

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

OCD-HOBBS

ATS-07-240  
FORM APPROVED  
OMB No 1004-0137  
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input checked="" type="checkbox"/> REENTER		5. Lease Serial No. LC-063458 031670B	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator ConocoPhillips Company		7. If Unit or CA Agreement, Name and No. Warren Unit #323	
3a. Address 3300 N. "A" Street, Bldg. 6 #247 Midland, TX 79705		8. Lease Name and Well No. <b>&lt;31488&gt;</b> Warren Unit #323	
3b. Phone No (include area code) (432)688-6884		9. API Well No. 30-025- 38512	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 610' FSL & 1820' FEL <b>LEA COUNTY CONTROLLED WATER BASIN</b> At proposed prod. zone 610' FSL & 1820' FEL <b>Unit 8</b>		10. Field and Pool, or Exploratory Warren; Drinkard/Warren; Blinbry-Tubb O&A	
11. Sec., T. R. M. or Blk. and Survey or Area UL "O", Sec. 21, T-20-S, R-38-E		12. County or Parish Lea	
13. State NM		14. Distance in miles and direction from nearest town or post office* Approx. 9 miles NW from Eunice, NM	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 710' FNL & 6100' FWL		16. No. of acres in lease 5120	
17. Spacing Unit dedicated to this well 40		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 1308' from #10	
19. Proposed Depth 7350'		20. BLM/BIA Bond No. on file ES0085	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3546' GL		22. Approximate date work will start* 07/08/2007	
23. Estimated duration 18 Days Followed by Completion		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 <i>Celeste G. Dale</i>	Name (Printed/Typed) Celeste G. Dale	Date 03/30/2007
Title Regulatory Specialist		
Approved by (Signature): <i>Ts/ James Stovall</i>	Name (Printed/Typed) Office <b>CARLSBAD FIELD OFFICE</b>	Date <b>APR 30 2007</b>
Title <b>ACTING FIELD MANAGER</b>		

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 1 YEAR**

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person to make any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

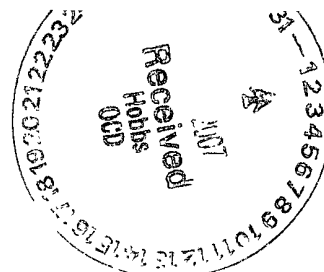
(Instructions on page 2)

Subject to  
Like Approval  
By State

Conditions of Approval: Approval to recompleat & test new zone, but cannot produce Downhole commingle until DHC is approved in Hobbs District office according to R-11363.

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL



DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

**COPY**

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025- <b>38512</b>	Pool Code 63080	Pool Name Warren; Drinkard
Property Code 31488	Property Name WARREN UNIT	Well Number 323
OGRID No. 217817	Operator Name CONOCOPHILLIPS COMPANY	Elevation 3546'

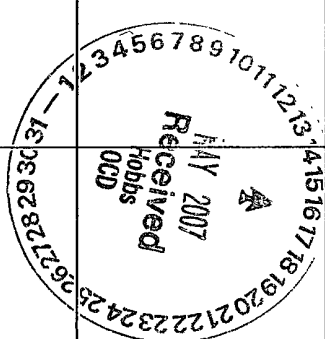
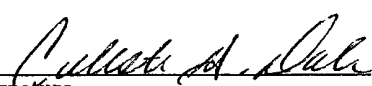
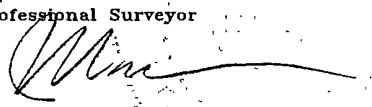
Surface Location

UL or lot No. 0	Section 21	Township 20 S	Range 38 E	Lot Idn	Feet from the 610	North/South line SOUTH	Feet from the 1820	East/West line EAST	County LEA
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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
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.						

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

NOTE: 1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.		<b>OPERATOR CERTIFICATION</b>  I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.   Signature  Celeste G. Dale Printed Name Regulatory Specialist  Title 03/30/07 Date
		<b>SURVEYOR CERTIFICATION</b>  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 supervision and that the same is true and correct to the best of my belief.  January 9, 2007 Date Surveyed Signature & Seal of Professional Surveyor  W.O. Num. 2007-0016 Certificate No. MACON McDONALD 12185

Plane Coordinate  
X = 864,491.5  
Y = 566,872.9

3552.0' 3550.7' 1820' 3549.2' 3545.5'

DISTRICT I  
1825 N. French Dr., Hobbs, NM 88240

DISTRICT II  
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

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OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

☐ AMENDED REPORT

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API Number 30-025- <b>38512</b>	Pool Code 63080	Pool Name Warren; Blinebry-Tubb
Property Code 31488	Property Name WARREN UNIT	Well Number 323
OGRID No. 217817	Operator Name CONOCOPHILLIPS COMPANY	Elevation 3546'

