

UNORTHODOX
LOCATION

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs
HOBBS OCD

JUN 06 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER

ATS-14-181

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

5. Lease Serial No.
SHL: NMNM066925, **(H)**
BHL: NMNM016353

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No. **(313336)**
Goldfinger 17 Federal Com #4H

9. API Well No.
30-025-41904

10. Field and Pool, or Exploratory
Mesa Verde; Delaware **(96191)**

11. Sec., T.R.M. or Blk and Survey or Area

Sec. 17 - T24S - R32E

12. County or Parish
Lea County

13. State
NM

1a. Type of Work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator
COG Production LLC. **(217955)**

3a. Address
2208 West Main Street
Artesia, NM 88210

3b. Phone No. (include area code)
575-748-6940

4. Location of Well (Report location clearly and in accordance with any State requirements.)*
At surface 190' FSL & 660' FEL Unit Letter P (SESE) SHL Sec 17-T24S-R32E
At proposed prod. Zone 330' FNL & 660' FEL Unit Letter A (NENE) BHL Sec 17-T24S-R32E

14. Distance in miles and direction from nearest town or post office*
Approximately 21 miles from Malaga

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. Unit line, if any) 190'

16. No. of acres in lease
SHL: 651.15
BHL: 1,720

18. Distance from location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL: 1320' Goldfinger #3H BHL: 1044'

19. Proposed Depth
TVD: 8,505' MD: 13,105'

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3560.3' GL

22. Approximate date work will start*
2/1/2014

17. Spacing Unit dedicated to this well
160

20. BLM/BIA Bond No. on file
NMB000860 & NMB000845

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:

- 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 **Mayte Reyes** Name (Printed/Typed) Mayte Reyes Date 10/29/2013

Title

Regulatory Analyst

Approved by (Signature) **/s/ STEPHEN J. CAFFEY** Name (Printed/Typed) Office CARLSBAD FIELD OFFICE

Title FIELD MANAGER

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)

Carlsbad Controlled Water Basin

Cap
06/09/14

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

JUN 09 2014

RM

Surface Use Plan
COG Production LLC
Goldfinger 17 FederalCom #4H
SL: 190' FSL & 660' FEL ULP
Section 17, T24S, R32E
BHL: 330' FNL & 660' FEL ULA
Section 17, T24S, R32E
Lea County, New Mexico

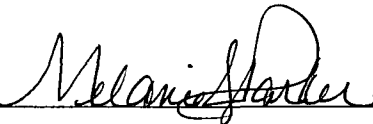
HOBBS OCD

JUN 09 2014

RECEIVED

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 Production 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 29th day of October, 2013.

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

Surface Use Plan
COG Production LLC
Goldfinger 17 Federal Com #4H
SL: 190' FSL & 660' FEL UL P
Section 17, T24S, R32E
BHL: 330' FNL & 660' FEL UL A
Section 17, T24S, R32E
Lea County, New Mexico

HOBBS OCD

JUN 09 2014

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STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

Date: October 29, 2013

Lease #: SHL: NMNM066925 BHL: NMNM016353
 Goldfinger 17 Federal Com #4H

Legal Description: Sections 17– T24 – R32E
 Lea County, New Mexico

Formation(s): Delaware

Bond Coverage: Statewide

BLM Bond File #: NMB000860 & NMB000845

COG PRODUCTION LLC



Mayte Reyes
Regulatory Analyst

ATTACHMENT TO FORM 3160-3
COG Production LLC
GOLDFINGER 17 FEDERAL COM #4H
SHL: 190' FSL & 660' FEL, Unit P
Sec. 17 T24S R32E
BHL: 330' FNL & 660' FEL, Unit A
Sec 17, T24S, R32E
Lea County, NM

1. Proration Unit Spacing: 160 Acres

2. Ground Elevation: 3560.1'

3. Proposed Depths:

Horizontal: EOC (end of curve) TVD = 8822' MD = 8545'
Toe (end of lateral) TVD = 8505' MD= 13105'

4. Estimated tops of geological markers: (TVD)

Permian	surface
Fresh Water	250'
Rustler	946'
Top of Salt	1265'
Base of Salt	4483'
Lamar	4734'
Bell Canyon	4777'
Cherry Canyon	5620'
Brushy Canyon	6930'
Bone Spring	8556'

5. Possible mineral bearing formations:

Lamar	4734'	Oil/Gas
Bell Canyon	4777'	Oil/Gas
Cherry Canyon	5620'	Oil/Gas
Brushy Canyon	6930'	Oil/Gas
Bone Spring	8556'	Oil/Gas

See COA

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to 975' 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 ~~4750'~~ and circulating cement back to surface. Any zones between 9 5/8" casing shoe and TD, which contain commercial quantities of oil and/or gas will have cement circulated across them. This will be achieved by cementing 5 1/2" production casing from the TD to surface.

4600'

ATTACHMENT TO FORM 3160-3
COG Production LLC
GOLDFINGER 17 FEDERAL COM #4H
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6. Proposed Mud System

See COA

The well will be drilled to TD with a combination of fresh water, brine, cut brine and polymer mud systems. The applicable depths and properties of these systems are as follows:

DEPTH (MD)	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-975'	Fresh Water	8.4	29	N.C.
975'- 4750' ^{4600'}	Brine	10	29	N.C.
4750' -13105'	Cut Brine	8.9-9.2	29	N.C.

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

Visual or electronic mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume.

The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weights, safe drilling practices and the use of H₂S scavengers will minimize

7. Proposed Casing Program

See COA

Hole Size	Interval MD	OD Casing	Weight	Grade	Condition	Jt.	brst/clps/ten
17 1/2"	0-975'	13 3/8" 0-975'	54.5#	J-55	New	ST&C	2.80/2.62/11.12
12 1/4"	975'- 4750' ^{4600'}	9 5/8" 0- 4750'	40#	J-55	New	LT&C	1.91/1.04/3.23
7 7/8"	4750' -13105'	5 1/2" 0-13105'	17#	P-110	New	LT&C	1.33/1.94/3.77

8. Proposed Cement Program

13 3/8" SURFACE: (Circulate to Surface)

		Description	Yield	Density	Water Requirements
Lead: 0'-700'	350 sks	Class "C" + 4% Gel	1.75 cf/sk	13.5 ppg	9.2 gal/sk.
Excess 26%		+ 2 % CaCl ₂			

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COG Production LLC
GOLDFINGER 17 FEDERAL COM #4H
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Tail:	250 sks	Class C w/2% CaCl ₂	1.32 cf/sk	14.8 ppg	6.3 gal/sk.
700'-975'					
Excess 46%					

Combined open hole excess 36%.

