ATS-12-819

RECEIVED
OCT 18 2012
NMOCD ARTESIA
OCD Artesia

Form 3160-3
(March 2012)

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

5. Lease Serial No. NM-14778

6. If Indian, Allotee or Tribe Name ----------

7. If Unit or CA Agreement, Name ----------

1a. Type of work: [X] DRILL [ ] REENTER

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

8. Lease Name and Well No. 303117
BLACKBART "15" FEDERAL #2H

2. Name of Operator COG PRODUCTION LLC.

UNORTHODOX 17955

9. API Well No. 0- - -

3a. Address 2208 WEST MAIN STREET
ARTESIA, NEW MEXICO 88210

3b. 575-748-6968

10. Field and Pool, or Exploratory 96217
WILLOW LAKE-BONE SPRING SE

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

At surface 190' FSL & 1800' FEL SECTION 15 T25S-R29E EDDY CO.

At proposed prod. zone BHL 330' FNL & 2188' FEL SECTION 15 T25S-R29E

11. Sec., T. R. M. or Blk. and Survey or Area
SECTION 15 T25S-R29E

14. Distance in miles and direction from nearest town or post office*
Approximately 35 miles Southeast of Carlsbad New Mexico

12. County or Parish EDDY CO.

13. State NM

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 1280

17. Spacing Unit dedicated to this well 160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1500'

19. Proposed Depth
TVD-7715'
MD-12,327'

20. BLM/BIA Bond No. on file
NMB-000845
NMB-000860

21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3086' GL

22. Approximate date work will start* WHEN APPROVED

23. Estimated duration 30 DAYS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must 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 BLM.

25. Signature	Name *(Printed/Typed)*	Date
Joe T. Janica	Joe T. Janica	08/17/12

Title: Permit Eng.

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ James A. Amos	/s/ James A. Amos	OCT 16 2012

Title	Office
for FIELD MANAGER	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)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

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: July 13, 2012

Lease #: SHL: NMNM~~40434~~ 14778
Blackbart 15 Federal #2H

Legal Description: Sec. 15– T25S – R29E
Eddy County, New Mexico

Formation(s): Lower Avalon Shale

Bond Coverage: Statewide

BLM Bond File #: NMB006970

COG PRODUCTION LLC

Joe T. Janica

Joe Janica

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-40797	96217	WILLOW LAKE BONE SPRING-SOUTHEAST

Property Code	Property Name	Well Number
39511	BLACKBART 15 FEDERAL	2H

OGRID No.	Operator Name	Elevation
217955	COG PRODUCTION LLC.	3086'

Surface Location

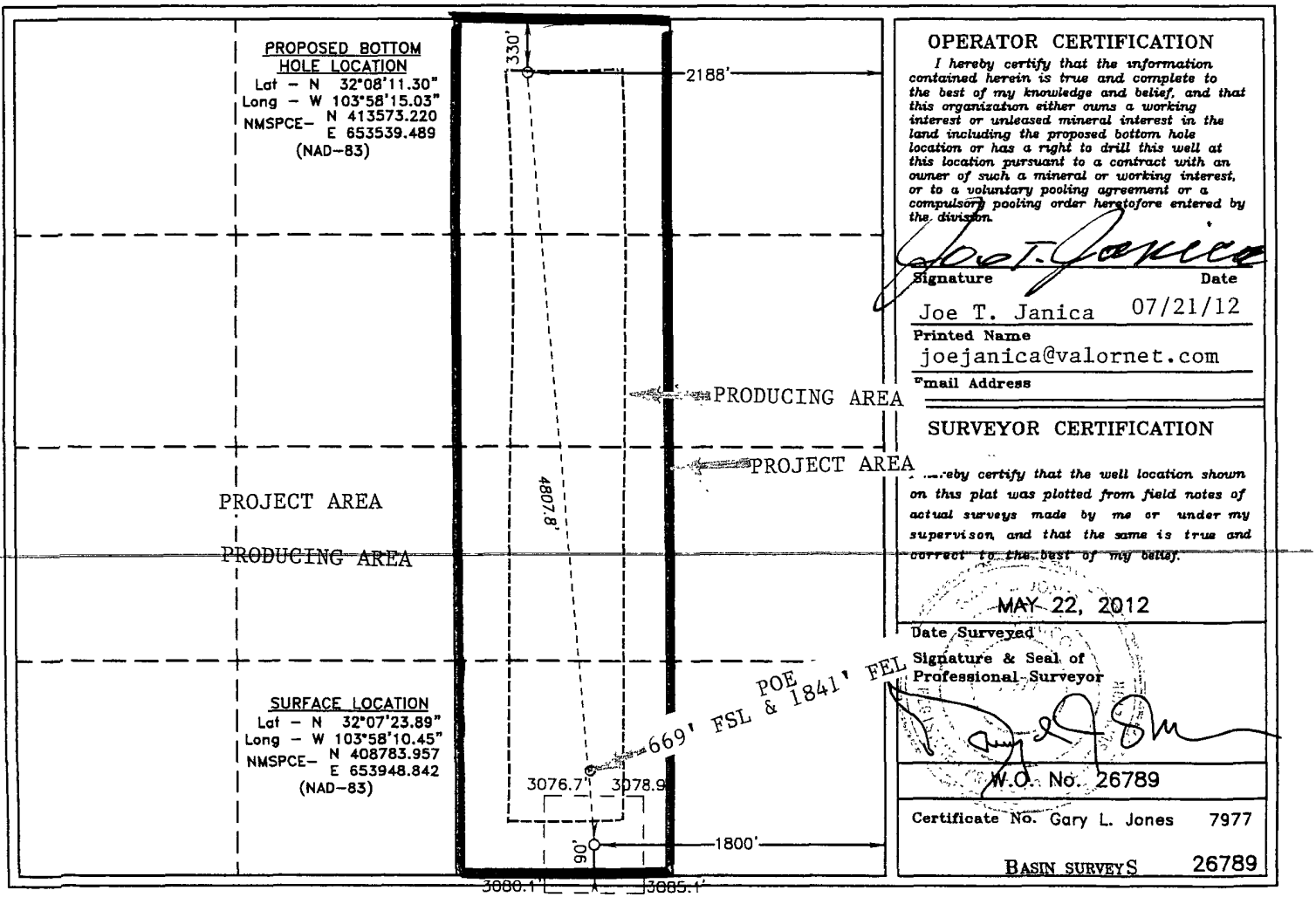
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	15	25 S	29 E		190	SOUTH	1800	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	15	25 S	29 E		330	NORTH	2188	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Joe T. Janica 07/21/12
Printed Name

joejanica@valornet.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief.

MAY 22, 2012
Date Surveyed

Signature & Seal of Professional Surveyor

W.O. No. 26789

Certificate No. Gary L. Jones 7977

BASIN SURVEYS 26789

EXHIBIT "A"

COG Production, LLC.
Black Bart 15 Federal #2H
Section 14, T.25S. R.29E.

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in the 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 the company I represent, 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 6th day of September, 2012.