Surface Location

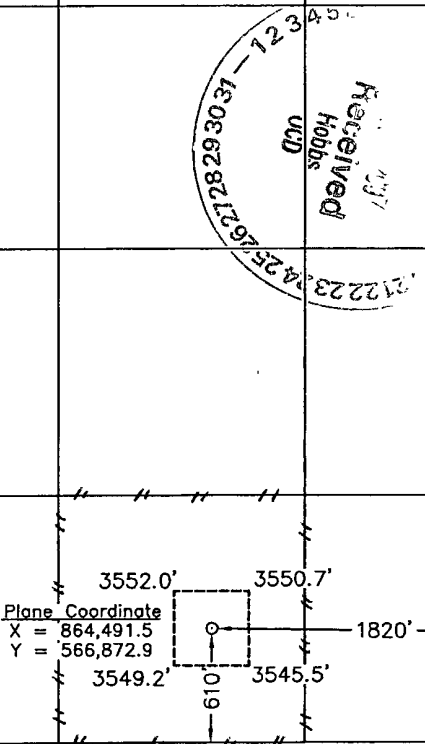
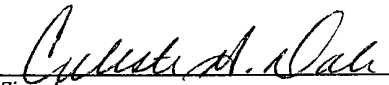
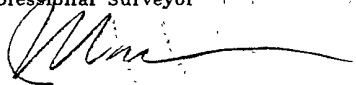
UL or lot No. 0	Section 21	Township 20 S	Range 38 E	Lot Idn	Feet from the 610	North/South line SOUTH	Feet from the 1820	East/West line EAST	County LEA
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Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.
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<p>NOTE:</p> <p>1) Plane Coordinates shown hereon are Transverse Mercator Grid and Conform to the "New Mexico Coordinate System", New Mexico East Zone, North American Datum of 1927. Distances shown hereon are mean horizontal surface values.</p>		<p>OPERATOR CERTIFICATION</p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p> Signature</p> <p>Celeste G. Dale Printed Name</p> <p>Regulatory Specialist Title</p> <p>03/30/07 Date</p>
		<p>SURVEYOR CERTIFICATION</p> <p>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 supervision and that the same is true and correct to the best of my belief.</p> <p>January 9, 2007</p> <p>Date Surveyed</p> <p>Signature &amp; Seal of Professional Surveyor  KMT</p> <p>W.O. Num. 2007-0016</p> <p>Certificate No. MACON McDONALD 12185</p>

# DRILLING PROGRAM

## ConocoPhillips Company Warren Unit # 323

Section 21, T20S – R38E, 610' FSL & 1820' FEL  
Lea County, New Mexico

Field: Warren

Objective: Warren Drinkard, Blinebry / Tubb

The following items supplement Form 3160-3 in accordance with instructions contained in Onshore Oil and Gas Orders # 1 and # 2, and all other applicable federal and state regulations.

1. Estimated tops of geological markers: (Datum is RKB 12' above Ground Level)

Rustler	1438'
Salado (Top salt)	1528'
Tansill	2548'
Yates	2703'
Seven Rivers	3013'
Queen	3593'
Penrose	3743'
Grayburg	3933'
San Andres	4163'
Glorieta	5493'
Blinebry Top	5788'
Tubb	6438'
Drinkard	6768'
Abo	7023'
TD	7275'

2. Estimated depths to water, oil, or gas formations:

Fresh Water:	Above 1438' (above top of Rustler formation)
Oil, gas, or salt water:	2548' to TD

Protection of fresh water will be accomplished by setting the surface casing into the Rustler formation and cementing the surface casing in accordance with the provisions of Onshore Oil and Gas Order No. 2 and New Mexico Oil Conservation Division Title 19.

3. Pressure Control Equipment: The blowout preventer equipment (BOP) will be installed after running and cementing the surface casing and will consist of a 5000 psi double ram and 5000 psi annular type preventer for drilling the production hole. A diagram of the BOPs and choke manifold is attached.

A variance to the provisions of Onshore Order No. 2 is proposed to allow us to test our BOPs as follows:

- We propose to test the ram type BOP's and choke and kill lines and valves to 250 psi (low pressure test) and to 2000 psi (high pressure test) instead of to the rated working pressure of the equipment.
- We propose to test the annular type BOP to 250 psi (low pressure test) and to 2000 psi (high pressure test) instead of to 50% of the rated working pressure of the equipment.

The Pressure Control Equipment tests will be performed with an independent BOP tester.

4. Proposed casing program:

Type	Hole Size	Interval	Casing Size	Weight	Grade	Joint
Conductor	17-1/2"	0-40' to 80'	13-3/8" or 14"			
Surface Casing	12-1/4"	0 – 1450' to 1500'	8-5/8"	24#	J-55	ST&C
Production Casing	7-7/8"	0 – 7215' to 7275'	5-1/2"	17#	J-55 or L-80	LT&C

We propose an **alternative option to run a stage tool** at 3800' to 5400' in the 5-1/2" production casing based on hole conditions if losses are observed to occur while drilling the 7-7/8" production hole.

