4% Gel + 1% CaCl ₂
(13.5 ppg / 9.2 gal/sk / 1.75 cuft/sk)
Tail: 200 sx Class C + 2% CaCl ₂
(14.8 ppg / 6.35 gal/sk / 1.34 cuft/sk)
**Calculated w/70% excess on OH volumes |
| c. 5 1/2" Production | Lead: 1090 sx 50:50:10 H w/ 8# salt, 5# kolseal, 0.5%
Halad-322, 0.3% HR-601 & 1/4# D-Air 5000 (11.9
ppg / 14.07 gal/sk / 2.51 cuft/sk)
Tail: 1130 sx 50:50:2 H w/ 1% salt, 0.4% GasStop,
0.3% CFR-3 & 0.1% HR601, & CFR-3 (14.4 ppg /
5.66 gal/sk 1.25 cuft/sk)
**Calculated w/70% excess on OH volumes |

- The above cement volumes could be revised pending caliper measurements.
- All casing strings are designed to circulate to surface.

5. Minimum Specifications for Pressure Control:

Nipple up on 13 3/8" with minimum 2M annular preventer. Annular will be tested to 50% of WP and remainder of system tested to 2000 psi by independent tester.

Nipple up on 9 5/8" with minimum 3M annular and double ram preventers. Annular will be tested to 50% of WP and remainder of system tested to 3000 psi by independent tester.

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.

A 2" kill line and a minimum 3" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 3000 psi WP rating.

All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string depth or 1500 psig, whichever is greater, but not to exceed 70 percent of casing's minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action will be taken.

While drilling the intermediate section, if a reading of H₂S is greater than 100 ppm, well will be shut-in and a remote operated choke will be installed.

6. Estimated BHP & BHT:

Lateral TD = 4237 psi
Lateral TD = 148° F

7. Mud Program: The applicable depths and properties of this system are as follows:

Depth	Type System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0' - 1,550'	Fresh Water	8.4	29	N.C.
1,550' - 3,100'	Brine	10.0	29	N.C.
3,100' - 14,144' (Lateral)	Cut Brine	8.5 - 8.7	29	N.C.

See
COA

- The necessary mud products for weight addition and fluid loss control will be on location at all times.
- A visual and electronic mud monitoring system will be rigged up prior to spud to detect changes in the volume of mud system. The electronic system consists of a pit volume totalizer, stroke counter and flow sensor at flow line.
- If weight and/or viscosity are introduced to the mud system a daily mud check will be performed by mud contractor, along with tourly check by rig personnel.
- After setting intermediate casing, a third party gas unit detection system will be installed at the flow line.

8. Auxiliary Well Control and Monitoring Equipment:

- A Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

See
COA

9. Testing, Logging and Coring Program:

- a. Drill stem tests will be based on geological sample shows.
- b. If open hole electrical logging is performed, the program will be:
 - i. Total Depth to Intermediate Casing: Dual Laterolog-Micro Laterolog and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
 - ii. Total Depth to Surface: Compensated Neutron with Gamma Ray
 - iii. No cores are planned.
 - iv. Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

10. Potential Hazards:

- a. No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. No H₂S is anticipated to be encountered.

(within one mile)

*See
COA*

11. Anticipated starting date and Duration of Operations:

- a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days.



COG Operating LLC

Lea County, NM (NAD27 NME)

Scooter Fed Com

1H

OH

Plan: Design #1

Standard Planning Report - Geographic

24 October, 2013

NEXUS
DIRECTIONAL SOLUTIONS, L.P.



Nexus Directional Solutions L.P.
Planning Report - Geographic



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3914.0usft (Original Well Elev)
Project:	Lea County, NM (NAD27 NME)	MD Reference:	WELL @ 3914.0usft (Original Well Elev)
Site:	Scooter Fed Com	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Design #1		

Project:	Lea County, NM (NAD27 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:	Scooter Fed Com		
Site Position:		Northing:	633,527.40 usft
From:	Map	Easting:	713,079.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 44' 23.085 N
		Longitude:	103° 38' 25.281 W
		Grid Convergence:	0.37 °

Well:	1H		
Well Position	+N/-S	0.0 usft	Northing: 633,527.40 usft
	+E/-W	0.0 usft	Easting: 713,079.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level: 3,896.5 usft

Wellbore:	OH		
Magnetics:	Model Name	Sample Date	Declination (°)
	IGRF2010	10/24/13	7.36
			Dip Angle (°)
			60.59
			Field Strength (nT)
			48,679

Design:	Design #1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			180.56

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
9,102.5	0.00	0.00	9,102.5	0.0	0.0	0.00	0.00	0.00	0.00	
9,839.2	88.40	180.56	9,579.8	-464.1	-4.5	12.00	12.00	0.00	180.56	
14,143.5	88.40	180.56	9,700.0	-4,766.5	-46.4	0.00	0.00	0.00	0.00	PBHL Scooter Fed Cc



Nexus Directional Solutions L.P.
Planning Report - Geographic



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3914.0usft (Original Well Elev)
Project:	Lea County, NM (NAD27 NME)	MD Reference:	WELL @ 3914.0usft (Original Well Elev)
Site:	Scooter Fed Com	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Design #1		

