

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

5. Lease Serial No.
NMLC062749B

6. If Indian, Allottee or Tribe Name

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

SUBMIT IN TRIPLICATE - Other instructions on page 2

Cancelled Field Office

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator
CONOCOPHILLIPS COMPANY
Contact: JEREMY LEE
E-Mail: Jeremy.L.Lee@cop.com

3a. Address
MIDLAND, TX 79710

3b. Phone No. (include area code)
Ph: 832-486-2519

8. Well Name and No.
ZIA HILLS 19 FEDERAL COM 112H

9. API Well No.
30-025-44239-00-X1

10. Field and Pool or Exploratory Area
WOLFCAMP

11. County or Parish, State
LEA COUNTY, NM

HOBBS OCD

JAN 16 2019

RECEIVED

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original APD
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

ConocoPhillips respectfully requests to change the approved drilling plan as reflected in the attached documents:

- Zia Hills 19 Fed Com 112H Kelly Cock
- Zia Hills 19 Fed Com 112H Choke Manifold
- Zia Hills 19 Fed Com 112H BOPE
- Zia Hills 19 Fed Com 112H Casing Design
- Zia Hills 19 Fed Com 112H Cement
- Zia Hills 19 Fed Com 112H Drill Plan

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

In particular the casing design is being modified due to availability of casing. As such we request approval at your earliest convenience.

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #448494 verified by the BLM Well Information System
For CONOCOPHILLIPS COMPANY, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 12/20/2018 (19PP0687SE)**

Name (Printed/Typed) JEREMY LEE Title REGULATORY COORDINATOR

Signature (Electronic Submission) Date 12/19/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ZOTA STEVENS Title PETROLEUM ENGINEER Date 12/26/2018

Conditions of approval, if any, are attached. Approval of this notice 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.

Office Hobbs

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.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Kz

Additional data for EC transaction #448494 that would not fit on the form

32. Additional remarks, continued

Thank you for your time spent reviewing this request.

WELL PLAN SUMMARY
1280 Extended Reach Single Lateral

Date: Dec 19, 2018
 Version: 1
 Prepared by: M. Smith

WELL: ZH 19 112H SURFACE LOC: SENW 19 S26 R32E BH LOC: NESW 7 S26 R32E ELEVATIONS: GL 3,182.4' KB +28.5'		COUNTY, STATE: Lea, Co. NM API No.: BLM Permit: WH Coord.: LAT 32° 1' 43.19" N (NAD-83) LON 103° 43' 3.22" W		AFE: WAF.OND. Drilling Network No.: Invoice Handler ID: VENNECP COST ESTIMATE DRILLING COMPLETION FACILITIES TOTAL	
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FORMATION TOP:	TVD	SUBSEA	
17-1/2" X 13-3/8"			
Base of Fresh Water	300	(2,882)	Fresh Water
Rustler	1,119	(2,092)	Fresh Water
Surface Casing Point	1,172	(2,039)	Fresh Water
Top of Salt / Salado	1,289	(1,922)	Salt
Castile	3,126	(85)	Salt
Delaware Base of Salt	4,254	1043	Gas / Oil
Cherry Canyon	5,167	1956.4829	Gas / Oil
Brushy Canyon	6,649	3437.9724	Gas / Oil
Bone Springs	8,038	4826.9087	Gas / Oil
Bone Springs 1st Carb	8,284	5073.219	Gas / Oil
Avalon A	8,562	5351.3994	Gas / Oil
Bone Springs 1st Sand	9,228	6016.6846	Gas / Oil
FBS Shale	9,506	6294.6396	
Bone Springs 2nd Carb	9,594	6383.4805	Gas / Oil
Bone Springs 2nd Sand	9,936	6725.0283	Gas / Oil
Bone Springs 3rd Carb	10,438	7226.8213	Gas / Oil
Bone Springs 3rd Sand	11,064	7853.39	Gas / Oil
Wolfcamp	11,465	8253.957	Gas / Oil
Wolfcamp A	11,671	8460.23	Gas / Oil
Top Target	11,955	8743.722	Gas / Oil
Intermediate Casing Point	11,959	8748	Gas / Oil
Bottom Target	11,963	8752	Gas / Oil

