

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

JUL 20 2016

RECEIVED

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMLC 029410A
1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other Inj <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator ConocoPhillips Company (217817)		7. If Unit or CA Agreement, Name and No. N/A
3a. Address 600 N. Dairy Ashford Rd.; P10-3096 Houston, TX 77079-1175		8. Lease Name and Well No. (31422) MCA Unit 565
3b. Phone No. (include area code) 281-206-5281		9. API Well No. 30-025-43369
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 1315' FNL and 1059' FWL; UL D, Sec. 29, T17S, R32E At proposed prod. zone 660' FNL and 1309' FWL; UL D, Sec. 29, T17S, R32E		10. Field and Pool, or Exploratory (43329) Maljamar; Grayburg, San Andres
14. Distance in miles and direction from nearest town or post office* Approximately 3.5 miles south east of Maljamar; New Mexico		11. Sec., T. R. M. or Blk. and Survey or Area Sec. 29, T17S, R32E
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 11' to UL line at TD	16. No. of acres in lease 560.00	12. County or Parish Lea County
17. Spacing Unit dedicated to this well 40	13. State NM	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. approx. 50' at surface	19. Proposed Depth 4545' MD/ 4439' TVD	20. BLM/BIA Bond No. on file ES0085
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3935' GL	22. Approximate date work will start* 01/15/2016	23. Estimated duration 7 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.   | 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 must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM.             |

25. Signature <i>Susan B. Maunder</i>	Name (Printed/Typed) Susan B. Maunder	Date 6/29/15
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Title Senior Regulatory Specialist		
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Approved by (Signature) <i>/s/George MacDonell</i>	Name (Printed/Typed)	Date JUL 19 2016
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Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE
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Application approval does not warrant conduct operations thereon. Conditions of approval, if any, are at

See attached NMOCD  
Conditions of Approval

use rights in the subject lease which would entitle the applicant to  
**APPROVAL FOR TWO YEARS**

Title 18 U.S.C. Section 1001 and Title 30 U.S.C. Section 1701 States any false, fictitious or fraudulent

and willfully to make to any department or agency of the United States.

(Continued on page 2)

\*(Instructions on page 2)

Roswell Controlled Water Basin

*07/21/16*  
**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL**

**Approval Subject to General Requirements  
& Special Stipulations Attached**

*Ka*

**ConocoPhillips, MCA UNIT 565**

**1. Geologic Formations**

TVD of target	4439'	Pilot hole depth	NA
MD at TD:	4545'	Deepest expected fresh water:	707'

**Permian Basin**

Formation	TVD (ft)
<b>Rustler</b>	<b>707</b>
<b>Salado</b>	<b>864</b>
<b>Tansill</b>	<b>1874</b>
<b>Yates</b>	<b>2054</b>
<b>Seven Rivers</b>	<b>2439</b>
<b>Queen</b>	<b>3039</b>
<b>Grayburg</b>	<b>3439</b>
<b>San Andres</b>	<b>3819</b>
<b>TD</b>	<b>4439</b>

**2. Casing Program**

*See  
COA*

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
12.25"	0	<del>742'</del> <b>780</b>	8.625"	24	J55	STC	4.18	8.99	13.7
7.875"	0	4535'	5.5"	17	J55	LTC	2.13	2.3	3.27
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

**ConocoPhillips, MCA UNIT 565**

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	YES
Does casing meet API specifications? If no, attach casing specification sheet.	YES
Is premium or uncommon casing planned? If yes attach casing specification sheet.	NO
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	YES
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	N/A
Is well located within Capitan Reef?	NO
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	NO
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	NO
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	NO
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	NO
If yes, are there three strings cemented to surface?	