9 5/8" INTERMEDIATE CASING:

Single Stage: (Circulate to Surface)

		<u>Description</u>	<u>Yield</u>	<u>Density</u>	<u>Water Requirements</u>
Lead:	250 sks	EconoCem-HLC +	2.00 cf/sk	12.7 ppg	10.6 gal/sk.
0'-975'		5% Salt +5 pps Kol-Seal			
Excess 36%					
Lead:*	675 sks	EconoCem-HLC +	2.00 cf/sk	12.7 ppg	10.6 gal/sk.
975'-4000'		5% Salt +5 pps Kol-Seal			
Excess 43%					
Tail:*	225 sks	Class C w/2% CaCl ₂	1.32 cf/sk	14.8 ppg	6.3 gal/sk.
4000'- 4750'					
Excess 18%					

* open hole
 Combined OH excess 37%

5 1/2" PRODUCTION CASING:

Single Stage: (Cement calculated to surface. Minimum tie back 200' above 9 5/8" intermediate casing)

		<u>Description</u>	<u>Yield</u>	<u>Density</u>	<u>Water Requirements</u>
Lead: 0'- 4750'	600 sks	EconoCem-H +	2.51 cf/sk	11.9 ppg	14.2 gal/sk.
(min. tie back 200'		0.5% Halad-322+			
Above 9 5/8" shoe)		5 pps Kol-Seal+			
Excess 22%		0.25 pps D-AIR 5000+			
		0.2% HR-601			
Lead:*					
4750' -8068'(KOP)	350 sks	EconoCem-H +	2.51 cf/sk	11.9 ppg	14.2 gal/sk.
Excess 53%		0.5% Halad-322+			
		5 pps Kol-Seal+			
		0.25 pps D-AIR 5000+			
		0.2% HR-601			

**ATTACHMENT TO FORM 3160-3
COG Production LLC
GOLDFINGER 17 FEDERAL COM #4H
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Tail:*

8068'(KOP) - 13105' 1000 sks VersaCem + 1.24 cf/sk 14.4ppg 5.7 gal/sk.
Excess 41% 0.4% GasStop + 0.3% CFR-3 +
1 % Salt+ 0.1 % HR-601

*open hole

Combined OH Excess 46%

9. Pressure Control Equipment:

*See
COG*
A 13 5/8" 2000 psi Hydril type annular preventer with mud cross, choke manifold, chokes, kill line, Kelly cock, safety valve and subs to fit all drill strings in use as provided for in Onshore Order #2 will be nipped up on the 13 3/8" x 2000 psi SOW X 13 5/8" x 2000 psi casing head (see attached BOPE drawings). This unit will be hydraulically operated and will be tested by independent tester using test plug to 250 psig/300 psig low and 1000 psig high. Choke line valve, chokes, upper Kelly cock valve, safety valve shall also be tested to 250 psig/300 psig low and 1000 psig high by independent tester.

After setting the 9 5/8" intermediate casing the following BOPE as provided for in Onshore Order #2 will be rigged up on the 9 5/8" intermediate casing spool (13 5/8" 2000 psi x 13 5/8" 3000 psi): 13 5/8" X 3000 psi annular, 13 5/8" X 3000 psi double ram type preventer with blind rams on top and 4 1/2" drill pipe rams on the bottom, choke, mud cross, choke manifold, 4" diameter choke line, 2" kill line, kelly cock, safety valve with proper subs for all drill string connections in use (see attached BOPE drawings). The BOPE including auxiliary equipment (chokes, choke manifold etc.) will be tested by independent tester.

Test plug will be used and all BOPE tested to 250 psig/ 300 psig low pressure and 3000 psig high pressure for 10 minutes. Annular preventer will be tested to 1500 psig. BOP stack will be 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. Any time a component of the BOP stack or choke manifold is changed or installed BOPE will be re-tested as required.

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.

10. Production Hole Drilling Summary:

Drill 7 7/8" hole to 8068'. Kick off at +/- 8068', building curve at 12°/100' to 90.54° inclination at 8822' MD/8545' TVD az 359.73°. Continue lateral section at 90.54° inc., az 359.73° for +/-4283' lateral to TD at +/-13105'MD/ 8505'TVD. Run 5-1/2" production casing. 5 1/2" casing will be isolated by a single stage cement job. Cement will be calculated to surface (min tie back is 200' above 9 5/8" csq shoe).

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 Production LLC
GOLDFINGER 17 FEDERAL COM #4H
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12. Logging, Testing and Coring Program:

- A. The following logs will be run in the vertical portion of the hole to KOP: SLB-PEX/HRLA, HNGS.
- B. The mud logging program will consist of lagged 10' samples from intermediate casing shoe to KOP and thru curve and lateral to TD.
- C. Drill Stem test is not anticipated
- D. No conventional coring is anticipated.
- E. Further testing procedures will be determined after the 5 ½" production casing has been cemented at TD based on drill shows and log evaluation.

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

See COA

No abnormal pressures or temperatures are anticipated. The estimated bottom hole temperature is 107° Fahrenheit and estimated maximum bottom hole pressure is 3685 psi.. Wells in the Mesa Verde area will penetrate formations that are known or could reasonably be expected to contain hydrogen sulfide. Measurable gas volumes or hydrogen sulfide levels have **not** been encountered during drilling operations in this area; however, a H2S drilling operations plan is included with this APD. Hydrogen Sulfide detection equipment will be operational and breathing equipment will be on location after drilling out the 13 3/8" casing shoe and until the 5 ½" casing is cemented. If H2S concentrations exceed 100 ppm the well will be shut-in and a remote operated choke will be installed. COG will comply with Onshore Order #6. All BOPE testing companies used by COG have H2S certified employees and will work on H2S locations. No major loss circulation zones have been reported in offsetting wells.

14. Anticipated Starting Date

Drilling operations will commence on approximately **February 1, 2014** with drilling and completion operations lasting approximately **90** days.



Concho Oil and Gas

Lea County

Section 17-24S-32E Goldfinger 17 Fed Com

Goldfinger 17 Federal Com #4H

Original Hole

Plan: Plan#1

Standard Planning Report

23 October, 2013





Stryker Directional Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Section 17-24S-32E Goldfinger 17 Fed Com
Company:	Concho Oil and Gas	TVD Reference:	GL 3560.3 + 18 @ 3578.3usft (Silver Oak #7)
Project:	Lea County	MD Reference:	GL 3560.3 + 18 @ 3578.3usft (Silver Oak #7)
Site:	Section 17-24S-32E Goldfinger 17 Fed Com	North Reference:	Grid
Well:	Goldfinger 17 Federal Com #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan#1		

Project	Lea County		
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	Section 17-24S-32E Goldfinger 17 Fed Com		
Site Position:	Map	Northing:	440,931.60 usft
From:		Easting:	697,698.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 12' 38.240 N
		Longitude:	103° 41' 38.858 W
		Grid Convergence:	0.34 °