DRILLING RIG PTEN 256 **TARGET FORMATION Wolfcamp A Lower**
LOCATION DIRECTIONS
 From the intersection of U.S. Hwy 285 and State Hwy 652 in Orta, TX, go east on State Hwy 652 for 16.6 miles to the Texas and New Mexico state line and continue onto New Mexico County Road 1 for 2 miles to lease road (Directly west of Battle Axe Road). Turn left (W) onto the lease road and travel 1.1 miles to lease road. Turn right (N) onto the lease road and travel 1/10 of a mile to the location lease road. Turn right (E) onto location lease road and travel 600' to the location.
 Lat: 32-01-42.74N Long: 103-43-02.68W

POTENTIAL HAZARDS -> MITIGATIONS
 Losses in the Canyon groups; flow in the Bone Springs -> Frac tanks full with cut brine. LCM
 Elevated pressure / gas in the Wolfcamp prior to INT setpoint -> Set at minimum depth of 11465' TVD
 Wellbore instability in the PROD hole -> Ready to elevate MW, watching gas on connections
 Strong formation push in lateral -> Maintain within 30' L/R of line, putting in quick maintenance slides

9 5/8 in. shoe 12399' MD 1902' FNL	TARGET	11,959	8,748	Gas / Oil
	Formation Dip Rate:	est 90.1° (up dip)		
	PBTD	11,959	8,748	Gas / Oil
Estimated BH Static Temperature (°F):	203			
Max. Anticipated BH Pressure:	0.690 psi/ft	8,252 psi		
Max Anticipated Surface Pressure:		5,621 psi		

	Office	Cell
Drilling Engineer: Matt Smith	281-206-5199	432-269-6432
Geologist: Josh Day	281-206-5620	423-512-0347
Onsite Drilling Rep.: Greg Rivera	432-848-5238	
Dennis Housty		
Field Drilling Supt.: James Taylor	830-583-4828	956-229-1393
Patrick Wellman		432-215-7079
Drilling Supt.: Scott Nicholson	281-206-5392	432-230-8010

DRILLING FLUID:	Type	Interval (MD)	Density (ppg)	Vis (sec/stg)	PV (cP)	YP (#/100R2)	pH	FL (mL)	LGS (% by vol)	NaCl (ppb sol)	Remarks
Surface:	Fresh Water	Surface - 1,172'		28-50	1-5	2-6	7.5-8.5	NC	< 5.0	10,000	Rig Tanks
Intermediate:	Emulsified Brine	1172' - 12399'		28-50	1-5	2-6	7.5-8.5	NC	< 5.0	180,000	Rig Tanks
Production:	OBM	12399' - 22262'		50-70	18-25	8-14	9.5-10	< 8	< 8.0	400 - 00	Rig Tanks

CASING:	Hole	TOP (MD)	BTM (MD)	Length	Size	WT	Grade	Connection	SOP:
Surface:	17-1/2"	29'	1,172'	1,143'	13 3/8	54.50	J-55	BTC	Minimum - COP Class 3 Well Control Requirements Rig - 13-5/8"x10M psi Rams / 4-1/16"x10M psi Manifold Stackup - Rotating Head, Annular Preventer, Pipe Ram, Blind Ram, Mud Cross (Choke & Kill Valves); Pipe Ram
Intermediate:	12-1/4"	29'	12,399'	12,371'	9 5/8	40.00	L80-IC	BTC	
Production:	8-1/2"	29'	22,262'	22,234'	5 1/2	23.00	P-110	TXP	