Proposed wellhead program:

Casing Head: 8-5/8" Slip on and Weld x 11" 5M Casing Head installed on 8-5/8" surface casing

Tubing Head: 11" 5M x 7-1/6" 5M Tubing Head installed after setting 5-1/2" production casing

5. Proposed cementing program:

13-3/8" or 14" Conductor: Cemented with ready mix to surface

8-5/8" Surface Casing:

Lead Slurry: 600 sx

65% Class C

35% Poz

+ 6% bentonite

+ 3% salt

+ 0.125 lb/sx Poly-E-Flake

Mix Weight = 12.9 ppg,

Yield = 1.83 cuft/sx yield,

Mix Water = 9.78 gal/sx

Top of Lead Slurry at Surface

Tail Slurry:

200 sx Class C Cement

+ 2% calcium chloride

+ 0.125 lb/sx Poly-E-Flake

Mix Weight = 14.8 ppg,

Yield = 1.35 cuft/sx yield,

Mix Water = 6.35 gal/sx

Length of Tail Slurry: 300'

Top of Tail Slurry at 1150' - 1200' MD RKB

Proposed cementing program (continued)

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

Lead Slurry: 700 sx  
50% Class C  
50% Poz  
+ 10% bentonite  
+ 8 lb/sx salt  
+ 0.4% Fluid Loss Additive  
+ 0.2% Dispersant  
+ 0.125 pps Poly-E-Flake  
+ 1% Well Life Loss Circulation Material if needed  
Mix Weight = 11.8 ppg,  
Yield = 2.53 cuft/sx yield,  
Mix Water = 14.63 gal/sx  
Top of Lead Slurry at Surface

Tail Slurry: 400 sx  
50% Class H  
50% Poz  
+ 2% bentonite  
+ 5% salt (bwow)  
+ 0.4% Fluid Loss Additive  
+ 0.2% dispersant  
+ 1% Well Life Loss Circulation Material if needed  
Mix Weight = 14.2 ppg,  
Yield = 1.31 cuft/sx yield,  
Mix Water = 6.11 gal/sx  
Top of Tail Slurry at ~ 5400'

The volumes presented here are estimates and we propose to adjust the cement volumes based on caliper data if logs are available.

## Proposed cementing program (continued)

### 5-1/2" Production Casing: Two-Stage Cementing Option

It is proposed to use Two-Stage Cementing if needed based on wellbore conditions and observations of any loss of circulations events or heavy seepage losses while drilling the 7-7/8" hole. In the event of the implementation of this option, the cementing program would be as follows:

- Stage 1 Cement: Will place cement from the 5-1/2" production casing shoe to the Stage Tool.
- Stage 2 Cement: Will place cement from the stage tool in the 5-1/2" production casing to Surface.

#### Stage 1:

Lead Slurry: This slurry is proposed as an option to be used if needed depending on the depth at which the Stage Tool is set.

50% Class C

50% Poz

+ 10% bentonite

+ 8 lb/sx salt

+ 0.4% Fluid Loss Additive

+ 0.2% Dispersant

+ 0.125 pps Poly-E-Flake

+ 1% Well Life Loss Circulation Material if needed

Mix Weight = 11.8 ppg,

Yield = 2.53 cuft/sx yield,

Mix Water = 14.63 gal/sx

Tail Slurry: 400 sx

50% Class H

50% Poz

+ 2% bentonite

+ 5% salt (bwow)

+ 0.4% Fluid Loss Additive

+ 0.2% dispersant

+ 1% Well Life Loss Circulation Material if needed

Mix Weight = 14.2 ppg,

Yield = 1.31 cuft/sx yield,

Mix Water = 6.11 gal/sx

Top of Tail Slurry ~ 5400' MD RKB

Proposed cementing program (continued)

5-1/2" Production Casing: Two-Stage Cementing Option (continued)

Stage 2:

Lead Slurry:

50% Class C

50% Poz

+ 10% bentonite

+ 8 lb/sx salt

+ 0.4% Fluid Loss Additive

+ 0.2% Dispersant

+ 0.125 pps Poly-E-Flake

+ 1% Well Life Loss Circulation Material if needed

Mix Weight = 11.8 ppg,

Yield = 2.53 cuft/sx yield,

Mix Water = 14.63 gal/sx

Top of Lead Slurry at Surface

Tail Slurry: 100 sx

Class C Neat

Mix Weight = 14.8 ppg,

Yield = 1.35 cuft/sx yield,

Mix Water = 6.37 gal/sx

Top of Stage 2 Tail Slurry at ~ 5000' - 5200' MD RKB

Note: The volumes presented here are estimates and we propose to adjust the cement volumes based on caliper data if logs are available.