**3. Cementing Program**

Casing	# Sk	Wt. lb/gal	Yld ft <sup>3</sup> /sack	H <sub>2</sub> O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	350	13.5	1.75	9.17	15.75	Lead: Class C + 4% Bentonite + 2% CaCl <sub>2</sub> + 0.25% Cello Flake (LCM)
	250	14.8	1.34	6.36	8	Tail: Class C + 2% CaCl <sub>2</sub>
DV Tool-Contingency <i>~1800 or ~3400</i>	450	11.5	3.22	19.06	29	Lead: Class C + 3% MPA-5 (strength enhancement) + 10% extender + .005 lbs/sx Static Free + .005 gps defoamer + .125 lb/sx Cello Flake + 3 lbs/sx LCM + 2% extender + 1% bonding improver + 6% Bentonite
	320	14.0	1.37	6.17	5.5	Tail: (35:65) Poz: Class C + 1% Extender + 1.5% Fluid Loss Add. + .125 lbs/sx Cello Flake + 3 lbs/sx LCM
	250	14.8	1.34	6.36	8	Stage 2: Class C + 2% CaCl <sub>2</sub>

**ConocoPhillips, MCA UNIT 565**

Prod.	450	11.5	3.21	19.34	29	Lead: Class C +10% Gas Migration Add.+2% Extender+3% MPA-5 (strength enhancement) +1% BA-10A (Bonding improver)+6% Bentonite
	320	14.0	1.37	6.48	5.5	Tail: (35:65) Poz:Class C+1% Extender+1.5% Fluid Loss Add.

Lab reports with recipe and the 500 psi compressive strength time for the cement will be onsite for review.

DV tool to be run and two stage cement job to be performed as contingency in the event of flows or severe losses while drilling and running casing. DV tool depth will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe.

Casing String	TOC	% Excess
Surface	0'	157% lead, 107% tail
Production	0'	262% lead, 81% tail

**4. Pressure Control Equipment**

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
7-7/8"	11"	3M	Annular	x	70% of working pressure  3M
			Blind Ram		
			Pipe Ram		
			Double Ram	x	
			Other*		
			Pipe Ram		
			Double Ram		
			Other*		

\*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

**ConocoPhillips, MCA UNIT 565**

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y/N	Are anchors required by manufacturer?
	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.  See attached schematic.

**5. Mud Program**

Depth		Type	Weight (ppg)	Viscosity	Water Loss	PH
From	To					
0	Surf. shoe	FW Gel	8.5-9.0	28-40	N/C	N.C.
Surf. Shoe	TD	Saturated Brine	10.0	29	N/C	10-11

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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**6. Logging and Testing Procedures**

Logging, Coring and Testing.	
YES	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
NO	Drill stem test? If yes, explain
NO	Coring? If yes, explain

Additional logs planned		Interval
X	Resistivity	TD to Surface Shoe
X	Density, Spectral GR, BHC, Caliper	TD to Surface Shoe
	CBL	
X	Mud log	TD to Surface Shoe
	PEX	

**7. Drilling Conditions**

Condition	Specify what type and where?
BH Pressure at deepest TVD	1922 psi
Abnormal Temperature	No

- Mitigation measure for abnormal conditions - Loss of circulation is a possibility in the horizons below the Top of Grayburg. We expect that normal Loss of Circulation Material will be successful in healing any such loss of circulation events.

<p>Gas detection equipment and pit level flow monitoring equipment will be on location. A flow paddle will be installed in the flow line to monitor relative amount of mud flowing in the non-pressurized return line. Mud probes will be installed in the individual tanks to monitor pit volumes of the drilling fluid with a pit volume totalizer. Gas detecting equipment and H2S monitor alarm will be installed in the mud return system and will be monitored. A mud gas separator will be installed and operable before drilling out from the Surface Casing. The gases shall be piped into the flare system. Drilling mud containing H2S shall be degassed in accordance with API RP-49, item 5.14. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.</p>	
X	H2S is present
X	H2S Plan attached

**8. Other facets of operation**

Is this a walking operation? If yes, describe.

Will be pre-setting casing? If yes, describe.

A 10' rathole is planned between TD and production casing set depth.