Planned/Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
100.0	0.00	0.00	100.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
200.0	0.00	0.00	200.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
300.0	0.00	0.00	300.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
400.0	0.00	0.00	400.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
500.0	0.00	0.00	500.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
600.0	0.00	0.00	600.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
700.0	0.00	0.00	700.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
800.0	0.00	0.00	800.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
900.0	0.00	0.00	900.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
1,200.0	0.00	0.00	1,200.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
2,100.0	0.00	0.00	2,100.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
2,200.0	0.00	0.00	2,200.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
2,300.0	0.00	0.00	2,300.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
2,400.0	0.00	0.00	2,400.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
2,500.0	0.00	0.00	2,500.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
2,600.0	0.00	0.00	2,600.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
2,700.0	0.00	0.00	2,700.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
2,800.0	0.00	0.00	2,800.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
2,900.0	0.00	0.00	2,900.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
3,000.0	0.00	0.00	3,000.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
3,100.0	0.00	0.00	3,100.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
3,200.0	0.00	0.00	3,200.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
3,300.0	0.00	0.00	3,300.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
3,400.0	0.00	0.00	3,400.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
3,500.0	0.00	0.00	3,500.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
3,600.0	0.00	0.00	3,600.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
3,700.0	0.00	0.00	3,700.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
3,800.0	0.00	0.00	3,800.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
3,900.0	0.00	0.00	3,900.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
4,000.0	0.00	0.00	4,000.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
4,100.0	0.00	0.00	4,100.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
4,200.0	0.00	0.00	4,200.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
4,300.0	0.00	0.00	4,300.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
4,400.0	0.00	0.00	4,400.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
4,500.0	0.00	0.00	4,500.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
4,600.0	0.00	0.00	4,600.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
4,700.0	0.00	0.00	4,700.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
4,800.0	0.00	0.00	4,800.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
4,900.0	0.00	0.00	4,900.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
5,000.0	0.00	0.00	5,000.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
5,100.0	0.00	0.00	5,100.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
5,200.0	0.00	0.00	5,200.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
5,300.0	0.00	0.00	5,300.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
5,400.0	0.00	0.00	5,400.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W



Nexus Directional Solutions L.P.
Planning Report - Geographic



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3914.0usft (Original Well Elev)
Project:	Lea County, NM (NAD27 NME)	MD Reference:	WELL @ 3914.0usft (Original Well Elev)
Site:	Scooter Fed Com	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,500.0	0.00	0.00	5,500.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
5,600.0	0.00	0.00	5,600.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
5,700.0	0.00	0.00	5,700.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
5,800.0	0.00	0.00	5,800.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
5,900.0	0.00	0.00	5,900.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
6,000.0	0.00	0.00	6,000.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
6,100.0	0.00	0.00	6,100.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
6,200.0	0.00	0.00	6,200.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
6,300.0	0.00	0.00	6,300.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
6,400.0	0.00	0.00	6,400.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
6,500.0	0.00	0.00	6,500.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
6,600.0	0.00	0.00	6,600.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
6,700.0	0.00	0.00	6,700.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
6,800.0	0.00	0.00	6,800.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
6,900.0	0.00	0.00	6,900.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
7,000.0	0.00	0.00	7,000.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
7,100.0	0.00	0.00	7,100.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
7,200.0	0.00	0.00	7,200.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
7,300.0	0.00	0.00	7,300.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
7,400.0	0.00	0.00	7,400.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
7,500.0	0.00	0.00	7,500.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
7,600.0	0.00	0.00	7,600.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
7,700.0	0.00	0.00	7,700.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
7,800.0	0.00	0.00	7,800.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
7,900.0	0.00	0.00	7,900.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
8,000.0	0.00	0.00	8,000.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
8,100.0	0.00	0.00	8,100.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
8,200.0	0.00	0.00	8,200.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
8,300.0	0.00	0.00	8,300.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
8,400.0	0.00	0.00	8,400.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
8,500.0	0.00	0.00	8,500.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
8,600.0	0.00	0.00	8,600.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
8,700.0	0.00	0.00	8,700.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
8,800.0	0.00	0.00	8,800.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
8,900.0	0.00	0.00	8,900.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
9,000.0	0.00	0.00	9,000.0	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
9,102.5	0.00	0.00	9,102.5	0.0	0.0	633,527.40	713,079.00	32° 44' 23.085 N	103° 38' 25.281 W
Start Build 12.00									
9,125.0	2.70	180.56	9,125.0	-0.5	0.0	633,526.88	713,078.99	32° 44' 23.080 N	103° 38' 25.281 W
9,150.0	5.70	180.56	9,149.9	-2.4	0.0	633,525.05	713,078.97	32° 44' 23.062 N	103° 38' 25.281 W
9,175.0	8.70	180.56	9,174.7	-5.5	-0.1	633,521.92	713,078.94	32° 44' 23.031 N	103° 38' 25.282 W
9,200.0	11.70	180.56	9,199.3	-9.9	-0.1	633,517.49	713,078.90	32° 44' 22.987 N	103° 38' 25.283 W
9,225.0	14.70	180.56	9,223.7	-15.6	-0.2	633,511.79	713,078.84	32° 44' 22.931 N	103° 38' 25.284 W
9,250.0	17.70	180.56	9,247.7	-22.6	-0.2	633,504.81	713,078.78	32° 44' 22.862 N	103° 38' 25.285 W
9,275.0	20.70	180.56	9,271.3	-30.8	-0.3	633,496.60	713,078.70	32° 44' 22.780 N	103° 38' 25.287 W
9,300.0	23.70	180.56	9,294.4	-40.3	-0.4	633,487.15	713,078.60	32° 44' 22.687 N	103° 38' 25.289 W
9,325.0	26.70	180.56	9,317.0	-50.9	-0.5	633,476.51	713,078.50	32° 44' 22.582 N	103° 38' 25.291 W
9,350.0	29.70	180.56	9,339.1	-62.7	-0.6	633,464.70	713,078.39	32° 44' 22.465 N	103° 38' 25.293 W
9,375.0	32.70	180.56	9,360.5	-75.6	-0.7	633,451.76	713,078.26	32° 44' 22.337 N	103° 38' 25.295 W
9,400.0	35.70	180.56	9,381.1	-89.7	-0.9	633,437.71	713,078.12	32° 44' 22.198 N	103° 38' 25.298 W
9,425.0	38.70	180.56	9,401.0	-104.8	-1.0	633,422.60	713,077.98	32° 44' 22.048 N	103° 38' 25.301 W
9,450.0	41.70	180.56	9,420.1	-120.9	-1.2	633,406.46	713,077.82	32° 44' 21.889 N	103° 38' 25.304 W
9,475.0	44.70	180.56	9,438.4	-138.0	-1.3	633,389.36	713,077.65	32° 44' 21.719 N	103° 38' 25.307 W
9,500.0	47.70	180.56	9,455.7	-156.1	-1.5	633,371.32	713,077.48	32° 44' 21.541 N	103° 38' 25.311 W