## 6. Proposed Mud System

12-1/4" hole from surface to 1460 – 1510' MD RKB: The circulating media will be either a spud mud or fresh water with high viscosity sweeps. The mud components will be:

- Fresh Water
- Bentonite
- Lime
- Soda Ash
- Starch if needed
- Drilling Paper
- Other loss of circulation material if needed (nut plug or fibrous material)
- Soap sticks

7-7/8" hole from ~ 1450' to ~ 7275' (TD): The circulating media will be 10 ppg brine and will be converted to a mud with starch, attapulgate, and lime upon reaching Total Depth (TD).

The mud components will be:

- Brine (approximately 10 lb/gal density)
- Attapulgate
- Lime
- Starch
- Drilling Paper
- Other loss of circulation material if needed (nut plug, fibrous material, gilsonite, or asphalt)
- Soap Sticks if needed

## 7. Testing, Logging, and Coring

- Mud logging (samples) 2000' to TD
- Open hole electric line logs: (Gamma Ray, Neutron, Density, Resistivity, Spectral Gamma Ray, Sonic, Caliper)
- Formation pressure data (XPT) on electric line
- No whole cores are planned
- No sidewall cores are planned
- No drill stem tests will be done

## 8. Abnormal Pressures and Temperatures:

- No abnormal pressure is anticipated. All pressures in the surface hole are expected to be 8.33 ppg equivalent mud weight or less. All pressures in the production hole are anticipated to be 9 ppg equivalent mud weight or less. The maximum bottom hole pressure should not exceed 3363 psi.
- The expected bottom hole temperature is 113 degrees F
- The estimated Hydrogen Sulfide concentrations in this well is 10-100 ppm H<sub>2</sub>S with a maximum estimated gas rate of 28 MCFPD. The 100 ppm H<sub>2</sub>S ROE = 0-3 feet. The 500 ppm ROE = 0-1 feet. ConocoPhillips will provide H<sub>2</sub>S monitoring and an H<sub>2</sub>S contingency plan. Monitoring equipment will be rigged up and tested prior to drilling out from surface casing. The Hydrogen Sulfide Contingency Plan will be posted at the wellsite.

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

- It is estimated that drilling will commence about July 8, 2007 or August 25, 2007.
- Drilling operations should be finished within 15 to 18 days and followed by completion operations.

Program prepared by:

Steven O. Moore, Drilling Engineer, ConocoPhillips Company

Phone 832 486 2459

Cell Phone 281 467 7596

Date: March 29, 2007

**Proposed Drilling Wellbore Schematic**  
**Warren Unit # 323**

Datum: RKB (12' above ground level)

**Conductor**

13-3/8" conductor set at 40' - 80' BGL with rat hole machine

**Surface Casing**

Size 8 5/8 in  
Wt. 24 ppf  
Grade: J-55 ppf  
Conn: STC ppf

Hole Size 12 1/4 in  
Excess Cmt 100 %  
T.O.C. SURFACE

Surface Casing Shoe set at 1450' - 1500' MD RKB  
TD of 12-1/4" hole at 1460' - 1510' MD RKB

**Production Casing:**

Size 5 1/2 in  
Wt. 17 ppf  
Grade: J-55 or L-80 ppf  
Conn: LTC ppf

Hole Size 7 7/8 inT.O.C. SURFACE

Cement volumes are estimates and will be  
adjusted based on the caliper log if available.

Top of Float Collar at 7170' - 7230' MD RKB

Production Casing Shoe 7215 - 7275' MD RKB  
TD of 7-7/8" hole at 7225' - 7275' MD RKB

Schematic prepared by:  
Steven O. Moore, Drilling Engineer  
29-March-2007

11" 5M x 7 1/16" 5M Tubing Head  
8-5/8" SOW x 11" 5M Casing Head

☒ New  
☐ Used

**Surface Cement**

Spacer: 20 bbls fresh water

Lead Slurry:

600 sx  
Mix Weight = 12.9 ppg  
Yield = 1.83 cuft/sx

Top of Lead Slurry at Surface

Tail Slurry:

200 sx  
Mix Weight = 14.8 ppg  
Yield = 1.35 cuft/sx

Length of Tail Slurry: 300'  
Top of Tail Slurry: 1150 - 1200' MD RKB

Displacement: Fresh Water**Production Cement**

Spacer: 20 bbls fresh water

Lead Slurry: 700 sx

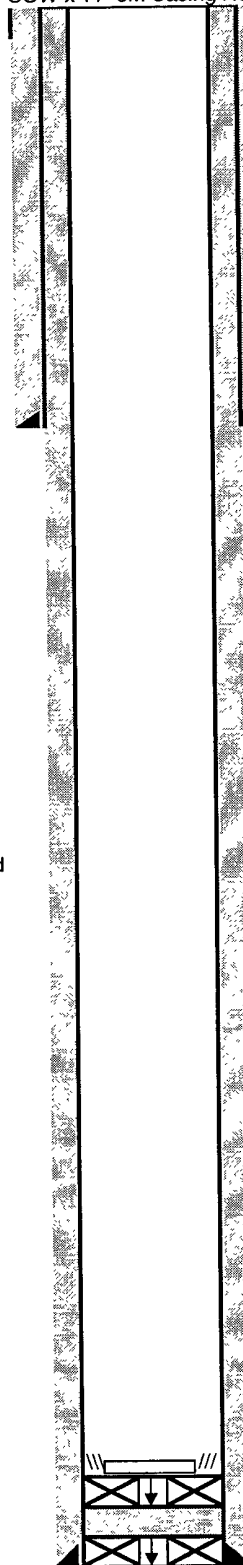
Mix Weight = 11.8 ppg,  
Yield = 2.53 cuft/sx yield,

Top of Lead Slurry at Surface

Tail Slurry: 400 sx

Mix Weight = 14.2 ppg  
Yield = 1.31 cuft/sx

Top of Tail Slurry @ 5400' to 5500' MD RKB

Displacement: 2% KCL water

**Proposed Alternative Drilling Wellbore Schematic**  
**Warren Unit # 323**

Datum: RKB (12' above ground level)

**Conductor**

13-3/8" conductor set at 40' - 80' BGL with rat hole machine

**Surface Casing**

Size 8 5/8 in  
 Wt. 24 ppf  
 Grade: J-55 ppf  
 Conn: STC ppf

Hole Size 12 1/4 in  
 Excess Cmt 100 %  
 T.O.C. SURFACE

Surface Casing Shoe set at 1450' - 1500' MD RKB  
 TD of 12-1/4" hole at 1460' - 1510' MD RKB

**Production Casing:**

Size 5 1/2 in  
 Wt. 17 ppf  
 Grade: J-55 or L-80 ppf  
 Conn: LTC ppf

Hole Size 7 7/8 in

**T.O.C. SURFACE**

Alternative Program: Stage Tool Placed at some depth between 3800' and 5400' depending on where losses may be observed.

Cement Volumes are estimates and will be adjusted based on the caliper log if available.

Top of Float Collar at 7170' - 7230' MD RKB

Production Casing Shoe 7215' - 7275' MD RKB  
 TD of 7-7/8" hole at 7225' - 7275' MD RKB

Schematic prepared by:  
 Steven O. Moore, Drilling Engineer  
 29-March-2007

11" 5M x 7 1/16" 5M Tubing Head  
 8-5/8" SOW x 11" 5M Casing Head

☒ New  
☐ Used

**Surface Cement**

Spacer: 20 bbls fresh water

Lead Slurry:  
 600 sx  
 Mix Weight = 12.9 ppg  
 Yield = 1.83 cuft/sx

Top of Lead Slurry at Surface

Tail Slurry:  
 200 sx  
 Mix Weight = 14.8 ppg  
 Yield = 1.35 cuft/sx

Length of Tail Slurry: 300'  
 Top of Tail Slurry: 1150' - 1200' MD RKB

Displacement: Fresh Water

**Production Cement**

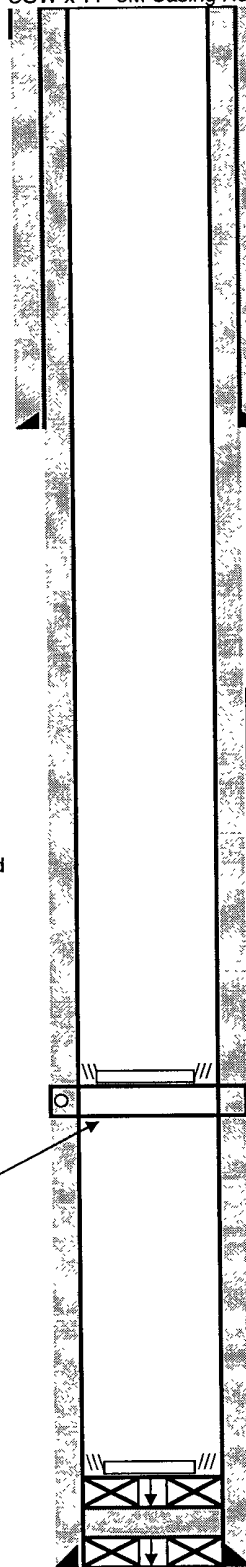
Stage 2  
 Lead Slurry:  
 Mix Weight = 11.8 ppg,  
 Yield = 2.53 cuft/sx yield  
 Top of cement at Surface

Stage 2  
 Tail Slurry: 100 sx Class C Neat  
 Mix Weight = 14.8 ppg  
 Yield = 1.35 cuft/sx