Well	Goldfinger 17 Federal Com #4H		
Well Position	+N/-S	13.3 usft	Northing:
	+E/-W	1,319.6 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level:
			3,560.3 usft

Wellbore	Original Hole		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	10/23/2013	7.35
			Dip Angle
			60.10
			Field Strength
			48,359

Design	Plan#1		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	13.3	1,319.6
			Direction
			359.73

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)		
0.0	0.00	0.00	0.0	13.3	1,319.6	0.00	0.00	0.00	0.00	
8,067.6	0.00	0.00	8,067.6	13.3	1,319.6	0.00	0.00	0.00	0.00	
8,822.1	90.54	359.73	8,545.0	495.2	1,317.3	12.00	12.00	-0.04	359.73	
13,105.4	90.54	359.73	8,505.0	4,778.3	1,297.1	0.00	0.00	0.00	0.00	PBHL Goldfinger F



Stryker Directional Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Section 17-24S-32E Goldfinger 17 Fed Com
Company:	Concho Oil and Gas	TVD Reference:	GL 3560.3 + 18 @ 3578.3usft (Silver Oak #7)
Project:	Lea County	MD Reference:	GL 3560.3 + 18 @ 3578.3usft (Silver Oak #7)
Site:	Section 17-24S-32E Goldfinger 17 Fed Com	North Reference:	Grid
Well:	Goldfinger 17 Federal Com #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan#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	13.3	1,319.6	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	13.3	1,319.6	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	13.3	1,319.6	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	13.3	1,319.6	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	13.3	1,319.6	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	13.3	1,319.6	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	13.3	1,319.6	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	13.3	1,319.6	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	13.3	1,319.6	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	13.3	1,319.6	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	13.3	1,319.6	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	13.3	1,319.6	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	13.3	1,319.6	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	13.3	1,319.6	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	13.3	1,319.6	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	13.3	1,319.6	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	13.3	1,319.6	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	13.3	1,319.6	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	13.3	1,319.6	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	13.3	1,319.6	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	13.3	1,319.6	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	13.3	1,319.6	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	13.3	1,319.6	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	13.3	1,319.6	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	13.3	1,319.6	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	13.3	1,319.6	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	13.3	1,319.6	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	13.3	1,319.6	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	13.3	1,319.6	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	13.3	1,319.6	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	13.3	1,319.6	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	13.3	1,319.6	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	13.3	1,319.6	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	13.3	1,319.6	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	13.3	1,319.6	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	13.3	1,319.6	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	13.3	1,319.6	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	13.3	1,319.6	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	13.3	1,319.6	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	13.3	1,319.6	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	13.3	1,319.6	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	13.3	1,319.6	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	13.3	1,319.6	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	13.3	1,319.6	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	13.3	1,319.6	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	13.3	1,319.6	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	13.3	1,319.6	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	13.3	1,319.6	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	13.3	1,319.6	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	13.3	1,319.6	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	13.3	1,319.6	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	13.3	1,319.6	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	13.3	1,319.6	0.0	0.00	0.00	0.00



Stryker Directional Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Section 17-24S-32E Goldfinger 17 Fed Com
Company:	Concho Oil and Gas	TVD Reference:	GL 3560.3 + 18 @ 3578.3usft (Silver Oak #7)
Project:	Lea County	MD Reference:	GL 3560.3 + 18 @ 3578.3usft (Silver Oak #7)
Site:	Section 17-24S-32E Goldfinger 17 Fed Com	North Reference:	Grid
Well:	Goldfinger 17 Federal Com #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan#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)
5,300.0	0.00	0.00	5,300.0	13.3	1,319.6	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	13.3	1,319.6	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	13.3	1,319.6	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	13.3	1,319.6	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	13.3	1,319.6	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	13.3	1,319.6	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	13.3	1,319.6	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	13.3	1,319.6	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	13.3	1,319.6	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	13.3	1,319.6	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	13.3	1,319.6	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	13.3	1,319.6	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	13.3	1,319.6	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	13.3	1,319.6	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	13.3	1,319.6	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	13.3	1,319.6	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	13.3	1,319.6	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	13.3	1,319.6	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	13.3	1,319.6	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	13.3	1,319.6	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	13.3	1,319.6	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	13.3	1,319.6	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	13.3	1,319.6	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	13.3	1,319.6	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	13.3	1,319.6	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	13.3	1,319.6	0.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,900.0	13.3	1,319.6	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	13.3	1,319.6	0.0	0.00	0.00	0.00
8,067.6	0.00	0.00	8,067.6	13.3	1,319.6	0.0	0.00	0.00	0.00
8067.6' MD KOP									
8,075.0	0.89	359.73	8,075.0	13.4	1,319.6	0.1	12.00	12.00	0.00
8,100.0	3.89	359.73	8,100.0	14.4	1,319.6	1.1	12.00	12.00	0.00
8,125.0	6.89	359.73	8,124.9	16.7	1,319.6	3.4	12.00	12.00	0.00
8,150.0	9.89	359.73	8,149.6	20.4	1,319.6	7.1	12.00	12.00	0.00
8,175.0	12.89	359.73	8,174.1	25.3	1,319.5	12.0	12.00	12.00	0.00
8,200.0	15.89	359.73	8,198.3	31.5	1,319.5	18.2	12.00	12.00	0.00
8,225.0	18.89	359.73	8,222.2	39.0	1,319.5	25.7	12.00	12.00	0.00
8,250.0	21.89	359.73	8,245.6	47.7	1,319.4	34.4	12.00	12.00	0.00
8,275.0	24.89	359.73	8,268.5	57.6	1,319.4	44.3	12.00	12.00	0.00
8,300.0	27.89	359.73	8,290.9	68.8	1,319.3	55.5	12.00	12.00	0.00
8,325.0	30.89	359.73	8,312.7	81.0	1,319.3	67.7	12.00	12.00	0.00
8,350.0	33.89	359.73	8,333.8	94.4	1,319.2	81.1	12.00	12.00	0.00
8,375.0	36.89	359.73	8,354.2	108.9	1,319.1	95.6	12.00	12.00	0.00
8,400.0	39.89	359.73	8,373.8	124.4	1,319.1	111.1	12.00	12.00	0.00
8,425.0	42.89	359.73	8,392.5	140.9	1,319.0	127.6	12.00	12.00	0.00
8,450.0	45.89	359.73	8,410.4	158.4	1,318.9	145.1	12.00	12.00	0.00
8,475.0	48.89	359.73	8,427.3	176.8	1,318.8	163.5	12.00	12.00	0.00
8,500.0	51.89	359.73	8,443.3	196.1	1,318.7	182.8	12.00	12.00	0.00
8,525.0	54.89	359.73	8,458.2	216.1	1,318.6	202.8	12.00	12.00	0.00
8,550.0	57.89	359.73	8,472.0	237.0	1,318.5	223.7	12.00	12.00	0.00
8,575.0	60.89	359.73	8,484.7	258.5	1,318.4	245.2	12.00	12.00	0.00
8,600.0	63.89	359.73	8,496.3	280.6	1,318.3	267.3	12.00	12.00	0.00
8,625.0	66.89	359.73	8,506.7	303.3	1,318.2	290.0	12.00	12.00	0.00