Attachments

Directional Plan

Other, describe: Two Stage contingency cementing diagram, Drill Plan Attachment

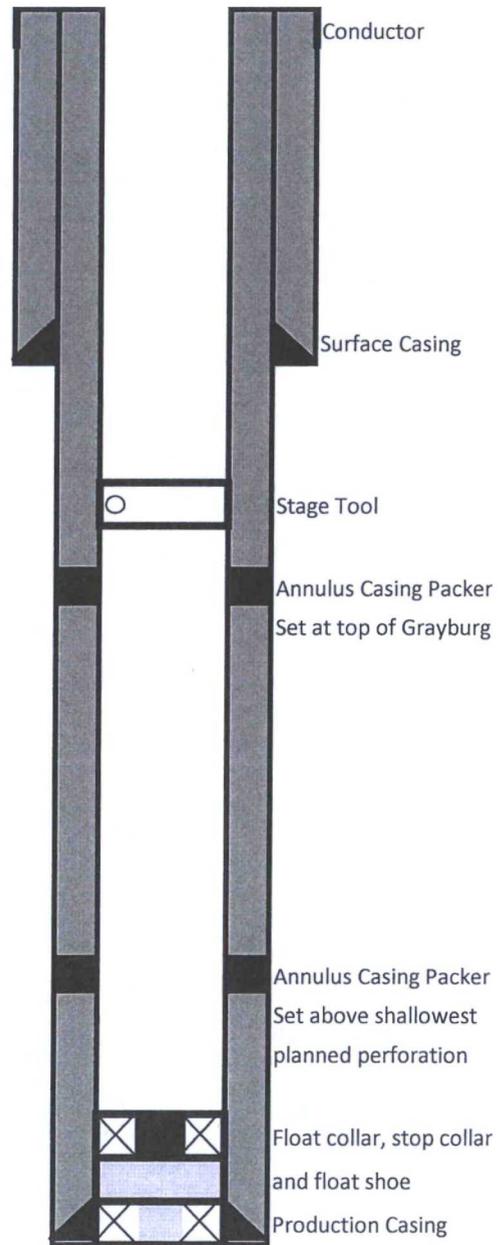
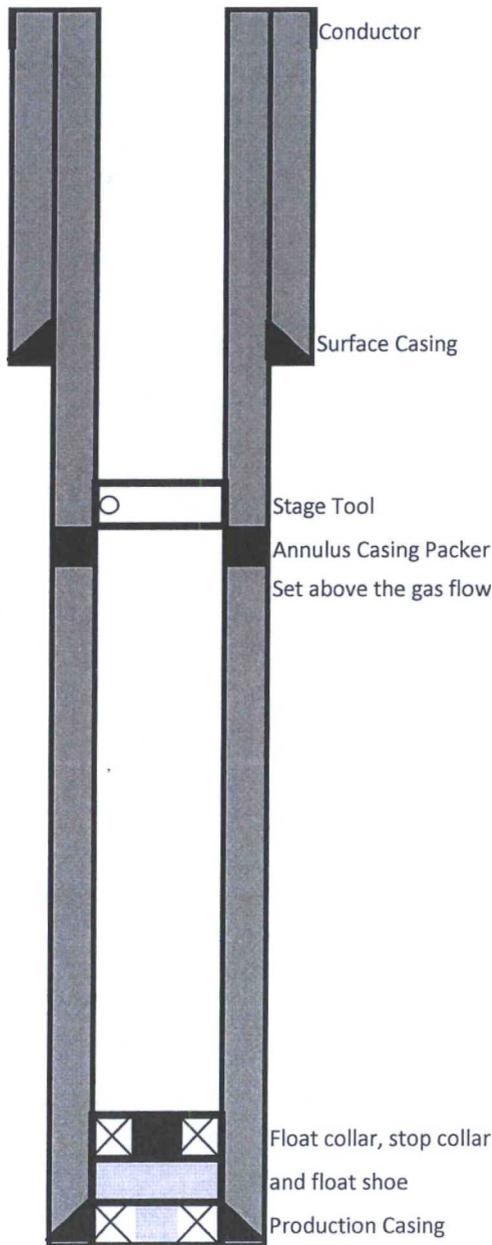
# Drill Plan Attachment

## Two-Stage Cementing (Alternative for Shallow Gas)

Provide contingency plan for using two-stage cementing for the production casing cement job if gas flow occurs during the drilling operations. See APD Drill Plan Section 3.

