Form 3160-3
(August 2007)

OCD-HOBBS HOBBS OCD

JUL 16 2012

RECEIVED

FORM APPROVED
OMB No. 1004-013
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM120910

6. If Indian, Allotee or Tribe Name:

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

1a. Type of Work: [✓] DRILL [ ] REENTER

1b. Type of Well: [✓] Oil Well [ ] Gas Well [ ] Other [✓] Single Zone [ ] Multiple Zone

8. Lease Name and Well No.: Pintail 3 Federal #1H 39347

2. Name of Operator: COG Production LLC. <217955>

9. API Well No.: 30-025-40684

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

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

10. Field and Pool, or Exploratory: Wildcat; Bone Spring <97838>

4. Location of Well *(Report location clearly and in accordance with any State requirements *)*

At surface: 260' FSL & 2290' FEL Unit Letter O SWSE Section 3-T26S-R32E

At proposed prod. Zone: 330' FNL & 2260' FEL Unit Letter B NWNE Section 3-T26S-R32E

11. Sec., T.R.M. or Blk and Survey or Area: Section 3-T26S-R32E

14. Distance in miles and direction from nearest town or post office*: About 23 miles from Malaga

12. County or Parish: Lea

13. State: New Mexico

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. Unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
330'	1418.62'	160
18. Distance from location* to nearest well, drilling, completed, applied for, on this lease, ft.		**20. BLM/BIA Bond No. on file**
870'	TVD· 9250' MD 13801'	NMB006970
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3260'	7/1/2012	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.
2. A Drilling Plan
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name *(Printed/Typed)*	Date
Mayte Reyes	Mayte Reyes	5/10/2012

Title: Regulatory Analyst

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ James A. Amos		JUL 13 2012
Title	**Office**	
FIELD MANAGER	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 theron.

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

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Kz 07/17/12

Approval Subject to General Requirements & Special Stipulations Attached

JUL 18 2012

COG Production LLC
DRILLING AND OPERATIONS PROGRAM
Pintail 3 Federal #1H
SHL: 260' FSL & 2290' FEL
BHL: 330' FNL & 2260' FWL
Section 3 T26S R32E
Lea County, New Mexico

In conjunction with Form 3160-3, Application for Permit to Drill subject well, COG Production 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	~ 320'	
Rustler	807'	
Top of Salt	1247'	
Base of Salt	4341'	
Delaware	4558'	Oil
Bone Spring	8717'	Oil
TD TVD	9250'	
TD MD	13,801'	

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 ~~850'~~ and circulating cement back to surface. All intervals will be isolated by setting 5 ½" casing to total depth and tying back cement to a minimum of 500' into 9-5/8" csg.

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

Hole Size	Depths	Section	OD Casing	New/ Used	Wt	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 ½"	0' - ~~850'~~ 1025 See COA	Surface	13 3/8"	New	54.5#	STC	J-55	1.125	1.125	1.6
12 ¼"	0' – 3500'	Intrmd	9 5/8"	New	36#	BTC	J-55	1.125	1.125	1.6
12 ¼"	3500' – 4450'	Intrmd	9 5/8"	New	40#	BTC	J-55	1.125	1.125	1.6
7 7/8"	0' – 13,801'	Production Curve & Lateral	5 ½"	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.

4. Proposed Cement Program

a. 13-3/8" Surface — Lead: 300 sx Class C + 4% Gel + 2% $CaCl_2$ (13.5 ppg /1.75 cuft/sx)
Tail: 250 sx Class C + 2% $CaCl_2$ (14.8 ppg / 1.35 cuft/sx)
**Calculated w/50% excess on OH volumes

See COA

b. 9 5/8" Intermediate: — Lead: 900 sx Class C + 4% Gel (13.5 ppg /1.75 cuft/sx)
Tail: 250 sx Class C + 1% $CaCl_2$ (14.8 ppg / 1.35 cuft/sx)
**Calculated w/35% excess on OH volumes

d. 5 ½" Production — Lead: 600 sx 50:50:10 H + Salt+Gilsonite+CFR-3+ HR601 (11.8 ppg / 2.5 cuft/sx)
Tail: 950 sx 50:50:2 H +Salt+GasStop +HR601 +CFR-3 (14.4 ppg /1.25 cuft/sx)
**Calculated w/35% excess on OH volumes