Stryker Directional Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Section 17-24S-32E Goldfinger 17 Fed Com
Company:	Concho Oil and Gas	TVD Reference:	GL 3560.3 + 18 @ 3578.3usft (Silver Oak #7)
Project:	Lea County	MD Reference:	GL 3560.3 + 18 @ 3578.3usft (Silver Oak #7)
Site:	Section 17-24S-32E Goldfinger 17 Fed Com	North Reference:	Grid
Well:	Goldfinger 17 Federal Com #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan#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)
8,650.0	69.89	359.73	8,515.9	326.6	1,318.1	313.3	12.00	12.00	0.00
8,675.0	72.89	359.73	8,523.9	350.3	1,318.0	337.0	12.00	12.00	0.00
8,700.0	75.89	359.73	8,530.7	374.3	1,317.9	361.1	12.00	12.00	0.00
8,725.0	78.89	359.73	8,536.1	398.7	1,317.8	385.4	12.00	12.00	0.00
8,750.0	81.89	359.73	8,540.3	423.4	1,317.7	410.1	12.00	12.00	0.00
8,775.0	84.89	359.73	8,543.2	448.2	1,317.5	434.9	12.00	12.00	0.00
8,800.0	87.89	359.73	8,544.7	473.2	1,317.4	459.9	12.00	12.00	0.00
8,822.1	90.54	359.73	8,545.0	495.3	1,317.3	482.0	11.98	11.98	0.00
8822.1' MD; 8545' TVD EOC									
8,900.0	90.54	359.73	8,544.3	573.2	1,317.0	559.9	0.00	0.00	0.00
9,000.0	90.54	359.73	8,543.4	673.1	1,316.5	659.9	0.00	0.00	0.00
9,100.0	90.54	359.73	8,542.4	773.1	1,316.0	759.9	0.00	0.00	0.00
9,200.0	90.54	359.73	8,541.5	873.1	1,315.5	859.8	0.00	0.00	0.00
9,300.0	90.54	359.73	8,540.6	973.1	1,315.1	959.8	0.00	0.00	0.00
9,400.0	90.54	359.73	8,539.6	1,073.1	1,314.6	1,059.8	0.00	0.00	0.00
9,500.0	90.54	359.73	8,538.7	1,173.1	1,314.1	1,159.8	0.00	0.00	0.00
9,600.0	90.54	359.73	8,537.8	1,273.1	1,313.7	1,259.8	0.00	0.00	0.00
9,700.0	90.54	359.73	8,536.8	1,373.1	1,313.2	1,359.8	0.00	0.00	0.00
9,800.0	90.54	359.73	8,535.9	1,473.1	1,312.7	1,459.8	0.00	0.00	0.00
9,900.0	90.54	359.73	8,535.0	1,573.1	1,312.2	1,559.8	0.00	0.00	0.00
10,000.0	90.54	359.73	8,534.0	1,673.1	1,311.8	1,659.8	0.00	0.00	0.00
10,100.0	90.54	359.73	8,533.1	1,773.1	1,311.3	1,759.8	0.00	0.00	0.00
10,200.0	90.54	359.73	8,532.2	1,873.1	1,310.8	1,859.8	0.00	0.00	0.00
10,300.0	90.54	359.73	8,531.2	1,973.1	1,310.3	1,959.8	0.00	0.00	0.00
10,400.0	90.54	359.73	8,530.3	2,073.1	1,309.9	2,059.8	0.00	0.00	0.00
10,500.0	90.54	359.73	8,529.4	2,173.1	1,309.4	2,159.8	0.00	0.00	0.00
10,600.0	90.54	359.73	8,528.4	2,273.1	1,308.9	2,259.8	0.00	0.00	0.00
10,700.0	90.54	359.73	8,527.5	2,373.1	1,308.5	2,359.8	0.00	0.00	0.00
10,800.0	90.54	359.73	8,526.6	2,473.1	1,308.0	2,459.8	0.00	0.00	0.00
10,900.0	90.54	359.73	8,525.6	2,573.0	1,307.5	2,559.8	0.00	0.00	0.00
11,000.0	90.54	359.73	8,524.7	2,673.0	1,307.0	2,659.8	0.00	0.00	0.00
11,100.0	90.54	359.73	8,523.7	2,773.0	1,306.6	2,759.8	0.00	0.00	0.00
11,200.0	90.54	359.73	8,522.8	2,873.0	1,306.1	2,859.8	0.00	0.00	0.00
11,300.0	90.54	359.73	8,521.9	2,973.0	1,305.6	2,959.8	0.00	0.00	0.00
11,400.0	90.54	359.73	8,520.9	3,073.0	1,305.2	3,059.8	0.00	0.00	0.00
11,500.0	90.54	359.73	8,520.0	3,173.0	1,304.7	3,159.7	0.00	0.00	0.00
11,600.0	90.54	359.73	8,519.1	3,273.0	1,304.2	3,259.7	0.00	0.00	0.00
11,700.0	90.54	359.73	8,518.1	3,373.0	1,303.7	3,359.7	0.00	0.00	0.00
11,800.0	90.54	359.73	8,517.2	3,473.0	1,303.3	3,459.7	0.00	0.00	0.00
11,900.0	90.54	359.73	8,516.3	3,573.0	1,302.8	3,559.7	0.00	0.00	0.00
12,000.0	90.54	359.73	8,515.3	3,673.0	1,302.3	3,659.7	0.00	0.00	0.00
12,100.0	90.54	359.73	8,514.4	3,773.0	1,301.8	3,759.7	0.00	0.00	0.00
12,200.0	90.54	359.73	8,513.5	3,873.0	1,301.4	3,859.7	0.00	0.00	0.00
12,300.0	90.54	359.73	8,512.5	3,973.0	1,300.9	3,959.7	0.00	0.00	0.00
12,400.0	90.54	359.73	8,511.6	4,073.0	1,300.4	4,059.7	0.00	0.00	0.00
12,500.0	90.54	359.73	8,510.7	4,173.0	1,300.0	4,159.7	0.00	0.00	0.00
12,600.0	90.54	359.73	8,509.7	4,273.0	1,299.5	4,259.7	0.00	0.00	0.00
12,700.0	90.54	359.73	8,508.8	4,372.9	1,299.0	4,359.7	0.00	0.00	0.00
12,800.0	90.54	359.73	8,507.9	4,472.9	1,298.5	4,459.7	0.00	0.00	0.00
12,900.0	90.54	359.73	8,506.9	4,572.9	1,298.1	4,559.7	0.00	0.00	0.00
13,000.0	90.54	359.73	8,506.0	4,672.9	1,297.6	4,659.7	0.00	0.00	0.00
13,105.4	90.54	359.73	8,505.0	4,778.3	1,297.1	4,765.1	0.00	0.00	0.00