Nexus Directional Solutions L.P.
Planning Report - Geographic



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3914.0usft (Original Well Elev)
Project:	Lea County, NM (NAD27 NME)	MD Reference:	WELL @ 3914.0usft (Original Well Elev)
Site:	Scooter Fed Com	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,525.0	50.70	180.56	9,472.0	-175.0	-1.7	633,352.39	713,077.29	32° 44' 21.354 N	103° 38' 25.314 W	
9,550.0	53.70	180.56	9,487.3	-194.8	-1.9	633,332.65	713,077.10	32° 44' 21.158 N	103° 38' 25.318 W	
9,575.0	56.70	180.56	9,501.6	-215.3	-2.1	633,312.12	713,076.90	32° 44' 20.955 N	103° 38' 25.322 W	
9,600.0	59.70	180.56	9,514.8	-236.5	-2.3	633,290.88	713,076.69	32° 44' 20.745 N	103° 38' 25.326 W	
9,625.0	62.70	180.56	9,526.8	-258.4	-2.5	633,268.98	713,076.48	32° 44' 20.528 N	103° 38' 25.330 W	
9,650.0	65.70	180.56	9,537.7	-280.9	-2.7	633,246.47	713,076.26	32° 44' 20.306 N	103° 38' 25.334 W	
9,675.0	68.70	180.56	9,547.4	-304.0	-3.0	633,223.43	713,076.04	32° 44' 20.078 N	103° 38' 25.339 W	
9,700.0	71.70	180.56	9,555.8	-327.5	-3.2	633,199.91	713,075.81	32° 44' 19.845 N	103° 38' 25.343 W	
9,725.0	74.70	180.56	9,563.1	-351.4	-3.4	633,175.98	713,075.57	32° 44' 19.608 N	103° 38' 25.348 W	
9,750.0	77.70	180.56	9,569.0	-375.7	-3.7	633,151.71	713,075.34	32° 44' 19.368 N	103° 38' 25.353 W	
9,775.0	80.70	180.56	9,573.7	-400.2	-3.9	633,127.16	713,075.10	32° 44' 19.125 N	103° 38' 25.357 W	
9,800.0	83.70	180.56	9,577.1	-425.0	-4.1	633,102.39	713,074.86	32° 44' 18.880 N	103° 38' 25.362 W	
9,825.0	86.70	180.56	9,579.2	-449.9	-4.4	633,077.48	713,074.62	32° 44' 18.634 N	103° 38' 25.367 W	
9,839.2	88.40	180.56	9,579.8	-464.1	-4.5	633,063.29	713,074.48	32° 44' 18.493 N	103° 38' 25.369 W	
Start 4304.3 hold at 9839.2 MD										
9,900.0	88.40	180.56	9,581.5	-524.9	-5.1	633,002.53	713,073.89	32° 44' 17.892 N	103° 38' 25.381 W	
10,000.0	88.40	180.56	9,584.3	-624.8	-6.1	632,902.57	713,072.91	32° 44' 16.903 N	103° 38' 25.400 W	
10,100.0	88.40	180.56	9,587.1	-724.8	-7.1	632,802.61	713,071.94	32° 44' 15.914 N	103° 38' 25.419 W	
10,200.0	88.40	180.56	9,589.9	-824.7	-8.0	632,702.66	713,070.97	32° 44' 14.925 N	103° 38' 25.438 W	
10,300.0	88.40	180.56	9,592.7	-924.7	-9.0	632,602.70	713,069.99	32° 44' 13.936 N	103° 38' 25.457 W	
10,400.0	88.40	180.56	9,595.5	-1,024.7	-10.0	632,502.74	713,069.02	32° 44' 12.947 N	103° 38' 25.476 W	
10,500.0	88.40	180.56	9,598.3	-1,124.6	-10.9	632,402.79	713,068.05	32° 44' 11.958 N	103° 38' 25.495 W	
10,600.0	88.40	180.56	9,601.1	-1,224.6	-11.9	632,302.83	713,067.08	32° 44' 10.969 N	103° 38' 25.514 W	
10,700.0	88.40	180.56	9,603.9	-1,324.5	-12.9	632,202.87	713,066.10	32° 44' 9.980 N	103° 38' 25.533 W	
10,800.0	88.40	180.56	9,606.6	-1,424.5	-13.9	632,102.92	713,065.13	32° 44' 8.991 N	103° 38' 25.552 W	
10,900.0	88.40	180.56	9,609.4	-1,524.4	-14.8	632,002.96	713,064.16	32° 44' 8.002 N	103° 38' 25.571 W	
11,000.0	88.40	180.56	9,612.2	-1,624.4	-15.8	631,903.01	713,063.18	32° 44' 7.013 N	103° 38' 25.590 W	
11,100.0	88.40	180.56	9,615.0	-1,724.4	-16.8	631,803.05	713,062.21	32° 44' 6.024 N	103° 38' 25.609 W	
11,200.0	88.40	180.56	9,617.8	-1,824.3	-17.8	631,703.09	713,061.24	32° 44' 5.035 N	103° 38' 25.629 W	
11,300.0	88.40	180.56	9,620.6	-1,924.3	-18.7	631,603.14	713,060.26	32° 44' 4.046 N	103° 38' 25.648 W	
11,400.0	88.40	180.56	9,623.4	-2,024.2	-19.7	631,503.18	713,059.29	32° 44' 3.057 N	103° 38' 25.667 W	
11,500.0	88.40	180.56	9,626.2	-2,124.2	-20.7	631,403.22	713,058.32	32° 44' 2.068 N	103° 38' 25.686 W	
11,600.0	88.40	180.56	9,629.0	-2,224.1	-21.7	631,303.27	713,057.34	32° 44' 1.079 N	103° 38' 25.705 W	
11,700.0	88.40	180.56	9,631.8	-2,324.1	-22.6	631,203.31	713,056.37	32° 44' 0.090 N	103° 38' 25.724 W	
11,800.0	88.40	180.56	9,634.6	-2,424.0	-23.6	631,103.36	713,055.40	32° 43' 59.101 N	103° 38' 25.743 W	
11,900.0	88.40	180.56	9,637.4	-2,524.0	-24.6	631,003.40	713,054.43	32° 43' 58.112 N	103° 38' 25.762 W	
12,000.0	88.40	180.56	9,640.2	-2,624.0	-25.5	630,903.44	713,053.45	32° 43' 57.123 N	103° 38' 25.781 W	
12,100.0	88.40	180.56	9,642.9	-2,723.9	-26.5	630,803.49	713,052.48	32° 43' 56.134 N	103° 38' 25.800 W	
12,200.0	88.40	180.56	9,645.7	-2,823.9	-27.5	630,703.53	713,051.51	32° 43' 55.145 N	103° 38' 25.819 W	
12,300.0	88.40	180.56	9,648.5	-2,923.8	-28.5	630,603.57	713,050.53	32° 43' 54.156 N	103° 38' 25.838 W	
12,400.0	88.40	180.56	9,651.3	-3,023.8	-29.4	630,503.62	713,049.56	32° 43' 53.167 N	103° 38' 25.857 W	
12,500.0	88.40	180.56	9,654.1	-3,123.7	-30.4	630,403.66	713,048.59	32° 43' 52.178 N	103° 38' 25.876 W	
12,600.0	88.40	180.56	9,656.9	-3,223.7	-31.4	630,303.71	713,047.61	32° 43' 51.189 N	103° 38' 25.895 W	
12,700.0	88.40	180.56	9,659.7	-3,323.7	-32.4	630,203.75	713,046.64	32° 43' 50.200 N	103° 38' 25.914 W	
12,800.0	88.40	180.56	9,662.5	-3,423.6	-33.3	630,103.79	713,045.67	32° 43' 49.211 N	103° 38' 25.933 W	
12,900.0	88.40	180.56	9,665.3	-3,523.6	-34.3	630,003.84	713,044.70	32° 43' 48.222 N	103° 38' 25.952 W	
13,000.0	88.40	180.56	9,668.1	-3,623.5	-35.3	629,903.88	713,043.72	32° 43' 47.233 N	103° 38' 25.971 W	
13,100.0	88.40	180.56	9,670.9	-3,723.5	-36.2	629,803.92	713,042.75	32° 43' 46.244 N	103° 38' 25.990 W	
13,200.0	88.40	180.56	9,673.7	-3,823.4	-37.2	629,703.97	713,041.78	32° 43' 45.255 N	103° 38' 26.009 W	
13,300.0	88.40	180.56	9,676.4	-3,923.4	-38.2	629,604.01	713,040.80	32° 43' 44.266 N	103° 38' 26.028 W	
13,400.0	88.40	180.56	9,679.2	-4,023.3	-39.2	629,504.06	713,039.83	32° 43' 43.277 N	103° 38' 26.047 W	
13,500.0	88.40	180.56	9,682.0	-4,123.3	-40.1	629,404.10	713,038.86	32° 43' 42.288 N	103° 38' 26.066 W	
13,600.0	88.40	180.56	9,684.8	-4,223.3	-41.1	629,304.14	713,037.88	32° 43' 41.299 N	103° 38' 26.086 W	
13,700.0	88.40	180.56	9,687.6	-4,323.2	-42.1	629,204.19	713,036.91	32° 43' 40.310 N	103° 38' 26.105 W	