## Two-Stage Cementing (Alternative for Oil/Water/Gas & Water Flow)

Provide contingency plan for using two-stage cementing for the production casing cement job if oil or water flow occurs during drilling operations. See APD Drill Plan Section 3.





Company: ConocoPhillips  
 Site: MCA Unit  
 Well: 565  
 Project: Lea County, New Mexico (NAD 27)  
 Rig Name: Precision 194



ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
1873.90	0.00	0.00	1873.90	0.00	0.00	0.00	0.00	KOP, 2.00*/100' Build
2798.07	18.48	20.65	2782.13	138.29	52.11	147.47	147.78	Begin 18.48* Tangent
4544.96	18.48	20.65	4438.90	656.53	247.40	700.12	701.60	PBHL

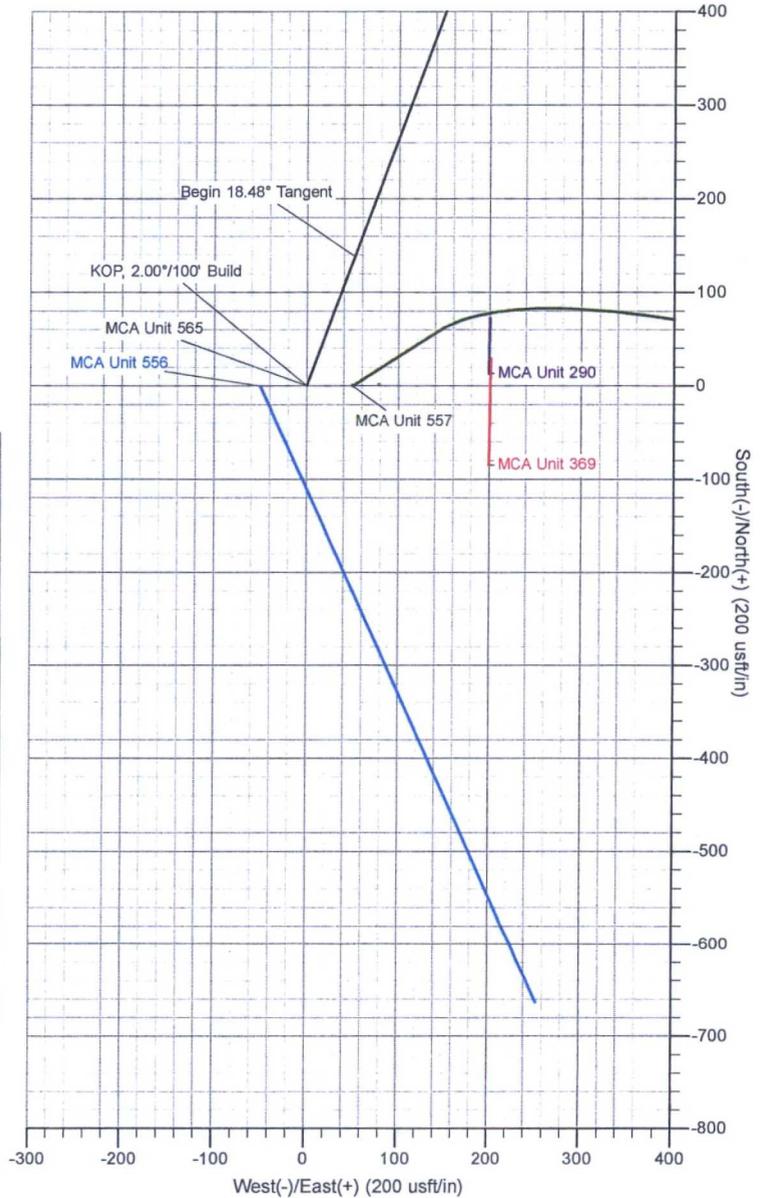
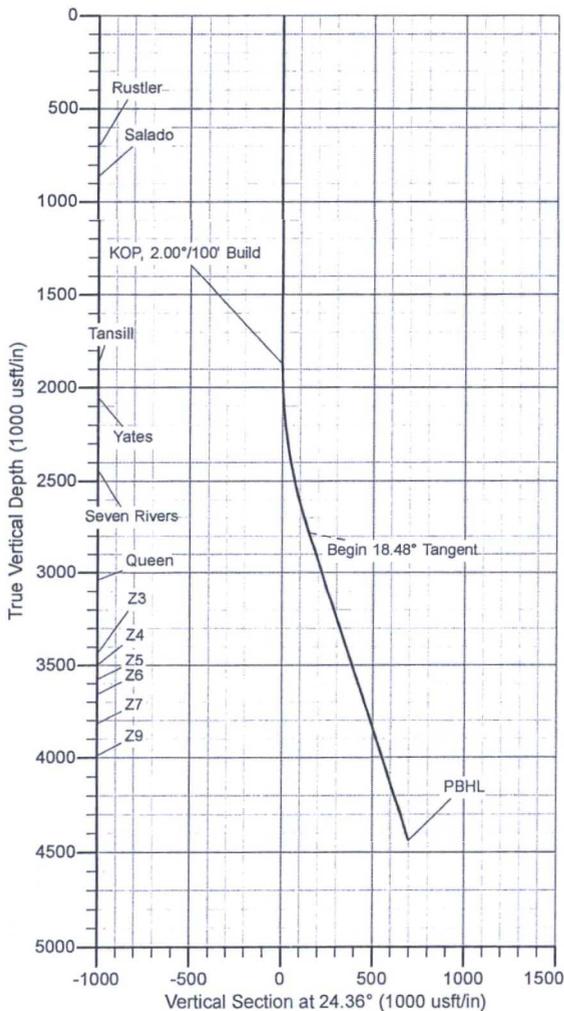