Signed: _____

Name : Rand French

Position Title: Regulatory Advisor

Address: 2208 West Main Street, Artesia, NM 88210

Telephone: 575-748-6940

COG PRODUCTION LLC Pre-Drill Geological Prognosis
Lower Avalon Shale Single Lateral - no Pilot Hole
Wildcat / Pierce Crossing, E. (Bone Spring)

LAV	No PH

Black Bart 15 Fed #2H
30-015-?????

Rig: Silver Oak #7

Target Zone: Lower Avalon Shale					
Regular section		FNL	FSL	FEL	FWL
§-T-R (SHL)	15-25S-29E		190	1800	
§-T-R (BHL)	15-25S-29E	330		2188	

GL:	3086	actual
KB:	3104	actual

PROPOSED WELL			REFERENCE WELL
COG PRODUCTION LLC			COG PRODUCTION LLC
Black Bart 15 Fed #2H		3000'	Patron 23 Fed 1H PH
15-25S-29E			23-25S-29E
Eddy Co., NM			Eddy Co., NM
KB: 3104	Est. MD: 12100		KB: 3122

Formations	TVD	Subsea	Iso to Tgt	Lith	Hazards/Misc	TVD	Subsea	Iso
Rustler	176	2928		Mixed lithologies		213	2909	1500
TOS	1676	1428		Salt		1713	1409	1311
BOS	2987	117		Salt		3024	98	200
Delaware (Lamar)	3187	-83		Limestone & Sand		3224	-102	3762
Bone Sprg (BSGL)	6949	-3845		Limestone		6986	-3864	373
U Avalon Sh	7322	-4218	403	Silt, Shale & Carb		7359	-4237	221
☆ L Avalon Sh	7543	-4439	182	Silt, Shale & Carb		7580	-4458	328
FBSG_sand	7871	-4767		Fine Sand & Carb		7908	-4786	--
EOC target	7725	-4621						
EOL target	7715	-4611						

Comments

Wireline Evaluation

GR and Neutron: TD to surface. Density: TD to intermediate casing point. DLLT/MGRD: TD to intermediate casing point.

Coring and Testing

None

Mudlogging

Log out from intermediate casing to TD with a 2-man unit keeping 2 sets of 10' samples & capturing 1' drill time.

Land (obligations and deadlines)

Version/Geologist

v2 **Andrew McCarthy** **DATE:** 6/15/2012

S:\Delaware Basin Team\Electronic Well Files\OPERATED\BLACK BART 15 FED 2H\AFE-DRLG

COG Production LLC
DRILLING AND OPERATIONS PROGRAM
Blackbart 15 Fed #2H
SHL: 1800' FEL & 190' FSL
BHL: 2188' FEL & 330' FNL
Section 15 T25S R29E
Eddy 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:

Water	60'	
Rustler	563'	
Top of Salt	1,098'	
Base of Salt	2,987'	
Delaware	3,187'	Oil
Bone Spring	6,949'	Oil
L Avalon Shale	7,543'	Oil
1st Bone Spring	7,871	Oil
TD TVD	7,715'	
TD MD	12,327'	

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 590' 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 See COA	Section	OD Casing	New/ Used	Wt	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 ½"	0' - ~~590'~~ 695	Surface	13 3/8"	New	48#	STC	H-40	1.125	1.125	1.6
12 ¼"	0' – 3,200'	Intrmd	9 5/8"	New	36#	LTC	J-55	1.125	1.125	1.6
7 7/8"	0' – 12,327'	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: 200 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 / 1.34 cuft/sx)
**Calculated w/50% excess on OH volumes

b. 9 5/8" Intermediate: — Lead: 510 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 / 1.34 cuft/sx)
**Calculated w/35% excess on OH volumes

d. 5 ½" Production — Lead: 650 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 = 3346 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' – ~~590'~~ 1A5	Fresh Water	8.4	29	N.C.
~~590'~~ – 3200'	Brine	10	29	N.C.
3200' – 12,327' (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.

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

Eddy County, NM (NAD 83)
Blackbart 15 Federal 2H
Blackbart 15 Federal 2H

Wellbore #1

Plan: Plan #1

Standard Planning Report

12 July, 2012

COG Operating LLC
Blackbart 15 Federal 2H
Eddy County, NM (NAD 83)
Plan #1

Surface Location		Ground Elev: 3086.00 WELL @ 3103.50ft (Original Well Elev)			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	408783.96	653948.84	32.12330133	-103.96957460

TARGET DETAILS

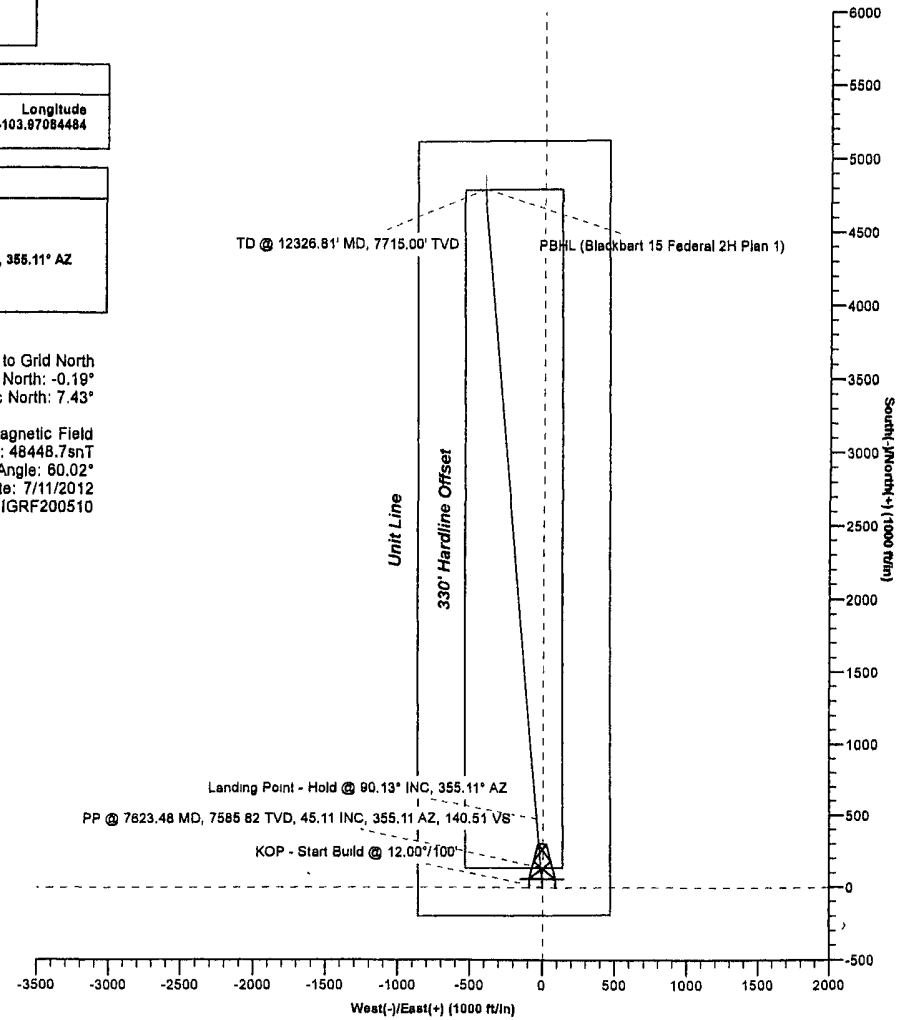
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL (Blackbart 15 Federal 2H Plan 1)	7715.00	4789.26	-409.35	413573.22	653539.49	32.13647027	-103.97084484