Stage 1  
 Lead Slurry: if needed depending on depth at which stage tool is placed  
 Mix Weight = 11.8 ppg,  
 Yield = 2.53 cuft/sx yield,

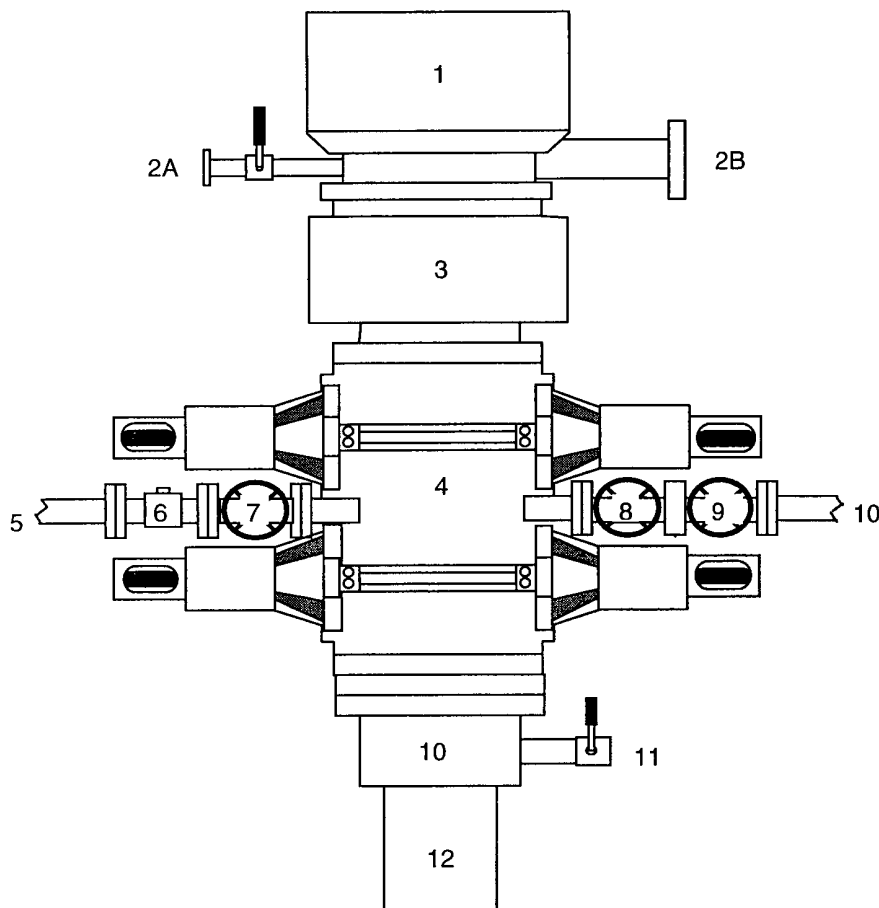
Stage 1  
 Tail Slurry: 400 sx  
 Mix Weight = 14.2 ppg  
 Yield = 1.31 cuft/sx  
 Top of Tail Slurry @ 5400' to 5500' MD RKB

Displacement: Mud or Fresh Water



# BLOWOUT PREVENTER ARRANGEMENT & PROGRAM

For Drilling Production Hole and Setting 5.5 inch Casing



1. Rotating Head
- 2A. Fill-up Line & valve
- 2B. Flow Line
3. Annular BOP (11", 5000 psi)
4. Double Ram BOP (11", 5000 psi)  
(Blind Rams - Upper Set)  
(Pipe Rams - Lower Set)
5. Kill Line
6. Kill Line Check Valve
7. Kill Line Valve
8. Inner Choke Line Valve (3")
9. Outer Choke Line Valve (3")
10. Csg Head "A" Section (11", 5M)
11. Csg Head Valve (2", 3M)
12. 8 5/8" Casing

We propose a VARIANCE to Onshore Order No. 2 to allow us to test our BOPs as follows:

Test Pipe Rams and Blind Rams to 3000 psi instead of 5000 psi

Test Annular BOP to 2000 psi instead of 2500 psi

The reason for this request is that we feel that this is an adequate test and reduces wear and tear on the equipment.

