

OCD Hobbs

HOBBSOCD

DEC 12 2014

RECEIVED

ATS-14-817

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM119759
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator COG Operating LLC. (229137)		7. If Unit or CA Agreement, Name and No.
3a. Address 2208 West Main Street Artesia, NM 88210		8. Lease Name and Well No. (313978) Blue Jay Federal #1H
3b. Phone No. (include area code) 575-748-6940		9. API Well No. 30-025-42338
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 190' FSL & 2310' FEL Unit Letter O (SWSE) SHL Section 18-T20S-R35E At proposed prod. Zone 330' FNL & 2260' FEL Unit Letter B (NWNE) BHL Section 18-T20S-R35E		10. Field and Pool, or Exploratory (97983) WC-025 G-07 S203506D; BCS
14. Distance in miles and direction from nearest town or post office* Approximately 18 miles from Eunice		11. Sec., T.R.M. or Blk and Survey or Area Section 18 - T20S - R35E
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. Unit line, if any) 190'		12. County or Parish Lea County
16. No. of acres in lease 320		13. State NM
17. Spacing Unit dedicated to this well 160		
18. Distance from location* to nearest well, drilling, completed, SHL: None on this Lease applied for, on this lease, ft.		20. BLM/BIA Bond No. on file NMB000740 & NMB00215
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3671.8' GL		22. Approximate date work will start* 7/1/2014
		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 	Name (Printed/Typed) Mayte Reyes	Date 5-28-14
Title Regulatory Analyst		
Approved by (Signature) 	Name (Printed/Typed)	Date DEC 8 2014
Title FIELD MANAGER		
Office CARLSBAD FIELD OFFICE		

Application approval does not warrant or certify that the applicant holds legan 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)

*(Instructions on page 2)

Lea County Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL
DEC 15 2014

DEC 12 2014

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COG Operating, LLC
DRILLING AND OPERATIONS PROGRAM
Blue Jay Federal 1H
SHL: 190' FSL & 2310' FEL
BHL: 330' FNL & 2260' FEL
Section 18, T20S, R35E
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	270'	
Rustler	1,843'	
Salado	1,933'	
Castile	3,400'	
Tansill	3,608'	
Yates	3,718'	
7 Rivers	3,901'	
Capitan Reef	3,950'	
Cherry Canyon	5,644'	Oil
Brushy Canyon	6,893'	Oil
Bone Spring	8,373'	Oil
1 st BS Sand	9,623'	Oil
2 nd BS Sand	10,198'	Oil
3 rd BS Sand	11,173'	Oil
Wolfcamp	11,298'	Oil
PH TD/TVD	11,540'	
Lateral TD MD	15,809'	
Lateral TD TVD	11,140'	

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 1890' and circulating cement back to surface.

The salt section and reef will be protected by setting 9 5/8" casing at ^{5400'}~~5660'~~ and circulating cement to surface on both stages utilizing a DV tool placed at ~ 3850'.

Other intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement back to 5360' (300' overlap).

See COA'S

50' above Capitan Reef

3. Proposed Casing Program: All casing is new and API approved

See COA

Hole Size	Depths	Section	OD Casing	New/Used	Wt	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 1/2"	0' - 1,890'	Surface	13 3/8"	New	54.5#	STC	J-55	1.125	1.125	1.6
12 1/4"	0' - 3,800'	Intrmd	9 5/8"	New	36#	BTC	J-55	1.125	1.125	1.6
8 3/4" 11 3/4"	3,800' - 5,660' 5,400' - 5,400'	Pilot Hole	8 3/4" 9 5/8"	New	40#	BTC	L-80	1.125	1.125	1.6
8 3/4"	10,773' - 11,535'	Production Curve	5 1/2"	New	17#	LTC	P-110	1.125	1.125	1.6
7 7/8"	11,535' - 15,809'	Production Lateral	5 1/2"	New	17#	LTC	P-110	1.125	1.125	1.6

- While running all casing strings, the pipe will be kept a minimum of 1/3 full at all times to avoid approaching the collapse pressure of casing.
- Will run one centralizer every other joint in lateral section of well.

4. Proposed Cement Program

a. 13-3/8" Surface

Lead: 990 sx Class C + 4% Gel + 2% CaCl₂
(13.5 ppg / 9.2 gal/sk / 1.75 ft³/sk)
Tail: 250 sx Class C + 2% CaCl₂
(14.8 ppg / 6.35 gal/sk / 1.34 ft³/sk)

**Calculated w/55% excess on OH volumes

b. 9 5/8" Intermediate:

1st stg:
Lead: 450 sx 35:65:6 C + Salt+Gilsonite+CFR-3+ HR601
(12.9 ppg / 9.96 gal/sk / 1.92 cuft/sx)
Tail: 200 sx Class C
(14.8 ppg / 6.35 gal/sk / 1.34 cuft/sx)
2nd stg:
Lead: 1310 sx Class C + 4% Gel
(13.5 ppg / 9.96 gal/sk / 1.75 cuft/sx)
Tail: 200 sx Class C
(14.8 ppg / 6.35 gal/sk / 1.34 cuft/sx)

*Calculated w/>60% excess on OH volumes

**DVT/ECP set @ 3850'

c. 5 1/2" Production

Lead: 830 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 ft³/sk)
Tail: 1190 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 ft³/sk)

**Calculated w/60% excess on OH volumes

See
COA

- The above cement volumes could be revised pending caliper measurements.
- Surface and intermediate casing strings are designed to circulate cement to surface.
- ~~Production casing string is designed to circulate cement to 5360' (300' overlap).~~ minimum of 50' above Capitan Reef
- Pilot hole will be plugged back with the following plugs:
 - 340': 11,200' - 11,540' with 170 sx Class H (17.2 ppg / 3.60 gal/sk / 0.98 ft³/sk)
 - 675': 10,525' - 11,200' with 330 sx Class H (17.2 ppg / 3.60 gal/sk / 0.98 ft³/sk)

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 5M annular and double ram preventers. Annular will be tested to 50% of WP and remainder of system tested to 5000 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 5000 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:

Pilot Hole TD = 5521 psi

Pilot Hole TD = 159° F

Lateral TD = 4866 psi

Lateral TD = 156° F

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

See
COA

Depth	Type System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0' - 1,890'	Fresh Water	8.4 - 9.0	29	N.C.
1,890' - 5,660'	Brine	10.0 - 10.3	29	N.C.
5,660' - 11,540'	Cut Brine	8.7 - 9.4	29	N.C.
10,773' - 15,809' (Lateral)	Cut Brine	8.8 - 9.2	29	N.C.