Stryker Directional Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Section 17-24S-32E Goldfinger 17 Fed Com
Company:	Concho Oil and Gas	TVD Reference:	GL 3560.3 + 18 @ 3578.3usft (Silver Oak #7)
Project:	Lea County	MD Reference:	GL 3560.3 + 18 @ 3578.3usft (Silver Oak #7)
Site:	Section 17-24S-32E Goldfinger 17 Fed Com	North Reference:	Grid
Well:	Goldfinger 17 Federal Com #4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan#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)
13105.4' MD 8505' TVD EOL - PBHL Goldfinger Fed Com #4H									

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 Goldfinger Fed	0.00	0.00	8,505.0	4,778.3	1,297.1	445,709.90	698,995.10	32° 13' 25.448 N	103° 41' 23.428 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,067.6	8,067.6	13.3	1,319.6	8067.6' MD KOP
8,822.1	8,545.0	495.3	1,317.3	8822.1' MD; 8545' TVD EOC
13,105.4	8,505.0	4,778.3	1,297.1	13105.4' MD 8505' TVD EOL



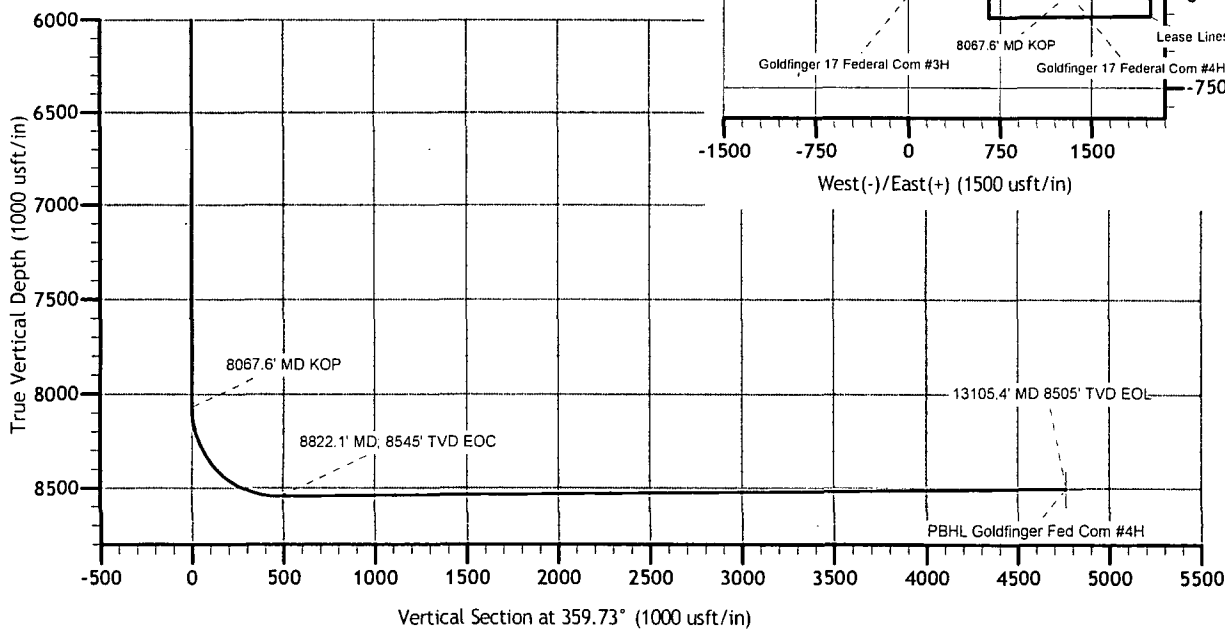
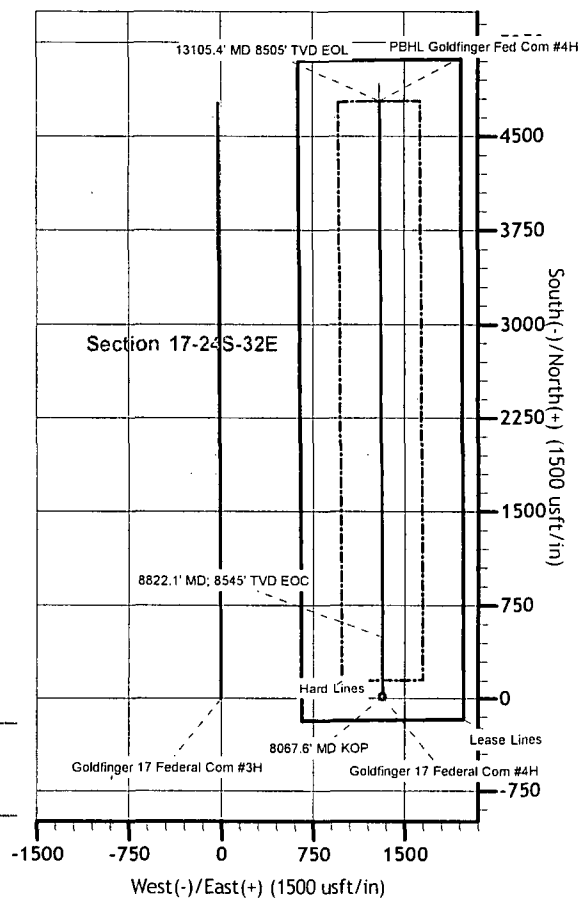
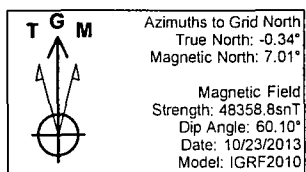
COMPANY: Concho Oil and Gas
WELL: Goldfinger 17 Federal Com #4H
COUNTY: Lea County
DATUM: NAD 1927 (NADCON CONUS)
RIG: Silver Oak #7



OFFICE: 936.582.7296

GRID CORRECTION: To convert a Magnetic Direction to a Grid Direction, Add 7.01°

GEODETIC ZONE: New Mexico East 3001 GL 3560.3 + 18 @ 3578.3usft (Silver Oak #7) GROUND ELEVATION: 3560.3										
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot				
13.3	1319.6	440944.90	699017.60	32° 12' 38.293 N	103° 41' 23.498 W					
PLAN SECTIONS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Target
1	0.0	0.00	0.00	0.0	13.3	1319.6	0.00	0.00	0.0	
2	8067.6	0.00	0.00	8067.6	13.3	1319.6	0.00	0.00	0.0	
3	8822.1	90.54	359.73	8545.0	495.2	1317.3	12.00	359.73	481.9	
4	13105.4	90.54	359.73	8505.0	4778.3	1297.1	0.00	0.00	4765.1	PBHL Goldfinger Fed Com #4H





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

No records found.