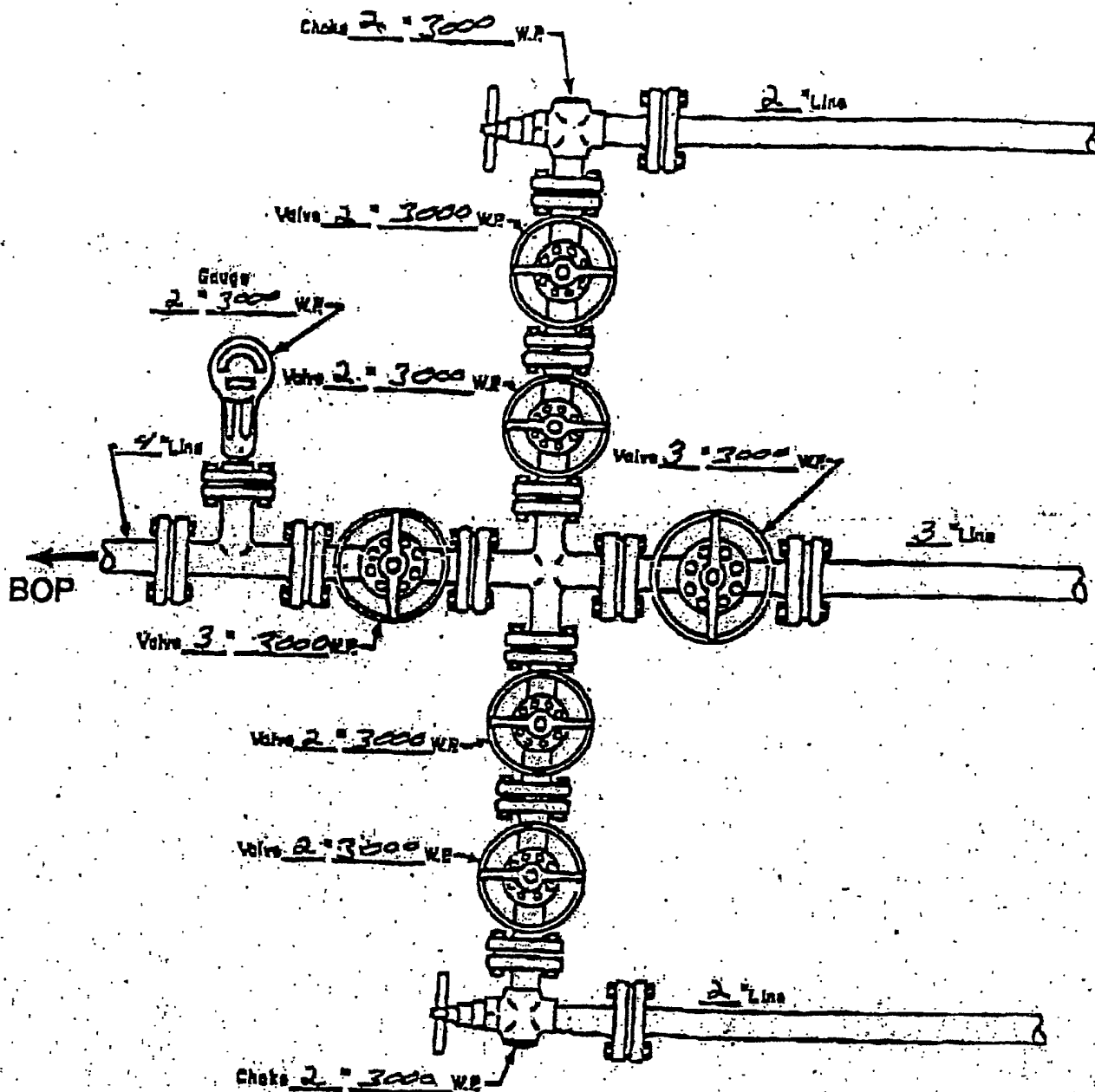
We propose a VARIANCE to Order # 2 to allow us to pressure test the Surface Casing to 1000 psi instead of to 1500 psi.

Per Onshore Order # 2 the test would be performed for a minimum of 30 minutes with less than 10% pressure decline in the 30 minute test period. The reason for this is that we feel this is an adequate test pressure and will allow us to use the rig pump for the test instead of a testing unit pump and will reduce wear and tear on the equipment.

