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		.)		.Re	vised 11/26/1
Form 3160-3 (March 2012)				OMB N	APPROVED No. 1004-0137
UNITED STATE	es	HOBE	35 0		October 31, 2014
DEPARTMENT OF THE			a a aa4	5. Lease Serial No. LC 031621B	$\backslash$
BUREAU OF LAND MA APPLICATION FOR PERMIT TO			282016	6. If Indian, Allotee	or Tribe Name
			EWE		
la. Type of work: DRILL REEN	FER	Split E	stat	N/A	ement, Name and No.
1b. Type of Well: 🔽 Oil Well Gas Well Other		ingle Zone 🔽 Multi	ple Zone	8. Lease Name and Britt B	Well No. <b>(3136</b> 55
2. Name of Operator ConocoPhillips Company (2-179			·	9. API Well No. 30-024-4	-3156,
3a. Address 600 N. Dairy Ashford Rd.; P10-3096 Houston, TX 77079-1175	3b. Phone N 281-206-5	0. (include area code) 5281	MANGAN	10. Field and Poobor I Blinebry; Tubb	47090)
4. Location of Well (Report location clearly and in accordance with a	INY State requirer	ments.*)		11. Sec., T. R. M. or B	lk. and Survey or Area
At surface 1775' FSL & 870' FEL; UL I, Sec. 10, T20S,	R37E			Sec. 10, T20S, R37	Έ _
At proposed prod. zone 1980' FSL & 660' FEL; UL I, Sec.	10, T20S, R	37E			
14. Distance in miles and direction from nearest town or post office* Approximately 5 miles NW of Monument, NM		<u></u>	r	12. County or Parish Lea County	13. State NM
<ul> <li>15. Distance from proposed* 870' location to nearest property or lease line, fl. (Also to nearest drig. unit line, if any)</li> </ul>	16. No. of a 1757	acres in lease	17. Spacin 40.00	g Unit dedicated to this v	vell
<ol> <li>Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.</li> </ol>	19. Propose 7211'TVD	d Depth 1/7219' MD	20. BLM/ ES0085	3IA Bond No. on file	
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	1	imate date work will sta	rt*	23. Estimated duration	1
3594' GL	03/15/201	15		7 days	
·	24. Atta				
The following, completed in accordance with the requirements of Onshe	ore Oil and Gas	Order No.1, must be a	ttached to the	s form:	
1. Well plat certified by a registered surveyor.			he operation	as unless covered by an	existing bond on file (see
<ol> <li>A Drilling Plan.</li> <li>A Surface Use Plan (if the location is on National Forest System SUPO must be filed with the appropriate Forest Service Office).</li> </ol>	a Lands, the	Item 20 above). 5. Operator certific 6. Such other site BLM.		rmation and/or plans as	may be required by the
25. Signature	Name	(Printed/Typed)			Date,
Older Di launder		n B. Maunder			11/26/14
Senior Regulatory Specialist					<b>.</b>
Approved by (Signatus) teve Caffey	Office	(Printed/Typed)			Date MAR 2 3 20
Title FIELD MANAGER		CARLSBA	DFIELD	OFFICE	
Application approval does not warrant or certify that the applicant hole onduct operations thereon.	ds legal or equit	table title to those right	s in the subj		title the applicant to FOR TWO YEA
onditions of approval if any, are attached					
Conditions of approval, if any, are attached. itle 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a c tates any false, fictitious or fraudulent statements or representations as	rime for any pe to any matter w	erson knowingly and w vithin its jurisdiction.	villfully to m	ake to any department of	agency of the online
itle 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a c tates any false, fictitious or fraudulent statements or representations as	crime for any period to any matter w	vithin its jurisdiction.		+/7	······
itle 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a c	rime for any pe to any matter w	vithin its jurisdiction.			uctions on page 2)

Appro & Special Stipulations Attached

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SEE ATTACHED FOR CONDITIONS OF APPROVAL

# Drilling Plan ConocoPhillips Company Britt B; Blinebry –Tubb - Drinkard

# Britt B#55

## Lea County, New Mexico

### 1. Estimated tops of geological markers and estimated depths to water, oil, or gas formations:

The datum for these depths is RKB (which is 13' above Ground Level).