CEMENT:	Hole	MD	TVD	Spacer	Lead	Tail	COMMENTS
Surface:	17-1/2" X 13-3/8"	1,172'	1,172'	20 bbls FW	530 sx Class C + adds 12.8 ppg 2.05 ft ³ /sk	450 sx Class C + adds 14.8 ppg 1.32 ft ³ /sk	Cemented to surface w/ 100%XS Add FiberBlock
Intermediate:	12-1/4" X 9-5/8"	12,399'	11,959'	20 bbls 10.5 ppg spacer	1290 sx Class C+adds, 11 ppg 2.97 ft ³ /sk.	x IntegraCem Lite C01+FP+Retarder+FL 13.8 ppg 1.16 ft ³ /sk	Cemented to Surface w/ 100%L / 30%T XS calc'd on 12.25" hole Add FiberBlock Cemented to TOC w/ 15% XS calc'd on 8.5" hole.
Production:	8-1/2" X 5-1/2"	22,262'	11,959'	30 bbls 14 ppg spacer	2662 sx Class H + adds 15.6 ppg 1.19R3/sk		

Comments	MD (ft)	INC (deg)	AZI (deg)	TVD (ft)	NS (ft)	EW (ft)	DLS (ft/100')	VS (ft)	SEC-T-R	Section Line Distance
Build @ 1.5°/100'	4,700'	0	0	4,700'	0	0	0	0	19 S26 R32E	2498' FNL 1699' FWL
End Build @ 6°	5,106'	6	101	5,105'	-4	21	1.5	-4	19 S26 R32E	2502' FNL 1720' FWL
Drop @ 1.5°/100'	10,567'	6	101	10,535'	-116	591	0	-120	19 S26 R32E	2614' FNL 2290' FWL
KOP	11,274'	0	0	11,241'	-120	612	1.5	-124	19 S26 R32E	2618' FNL 2311' FWL
Intermediate Curve LP	12,399'	90	359	11,959'	596	612	10	592	19 S26 R32E	1902' FNL 2311' FWL
Toe Sleeve 2	22,057'	90	359	11,959'	10254	544	0	10,250	7 S26 R32E	2433' FSL 2310' FWL
Toe Sleeve 1	22,102'	90	359	11,959'	10299	544	0	10,295	7 S26 R32E	2483' FSL 2310' FWL
PBHLTD	22,262'	90	359	11,959'	10459	544	0	10,455	7 S26 R32E	2618' FSL 2310' FWL

FORMATION EVALUATION:
 Mud Logging - One-Man: First intermediate hole to TD
 Mud Logging - Two-Man: Intermediate Casing Point to TD
 Open Hole - PEX CNL on 1 well on the pad, as deep as possible into curve section of intermediate
 Cased Hole - GR/CBL/USIT NA
 MWD - GR 200' above KOP to TD

OUR WORK IS NEVER SO URGENT OR IMPORTANT THAT WE CANNOT TAKE THE TIME TO DO IT SAFELY!

ZH 19 112H

SENW 19 S26 R32E

Lea, Co, NM

12/19/2018

SURFACE CASING DESIGN INFORMATION

Setting Depth: 1,172' MD 1,172' TVD

PIPE BODY DIMENSIONAL / PERFORMANCE DATA:

SIZE (Inches)	WEIGHT (LB/FT)	GRADE	CPLG TYPE	BORE ID (Inches)	DRIFT ID (Inches)	COLLAPSE (PSI) API / CoP	BURST (PSI) API / CoP	TENSION (1k LBS) API / CoP
13.375	54.5	J-55	BTC	12.615	12.459	1,130 / 1,076	2,730 / 2,373	853 / 609

Surface Casing Test Pressure = 1,500 psi
Pressure Test Prior to Drill Out

CONNECTION DIMENSIONAL / PERFORMANCE DATA:

OD (Inches)	ID (Inches)	DRIFT (Inches)	CPLG TYPE	COLLAPSE (PSI) API / CoP	BURST (PSI) API / CoP	TENSION (1k LBS) API / CoP
14.375	12.615	12.459	BTC	1,130 / 1,076	2,730 / 2,373	909 / 649

Minimum Design / Safety Factors COI
Burst 1.15 Collapse 1.05 Tension (Body & Connection) 1.40
Actual Design / Safety Factors
Burst 5.21 Collapse 2.16 Tension (Body) 13.36
15.37