PLSS Search:

Section(s): 17

Township: 24S

Range: 32E



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

closed) (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
<u>C 01932</u>	C	ED		3	1	12	24S	32E		628633	3567188*	492		
<u>C 02350</u>		ED		4	3	10	24S	32E		625826	3566333*	60		
<u>C 03527 POD1</u>	C	LE		1	2	3	03	24S	32E	625770	3568487	500		
<u>C 03528 POD1</u>	C	LE		1	1	2	15	24S	32E	626040	3566129	541		
<u>C 03530 POD1</u>	C	LE		3	4	3	07	24S	32E	620886	3566156	550		
<u>C 03555 POD1</u>	C	LE		2	2	1	05	24S	32E	622709	3569231	560		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 6

PLSS Search:

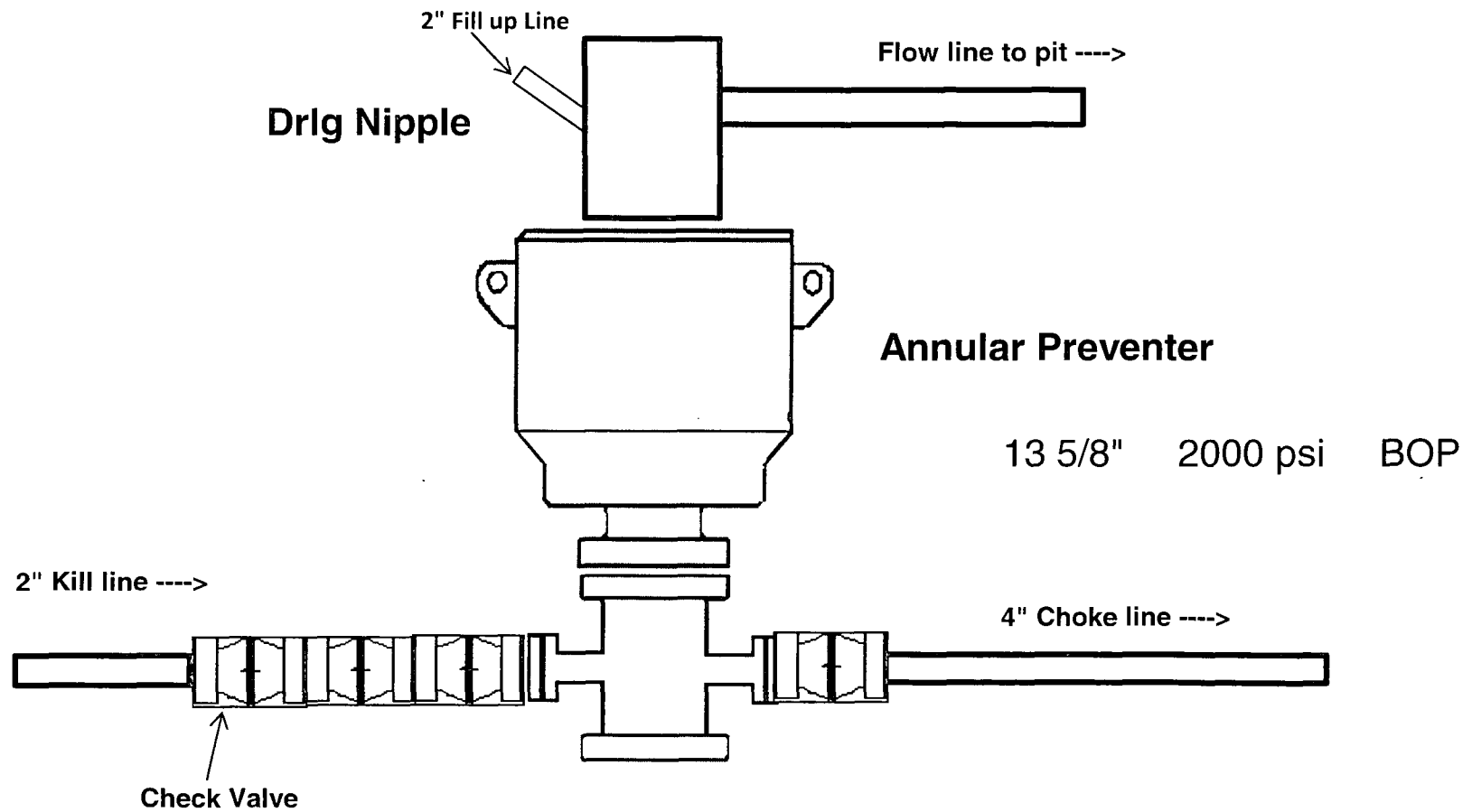
Township: 24S

Range: 32E

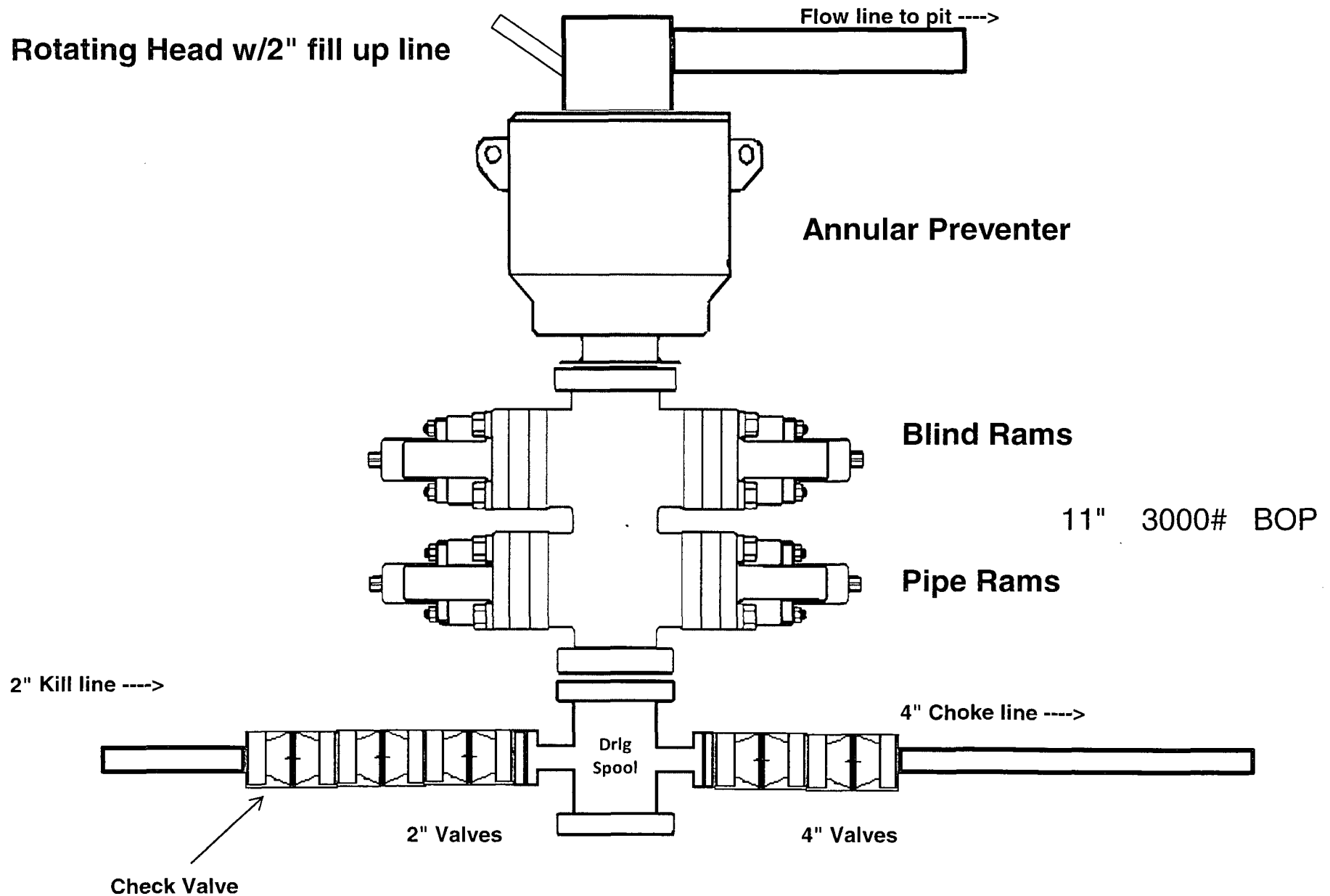
*UTM location was derived from PLSS - see Help