	Тор	Тор	
Formations	Depth	Depths	Contents
	FT MD	FT TVD	
Quaternary	Surface	Surface	Fresh Water
Rustler	1386	1386	Anhydrite
Salado (top of salt)	1474	1474	Salt
Tansill (base of salt)	2572	2572	Gas, Oil and Water
Yates	2723	2722	Gas, Oil and Water
Seven Rivers	2978	2977	Gas, Oil and Water
Queen	3534	3532	Gas, Oil and Water
Penrose	3646	3644	Gas, Oil and Water
Grayburg	3792	3790	Gas, Oil and Water
San Andres	4030	4027	Gas, Oil and Water
Glorieta	5235	5230	Gas, Oil and Water
Paddock	5356	5351	Gas, Oil and Water
Blinebry	5700	5695	Gas, Oil and Water
Tubb	6383	6377	Gas, Oil and Water
Drinkard	6708	6701	Gas, Oil and Water
Abo	7018	7011	Gas, Oil and Water
Deepest estimated perforation	7018	7011	Deepest estimated perf. is Top of Abo
Total Depth (maximum)	7219	7211	200' below deepest estimated perforation

All of the water bearing formations identified above will be protected by setting of the <u>8-5/8</u> surface casing <u>25' – 70' into the Rustler formation</u> and circulating of cement from casing shoe to surface in accordance with the provisions of Onshore Oil and Gas Order No. 2 and New Mexico Oil Conservation Division Title 19.

The targeted oil and gas bearing formations identified above will be protected by setting of the <u>5-1/2</u>" production casing <u>10' off bottom of TD</u> and circulating of cement from casing shoe to surface in accordance with the provisions of Onshore Oil and Gas Order No. 2 and New Mexico Oil Conservation Division Title 19.

## 2. Proposed casing program:

													•	
	Type	Hole Size	N	Interval ID RKB (ft)	OD Wt		Gr	Conn	MIY	Col	Jt Str		Safety Fac lated per Co Corporate (	nocoPhillips
	Type	(in)	From	То	(inches)	(lb/ft)		Colin	(psi)	(psi)	(klbs)	Burst DF	Collapse DF	Jt Str DF (Tension) Dry/Buoyant
	Cond	20	0	40' - 85' (30' - 75' BGL)	16	0.5" wall	В	Line Pipe	N/A	N/A	N/A	NA	NA	NA
	Ait.	20	0	40' – 85' (30' – 75' BGL)	13-3/8	48#	H-40	PE	1730	740	N/A	NA	NA	NA
0	Cond Of Surf	12-1/4	0	<del>1416' - 1448' -</del>	8-5/8	24#	J-55	STC	2950	1370	244	1.38	2.15	3.05
	Prod	7-7/8	0	7179' – 7209'	5-1/2	17#	L-80	LTC	7740	6290	338	3.47	4.89	2.68

The casing will be suitable for H<sub>2</sub>S Service. All casing will be new.

The surface and production casing will be set approximately 10' off bottom and we will drill the hole with a 45' range uncertainty for casing set depth to fit the casing string so that the cementing head is positioned at the floor for the cement job.

The production casing will be set 155' to 200' below the deepest estimated perforation to provide rathole for the pumping completion and for the logs to get deep enough to log the interval of interest.

## Casing Safety Factors - BLM Criteria:

Туре	Depth	Wt	MIY	Col	Jt Str	Drill Fluid	Burst	Collapse	Tensile-Dry	Tens-Bouy
Surface Casing	1416	24	2950	1370.	244000	8.5	4.71	2.19	7.2	8.3
Production Casing	7209	17	7740	6290	338000	10	2.06	1.68	2.76	3.25

## Casing Safety Factors – Additional ConocoPhillips Criteria:

ConocoPhillips casing design policy establishes Corporate Minimum Design Factors (see table below) and requires that service life load cases be considered and provided for in the casing design.