Nexus Directional Solutions L.P. Planning Report - Geographic



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 1H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3914.0usft (Original Well Elev)
Project:	Lea County, NM (NAD27 NME)	MD Reference:	WELL @ 3914.0usft (Original Well Elev)
Site:	Scooter Fed Com	North Reference:	Grid
Well:	1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,800.0	88.40	180.56	9,690.4	-4,423.2	-43.1	629,104.23	713,035.94	32° 43' 39.321 N	103° 38' 26.124 W	
13,900.0	88.40	180.56	9,693.2	-4,523.1	-44.0	629,004.27	713,034.97	32° 43' 38.332 N	103° 38' 26.143 W	
14,000.0	88.40	180.56	9,696.0	-4,623.1	-45.0	628,904.32	713,033.99	32° 43' 37.343 N	103° 38' 26.162 W	
14,100.0	88.40	180.56	9,698.8	-4,723.0	-46.0	628,804.36	713,033.02	32° 43' 36.354 N	103° 38' 26.181 W	
14,143.5	88.40	180.56	9,700.0	-4,766.5	-46.4	628,760.90	713,032.60	32° 43' 35.924 N	103° 38' 26.189 W	
TD at 14143.5										

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
PBHL Scooter Fed Com	- plan hits target center	0.00	0.00	9,700.0	-4,766.5	-46.4	628,760.90	713,032.60	32° 43' 35.924 N	103° 38' 26.189 W
	- Point									

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
9,102.5	9,102.5	0.0	0.0	Start Build 12.00	
9,839.2	9,579.8	-464.1	-4.5	Start 4304.3 hold at 9839.2 MD	
14,143.5	9,700.0	-4,766.5	-46.4	TD at 14143.5	



NEXUS

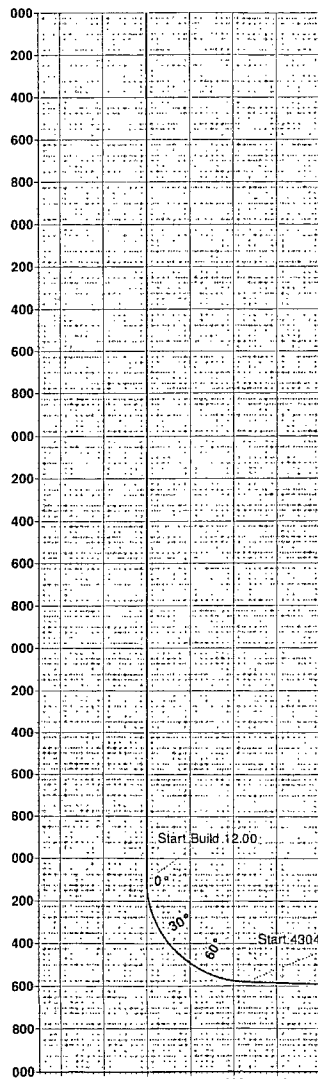
DIRECTIONAL SOLUTIONS, L.P.