- 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. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- c. 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.

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
Blue Jay Federal
#1H**

OH

Plan: Design #1

Standard Planning Report

08 May, 2014



Wellplanning Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3697.8usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 3697.8usft (Original Well Elev)
Site:	Blue Jay Federal	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Design #1		

Project:	Lea County, NM		
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:	Blue Jay Federal		
Site Position:	Map	Northing:	570,747.00 usft
From:		Easting:	758,261.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 33' 58.661 N
		Longitude:	103° 29' 42.139 W
		Grid Convergence:	0.45 °

Well:	#1H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level:

Wellbore:	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	5/8/2014	7.22
			Dip Angle
			60.44
			Field Strength
			48,538

Design:	Design #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			0.12

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
10,772.5	0.00	0.00	10,772.5	0.0	0.0	0.00	0.00	0.00	0.00	
11,535.1	91.47	4.00	11,250.0	488.7	34.2	12.00	12.00	0.00	4.00	
11,622.4	91.47	359.63	11,247.8	576.0	36.9	5.00	0.01	-5.00	-89.88	
15,808.9	91.47	359.63	11,140.0	4,761.0	10.0	0.00	0.00	0.00	0.00	PBHL(BJF#1H)



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Site:	Blue Jay Federal	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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00



Wellplanning Planning Report

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Wellbore:	OH		
Design:	Design #1		

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)
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00
9,200.0	0.00	0.00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00
9,300.0	0.00	0.00	9,300.0	0.0	0.0	0.0	0.00	0.00	0.00
9,400.0	0.00	0.00	9,400.0	0.0	0.0	0.0	0.00	0.00	0.00
9,500.0	0.00	0.00	9,500.0	0.0	0.0	0.0	0.00	0.00	0.00
9,600.0	0.00	0.00	9,600.0	0.0	0.0	0.0	0.00	0.00	0.00
9,700.0	0.00	0.00	9,700.0	0.0	0.0	0.0	0.00	0.00	0.00
9,800.0	0.00	0.00	9,800.0	0.0	0.0	0.0	0.00	0.00	0.00
9,900.0	0.00	0.00	9,900.0	0.0	0.0	0.0	0.00	0.00	0.00
10,000.0	0.00	0.00	10,000.0	0.0	0.0	0.0	0.00	0.00	0.00
10,100.0	0.00	0.00	10,100.0	0.0	0.0	0.0	0.00	0.00	0.00
10,200.0	0.00	0.00	10,200.0	0.0	0.0	0.0	0.00	0.00	0.00
10,300.0	0.00	0.00	10,300.0	0.0	0.0	0.0	0.00	0.00	0.00
10,400.0	0.00	0.00	10,400.0	0.0	0.0	0.0	0.00	0.00	0.00
10,500.0	0.00	0.00	10,500.0	0.0	0.0	0.0	0.00	0.00	0.00
10,600.0	0.00	0.00	10,600.0	0.0	0.0	0.0	0.00	0.00	0.00
10,700.0	0.00	0.00	10,700.0	0.0	0.0	0.0	0.00	0.00	0.00