#### ConocoPhillips Corporate Criteria for Minimum Design Factors

1 ·	Burst	Collapse	Axial
Casing Design Factors	1.15	1.05	1.4

$ \frac{1}{12} $	Moduction Coston /5 4/08 4741 00 1 TON		6	65 3500 24 295	50 13	70 24400		8 000	5 1.3			.07				
The share of the	Production Casing (5-1/2" 17# L-80 LTC)	7209	9	17 774	10 62	90 33800	0 3970	100	10 2.0	6 2	48 1	.95				•
The network of the product of the set of th			-1 1- 1- 1		00 <sup>-</sup>											
$ \begin{array}{  c   } \hline \begin{array}{  c   } \hline \hline$	The maximum Internal (burst) load on the Production Casing occurs durin	g the fracture	stimulat	ion where t	the maxin	rum allow ab)	ishore Orda a working pi	r 2 - 11 Requ ressure	irements).							
$ \frac{1}{100} 1$	Surface Casing Test Pressure ≓	1500	psl		Pre	dicted Pore I	Tessure at	1D (PP1D) =	8.5	5 ppg						
Settle Charg Burt Settle 2007 - All Bur (1997) CM guines Allow 19					Predic	ted Frac Gri	dient at Sho	os (CSFG) ≃	19.2	3 ppg						
Surface Catego from Extra (Fight Mark rates scale of the set of t	Surface Casing Burst Safety Factor = API Burst Rating / M Production Casing MAWP for the Fracture Stimulation = API	aximum Predic	ted Sur	ace Pressu	ure (MPSF	) 'OR' Maxim	um Allow ab	le Surface P	ressure (	MASP)	•					
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Case 61 AF Case 64 MPB (# PTO CO) = 7200 x 0.020 x 0.630 x 0.020 x 0.							÷		+		`= _	- 1. A. A. A.	t -			2
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$ \begin{array}{c} Chief and MPEP (PTD) = COT = 720 + 2.02 + 2.02 + 2.02 + 2.04 + 2$	Production Casing Burst Safety Factor:		) /	2126	=`.	1.39				· .	· `				. :	
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## 3. Proposed cementing program:

## 16" or 13-3/8" Conductor:

Comment to surface with rathole mix, ready mix or Class C Neat cement. (Note: The gravel used in the cement is not to exceed 3/8" diameter) TOC at surface.

## 8 5/8" Surface Casing Cementing Program:

The intention for the cementing program for the Surface Casing is to:

- Place the Tail Slurry from the casing shoe to 350' above the casing shoe,
- Bring the Lead Slurry to surface.

Spacer: 20 bbls Fresh Water

	Slurry	inter Ft l	vals VID	Weight ppg	Sx	Vol Cuft	Additives	Yield ft <sup>3</sup> /sx
Lead	Class C	Surface	1116' – 1146'	13.6	450	765	+ 2% Extender + 2% CaCl <sub>2</sub> + 0.125 lb/sx Lost Circulation Control Agent + 0.2% Defoamer Excess =200% based on gauge hole volume	1.70
Tail	Class C	1116' – 1146'	1416' – 1446'	14.8	300	402	1% CaCl2 Excess = 100% based on gauge hole volume	1.34

Displacement: Fresh Water.

Note: In accordance with the Pecos District Conditions of Approval, we will Wait on Cement (WOC) for a period of not less than 18 hrs after placement or until at least 500 psi compressive strength has been reached in both the Lead Slurry and Tail Slurry cements on the Surface Casing, whichever is greater.

## 5-1/2" Production Casing Cementing Program – Single Stage Cementing Option:

The intention for the cementing program for the Production Casing – Single Stage Cementing Option is to:

- Place the Tail Slurry from the casing shoe to above the top of the Grayburg,
- Bring the Lead Slurry to surface.