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	7247.54	0.00	0.00	7247.54	0.00	0.00	0.00	0.00	0.00	KOP - Start Build @ 12.00°/100'
3	7998.64	90.13	355.11	7725.00	476.83	-40.76	12.00	355.11	478.57	Landing Point - Hold @ 90.13° INC, 355.11° AZ
4	12326.81	90.13	355.11	7715.00	4789.26	-409.35	0.00	0.00	4806.73	TD @ 12326.81' MD, 7715.00' TVD

Azimuths to Grid North
True North: -0.19°
Magnetic North: 7.43°

Magnetic Field
Strength: 48448.7snT
Dip Angle: 60.02°
Date: 7/11/2012
Model: IGRF200510



Database:	Houston R5000 Database	**Local Co-ordinate Reference:**	Site Blackbart 15 Federal 2H
Company:	COG Operating LLC	**TVD Reference:**	WELL @ 3103.50ft (Original Well Elev)
Project:	Eddy County, NM (NAD 83)	**MD Reference:**	WELL @ 3103.50ft (Original Well Elev)
Site:	Blackbart 15 Federal 2H	**North Reference:**	Grid
Well:	Blackbart 15 Federal 2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project Eddy County, NM (NAD 83)

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

Site Blackbart 15 Federal 2H

Site Position:		**Northing:**	408,783.96 ft	**Latitude:**	32.12330133
From:	Map	**Easting:**	653,948.85 ft	**Longitude:**	-103.96957461
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.19 °

Well Blackbart 15 Federal 2H

Well Position	**+N/-S**	0.00 ft	**Northing:**	408,783.96 ft	**Latitude:**	32.12330133
	+E/-W	0.00 ft	**Easting:**	653,948.85 ft	**Longitude:**	-103.96957461
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	3,086.00 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	7/11/2012	7.62	60.02	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	355.11

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	
7,247.54	0.00	0.00	7,247.54	0.00	0.00	0.00	0.00	0.00	0.00	
7,998.64	90.13	355.11	7,725.00	476.83	-40.76	12.00	12.00	0.00	355.11	
12,326.81	90.13	355.11	7,715.00	4,789.26	-409 35	0.00	0.00	0.00	0.00	PBHL (Blackbart 15 F

Database:	Houston R5000 Database	**Local Co-ordinate Reference:**	Site Blackbart 15 Federal 2H
Company:	COG Operating LLC	**TVD Reference:**	WELL @ 3103.50ft (Original Well Elev)
Project:	Eddy County, NM (NAD 83)	**MD Reference:**	WELL @ 3103.50ft (Original Well Elev)
Site:	Blackbart 15 Federal 2H	**North Reference:**	Grid
Well:	Blackbart 15 Federal 2H	**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)
7,247.54	0.00	0.00	7,247.54	0.00	0.00	0.00	0.00	0.00	0.00
KOP - Start Build @ 12.00°/100'									
7,300.00	6.30	355.11	7,299.89	2.87	-0.25	2.88	12.00	12.00	0.00
7,400.00	18.30	355.11	7,397.42	24.05	-2.06	24.14	12.00	12.00	0.00
7,500.00	30.30	355.11	7,488.40	64.97	-5.55	65.20	12.00	12.00	0.00
7,600.00	42.30	355.11	7,568.85	123.84	-10.58	124.29	12.00	12.00	0.00
7,623.48	45.11	355.11	7,585.82	140.00	-11.97	140.51	12.00	12.00	0.00
PP @ 7623.48 MD, 7585.82 TVD, 45.11 INC, 355.11 AZ, 140.51 VS									
7,700.00	54.30	355.11	7,635.26	198.09	-16.93	198.81	12.00	12.00	0.00
7,800.00	66.30	355.11	7,684.72	284.48	-24.32	285.51	12.00	12.00	0.00
7,900.00	78.30	355.11	7,715.07	379.22	-32.41	380.60	12.00	12.00	0.00
7,998.64	90.13	355.11	7,725.00	476.83	-40.76	478.57	12.00	12.00	0.00
Landing Point - Hold @ 90.13° INC, 355.11° AZ									
8,000.00	90.13	355.11	7,725.00	478.18	-40.87	479.93	0.00	0.00	0.00
8,100.00	90.13	355.11	7,724.77	577.82	-49.39	579.93	0.00	0.00	0.00
8,200.00	90.13	355.11	7,724.54	677.46	-57.90	679.93	0.00	0.00	0.00
8,300.00	90.13	355.11	7,724.31	777.09	-66.42	779.93	0.00	0.00	0.00
8,400.00	90.13	355.11	7,724.07	876.73	-74.94	879.93	0.00	0.00	0.00
8,500.00	90.13	355.11	7,723.84	976.37	-83.45	979.93	0.00	0.00	0.00
8,600.00	90.13	355.11	7,723.61	1,076.00	-91.97	1,079.93	0.00	0.00	0.00
8,700.00	90.13	355.11	7,723.38	1,175.64	-100.49	1,179.92	0.00	0.00	0.00
8,800.00	90.13	355.11	7,723.15	1,275.27	-109.00	1,279.92	0.00	0.00	0.00
8,900.00	90.13	355.11	7,722.92	1,374.91	-117.52	1,379.92	0.00	0.00	0.00
9,000.00	90.13	355.11	7,722.69	1,474.55	-126.03	1,479.92	0.00	0.00	0.00
9,100.00	90.13	355.11	7,722.46	1,574.18	-134.55	1,579.92	0.00	0.00	0.00
9,200.00	90.13	355.11	7,722.23	1,673.82	-143.07	1,679.92	0.00	0.00	0.00
9,300.00	90.13	355.11	7,721.99	1,773.46	-151.58	1,779.92	0.00	0.00	0.00
9,400.00	90.13	355.11	7,721.76	1,873.09	-160.10	1,879.92	0.00	0.00	0.00
9,500.00	90.13	355.11	7,721.53	1,972.73	-168.62	1,979.92	0.00	0.00	0.00
9,600.00	90.13	355.11	7,721.30	2,072.37	-177.13	2,079.92	0.00	0.00	0.00
9,700.00	90.13	355.11	7,721.07	2,172.00	-185.65	2,179.92	0.00	0.00	0.00
9,800.00	90.13	355.11	7,720.84	2,271.64	-194.16	2,279.92	0.00	0.00	0.00
9,900.00	90.13	355.11	7,720.61	2,371.28	-202.68	2,379.92	0.00	0.00	0.00
10,000.00	90.13	355.11	7,720.38	2,470.91	-211.20	2,479.92	0.00	0.00	0.00
10,100.00	90.13	355.11	7,720.15	2,570.55	-219.71	2,579.92	0.00	0.00	0.00
10,200.00	90.13	355.11	7,719.91	2,670.19	-228.23	2,679.92	0.00	0.00	0.00
10,300.00	90.13	355.11	7,719.68	2,769.82	-236.75	2,779.92	0.00	0.00	0.00
10,400.00	90.13	355.11	7,719.45	2,869.46	-245.26	2,879.92	0.00	0.00	0.00
10,500.00	90.13	355.11	7,719.22	2,969.09	-253.78	2,979.92	0.00	0.00	0.00
10,600.00	90.13	355.11	7,718.99	3,068.73	-262.29	3,079.92	0.00	0.00	0.00
10,700.00	90.13	355.11	7,718.76	3,168.37	-270.81	3,179.92	0.00	0.00	0.00
10,800.00	90.13	355.11	7,718.53	3,268.00	-279.33	3,279.92	0.00	0.00	0.00
10,900.00	90.13	355.11	7,718.30	3,367.64	-287.84	3,379.92	0.00	0.00	0.00
11,000.00	90.13	355.11	7,718.07	3,467.28	-296.36	3,479.92	0.00	0.00	0.00
11,100.00	90.13	355.11	7,717.84	3,566.91	-304.87	3,579.92	0.00	0.00	0.00
11,200.00	90.13	355.11	7,717.60	3,666.55	-313.39	3,679.92	0.00	0.00	0.00
11,300.00	90.13	355.11	7,717.37	3,766.19	-321.91	3,779.92	0.00	0.00	0.00
11,400.00	90.13	355.11	7,717.14	3,865.82	-330.42	3,879.92	0.00	0.00	0.00
11,500.00	90.13	355.11	7,716.91	3,965.46	-338.94	3,979.92	0.00	0.00	0.00
11,600.00	90.13	355.11	7,716.68	4,065.10	-347.46	4,079.92	0.00	0.00	0.00
11,700.00	90.13	355.11	7,716.45	4,164.73	-355.97	4,179.92	0.00	0.00	0.00
11,800.00	90.13	355.11	7,716.22	4,264.37	-364.49	4,279.92	0.00	0.00	0.00
11,900.00	90.13	355.11	7,715.99	4,364.00	-373.00	4,379.92	0.00	0.00	0.00