Azimuths to Grid North  
 True North: -0.29°  
 Magnetic North: 7.10°

Magnetic Field  
 Strength: 48548.6snT  
 Dip Angle: 60.64°  
 Date: 06/04/2015  
 Model: BGGM2015

US State Plane 1927 (Exact solution)  
 New Mexico East 3001

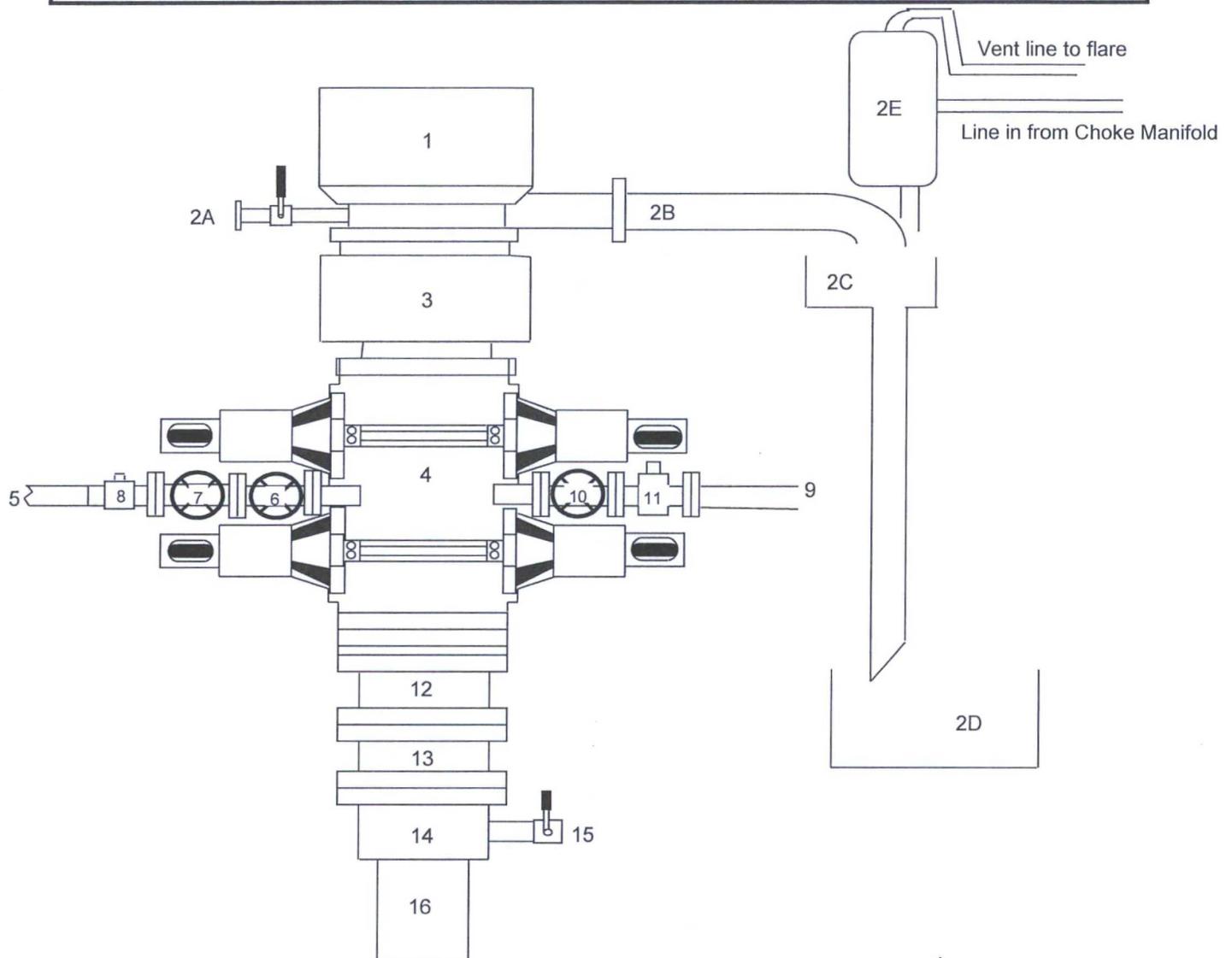
Created By: HLH  
 Date: 15:15, June 05 2015  
 Plan: Design #1



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by MS Energy are at the sole risk and responsibility of the customer. MS Energy is not responsible for the accuracy of this schematic or the information contained herein.