- The above cement volumes could be revised pending the caliper measurement from the open hole logs.
- The 9-5/8" intermediate string is designed to circulate to surface.
- The production string will at least tie back 500' into 9-5/8" shoe

5. Minimum Specifications for Pressure Control:

Nipple up on 13 3/8 with annular preventer tested to 50% of rating working pressure by independent tester and the rest of the 2M system tested to 2000 psi.
Nipple up on 9 5/8 with 3M system tested 3000 psi to 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.

6. Estimated BHP:

Lateral TD = 4125 psi

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

Depth	Type System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0' – ~~850'~~ 1025	Fresh Water	8.4	29	N.C.
850' – 4450'	Brine	10	29	N.C.
4450' – 13,801' (Lateral)	Cut Brine	8.9 – 9.2	29	N.C.

The necessary mud products for weight addition and fluid loss control will be on location at all times.

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 ½" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

9. Testing, Logging and Coring Program: See COA

a. Drill stem tests will be based on geological sample shows.
b. If open hole electrical logging is preformed, 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 coring program is planned
   iv. Additional testing will be initiated subsequent to setting the 5 ½" 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.

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 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
Pintail 3 Federal 1H
Pintail 3 Federal 1H

Wellbore #1

Plan: Plan #1

Standard Planning Report

08 May, 2012

Crescent Directional Drilling

Planning Report

Database:	R5000 Houston DB	**Local Co-ordinate Reference:**	Site Pintail 3 Federal 1H
Company:	COG Operating LLC	**TVD Reference:**	WELL @ 3303 50ft (Original Well Elev)
Project:	Lea County, NM	**MD Reference:**	WELL @ 3303 50ft (Original Well Elev)
Site:	Pintail 3 Federal 1H	**North Reference:**	Grid
Well:	Pintail 3 Federal 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project Lea County, NM

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Pintail 3 Federal 1H

Site Position:		**Northing:**	388,232 10 ft	**Latitude:**	32 066183
From:	Map	**Easting:**	708,222 70 ft	**Longitude:**	-103 794594
Position Uncertainty:	0 00 ft	**Slot Radius:**	13 200 in	**Grid Convergence:**	0 29 °

Well Pintail 3 Federal 1H

Well Position	**+N/-S**	0 00 ft	**Northing:**	388,232 10 ft	**Latitude:**	32 066183
	+E/-W	0 00 ft	**Easting:**	708,222 70 ft	**Longitude:**	-103 794594
Position Uncertainty		0 00 ft	**Wellhead Elevation:**		**Ground Level:**	3,283 00 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	5/8/2012	7 56	60 01	48,449

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0 00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0 00	0 00	0 00	359 82

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
8,772 54	0 00	0 00	8,772 54	0 00	0 00	0 00	0 00	0 00	0 00	
9,522 54	90 00	359 82	9,250 00	477 46	-1 47	12 00	12 00	0 00	359 82	
13,801 39	90 00	359 82	9,250 00	4,756 30	-14 60	0 00	0 00	0 00	0 00	PBHL (Pintail 3 Feder