Drawn by: Steven O. Moore, Drilling Engineer, 20-Feb-2007

Revision Date: February 20, 2007

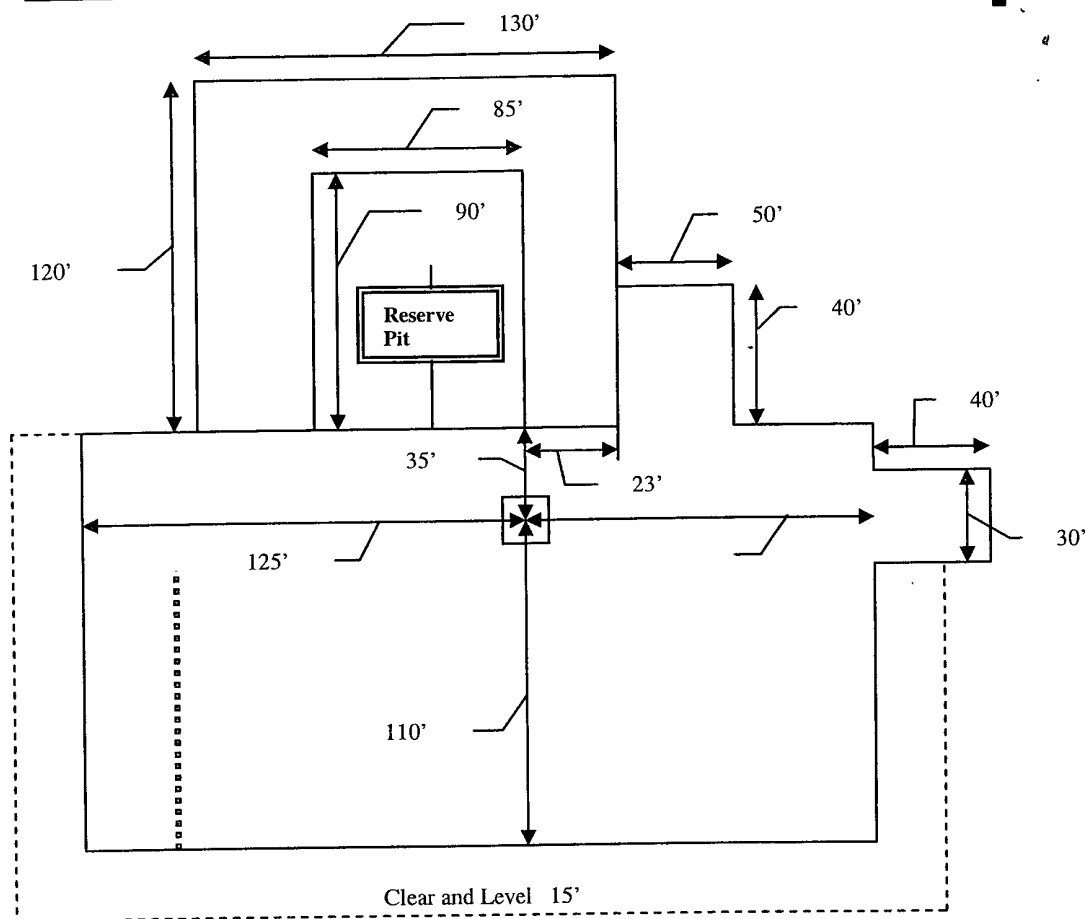
# CHOKE MANIFOLD DIAGRAM



MANIFOLD  
3000 W.P.

- ☒ Manual
- ☐ Hydraulic

North



- 100' Left of center line of cellar
- 50' Back of berm wall or 15' back of center line of cellar
- ----- Conduit

**Location dimensions**  
**Revised 12-18-06**

## **H2S DRILLING OPERATIONS PLAN**

ConocoPhillips, Inc. will comply with Onshore Order No. 2 and No. 6 for working in an H2S environment or a potential H2S environment.

### **I. Hydrogen Sulfide Training**

All contractors and subcontractors employed by ConocoPhillips will receive or have received training from a qualified instructor within the last twelve months in the following areas prior to commencing drilling operations on this well.

1. The hazards and characteristics of hydrogen sulfide (H2S)
2. Safety precautions.
3. Operations of safety equipment and life support systems.

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

1. The effect of H2S on metal components in the system, especially where high tensile strength tubulars are to be used.
2. Corrective action and shutdown procedures when drilling or reworking a well, blowout prevention and well control procedures, if the nature of work performed involves these items.
3. The contents and requirements of the contingency plan when such plan is required.

### **II. H2S EQUIPMENT AND SYSTEMS**

#### **1. Safety Equipment**

The following minimum safety equipment will be on location:

- A. Wind direction indicators placed near rig floor/mud return lines and at points along the perimeter of the location to allow visibility of at least one indicator from any point on location.
- B. Automatic H2S detection alarm equipment (both audio and visual)
- C. Clearly visible warning signs. Signs will use the words "POISON GAS" and "CAUTION" with a strong color contrast.
- D. Protective breathing equipment will be located in the doghouse and at briefing areas on location.

#### **2. Well Control Systems**

##### **A. Blowout Prevention Equipment**

Equipment includes but is not limited to:

1. Pipe rams to accommodate all pipe sizes
2. Blind rams
3. Choke manifold
4. Closing Unit
5. Flare line and means of ignition

#### B. Communication

The rig contractor will be required to have two-way communication capability. ConocoPhillips will have either land-line, satellite phone, microwave phone, or mobile (cellular) telephone capabilities.

#### C. Mud Program

The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to surface. Proper mud weight, safe drilling practices and the use of H<sub>2</sub>S scavengers when appropriate will minimize hazards when penetrating H<sub>2</sub>S bearing zones.

#### D. Drill Stem Tests

Any planned drill stem test will be cancelled if H<sub>2</sub>S is detected prior to such test. In the event that H<sub>2</sub>S is detected during testing, the test will be terminated immediately.