Database:	Houston R5000 Database	**Local Co-ordinate Reference:**	Site Blackbart 15 Federal 2H
Company:	COG Operating LLC	**TVD Reference:**	WELL @ 3103.50ft (Original Well Elev)
Project:	Eddy County, NM (NAD 83)	**MD Reference:**	WELL @ 3103.50ft (Original Well Elev)
Site:	Blackbart 15 Federal 2H	**North Reference:**	Grid
Well:	Blackbart 15 Federal 2H	**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)
12,000.00	90.13	355.11	7,715.76	4,463.64	-381.52	4,479.92	0.00	0.00	0.00
12,100.00	90.13	355.11	7,715.52	4,563.28	-390.04	4,579.92	0.00	0.00	0.00
12,200.00	90.13	355.11	7,715.29	4,662.91	-398.55	4,679.92	0.00	0.00	0.00
12,300.00	90.13	355.11	7,715.06	4,762.55	-407.07	4,779.92	0.00	0.00	0.00
12,326.81	90.13	355.11	7,715.00	4,789.26	-409.35	4,806.73	0.00	0.00	0.00
TD @ 12326.81' MD, 7715.00' TVD - PBHL (Blackbart 15 Federal 2H Plan 1)									

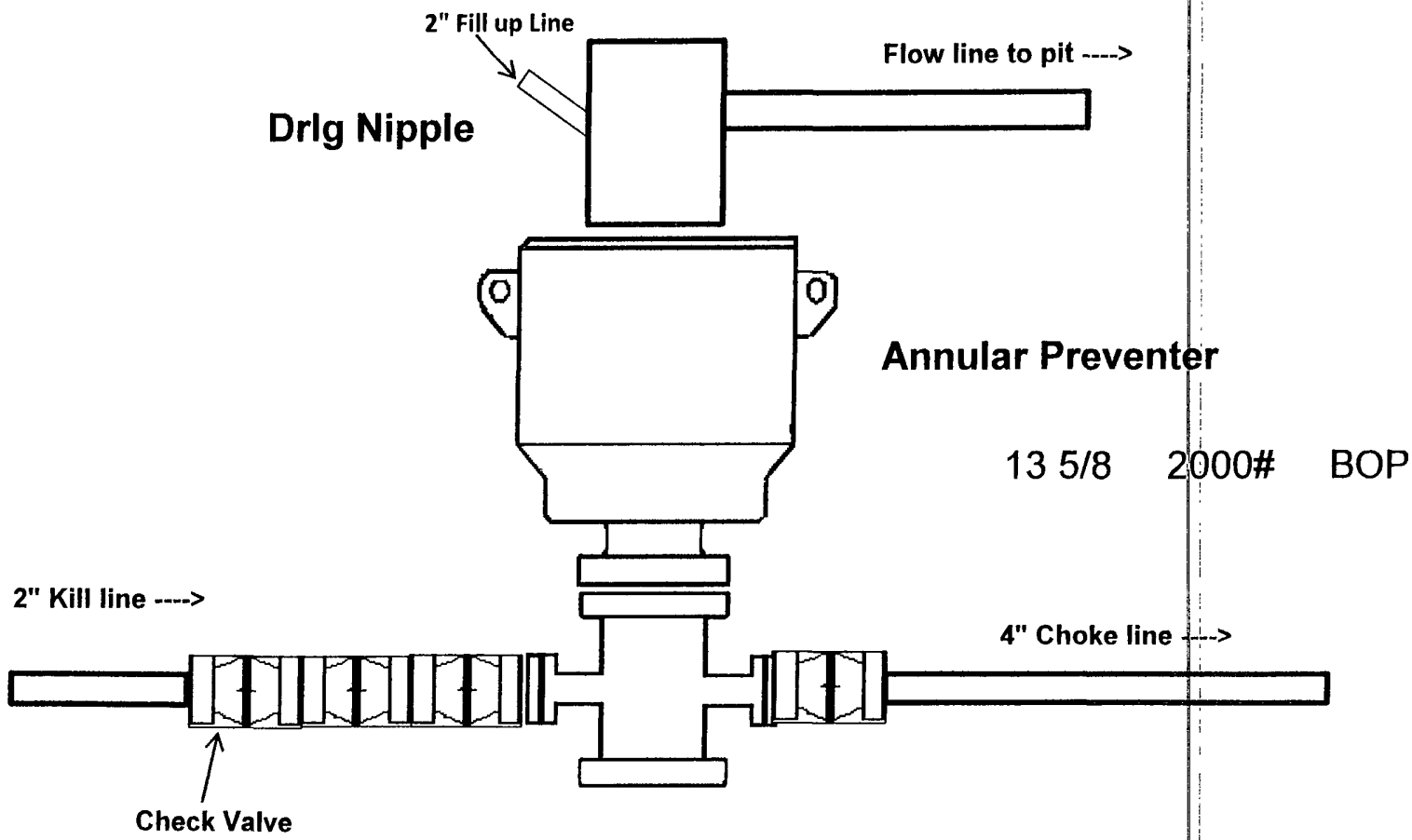
Design Targets

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 (Blackbart 15 Fed - plan hits target center - Point	0.00	0.00	7,715.00	4,789.26	-409.35	413,573.22	653,539.49	32.13647027	-103.97084484