Crescent Directional Drilling

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Company:	COG Operating LLC	**TVD Reference:**	WELL @ 3303 50ft (Original Well Elev)
Project:	Lea County, NM	**MD Reference:**	WELL @ 3303 50ft (Original Well Elev)
Site:	Pintail 3 Federal 1H	**North Reference:**	Grid
Well:	Pintail 3 Federal 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,772 54	0 00	0 00	8,772 54	0 00	0 00	0 00	0 00	0 00	0 00
KOP - Start Build @ 12.00°/100'									
8,800 00	3 30	359 82	8,799 99	0 79	0 00	0 79	12 00	12 00	0 00
8,900 00	15.30	359 82	8,898 49	16 91	-0 05	16 91	12 00	12 00	0 00
9,000 00	27 30	359 82	8,991 49	53 16	-0 16	53 17	12 00	12 00	0 00
9,100 00	39 30	359 82	9,074 93	107 96	-0 33	107 96	12 00	12 00	0 00
9,200 00	51 30	359 82	9,145.14	178 91	-0 55	178 91	12.00	12 00	0 00
9,300 00	63 30	359 82	9,199 07	262 90	-0 81	262 90	12 00	12 00	0 00
9,400 00	75 30	359 82	9,234 36	356 27	-1 09	356 27	12.00	12 00	0 00
9,500 00	87 30	359 82	9,249 47	454 94	-1.40	454 94	12 00	12 00	0 00
9,522.54	90 00	359.82	9,250.00	477 46	-1 47	477 46	12 00	12 00	0 00
Landing Point - Hold @ 90.00° INC, 359.82° AZ									
9,600 00	90 00	359 82	9,250 00	554 93	-1 70	554.93	0 00	0 00	0 00
9,700 00	90 00	359 82	9,250 00	654 93	-2.01	654.93	0 00	0.00	0 00
9,800 00	90 00	359 82	9,250 00	754.93	-2 32	754.93	0 00	0 00	0 00
9,900 00	90.00	359 82	9,250.00	854.93	-2 62	854.93	0 00	0 00	0 00
10,000.00	90 00	359 82	9,250.00	954 93	-2 93	954 93	0.00	0 00	0 00
10,100 00	90 00	359 82	9,250 00	1,054 92	-3 24	1,054 93	0.00	0 00	0 00
10,200 00	90 00	359.82	9,250 00	1,154 92	-3 55	1,154.93	0.00	0 00	0 00
10,300.00	90 00	359 82	9,250.00	1,254 92	-3 85	1,254 93	0 00	0 00	0.00
10,400 00	90 00	359 82	9,250 00	1,354 92	-4 16	1,354.93	0 00	0 00	0 00
10,500 00	90 00	359.82	9,250 00	1,454 92	-4 47	1,454 93	0 00	0 00	0 00
10,600.00	90 00	359 82	9,250 00	1,554 92	-4 77	1,554 93	0 00	0 00	0 00
10,700.00	90 00	359 82	9,250.00	1,654 92	-5.08	1,654 93	0 00	0 00	0 00
10,800 00	90 00	359.82	9,250 00	1,754 92	-5 39	1,754 93	0 00	0 00	0 00
10,900 00	90 00	359 82	9,250 00	1,854 92	-5 69	1,854 93	0 00	0 00	0 00
11,000 00	90 00	359 82	9,250.00	1,954 92	-6 00	1,954 93	0 00	0 00	0 00
11,100 00	90 00	359 82	9,250 00	2,054 92	-6 31	2,054.93	0 00	0 00	0 00
11,200 00	90.00	359 82	9,250 00	2,154 92	-6 61	2,154 93	0 00	0 00	0 00
11,300 00	90 00	359.82	9,250 00	2,254 92	-6 92	2,254 93	0 00	0 00	0 00
11,400 00	90.00	359.82	9,250 00	2,354 92	-7.23	2,354 93	0 00	0 00	0 00
11,500 00	90 00	359 82	9,250.00	2,454 92	-7 54	2,454 93	0 00	0 00	0 00
11,600 00	90.00	359.82	9,250 00	2,554.92	-7 84	2,554 93	0.00	0 00	0 00
11,700.00	90 00	359 82	9,250.00	2,654 92	-8 15	2,654.93	0.00	0 00	0 00
11,800 00	90 00	359 82	9,250 00	2,754 92	-8 46	2,754.93	0.00	0 00	0 00
11,900 00	90 00	359 82	9,250 00	2,854 92	-8 76	2,854 93	0.00	0 00	0.00
12,000 00	90 00	359 82	9,250 00	2,954 92	-9 07	2,954 93	0 00	0 00	0 00
12,100 00	90 00	359 82	9,250 00	3,054 92	-9 38	3,054 93	0 00	0 00	0 00
12,200 00	90 00	359 82	9,250 00	3,154 91	-9 68	3,154 93	0 00	0 00	0 00
12,300 00	90 00	359 82	9,250 00	3,254 91	-9 99	3,254 93	0 00	0 00	0 00
12,400 00	90 00	359 82	9,250 00	3,354 91	-10.30	3,354 93	0 00	0 00	0 00
12,500 00	90.00	359.82	9,250 00	3,454 91	-10.61	3,454 93	0 00	0 00	0 00
12,600 00	90 00	359 82	9,250.00	3,554.91	-10 91	3,554 93	0 00	0 00	0 00
12,700 00	90 00	359 82	9,250 00	3,654 91	-11 22	3,654.93	0 00	0 00	0 00
12,800 00	90 00	359 82	9,250 00	3,754.91	-11 53	3,754 93	0 00	0 00	0 00
12,900 00	90 00	359 82	9,250 00	3,854 91	-11 83	3,854 93	0 00	0 00	0 00
13,000 00	90 00	359 82	9,250.00	3,954 91	-12 14	3,954 93	0 00	0 00	0 00
13,100 00	90 00	359 82	9,250 00	4,054 91	-12 45	4,054 93	0 00	0 00	0 00
13,200 00	90 00	359 82	9,250 00	4,154 91	-12 75	4,154 93	0 00	0 00	0 00
13,300 00	90 00	359 82	9,250.00	4,254 91	-13.06	4,254.93	0 00	0 00	0.00
13,400 00	90 00	359 82	9,250 00	4,354.91	-13.37	4,354.93	0 00	0 00	0 00
13,500 00	90 00	359 82	9,250 00	4,454 91	-13 67	4,454 93	0 00	0 00	0 00
13,600 00	90 00	359 82	9,250 00	4,554 91	-13 98	4,554 93	0 00	0 00	0 00
13,700 00	90 00	359 82	9,250 00	4,654 91	-14 29	4,654 93	0 00	0 00	0 00