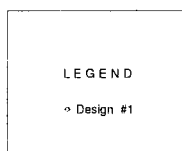
Azimuths to Grid North
True North: -0.37°
Magnetic North: 6.99°

Magnetic Field
Strength: 48679.3nT
Dip Angle: 60.59°
Date: 10/24/2013
Model: IGRF2010

Scooter Fed Com 1H
Lea County, NM (NAD27 NME)
Northing: (Y) 633527.40
Easting: (X) 713079.00
Design #1



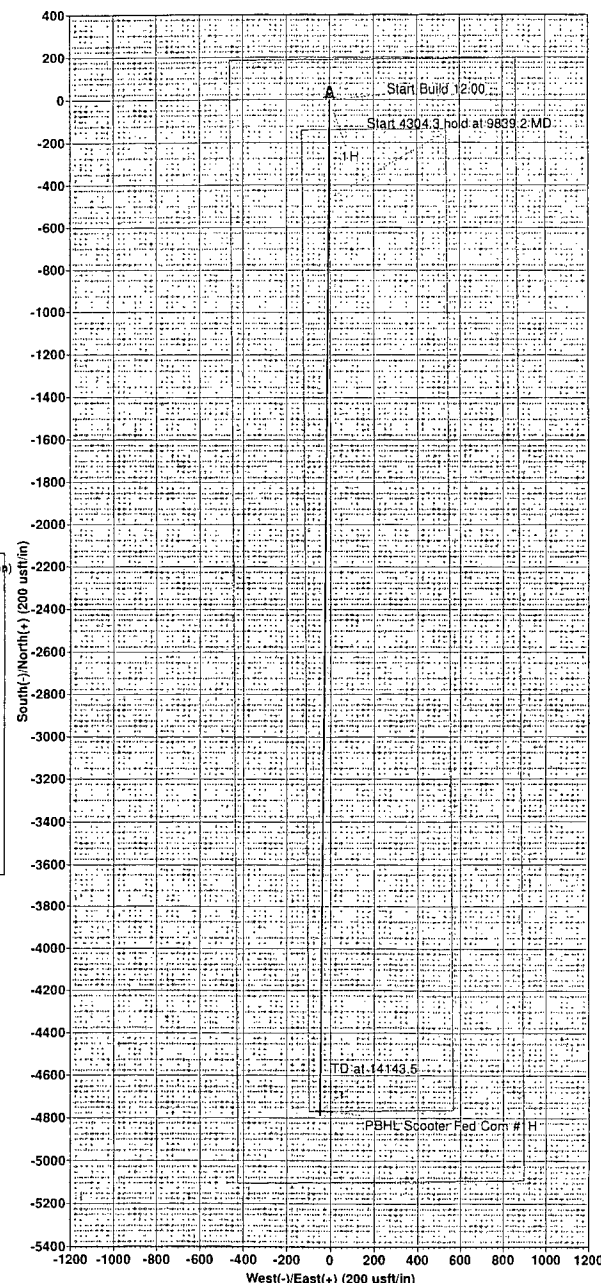
WELL DETAILS:											
WELL @ 3914.0usft (Original Well Elev)											
+N/-S		+E/-W		Northing		Easting		Latitude		Longitude	
0.0		0.0		633527.40		713079.00		32° 44' 23.085 N		103° 38' 25.281 W	
SECTION DETAILS											
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0			
9102.5	0.00	0.00	9102.5	0.0	0.0	0.00	0.00	0.0			
9839.2	88.40	180.56	9579.8	-464.1	-4.5	12.00	180.56	464.1			
14143.5	88.40	180.56	9700.0	-4766.5	-46.4	0.00	0.00	4766.7	PBHL Scooter Fed Com #1H		
DESIGN TARGET DETAILS											
Name			TVD	+N/-S	+E/-W	Northing			Easting		
PBHL Scooter Fed Com #1H			9700.0	-4766.5	-46.4	628760.90			713032.60		