INTERMEDIATE CASING DESIGN INFORMATION

Setting Depth: 12,399' MD 11,959' TVD

PIPE BODY DIMENSIONAL / PERFORMANCE DATA:

SIZE (Inches)	WEIGHT (LB/FT)	GRADE	CPLG TYPE	BORE ID (Inches)	DRIFT ID (Inches)	COLLAPSE (PSI) API / CoP	BURST (PSI) API / CoP	TENSION (1k LBS) API / CoP
9.625	40.0	L80-IC	BTC	8.835	8.75	3,870 / 3,685	5,750 / 5,000	916 / 654

Intermediate Casing Test Pressure = 4550 psi
Pressure Test Prior to Drill Out

CONNECTION DIMENSIONAL / PERFORMANCE DATA:

OD (Inches)	ID (Inches)	DRIFT (Inches)	CPLG TYPE	COLLAPSE (PSI) API / CoP	BURST (PSI) API / CoP	TENSION (1k LBS) API / CoP
10.625	8.835	8.75	BTC	3,870 / 3,685	5,750 / 5,000	947 / 676

Minimum Design / Safety Factors
Burst 1.15 Collapse 1.05 Tension (Body & Connection) 1.40
Actual Design / Safety Factors
Burst 0.97 Collapse 1.99 Tension (Body) 1.91
*1/3 Evacuation 1.91

PRODUCTION LINER DESIGN INFORMATION

Setting Depth: 22,262' MD 11,959' TVD
Hanger: 29' MD / TVD

PIPE BODY DIMENSIONAL / PERFORMANCE DATA:

SIZE (Inches)	WEIGHT (LB/FT)	GRADE	CPLG TYPE	BORE ID (Inches)	DRIFT ID (Inches)	COLLAPSE (PSI) API / CoP	BURST (PSI) API / CoP	TENSION (1k LBS) API / CoP
5.5	23	P-110	TXP	4.778	4.653	11,110 / 10,581	12,630 / 10,982	641 / 457

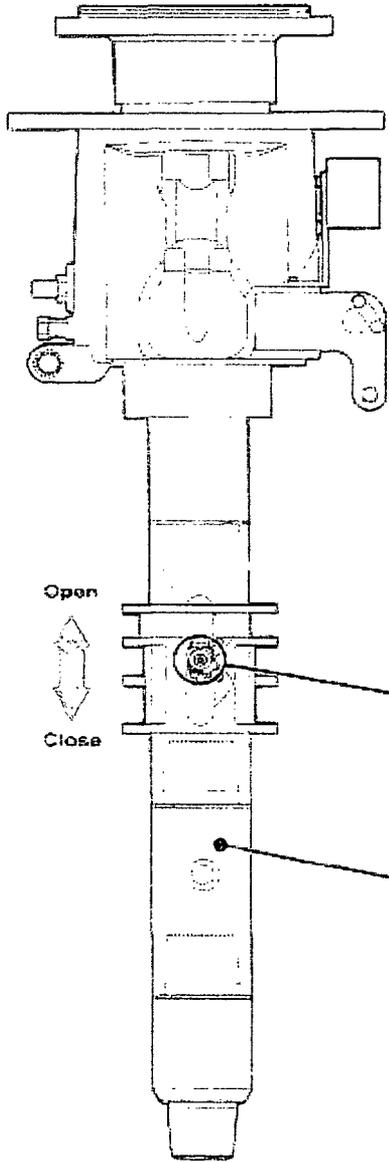
Production Casing Test Pressure = TBD

CONNECTION DIMENSIONAL / PERFORMANCE DATA:

OD (Inches)	ID (Inches)	DRIFT (Inches)	CPLG TYPE	COLLAPSE (PSI) API / CoP	BURST (PSI) API / CoP	TENSION (1k LBS) API / CoP
6.1	4.778	4.653	TXP	11,110 / 10,581	12,630 / 10,982	641 / 457