## Spacer: 20 bbls Fresh Water

	Slurry		rvals MD	Weight ppg	Sx	Vol Cuft	Additives	Yield ft <sup>3</sup> /sx
Lead	C Gas Tight Slurry	Surface	3000'	11.5	500	1300	Class C 94 lb/sx 6% Extender 10% Gas Migration Control 2% Sodium Metasilicate (dry) 1% Cement Bonding Agent 3% Aluminum Silicate 0.125 lb/sx Cello Flake 3 lb/sx LCM-1	2.6
Tail	Poz/Ć Gas Tight Slurry	3000'	7179' – 7209'	14.0	800	1120	(35:65) Poz:C 33 lb/sx 1% Sodium Metasilicate (dry) 1.5% Fluid Loss Control,	1.40

Displacement: Fresh Water with approximately 250 ppm gluteraldehyde biocide.

## 5-1/2" Production Casing Cementing Program - Two-Stage Cementing Option (Shallow Flow):

ConocoPhillips Company respectfully requests the options to our cementing program. The intention for the cementing program for the Production Casing – Two-Stage Cementing Option is to:

- Provide a contingency plan for using a Stage Tool and Annulus Casing Packer(s) to isolate shallow saltwater or gas flow if either of these events occurs while drilling the well.
- Place the Stage 1 Cement from the casing shoe to surface.
- Proceed with Stage 2 Cement only if cement returns are contaminated or flow was observed after pumping 1<sup>st</sup> stage.

Spacer: 20 bbls Fresh Water

	Stage	1 - Slurry		Intervals Ft MD	Weight ppg	Sx	Vol Cuft	Additives	Yield ft <sup>3</sup> /sx
A	Lead	C Gas Tight Slurry	Surface	3000'	11.5	500	1300	Class C 94 lb/sx 6% Extender 10% Gas Migration Control 2% Sodium Metasilicate (dry) 1% Cement Bonding Agent 3% Aluminum Silicate 0.125 lb/sx Cello Flake 3 lb/sx LCM-1	2.6
	Tail	Poz/C Gas Tight Slurry	3000'	7179' – 7209'	14.0	800	1120	(35:65) Poz:C 33 lb/sx 1% Sodium Metasilicate (dry) 1.5% Fluid Loss Control,	1.40

1<sup>st</sup> stage displacement: FW followed by Weighted Spacer

## Spacer: Remaining Weighted Spacer in cementing lines from the 1<sup>st</sup> stage displacement

Sta	Stage 2 - Slurry Intervals Ft MD		Weight ppg	Sx	Vol Cuft	Additives	Yield ft <sup>3</sup> /sx	
Lead	Class C	Surface	Stage Tool ~1450'	11.5	250	620	1% CaCl2 Excess = 100% based on gauge hole volume	2.6

2<sup>nd</sup> stage displacement: Fresh Water

## 5-1/2" Production Casing Cementing Program – Two-Stage Cementing Option (Lower Zone Losses or Naterflow):

ConocoPhillips Company respectfully requests the options to our cementing program. The intention for the cementing program for the Production Casing – Two-Stage Cementing Option is to:

- Provide a contingency plan for using a Stage Tool and Annulus Casing Packer(s) to isolate losses or waterflow if either of these events occurs while drilling the well.
- Place the Stage 1 Cement from the casing shoe to the stage tool,
- Bring Stage 2 Cement from the stage tool to surface.

Spacer: 20 bbls Fresh Water

Sta	ige 1 Slurry	Inter Ft N		Weight ppg	Sx	Vol Cuft	Additives	Yield ft <sup>3</sup> /sx
Tail	Poz/C Gas Tight Slurry	Stage Tool ~2900'	7179' – 7209'	14.0	800	. 1120	(35:65) Poz:C 33 lb/sx 1% Sodium Metasilicate (dry) 1.5% Fluid Loss Control,	2.6

1<sup>st</sup> stage displacement: FW followed by Brine

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(Date: 11/11/2014)