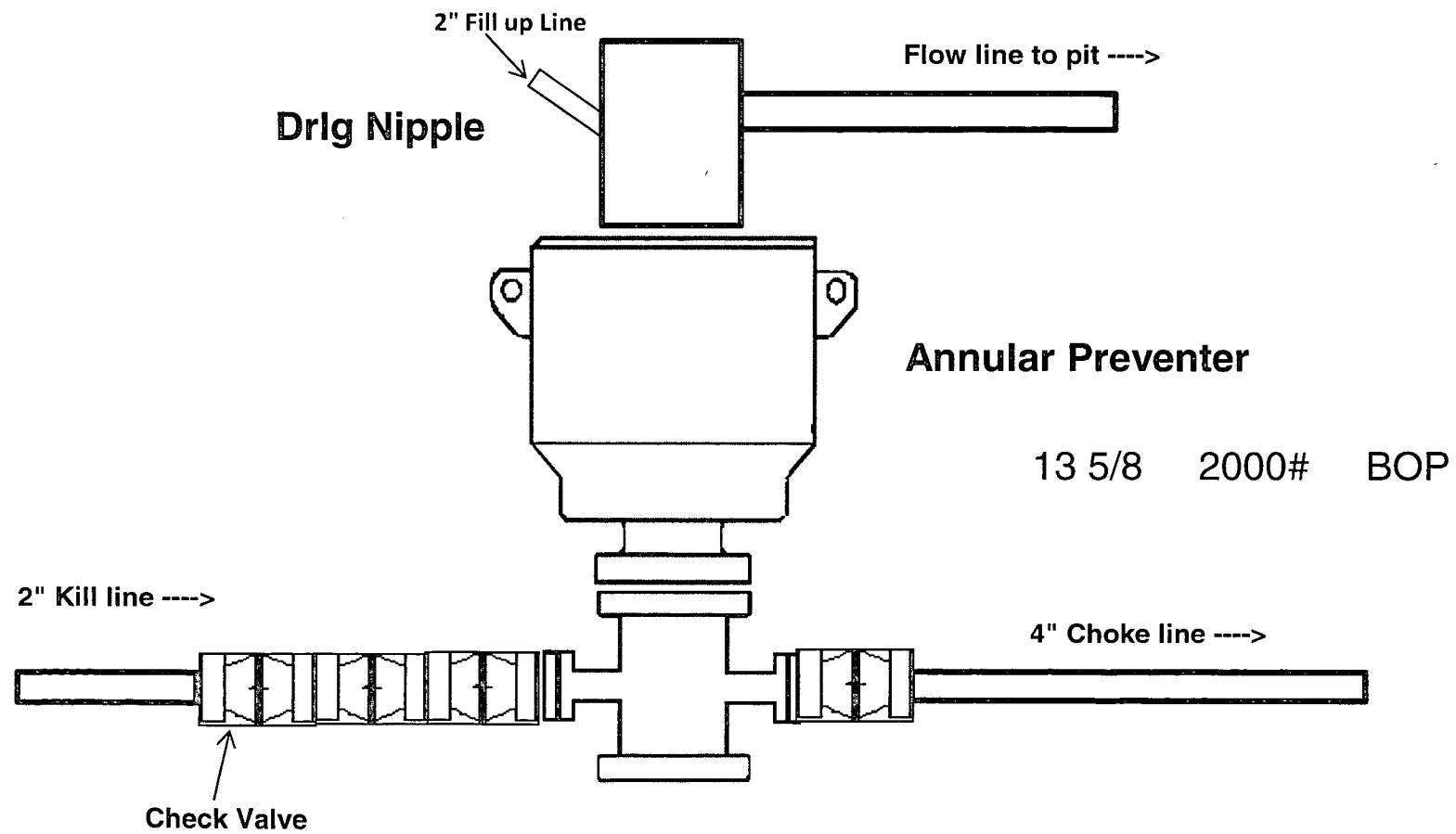
LEGEND
→ Design #1

Mail Ship
10/24, October 24/2013
Nexus Directional Solutions
3025 CH 1265
Odessa TX 79765

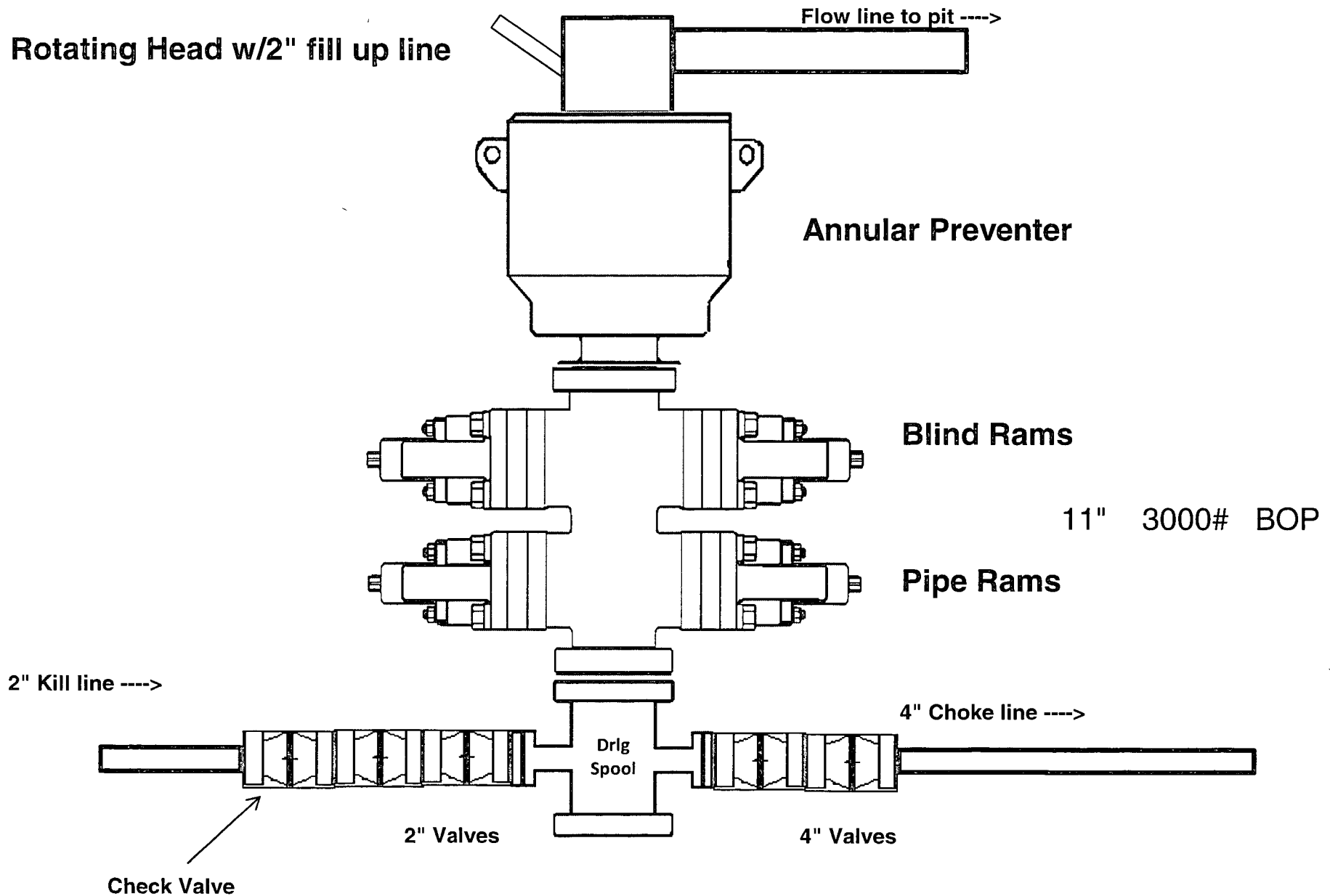
Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well 1H, Grid North
Latitude: 32° 44' 23.085 N
Longitude: 103° 38' 25.281 W
Grid East: 713079.00
Grid North: 633527.40
Scale Factor: 1.000
Geomagnetic Model: IGRF2010
Sample Date: 24-Oct-13
Magnetic Declination: 7.36°
Dip Angle from Horizontal: 60.59°
Magnetic Field Strength: 48679
To convert a Magnetic Direction to a Grid Direction, Add 6.99°
To convert a Magnetic Direction to a True Direction, Add 7.36° East
To convert a True Direction to a Grid Direction, Subtract 0.37°