Wellplanning Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	WELL @ 3697.8usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 3697.8usft (Original Well Elev)
Site:	Blue Jay Federal	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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,772.5	0.00	0.00	10,772.5	0.0	0.0	0.0	0.00	0.00	0.00
KOP - 10772.5 'MD, 0.00° INC, 0.00° AZI									
10,775.0	0.30	4.00	10,775.0	0.0	0.0	0.0	12.00	12.00	0.00
10,800.0	3.30	4.00	10,800.0	0.8	0.1	0.8	12.00	12.00	0.00
10,825.0	6.30	4.00	10,824.9	2.9	0.2	2.9	12.00	12.00	0.00
10,850.0	9.30	4.00	10,849.7	6.3	0.4	6.3	12.00	12.00	0.00
10,875.0	12.30	4.00	10,874.2	10.9	0.8	10.9	12.00	12.00	0.00
10,900.0	15.29	4.00	10,898.5	16.9	1.2	16.9	12.00	12.00	0.00
10,925.0	18.29	4.00	10,922.4	24.1	1.7	24.1	12.00	12.00	0.00
10,950.0	21.29	4.00	10,945.9	32.5	2.3	32.5	12.00	12.00	0.00
10,975.0	24.29	4.00	10,969.0	42.2	2.9	42.2	12.00	12.00	0.00
11,000.0	27.29	4.00	10,991.5	53.0	3.7	53.0	12.00	12.00	0.00
11,025.0	30.29	4.00	11,013.4	65.0	4.5	65.0	12.00	12.00	0.00
11,050.0	33.29	4.00	11,034.7	78.2	5.5	78.2	12.00	12.00	0.00
11,075.0	36.29	4.00	11,055.2	92.4	6.5	92.4	12.00	12.00	0.00
11,100.0	39.28	4.00	11,074.9	107.7	7.5	107.7	12.00	12.00	0.00
11,125.0	42.28	4.00	11,093.9	124.0	8.7	124.0	12.00	12.00	0.00
11,150.0	45.28	4.00	11,111.9	141.2	9.9	141.2	12.00	12.00	0.00
11,175.0	48.28	4.00	11,129.0	159.4	11.1	159.4	12.00	12.00	0.00
11,200.0	51.28	4.00	11,145.2	178.4	12.5	178.5	12.00	12.00	0.00
11,225.0	54.28	4.00	11,160.3	198.3	13.9	198.3	12.00	12.00	0.00
11,250.0	57.28	4.00	11,174.3	218.9	15.3	218.9	12.00	12.00	0.00
11,275.0	60.28	4.00	11,187.3	240.2	16.8	240.3	12.00	12.00	0.00
11,300.0	63.27	4.00	11,199.1	262.2	18.3	262.2	12.00	12.00	0.00
11,325.0	66.27	4.00	11,209.8	284.8	19.9	284.8	12.00	12.00	0.00
11,350.0	69.27	4.00	11,219.2	307.8	21.5	307.9	12.00	12.00	0.00
11,375.0	72.27	4.00	11,227.5	331.4	23.2	331.4	12.00	12.00	0.00
11,400.0	75.27	4.00	11,234.5	355.3	24.8	355.4	12.00	12.00	0.00
11,425.0	78.27	4.00	11,240.2	379.6	26.5	379.7	12.00	12.00	0.00
11,450.0	81.27	4.00	11,244.6	404.1	28.3	404.2	12.00	12.00	0.00
11,475.0	84.27	4.00	11,247.8	428.9	30.0	428.9	12.00	12.00	0.00
11,500.0	87.26	4.00	11,249.6	453.8	31.7	453.8	12.00	12.00	0.00
11,525.0	90.26	4.00	11,250.2	478.7	33.5	478.8	12.00	12.00	0.00
11,535.1	91.47	4.00	11,250.0	488.7	34.2	488.8	12.00	12.00	0.00
EOC - 11535.1 'MD, 91.47° INC, 4.00° AZI									
11,600.0	91.47	0.75	11,248.3	553.6	36.9	553.7	5.00	0.01	-5.00
11,622.4	91.47	359.63	11,247.8	576.0	36.9	576.0	5.00	0.00	-5.00
11,700.0	91.47	359.63	11,245.8	653.5	36.4	653.6	0.00	0.00	0.00
11,800.0	91.47	359.63	11,243.2	753.5	35.8	753.6	0.00	0.00	0.00
11,900.0	91.47	359.63	11,240.6	853.5	35.2	853.5	0.00	0.00	0.00
12,000.0	91.47	359.63	11,238.0	953.4	34.5	953.5	0.00	0.00	0.00
12,100.0	91.47	359.63	11,235.5	1,053.4	33.9	1,053.5	0.00	0.00	0.00
12,200.0	91.47	359.63	11,232.9	1,153.4	33.2	1,153.4	0.00	0.00	0.00
12,300.0	91.47	359.63	11,230.3	1,253.3	32.6	1,253.4	0.00	0.00	0.00
12,400.0	91.47	359.63	11,227.7	1,353.3	31.9	1,353.4	0.00	0.00	0.00
12,500.0	91.47	359.63	11,225.2	1,453.3	31.3	1,453.3	0.00	0.00	0.00
12,600.0	91.47	359.63	11,222.6	1,553.2	30.6	1,553.3	0.00	0.00	0.00
12,700.0	91.47	359.63	11,220.0	1,653.2	30.0	1,653.2	0.00	0.00	0.00
12,800.0	91.47	359.63	11,217.4	1,753.2	29.4	1,753.2	0.00	0.00	0.00
12,900.0	91.47	359.63	11,214.9	1,853.1	28.7	1,853.2	0.00	0.00	0.00
13,000.0	91.47	359.63	11,212.3	1,953.1	28.1	1,953.1	0.00	0.00	0.00
13,100.0	91.47	359.63	11,209.7	2,053.0	27.4	2,053.1	0.00	0.00	0.00
13,200.0	91.47	359.63	11,207.1	2,153.0	26.8	2,153.1	0.00	0.00	0.00
13,300.0	91.47	359.63	11,204.6	2,253.0	26.1	2,253.0	0.00	0.00	0.00



Wellplanning Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC.	TVD Reference:	WELL @ 3697.8usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 3697.8usft (Original Well Elev)
Site:	Blue Jay Federal	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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,400.0	91.47	359.63	11,202.0	2,352.9	25.5	2,353.0	0.00	0.00	0.00	
13,500.0	91.47	359.63	11,199.4	2,452.9	24.9	2,453.0	0.00	0.00	0.00	
13,600.0	91.47	359.63	11,196.9	2,552.9	24.2	2,552.9	0.00	0.00	0.00	
13,700.0	91.47	359.63	11,194.3	2,652.8	23.6	2,652.9	0.00	0.00	0.00	
13,800.0	91.47	359.63	11,191.7	2,752.8	22.9	2,752.8	0.00	0.00	0.00	
13,900.0	91.47	359.63	11,189.1	2,852.8	22.3	2,852.8	0.00	0.00	0.00	
14,000.0	91.47	359.63	11,186.6	2,952.7	21.6	2,952.8	0.00	0.00	0.00	
14,100.0	91.47	359.63	11,184.0	3,052.7	21.0	3,052.7	0.00	0.00	0.00	
14,200.0	91.47	359.63	11,181.4	3,152.7	20.4	3,152.7	0.00	0.00	0.00	
14,300.0	91.47	359.63	11,178.8	3,252.6	19.7	3,252.7	0.00	0.00	0.00	
14,400.0	91.47	359.63	11,176.3	3,352.6	19.1	3,352.6	0.00	0.00	0.00	
14,500.0	91.47	359.63	11,173.7	3,452.6	18.4	3,452.6	0.00	0.00	0.00	
14,600.0	91.47	359.63	11,171.1	3,552.5	17.8	3,552.5	0.00	0.00	0.00	
14,700.0	91.47	359.63	11,168.5	3,652.5	17.1	3,652.5	0.00	0.00	0.00	
14,800.0	91.47	359.63	11,166.0	3,752.4	16.5	3,752.5	0.00	0.00	0.00	
14,900.0	91.47	359.63	11,163.4	3,852.4	15.8	3,852.4	0.00	0.00	0.00	
15,000.0	91.47	359.63	11,160.8	3,952.4	15.2	3,952.4	0.00	0.00	0.00	
15,100.0	91.47	359.63	11,158.2	4,052.3	14.6	4,052.4	0.00	0.00	0.00	
15,200.0	91.47	359.63	11,155.7	4,152.3	13.9	4,152.3	0.00	0.00	0.00	
15,300.0	91.47	359.63	11,153.1	4,252.3	13.3	4,252.3	0.00	0.00	0.00	
15,400.0	91.47	359.63	11,150.5	4,352.2	12.6	4,352.3	0.00	0.00	0.00	
15,500.0	91.47	359.63	11,148.0	4,452.2	12.0	4,452.2	0.00	0.00	0.00	
15,600.0	91.47	359.63	11,145.4	4,552.2	11.3	4,552.2	0.00	0.00	0.00	
15,700.0	91.47	359.63	11,142.8	4,652.1	10.7	4,652.1	0.00	0.00	0.00	
15,808.9	91.47	359.63	11,140.0	4,761.0	10.0	4,761.0	0.00	0.00	0.00	
TD at 15808.9 - PBHL(BJF#1H)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
PBHL(BJF#1H)	0.00	0.00	11,140.0	4,761.0	10.0	575,508.00	758,271.00	32° 34' 45.770 N	103° 29' 41.584 W	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
10,772.5	10,772.5	0.0	0.0	KOP - 10772.5 'MD, 0.00° INC, 0.00° AZI	
11,535.1	11,250.0	488.7	34.2	EOC- 11535.1 'MD, 91.47° INC, 4.00° AZI	
15,808.9	11,140.0	576.0	36.9	TD at 15808.9	