Spacer: 20 bbls Fresh Water

Sta	ge 2 - Slurry	Inter Ft I		Weight ppg	Sx	Vol Cuft	Additives	Yield ft <sup>3</sup> /sx
Lead	C Gas Tight Slurry	Surface	Stage Tool ~2900'	11.5	500	1300	Class C 94 lb/sx 6% Extender 10% Gas Migration Control 2% Sodium Metasilicate (dry) 1% Cement Bonding Agent 3% Aluminum Silicate 0.125 lb/sx Cello Flake 3 lb/sx LCM-1	2.6

Displacement: Fresh Water

## Proposal for Option to Adjust Production Casing Cement Volumes:

The production casing cement volumes for the proposed single stage and two-stage option presented above are estimates based on gauge hole. We will adjust these volumes based on the caliper log data for each well and our trends for amount of cement returns to surface. Also, if no caliper log is available for any particular well, we would propose an option to possibly increase the production casing cement volume to account for any uncertainty in regard to the hole volume.

(Date: 11/11/2014)

#### 4. Pressure Control Equipment:

A <u>11" 3M</u> system will be installed, used, maintained, and tested accordingly as described in Onshore Oil and Gas Order No. 2.

Our BOP equipment will be:

- c Rotating Head
- c Annular BOP, 11" 3M
- o Blind Ram, 11" 3M
- o Pipe Ram, 11" 3M

After nippling up, and every 30 days thereafter or whenever any seal subject to test pressure is broken followed by related repairs, blowout preventors will be pressure tested. BOP will be inspected and operated at least daily to insure good working order. All pressure and operating tests will be done by an independent service company and recorded on the daily drilling reports. BOP will be tested using a test plug to isolate BOP stack from casing. BOP test will include a low pressure test from 250 to 300 psi for a minimum of 10 minutes or until requirements of test are met, whichever is longer. Ram type preventers and associated equipment will be tested to 50 percent of rated working pressure of 3000 psi isolated by test plug. Annular type preventers will be tested to 50 percent of rated working pressure, and therefore will be tested to 1500 psi. Pressure will be held for at least 10 minutes or until provisions of test are met, whichever is longer. Valve on casing head below test plug will be open during testing of BOP stack. BOP will comply with all provisions of Onshore Oil and Gas Order No. 2 as specified. **See Attached** I**30PE Schematic.** A variance is respectfully requested to allow for the use of flexible hose. The variance request is included as a separate enclosure with attachments.

### 5. Proposed Mud System:

DEPTH	TYPE	Density ppg	FV sec/qt	API Fluid Loss cc/30 min	рН	Vol bbl
0 – Surface Casing Point	Fresh Water or Fresh Water Native Mud in Steel Pits	8.5 - 9.0	28 – 40	N.C.	N.C.	150 – 300
Surface Casing Point to TD	Brine (Saturated NaCl <sub>2</sub> ) in Steel Pits	10	29	N.C.	10 – 11	300 1000
Conversion to Mud at TD	Brine Based Mud (NaCl <sub>2</sub> ) in Steel Pits	10	33 – 40	5 – 10	10 – 11	0 – 1000

The mud systems that are proposed for use are as follows:

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.

In the event that the well is flowing from a waterflow, then we would discharge excess drilling fluids from the steel mud pits through a fas-line into steel frac tanks at an offset location for containment. Depending on the rate of waterflow, excess fluids will be hauled to an approved disposal facility, or if in suitable condition, may be reused on the next well.

No reserve pit will be built.

#### Proposal for Option to Not Mud Up at TD:

FW, Brine, and Mud volume presented above are estimates based on gauge 12-1/4" or 7-7/8" holes. We will adjust these volume based on hole conditions. We do not plan to keep any weighting material at the wellsite. Also, we propose an option to not mud up leaving only brine in the hole if we have good hole stability.