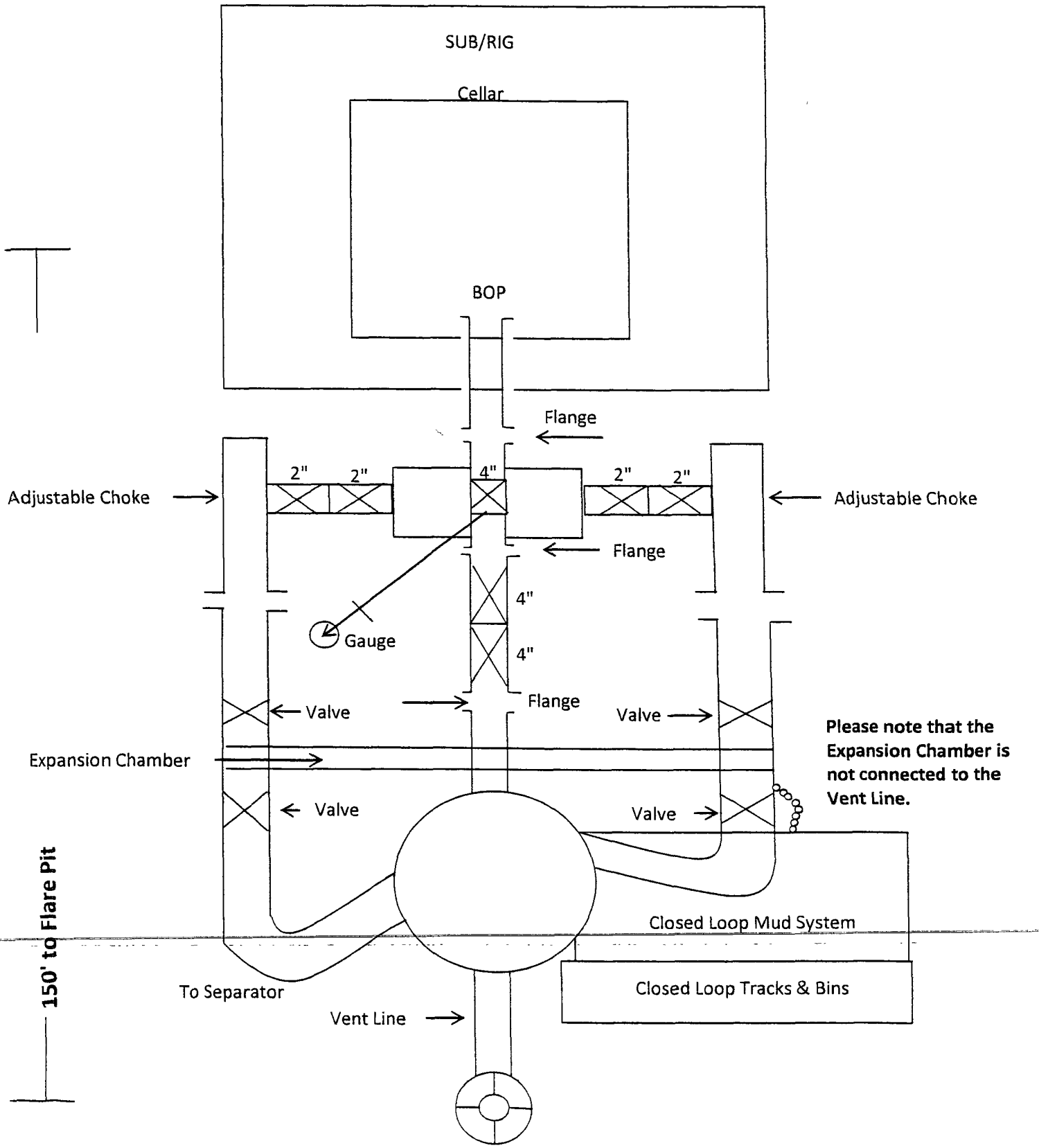
Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
7,247.54	7,247.54	0.00	0.00	KOP - Start Build @ 12.00°/100'
7,623.48	7,585.82	140.00	-11.97	PP @ 7623.48 MD, 7585.82 TVD, 45.11 INC, 355.11 AZ, 140.51 VS
7,998.64	7,725.00	476.83	-40.76	Landing Point - Hold @ 90.13° INC, 355.11° AZ
12,326.81	7,715.00	4,789.26	-409.35	TD @ 12326.81' MD, 7715.00' TVD