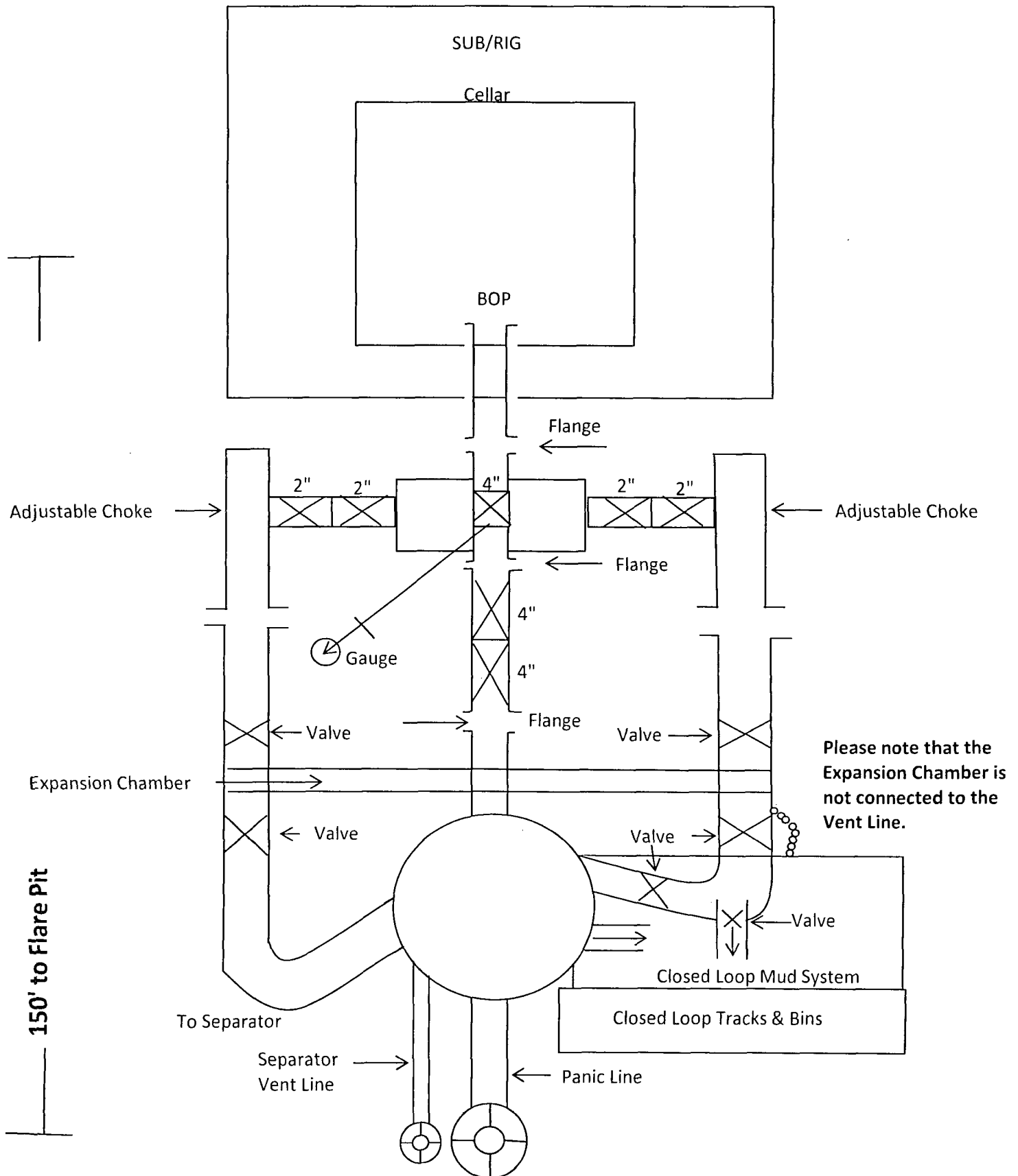
2,000 psi BOP Schematic



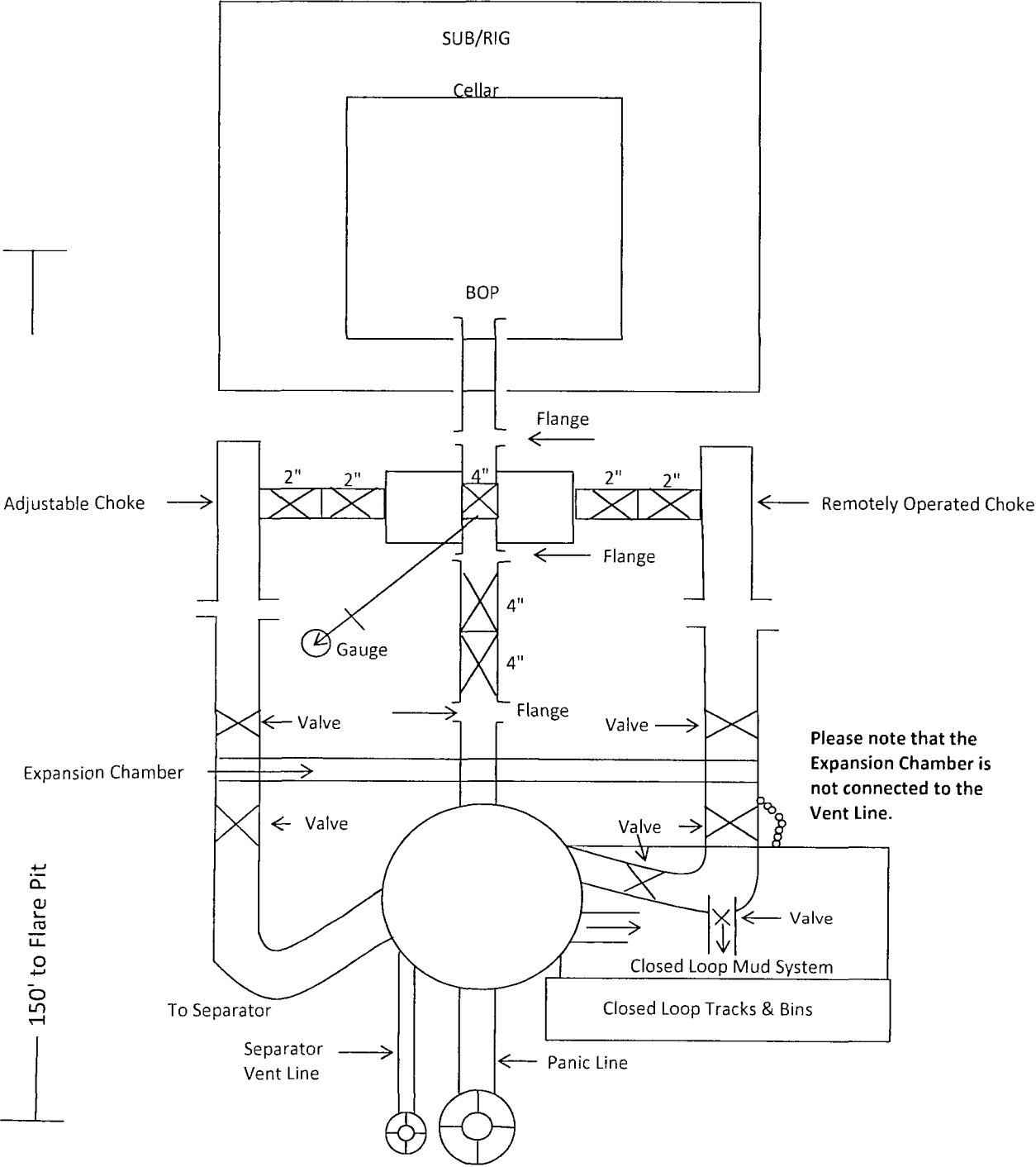
3,000 psi BOP Schematic



2M Choke Manifold Equipment



3M Choke Manifold Equipment



COG Operating LLC