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.

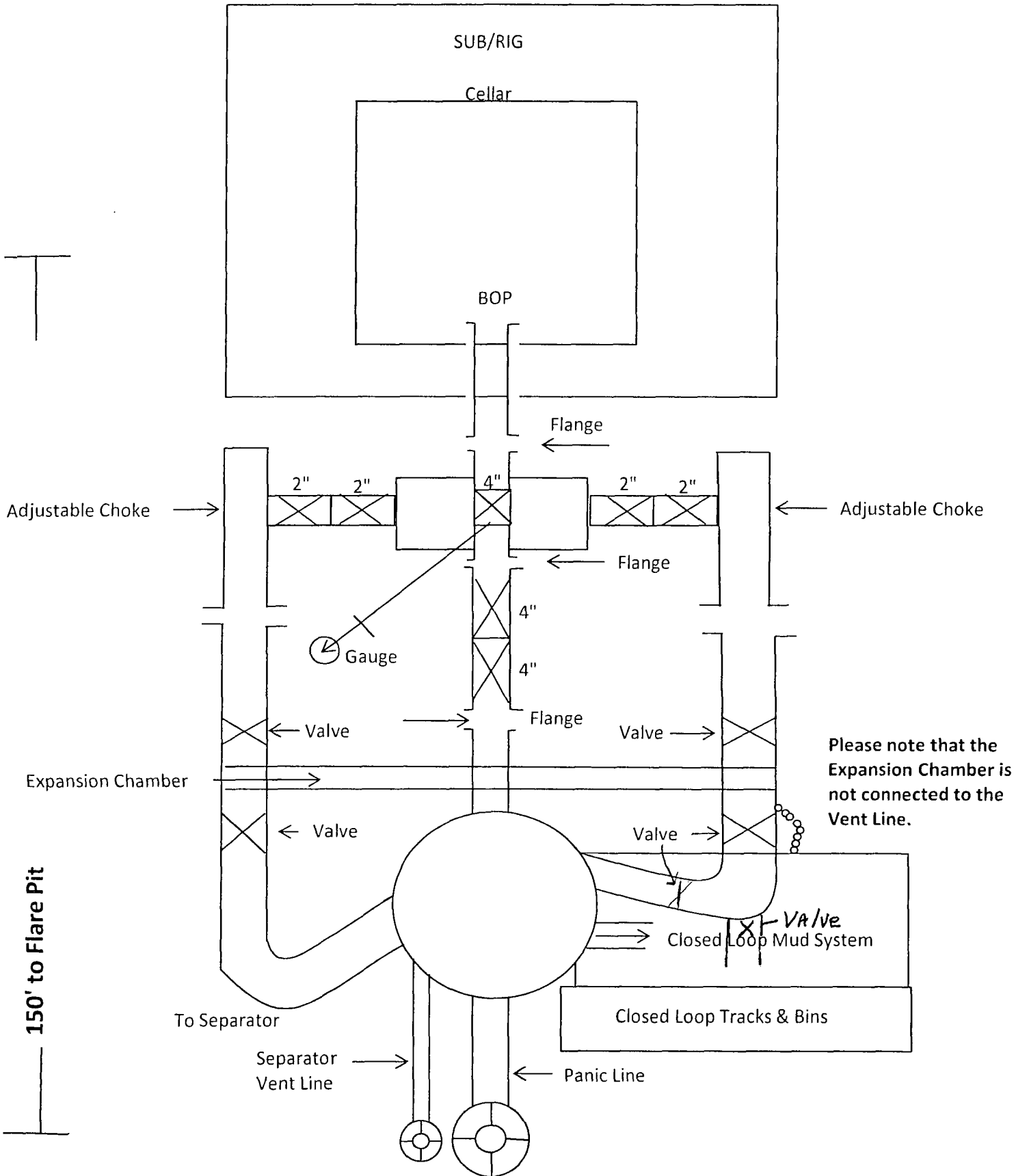
2,000 psi BOP Schematic



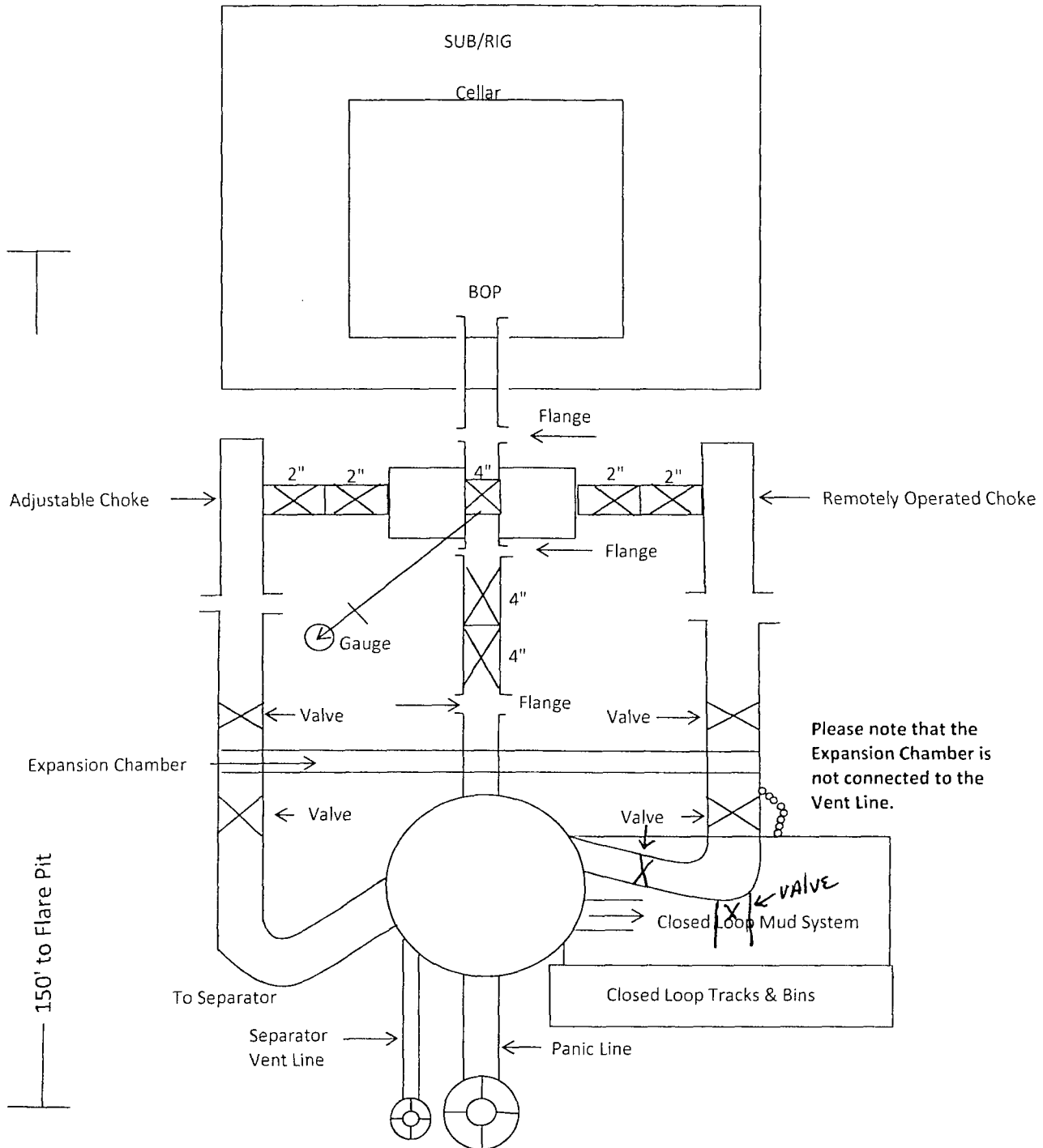
3,000 psi BOP Schematic



2M Choke Manifold Equipment



3M Choke Manifold Equipment