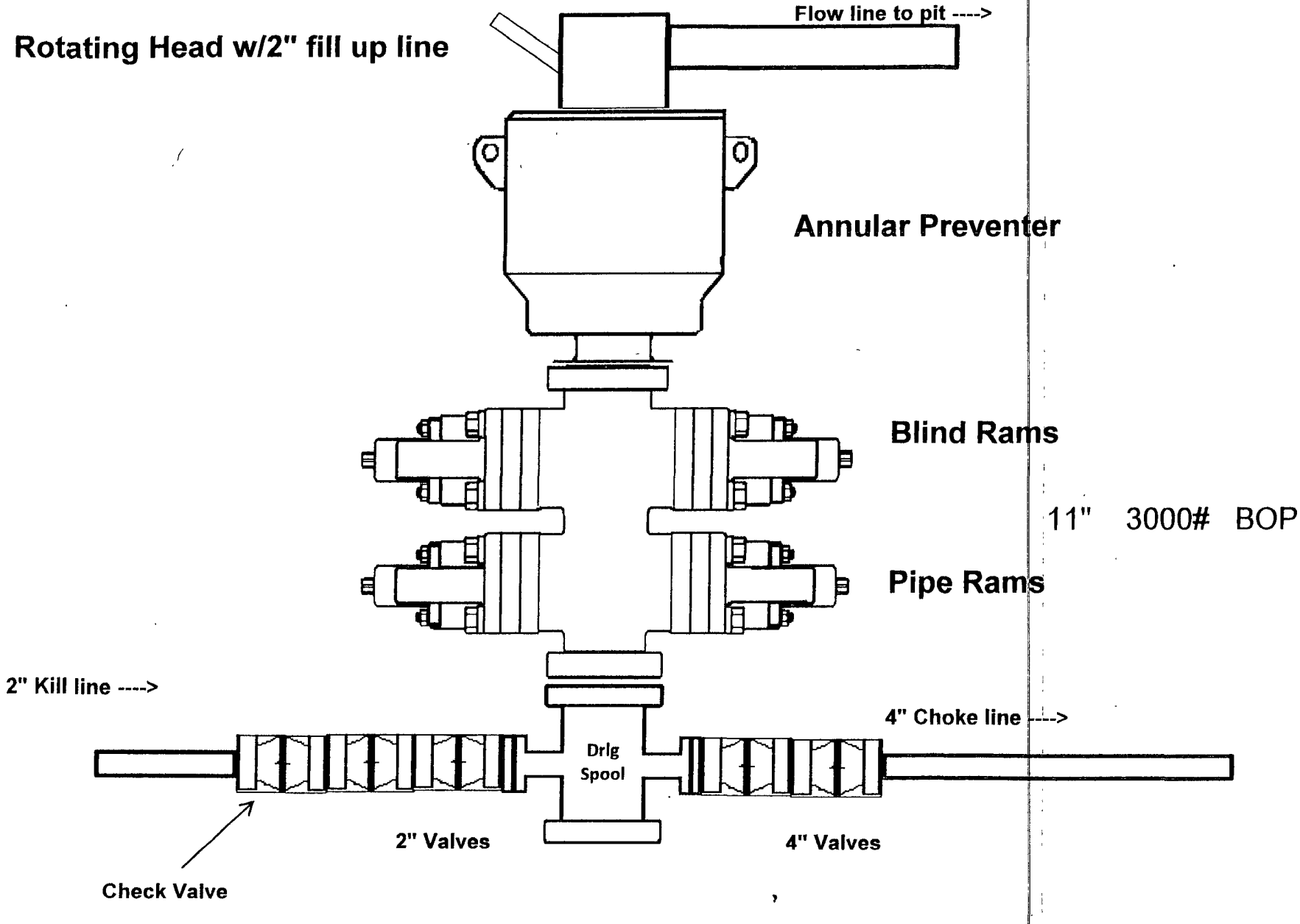
2,000 psi BOP Schematic



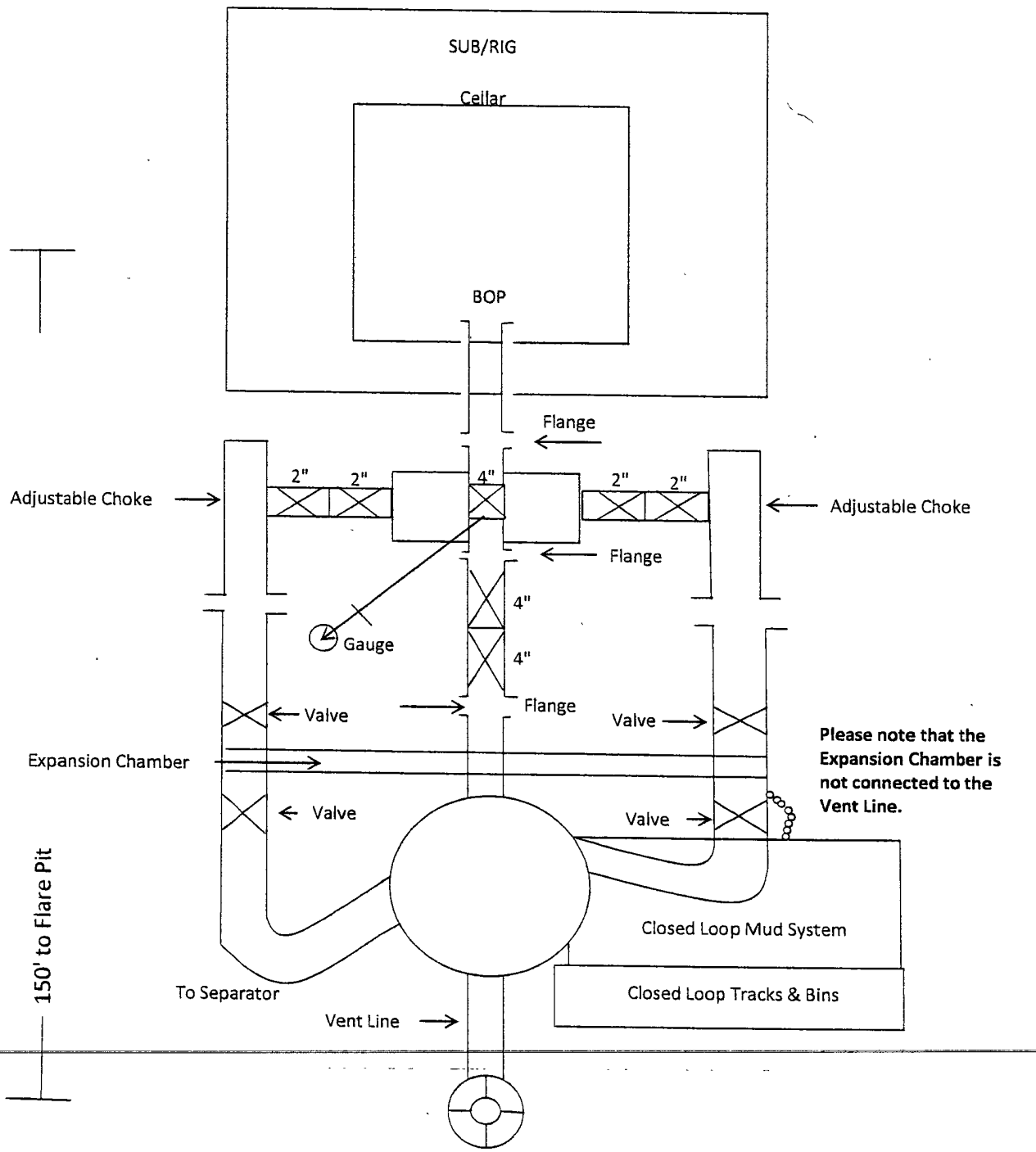
2M Choke Manifold Equipment



3,000 psi BOP Schematic



3M Choke Manifold Equipment



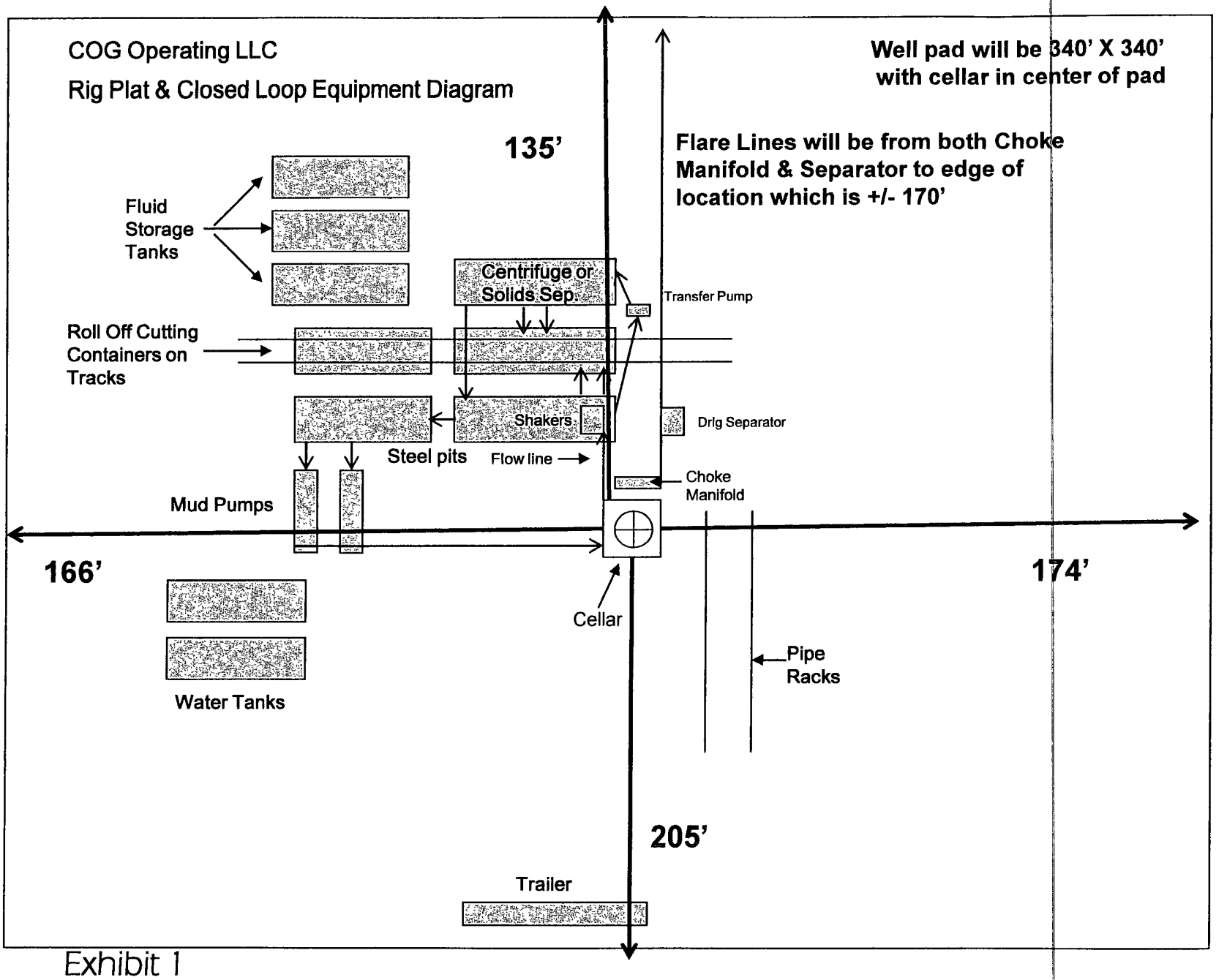

COG Operating LLC
Rig Plat & Closed Loop Equipment Diagram
Well pad will be 340' X 340' with cellar in center of pad
135'
Flare Lines will be from both Choke Manifold & Separator to edge of location which is +/- 170'
Fluid Storage Tanks
Centrifuge or Solids Sep.
Transfer Pump
Roll Off Cutting Containers on Tracks
Shakers
Drlg Separator
Steel pits
Flow line
Choke Manifold
Mud Pumps
166'
174'
Cellar
Pipe Racks
Water Tanks
205'
Trailer

Exhibit 1

COG PRODUCTION LLC
HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

A. The hazards and characteristics of hydrogen sulfide (H_2S).

B. The proper use and maintenance of personal protective equipment and life support systems.

C. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.

D. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

A. The effects of H_2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.

B. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.

C. The contents and requirements of the H_2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

II. H_2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

A. Well Control Equipment:

Flare line.

Choke manifold.

Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.

B. Protective equipment for essential personnel:

Mark II Surviveair 30-minute units located in the dog house and at briefing areas.

C. H_2S detection and monitoring equipment:

2 - portable H_2S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S levels of 20 ppm are reached.

D. Visual warning systems:

Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

E. Mud Program:

The mud program has been designed to minimize the volume of H_2S circulated to the surface.

F. Metallurgy:

All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H_2S service.

G. Communication:

Company vehicles equipped with cellular telephone.

COG Production LLC has conducted a review to determine if an H2S contingency plan is required for the above referenced well. We were able to conclude that any potential hazardous volume would be minimal. H2S concentrations of wells in this area from surface to TD are low enough; therefore, we do not believe that an H2S contingency plan is necessary.

WARNING

YOU ARE ENTERING AN H_2S AREA
AUTHORIZED PERSONNEL ONLY

1. ***BEARDS OR CONTACT LENSES NOT ALLOWED***
2. ***HARD HATS REQUIRED***
3. ***SMOKING IN DESIGNATED AREAS ONLY***
4. ***BE WIND CONSCIOUS AT ALL TIMES***
5. ***CK WITH COG PRODUCTION LLC FOREMAN AT MAIN OFFICE***

COG PRODUCTION LLC

1-575-748-6940

EMERGENCY CALL LIST

	OFFICE	MOBILE	HOME
COG OPERATING LLC OFFICE	575-748-6940		
SHERYL BAKER	575-748-6940	432-934-1873	575-748-2396
RON BEASLEY	575-746-2010	432-254-9883	
SETH WILD	575-748-6940	432-528-3633	
DEAN CHUMBLEY	575-748-3303	575-748-5988	575-748-2426