COG Operating LLC
Project: Lea County, NM
Site: Blue Jay Federal
Well: #1H
Wellbore: OH

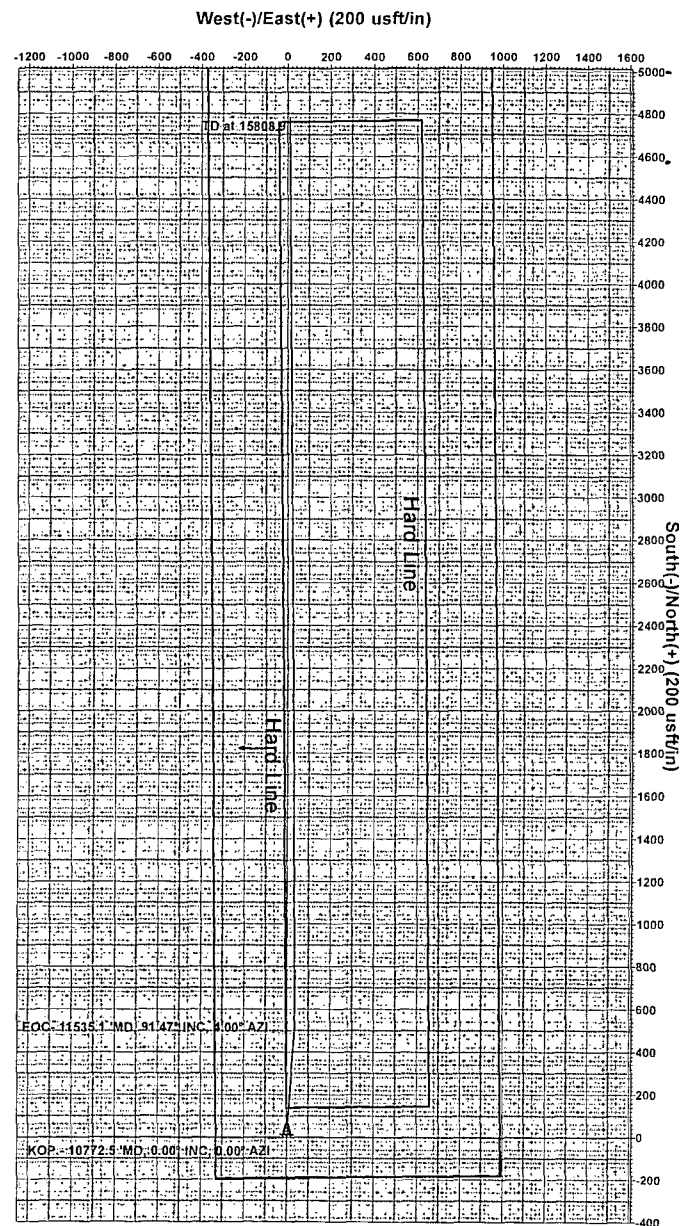
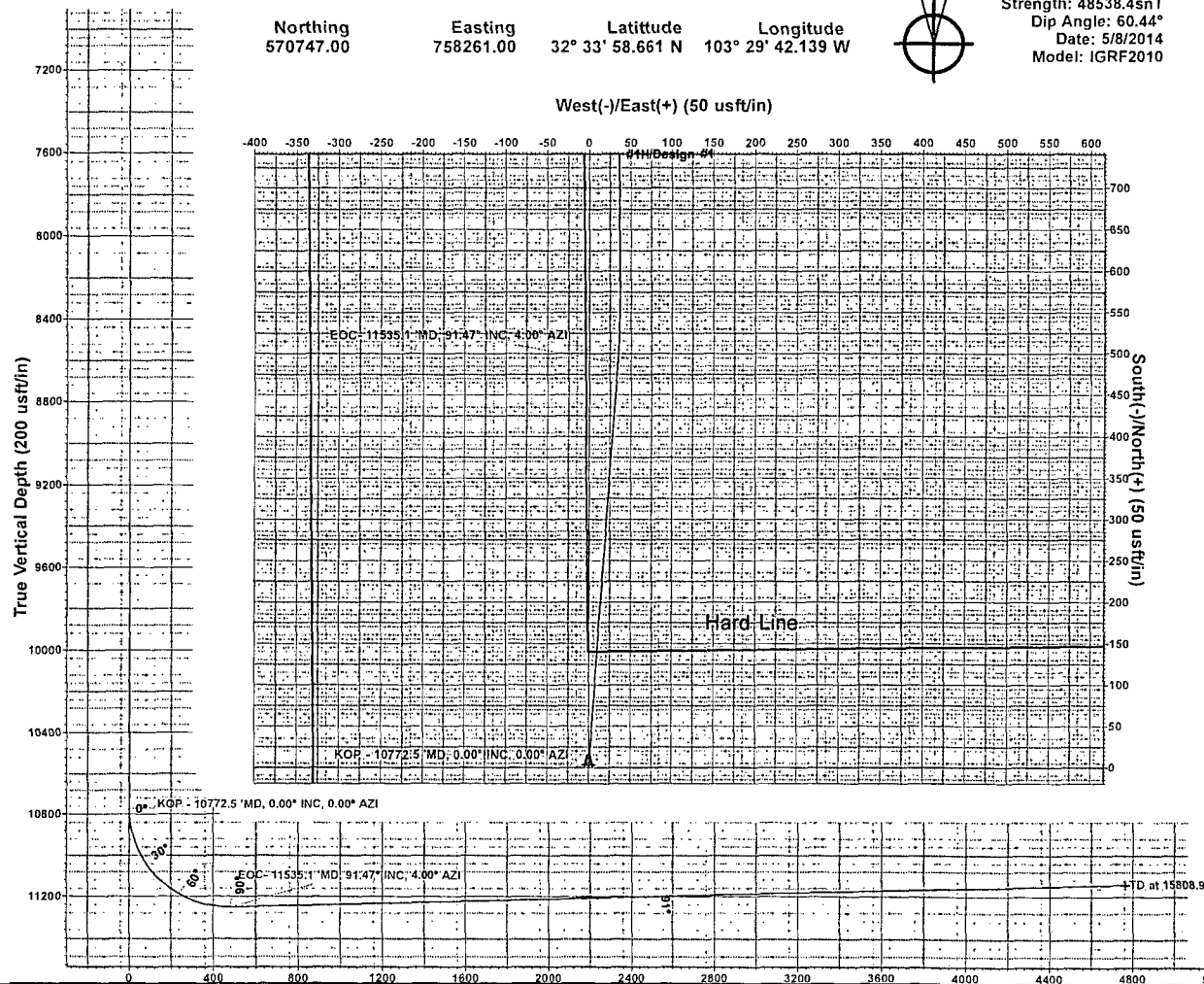
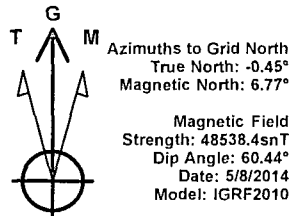
Plan: Design #1 (#1H/OH) Ground Elevation:: 3671.8
RKB Elevation: WELL @ 3697.8usft (Original Well Elev)
Rig Name: Original Well Elev