Minimum Design / Safety Factors
Burst 1.15 Collapse 1.05 Tension (Body & Connection) 1.40
Actual Design / Safety Factors
Burst 1.50 Collapse 1.32 Tension (Body) 2.33
2.94

the IBOP valves

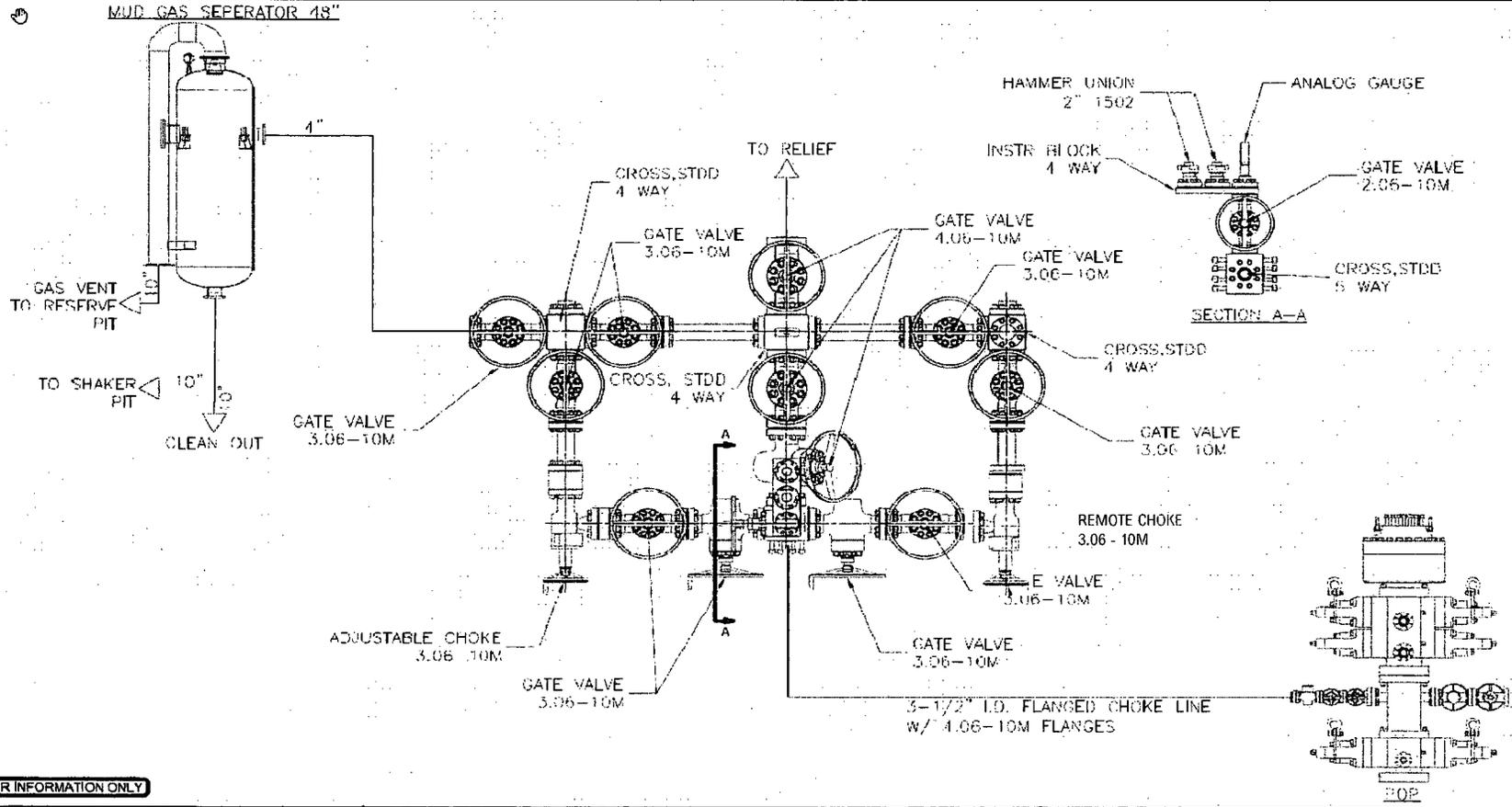


Lower Kelly Cock and Upper Kelly
Cock function are performed by
Upper IBOP (inside BOP) and Lower
IBOP in Top Drive