## BLOWOUT PREVENTER ARRANGEMENT

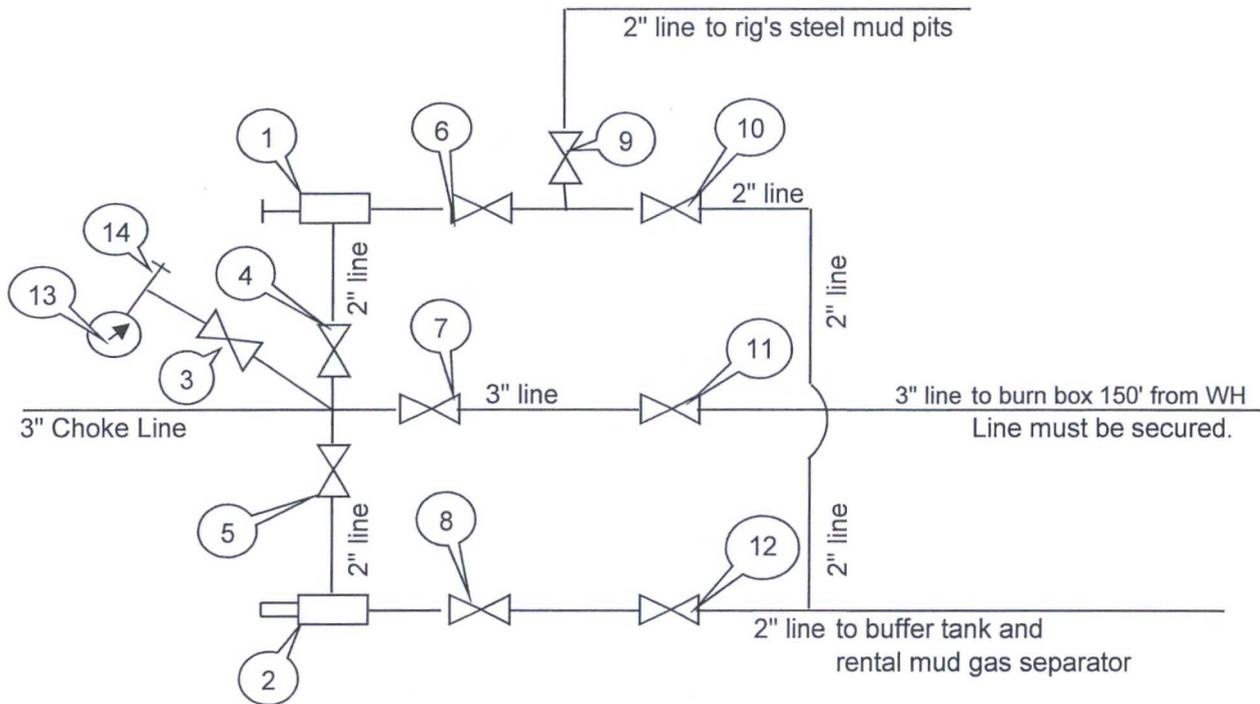
3M System per Onshore Oil and Gas Order No. 2 utilizing 3M and 5M Rated Equipment



Item	Description
1	Rotating Head (11")
2A	Fill up Line and Valve
2B	Flow Line (8")
2C	Shale Shakers and Solids Settling Tank
2D	Cuttings Bins for Zero Discharge
2E	Rental Mud Gas Separator with vent line to flare and return line to mud system
3	Annular BOP (11", 3M)
4	Double Ram (11", 3M, equipped with Blind Rams and Pipe Rams)
5	Kill Line (2" flexible hose, 3000 psi WP)
6	Kill Line Valve, Inner (2-1/16", 3000 psi WP)
7	Kill Line Valve, Outer (2-1/16", 3000 psi WP)
8	Kill Line Check Valve (2-1/16", 3000 psi WP)
9	Straight Choke Line (3" 3000 psi WP)
10	Choke Line Valve, Inner (3-1/8", 3000 psi WP)
11	Choke Line Valve, Outer, (Hydraulically operated, 3-1/8", 3000 psi WP)
12	Spacer Spool (11" 3M x 3M)
13	Adapter Flange (11" 3M x 5M)
14	Casing Head (11" 5M)
15	Ball Valve and Threaded Nipple on Casing Head Outlet, (2", 5M)
16	Surface Casing

## CHOKE MANIFOLD ARRANGEMENT

3M System per Onshore Oil and Gas Order No. 2 utilizing 3M and 5M Equipment



Item	Description
1	Manual Adjustable Choke, 2-1/16", 5M
2	Remote-Controlled Hydraulically-Operated Adjustable Choke, 2-1/16", 10M
3	Gate Valve, 2-1/16" 5M
4	Gate Valve, 2-1/16" 5M
5	Gate Valve, 2-1/16" 5M
6	Gate Valve, 2-1/16" 5M
7	Gate Valve, 3-1/8" 3M
8	Gate Valve, 2-1/16" 5M
9	Gate Valve, 2-1/16" 5M
10	Gate Valve, 2-1/16" 5M
11	Gate Valve, 3-1/8" 3M
12	Gate Valve, 2-1/16" 5M
13	Pressure Gauge
14	2" hammer union tie-in point for BOP Tester

We will test each valve to 3000 psi from the upstream side.

Submitted by:

Cord Denton

Drilling Engineer, Mid-Continent Business Unit, ConocoPhillips Company

Date: 27-April-2015