## 6. Logging, Coring, and Testing Program:

- a. No drill stem tests will be done
- b. Remote gas monitoring planned for the production hole section (optional).
- c. No whole cores are planned
- d. The open hole electrical logging program is planned to be as follows:
  - Total Depth to 1700' MD: Spectral Gamma Ray, PE, Resistivity (laterologs), Bulk Density, and Sonic
  - Total Depth to surface Casing Shoe: Caliper
  - Total Depth to surface, Total Gamma Ray and Neutron
  - Total Depth to 2350' MD ; Mud Log (optional)
  - Total Depth to 2350' MD ; Dielectric Scanner (optional)
  - Formation pressure data (XPT) on electric line if needed (optional)
  - Rotary Sidewall Cores on electric line if needed (optional)
  - FMI (Formation MicroImager) if needed (optional)
  - UBI (Ultrasonic Borehole Imager) if needed (optional)
- e. Cement Bond Log (optional).

### 7. Abnormal Pressures and Temperatures:

- No abnormal pressures are expected to be encountered.
- 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.
  - The bottom hole pressure is expected to be 7.8 ppg gradient.
  - o The expected Bottom Hole Temperature is 100 degrees F.
- The estimated H<sub>2</sub>S concentrations and ROE calculations for the gas in the zones to be penetrated are presented in the table below for the various producing horizons in this area:

FORMATION / ZONE	H2S (PPM)	Gas Rate (MCFD)	ROE 100 PPM	ROE 500 PPM
Seven Rivers	6	50 - 100 MCFD	0	0.
Grayburg / San Andres	18360	20 - 50 MCFD	95	43

ConocoPhillips will comply with the provisions of Oil and Gas Order # 6, Hydrogen Sulfide Operations. Also, ConocoPhillips will provide an H2S Contingency Plan (please see copy attached) and will keep this plan updated and posted at the wellsite during the drilling operation.

### 8. Anticipated starting date and duration of operations:

Well pad and road constructions will begin as soon as all agency approvals are obtained. Anticipated date to drill these wells begin in 2014 after receiving approval of the APD.

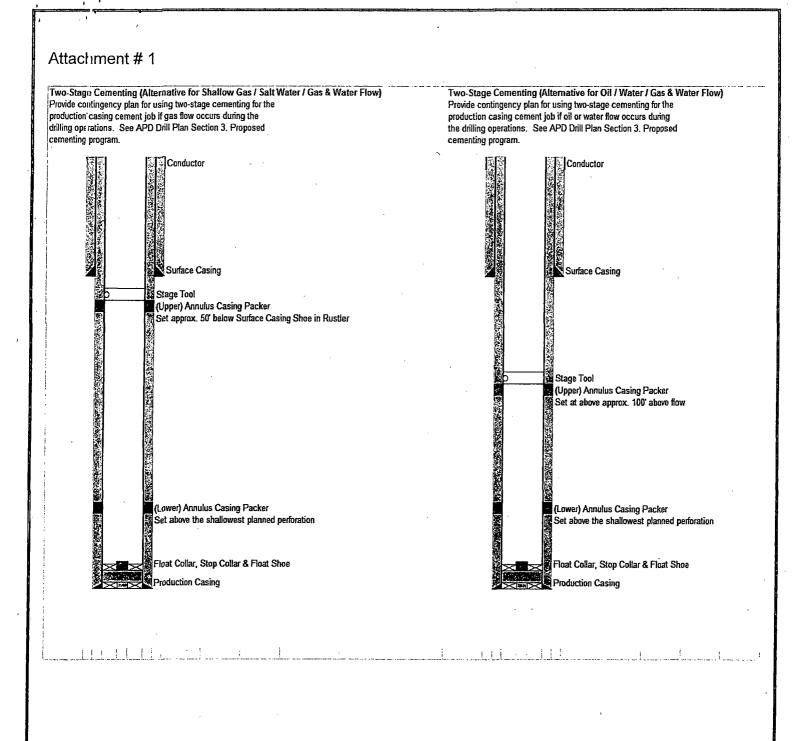
## <u>Attachments:</u>

- Attachment # 1 ..... Two-stage Cementing Schematic
- Attachment # 2 ...... BOP and Choke Manifold Schematic 3M System
- Attachment # 3 ...... Diagram of Choke Manifold Equipment