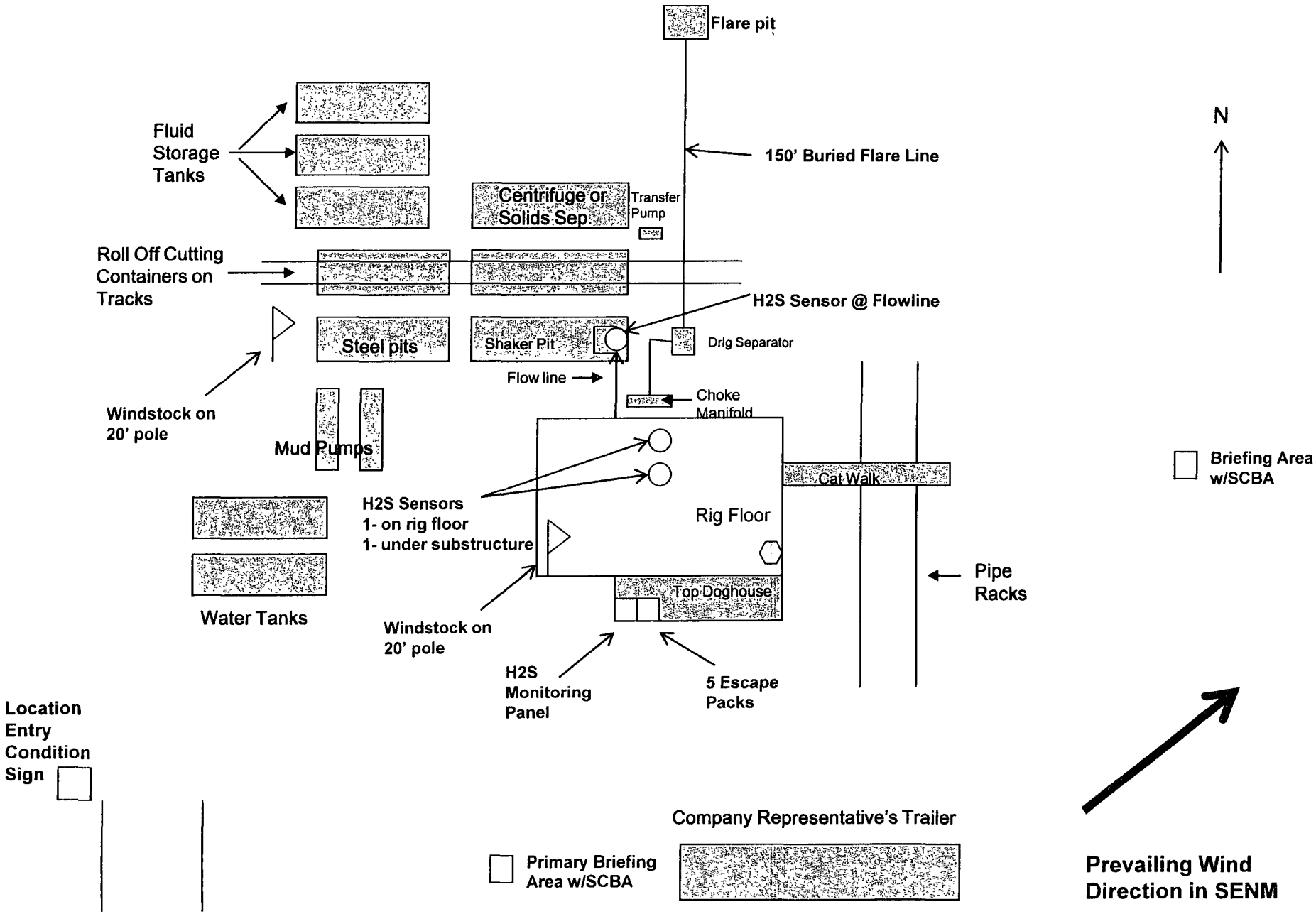
EMERGENCY RESPONSE NUMBERS

	OFFICE
STATE POLICE	575-748-9718
EDDY COUNTY SHERIFF	575-746-2701
EMERGENCY MEDICAL SERVICES (AMBULANCE)	911 or 575-746-2701
EDDY COUNTY EMERGENCY MANAGEMENT (HARRY BURGESS)	575-887-9511
STATE EMERGENCY RESPONSE CENTER (SERC)	575-476-9620
CARLSBAD POLICE DEPARTMENT	575-885-2111
CARLSBAD FIRE DEPARTMENT	575-885-3125
NEW MEXICO OIL CONSERVATION DIVISION	575-748-1283
INDIAN FIRE & SAFETY	800-530-8693
HALLIBURTON SERVICES	800-844-8451

COG Production LLC
H_2S Equipment Schematic
Terrain: Shinnery sand hills.

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

Secondary egress is a marked footpath.



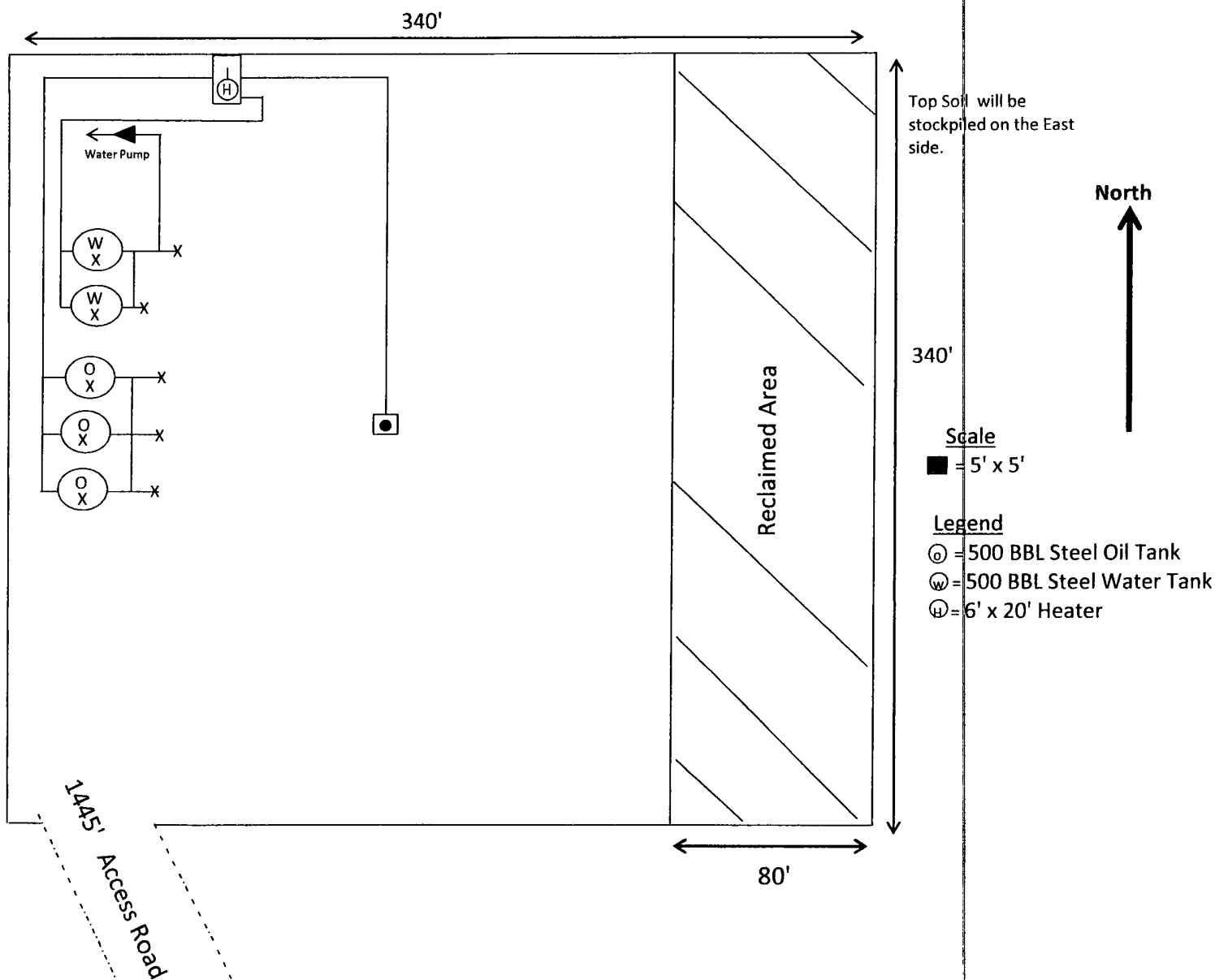
CONCHO

COG Operating LLC
2208 West Main
Artesia, NM 88210

Exhibit 3

Production Facility Layout

Blackbart 15 Fed #2H



PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Production
LEASE NO.:	NM14778
WELL NAME & NO.:	2H Black Bart 15 Federal
SURFACE HOLE FOOTAGE:	190' FSL & 1800' FEL
BOTTOM HOLE FOOTAGE	330' FNL & 2100' FEL
LOCATION:	Section 15, T.25 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.