Rig Plat & Closed Loop Equipment Diagram

Well pad will be 340' X 340'
with cellar in center of pad

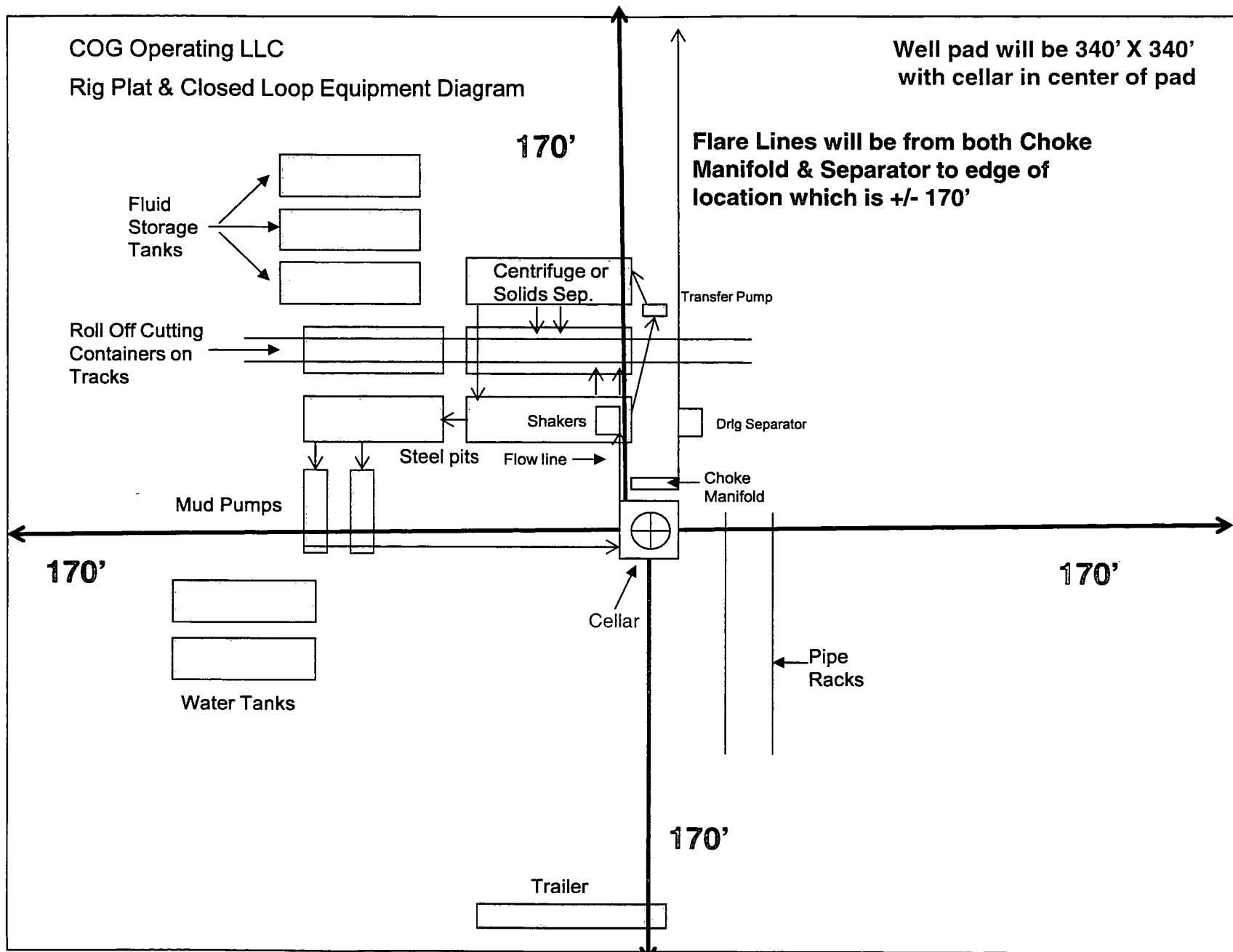


Exhibit 1

"I further certify that COG will comply with Rule 19.15.17
NMAC by using a Closed Loop System."