# **Contact Information:**

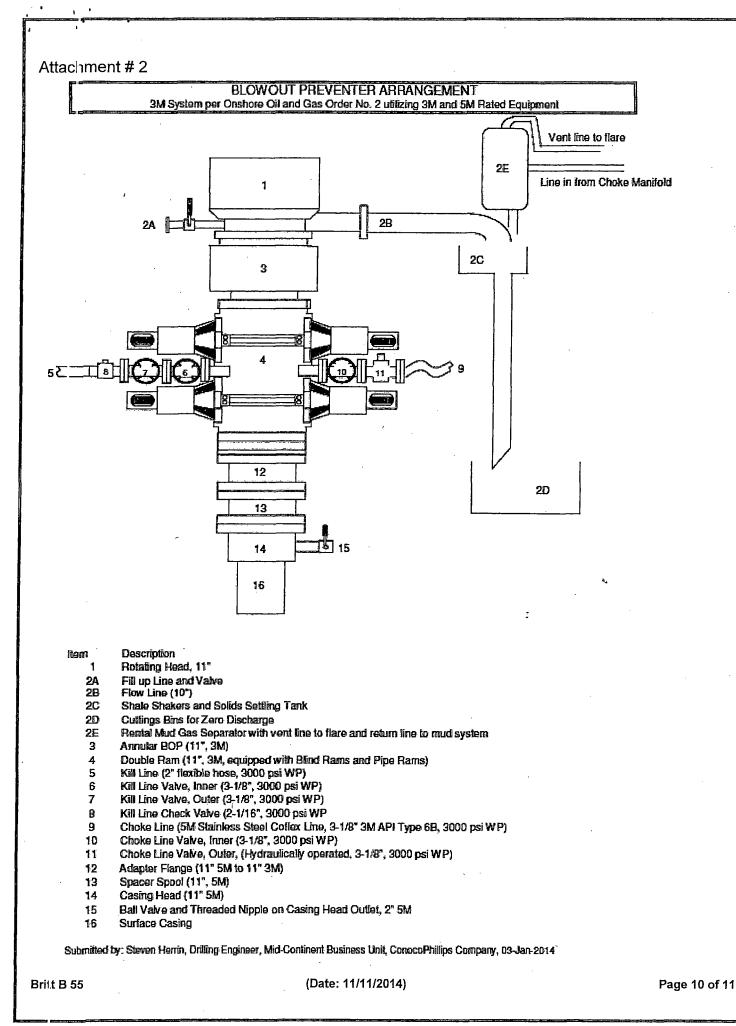
Proposed 11 November 2014 by: Steven Herrin Drilling Engineer, ConocoPhillips Company Phone (281) 206-5115 Cell (432) 209-7558 Britt B 55

(Date: 11/11/2014)

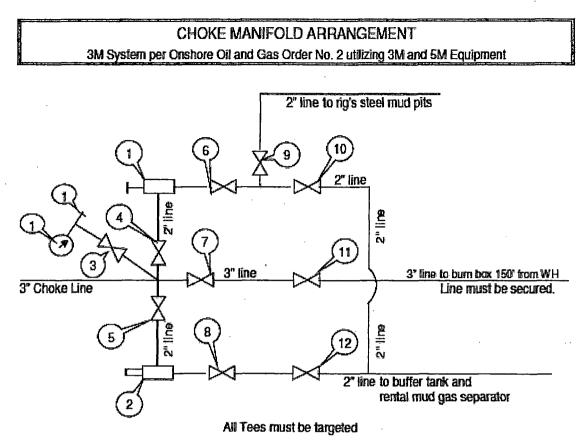


(Date: 11/11/2014)

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Attachment # 3



Item Description

- 1 Manual Adjustable Choke, 2-1/16", 3M
- 2 Remote Controlled Hydraulically Operated Adjustable Choke, 2-1/16", 3M
- 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: Steven Herrin Drilling Engineer, Mid-Continent Business Unit, ConocoPhillips Company Date: 3-January-2014