Northing 570747.00 Easting 758261.00
Latitude 32° 33' 58.661 N Longitude 103° 29' 42.139 W

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	10772.5	0.00	0.00	10772.5	0.0	0.0	0.00	0.00	0.0
3	11535.1	91.47	4.00	11250.0	488.7	34.2	12.00	4.00	488.8
4	11622.4	91.47	359.63	11247.8	576.0	36.9	5.00	-89.88	576.0
5	15808.9	91.47	359.63	11140.0	4761.0	10.0	0.00	0.00	4761.0

PBHL(BJF#1H)



Plan: Design #1 (#1H/OH)
Created By: Well Planner Date: 10:30, May 08 2014

Vertical Section at 0.12° (200 usft/in)
Terra Directional Services
322 Spring Hill Drive, Suite A100, Spring, Texas 77386
432.425.7532

PROJECT DETAILS: Lea County, NM
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
Local North: Grid



New Mexico Office of the State Engineer Water Column/Average Depth to Water

No records found.

PLSS Search:

Section(s): 18

Township: 20S

Range: 35E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the
POD suffix indicates the
POD has been replaced
& no longer serves a
water right file.)

(R=POD has
been replaced,
O=orphaned,
C=the file is
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 04116 S	L	LE		1	2	02	20S	35E		647710	3608881*	55	50	5
L 04157	L	LE		3	3	06	20S	35E		640483	3607561*	70	64	6
L 04158	L	LE		2	4	05	20S	35E		643290	3608008*	70	64	6

Average Depth to Water: **59 feet**

Minimum Depth: **50 feet**

Maximum Depth: **64 feet**

Record Count: 3

PLSS Search:

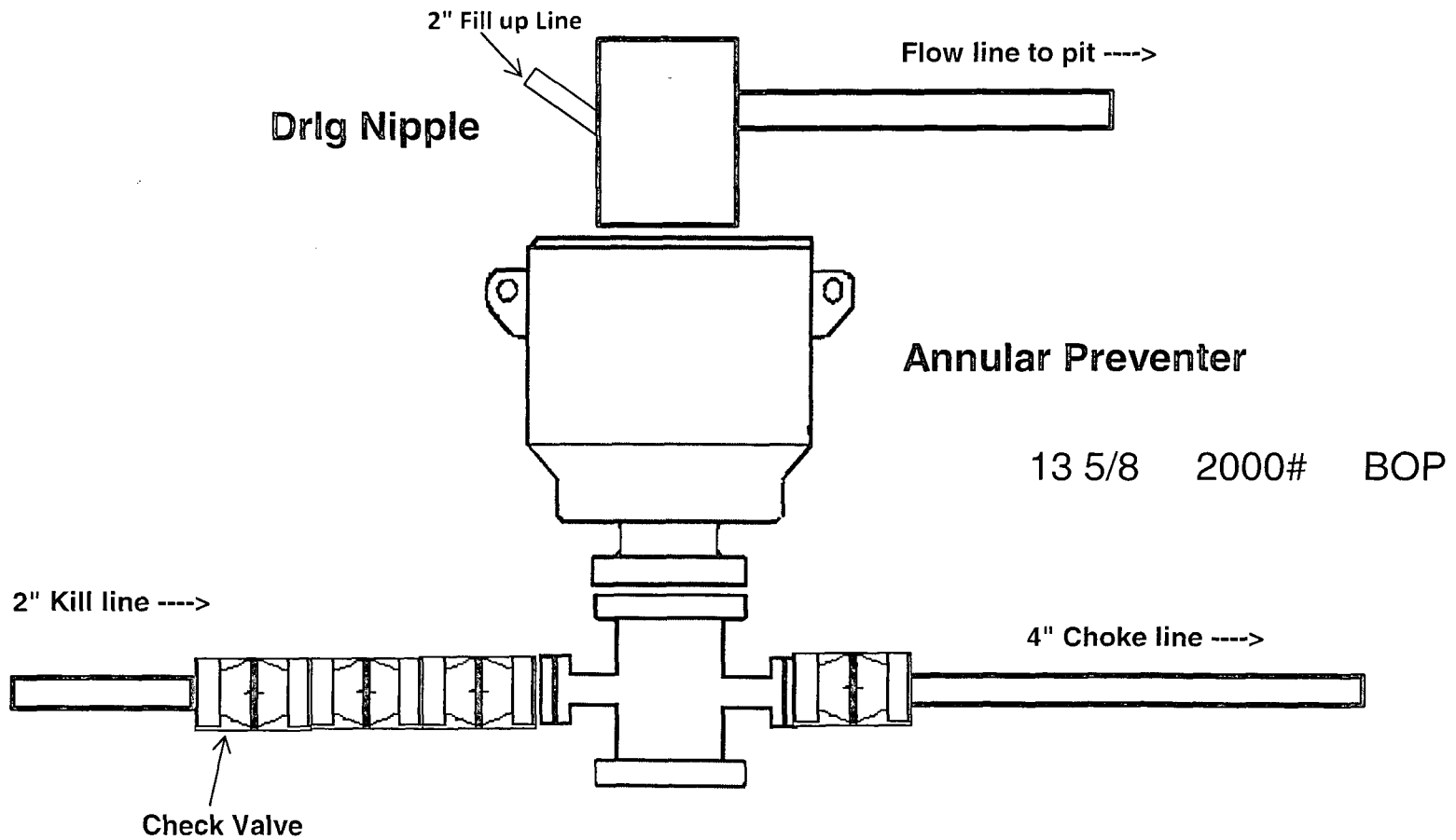
Township: 20S

Range: 35E

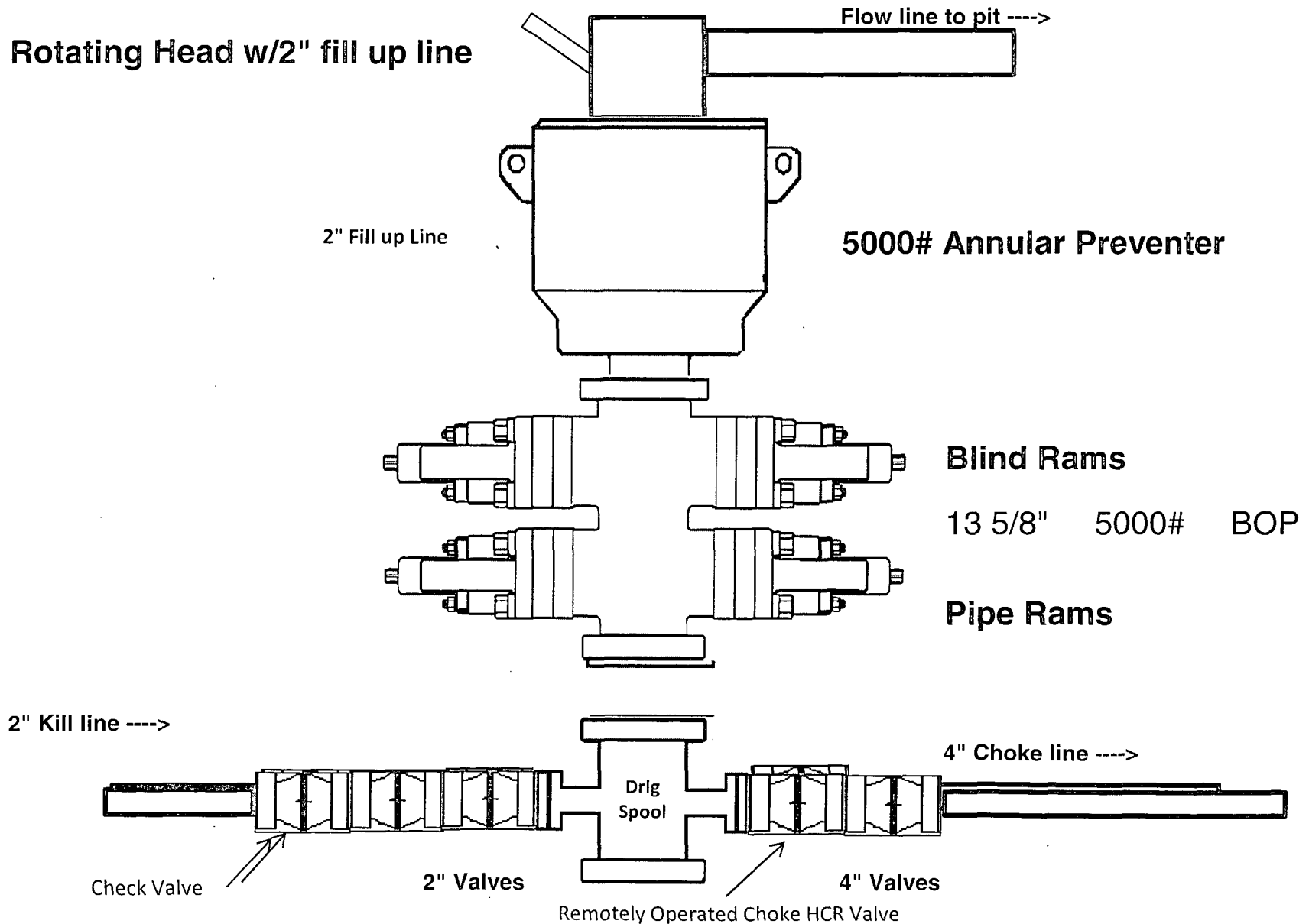
*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