COG PRODUCTION LLC

Rig Plat & Closed Loop Equipment Diagram

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

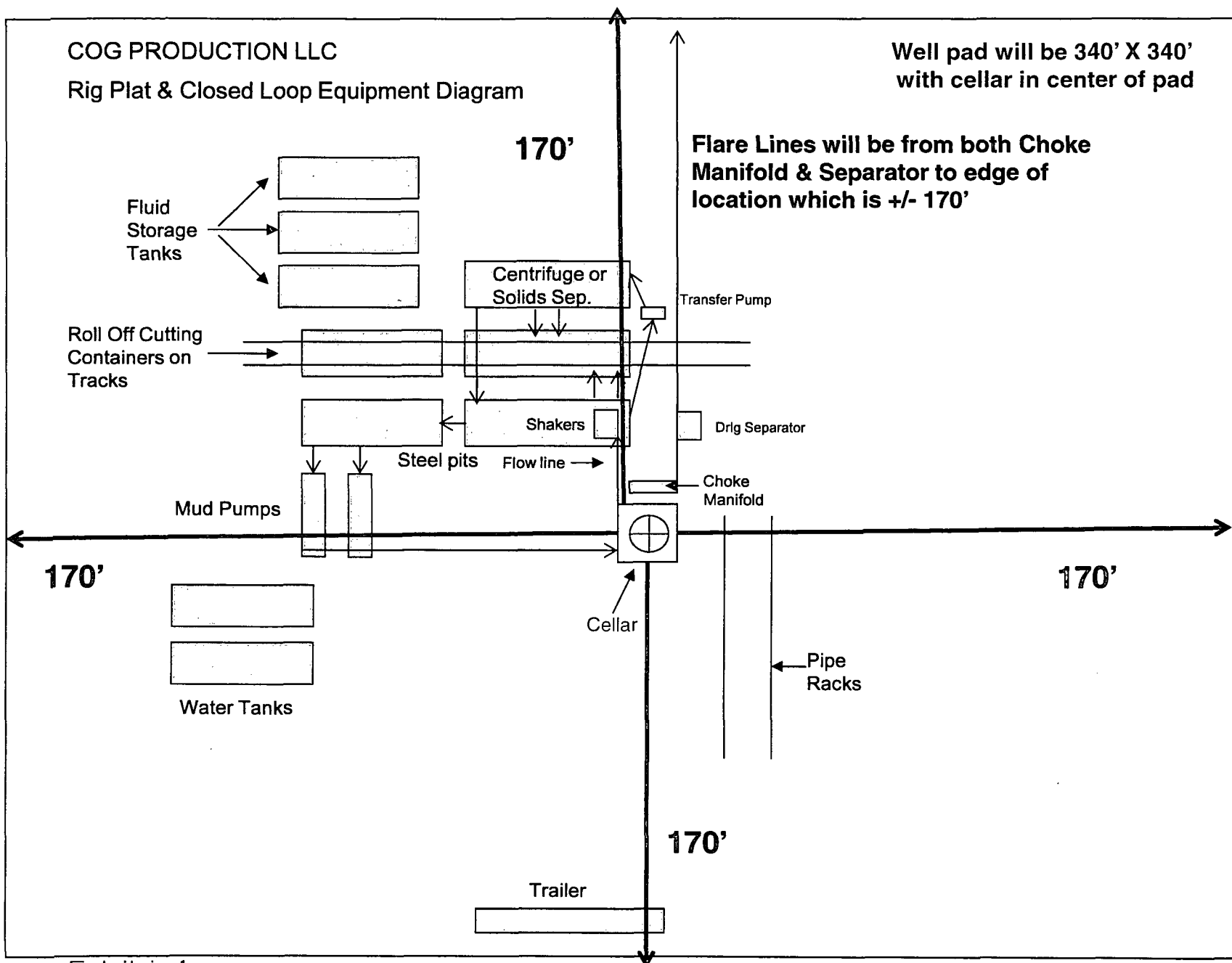


Exhibit 1

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