Crescent Directional Drilling

Planning Report

Database:	R5000 Houston DB	**Local Co-ordinate Reference:**	Site Pintail 3 Federal 1H
Company:	COG Operating LLC	**TVD Reference:**	WELL @ 3303 50ft (Original Well Elev)
Project:	Lea County, NM	**MD Reference:**	WELL @ 3303 50ft (Original Well Elev)
Site:	Pintail 3 Federal 1H	**North Reference:**	Grid
Well:	Pintail 3 Federal 1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,800 00	90 00	359 82	9,250 00	4,754 91	-14 60	4,754 93	0 00	0 00	0 00
13,801 39	90 00	359 82	9,250 00	4,756 30	-14 60	4,756.32	0 00	0 00	0 00

TD @ 13801.39' MD, 9250.00' TVD - PBHL (Pintail 3 Federal 1H Plan 1)

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL (Pintail 3 Federal - plan hits target center - Point	0.00	0 00	9,250 00	4,756 30	-14 60	392,988 40	708,208 10	32.079257	-103.794565

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
8,772 54	8,772 54	0 00	0 00	KOP - Start Build @ 12 00°/100'
9,522 54	9,250 00	477 46	-1 47	Landing Point - Hold @ 90 00° INC, 359 82° AZ
13,801.39	9,250 00	4,756 30	-14 60	TD @ 13801.39' MD, 9250 00' TVD