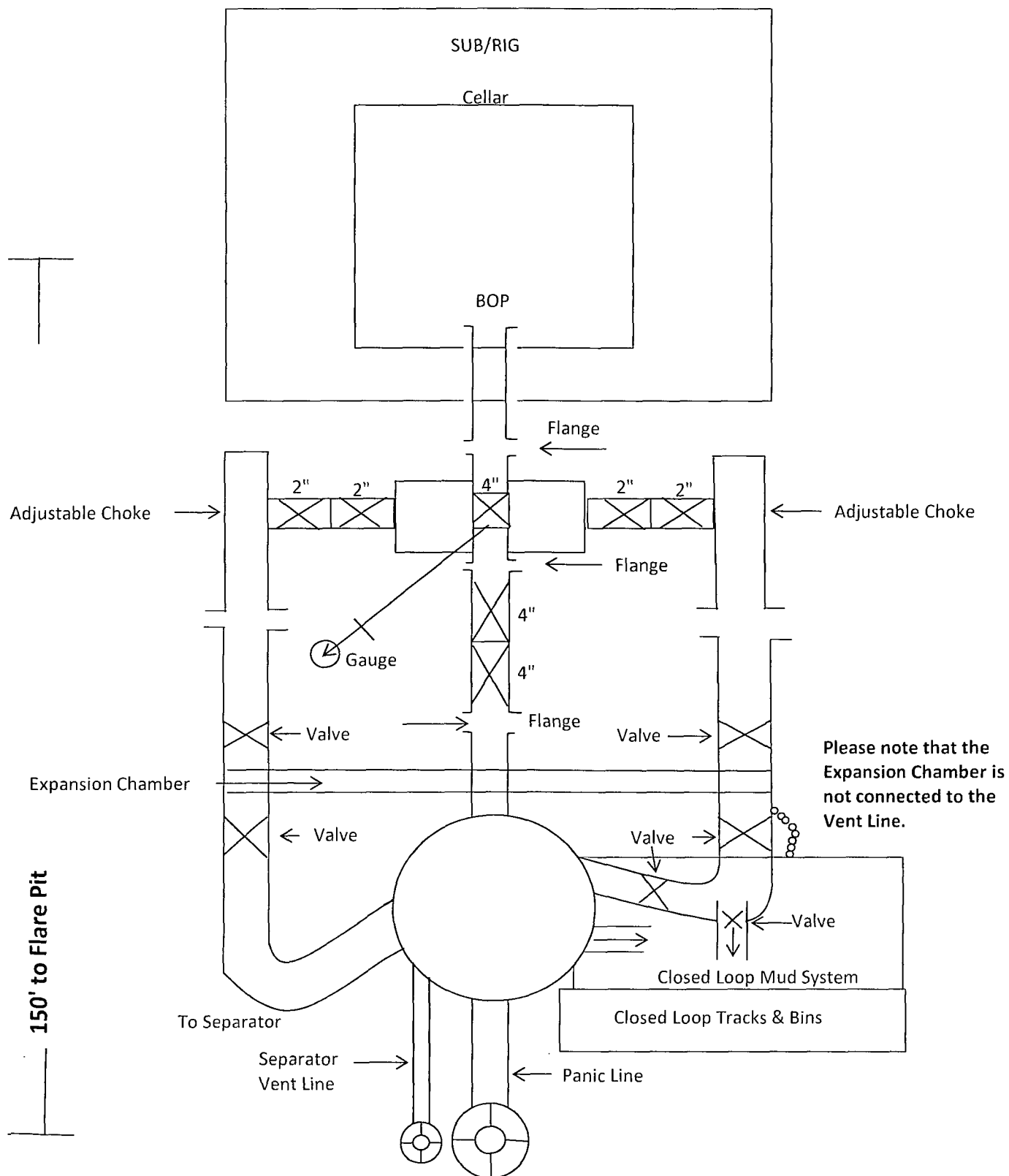
2,000 psi BOP Schematic



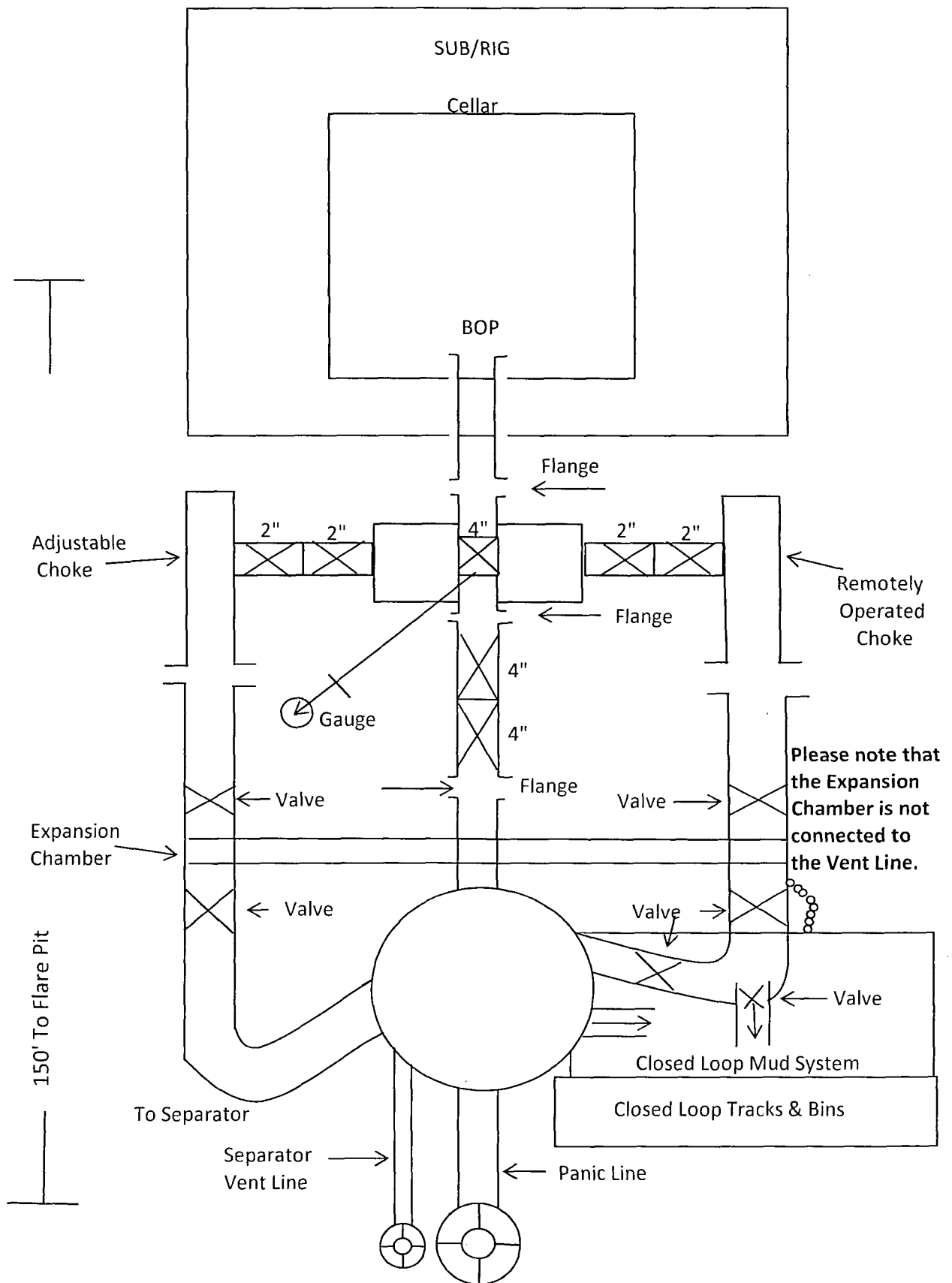
5,000 psi BOP Schematic



2M Choke Manifold Equipment



5M 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

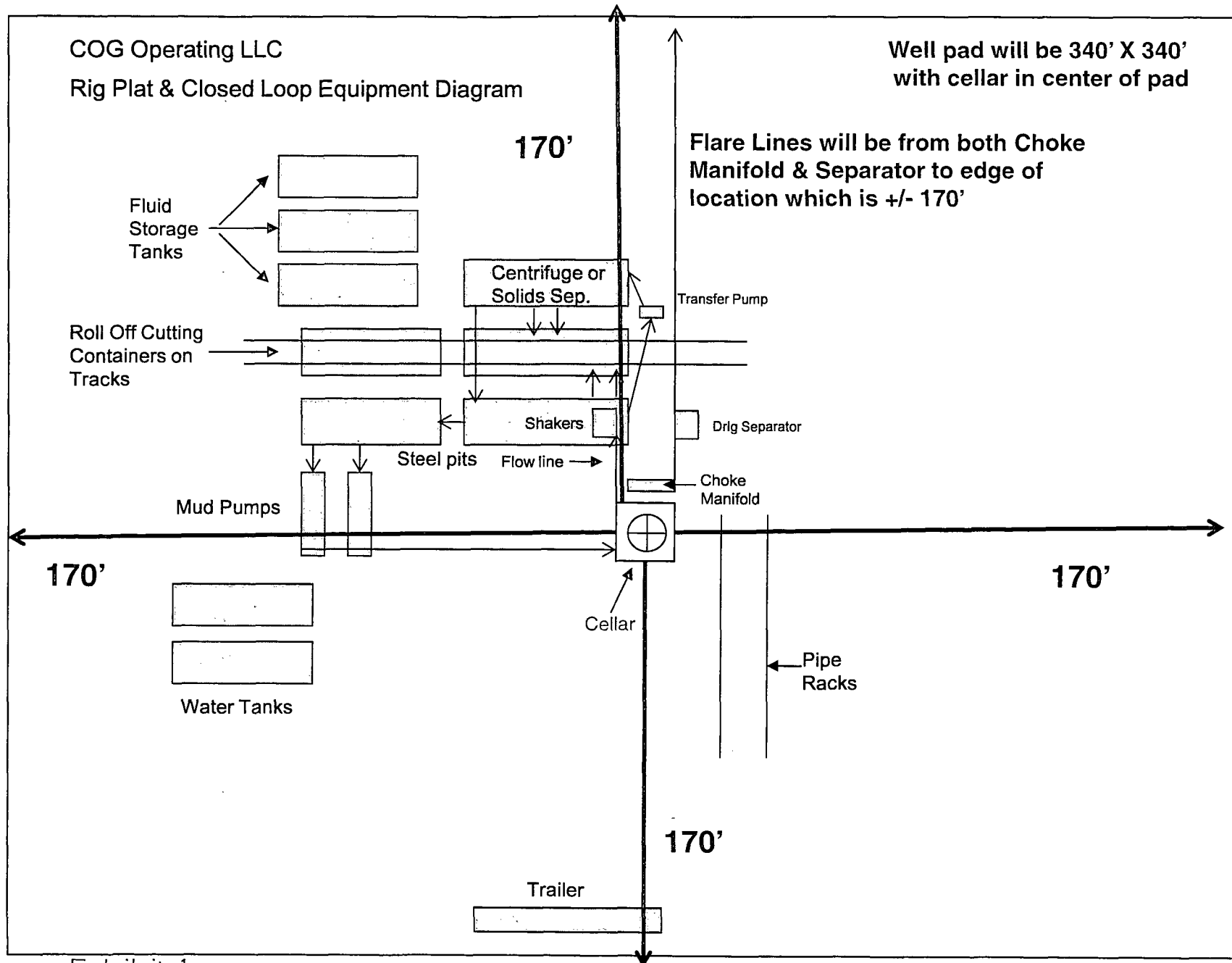


Exhibit 1

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

Surface Use Plan
COG Operating LLC
Blue Jay Federal #1H
SHL: 190' FSL & 2310' FEL UL O
Section 18, T20S, R35E
BHL: 330' FNL & 2260' FEL UL B
Section 18, T20S, R35E
Lea County, New Mexico

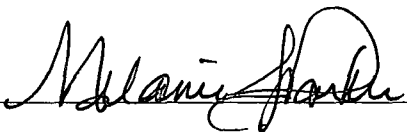
HOBBSOCD

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OPERATOR CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or COG Operating LLC, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 28 day of May, 2014.

Signed: 

Printed Name: Melanie J. Parker

Position: Regulatory Coordinator

Address: 2208 W. Main Street, Artesia, NM 88210

Telephone: (575) 748-6940

Field Representative (if not above signatory): Rand French

E-mail: mparker@concho.com