Upper
IBOP Crank
(Remote)

Lower IBOP
(Manual)

Choke Manifold 10M psi



FOR INFORMATION ONLY

BOPE Configuration & Specifications
13-5/8" x 10,000 psi System

Rotating Head (w/ fill up line)
 13-5/8" x 10k psi

Annular Preventer
 13-5/8" x 5k psi

Pipe Ram
 13-5/8" x 10k psi

Blind Ram
 13-5/8" x 10k psi

Kill Line 2-1/16" x 10k Chicksan
 (2) 2-1/16" x 10k Gate Valves
 Outer Check Valve

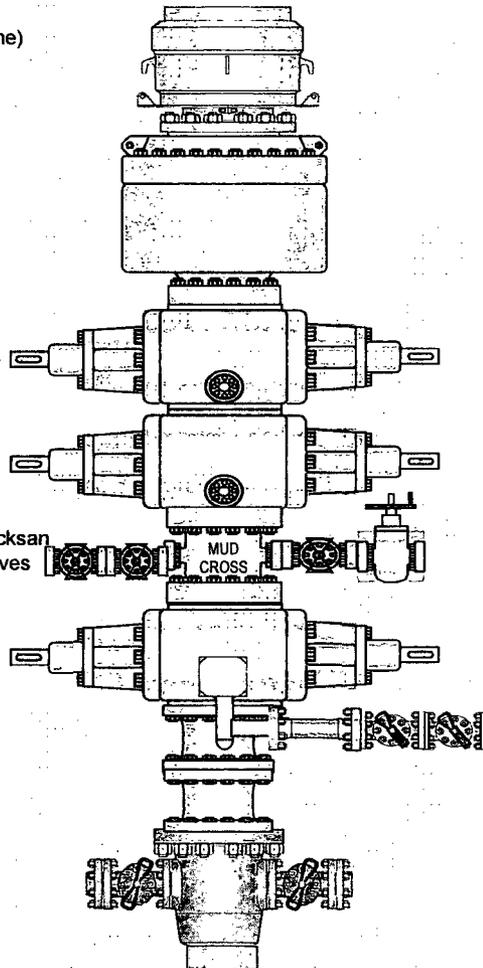
Choke Line 6" x 3" x 10k psi
 4-1/16" x 10k psi Inner Manual Valve
 4 - 1/16" x 10k psi Outer Remote HCR.

Pipe Ram
 13-5/8" x 10k psi

2" x 5k psi Gate Valves
 Pressure Testing Lines

Spacer Spool
 13-5/8" x 10k psi

Casing Head
 13-5/8" x 10k psi



PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	ConocoPhillips Co
LEASE NO.:	LC062749B
WELL NAME & NO.:	Zia Hills 19 Federal Com – 112H
SURFACE HOLE FOOTAGE:	2498'/N & 1699'/W
BOTTOM HOLE FOOTAGE:	2618'/S & 2310'/W, sec. 7
LOCATION:	Sec. 19, T. 26 S, R. 32 E
COUNTY:	Lea County

COA

All previous COAs still apply expect the following:

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input type="radio"/> Low	<input type="radio"/> Medium	<input checked="" type="radio"/> High
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP

A. Hydrogen Sulfide

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **17 1/2 inch** surface casing shall be set at approximately **1172 feet** (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Operator shall fill 1/3rd of the casing with fluid while running intermediate casing.

2. The minimum required fill of cement behind the **9 5/8 inch** intermediate casing is:

Operator has proposed an with a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool: Cement to surface. If cement does not circulate, contact the appropriate BLM office.
- ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings , the cement on the 3rd casing string must come to surface.
3. The minimum required fill of cement behind the **5-1/2 inch** production casing is:
 - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9 5/8** intermediate casing shoe shall be **10,000 (10M)** psi.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement

program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. **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. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.**
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be

initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

- c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.
- g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

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