CRESCENT DIRECTIONAL DRILLING

COG Operating LLC
Pintail 3 Federal 1H
Lea County, NM
Plan #1

CONCHO

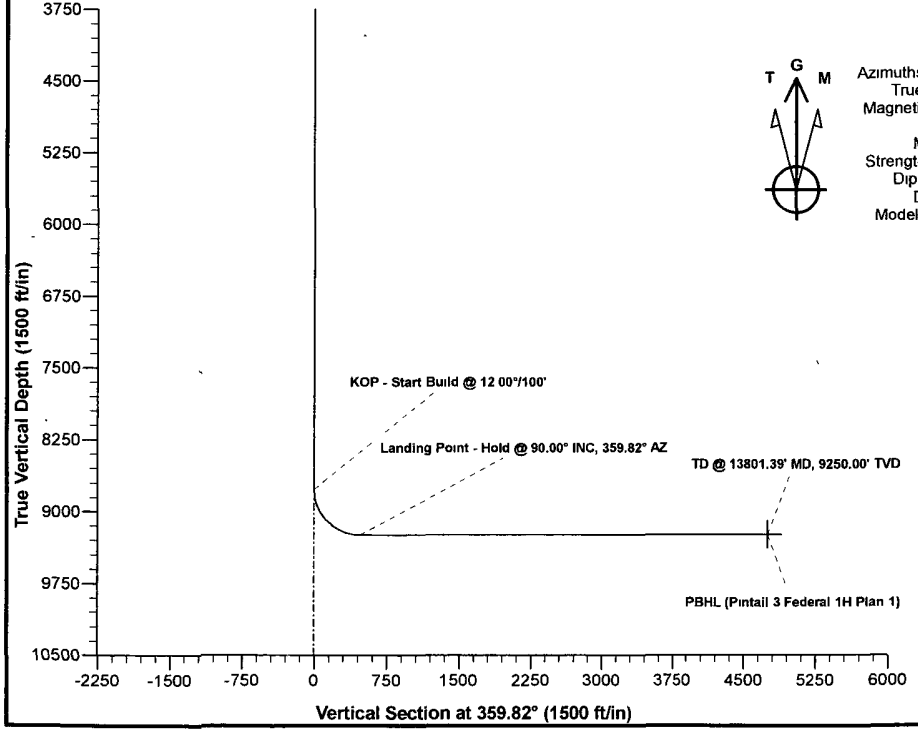
Surface Location		Ground Elev: 3283.00 WELL @ 3303.50ft (Original Well Elev)			
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.00	0.00	388232.10	708222.70	32.066183	-103.794594

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (Pintail 3 Federal 1H Plan 1)	9250.00	4756.30	-14.60	392988.40	708208.10	32.079257	-103.794564

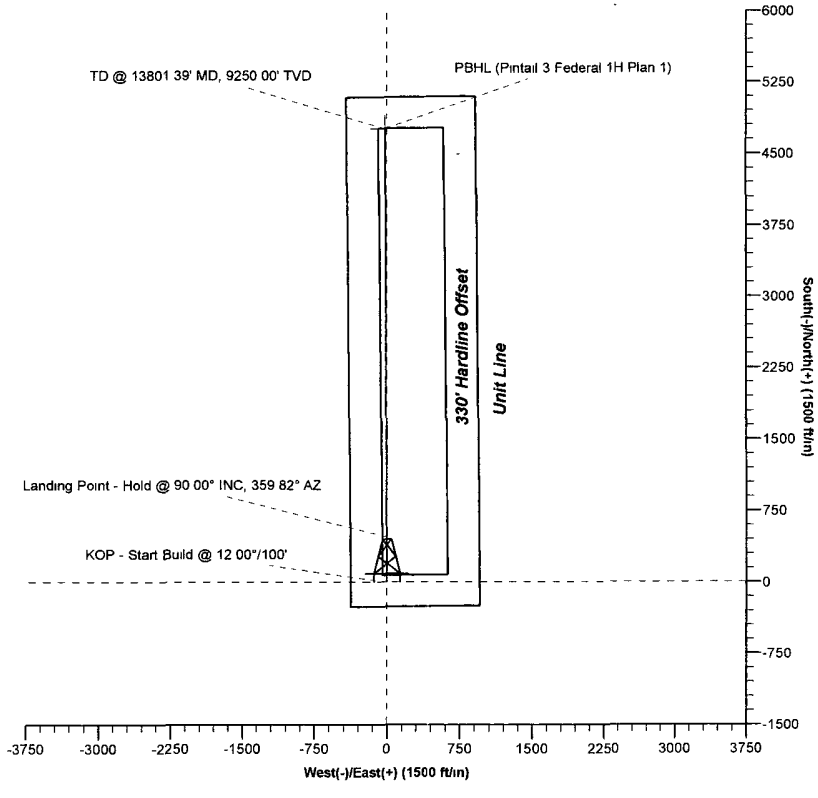
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	8772.54	0.00	0.00	8772.54	0.00	0.00	0.00	0.00	0.00	KOP - Start Build @ 12.00°/100'
3	9522.54	90.00	359.82	9250.00	477.46	-1.47	12.00	359.82	477.46	Landing Point - Hold @ 90.00° INC, 359.82° AZ
4	13801.39	90.00	359.82	9250.00	4756.30	-14.60	0.00	0.00	4756.32	TD @ 13801.39' MD, 9250.00' TVD

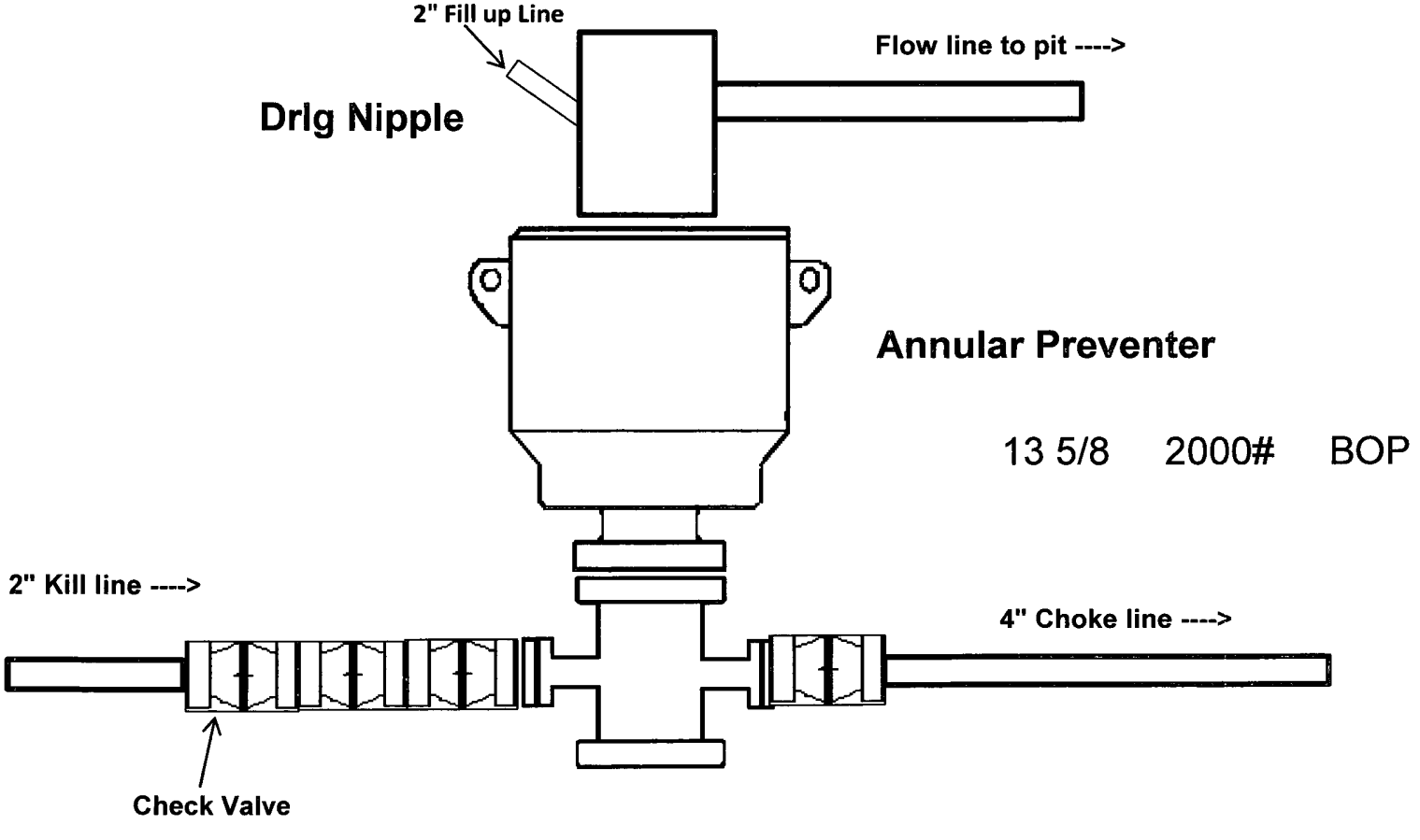


Azimuths to Grid North
True North -0.29°
Magnetic North 7.27°

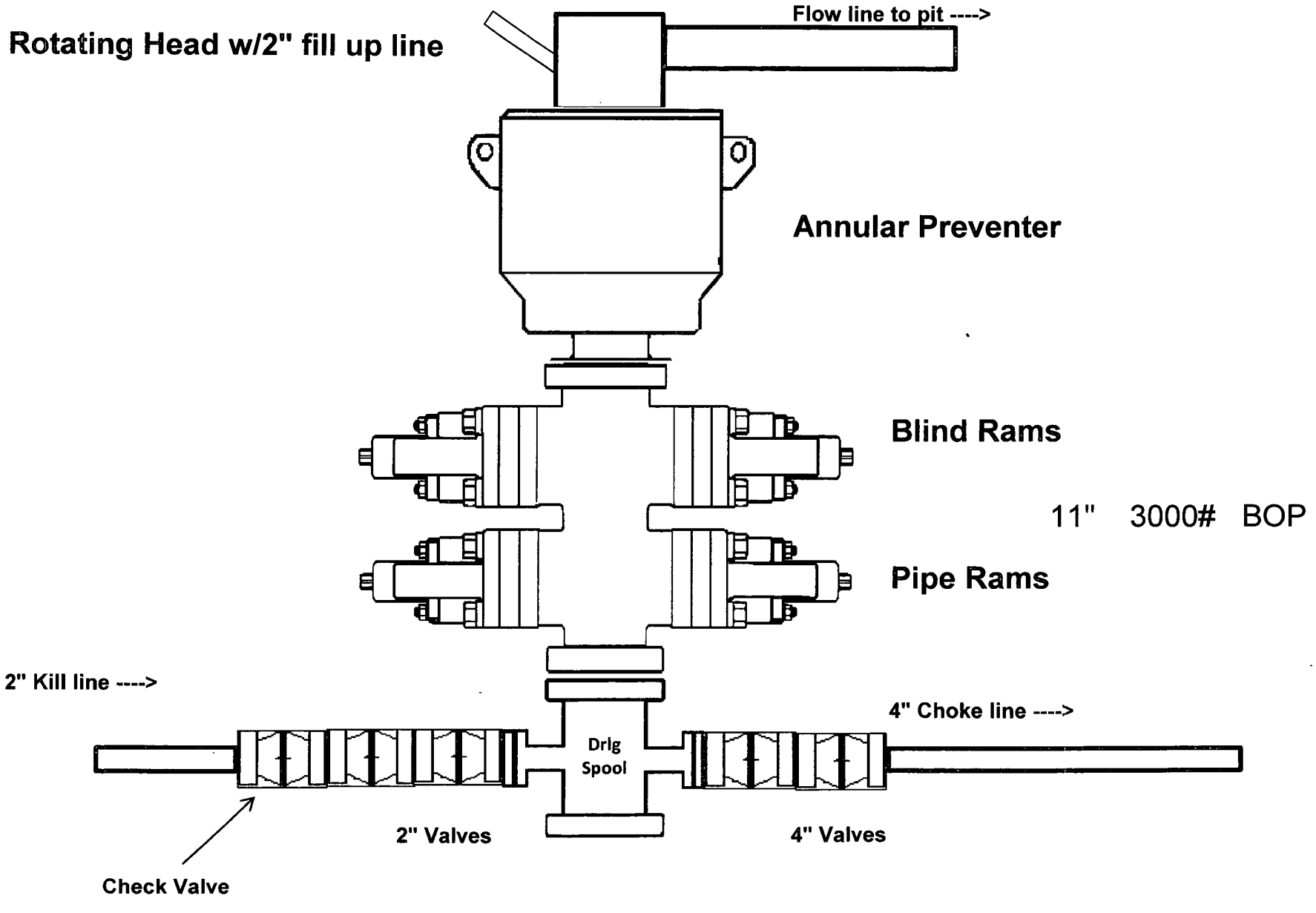
Magnetic Field
Strength 48448.5snT
Dip Angle 60.01°
Date: 5/8/2012
Model IGRF200510



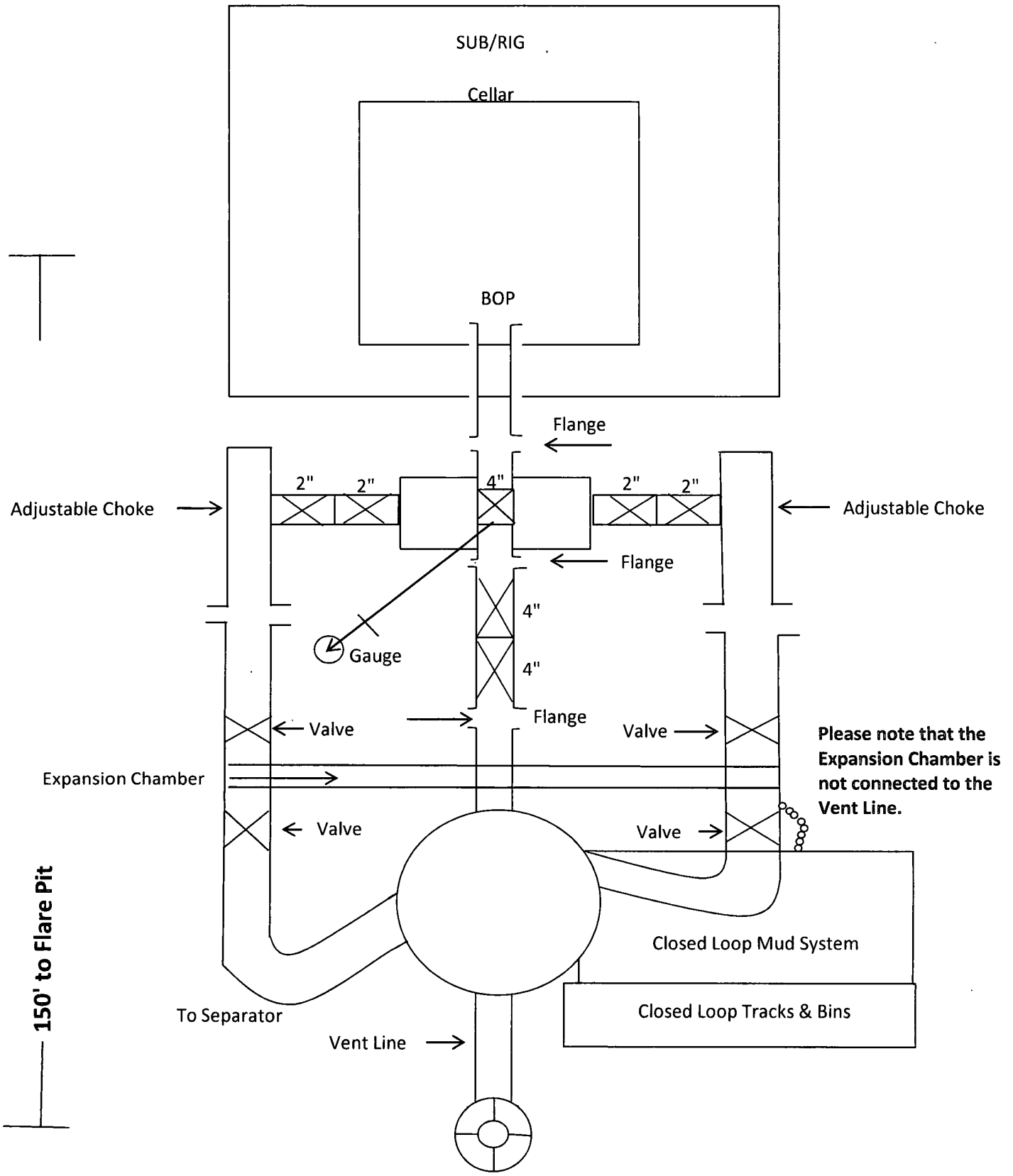
2,000 psi BOP Schematic



3,000 psi BOP Schematic



2M Choke Manifold Equipment



3M Choke Manifold Equipment