

ATS-12-1107

Form 3160-3
(March 2012)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

HOBBS OCD

OCD #680 2012

RECEIVED

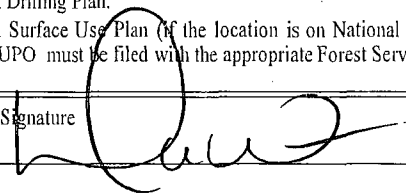
FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. LC068281-B	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name N/A	
2. Name of Operator ConocoPhillips Company		7. If Unit or CA Agreement, Name and No. N/A	
3a. Address P.O. Box 51810 Midland, Tx 79710		8. Lease Name and Well No. (38802) Buck 17 Federal # 6H	
3b. Phone No. (include area code) 432-688-6943		9. API Well No. 30-025-40801	
4. Location of Well (Report location clearly and in accordance with any State requirements*) At surface 28 FSL & 2604 FEL (SWSE) of 17-26S-32E Unit 0 At proposed prod. zone 330 FNL & 2340 FEL (NWNE) of 17-26S-32E Unit B		10. Field and Pool, or Exploratory Jennings (97838) Red Hills, Bone Spring Upper Shale	
11. Sec., T. R. M. or Blk. and Survey or Area Section 17-26S-32E (Surface)		12. County or Parish Lea	
13. State NM		14. Distance in miles and direction from nearest town or post office* 30 miles south/west of Jal, NM	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease 640	17. Spacing Unit dedicated to this well 160	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth 13539 MD/8828 TVD	20. BLM/BIA Bond No. on file ES0085	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3175 GL	22. Approximate date work will start* 09/01/2012	23. Estimated duration 30 days	

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 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 	Name (Printed/Typed) Donna Williams	Date 08/13/2012
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Title
Sr. Regulatory Advisor

Approved by (Signature) /s/George MacDonell	Name (Printed/Typed) /s/George MacDonell	Date DEC 18 2012
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Title FOA FIELD MANAGER	Office CARLSBAD FIELD OFFICE
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Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

OCD CONDITION OF APPROVAL for Drilling
Intent to drill ONLY -- CANNOT produce until the Non-Standard
Location has been approved by the OCD Santa Fe office.

SEE ATTACHED FOR
CONDITIONS OF APPROVALKZ
12/24/12Approval Subject to General Requirements
& Special Stipulations Attached

JAN 08 2013

OPERATORS NAME: ConocoPhillips Company

LEASE NAME AND WELL NO.:

Buck Federal 17 # 6H

SURFACE LOCATION:

28 FSL & 2604 FEL (SWSE) of 17-26S-32E

CASING POINT:

765.7 FSL & 2353.5 FEL (SWSE) of 17-26S-32E

BHL:

330 FNL & 2340 FEL (NWNE) of 17-26s-32E

FIELD NAME:

Red Hills; Bone Spring

POOL NAME:

Bone Spring/Avalon

COUNTY:

Lea County, New Mexico

Federal Surface/Federal Minerals LC068281-B

The following information is to supplement the Application for Permit to Drill.

DRILLING PLAN

1. Name and estimated tops of all geologic groups, formations, members, or zones.(TVD)

Quaternary	Surface	Water
Rustler	1037	Salt
Castille	2566	Salt
Delaware Top	4353	Oil/gas/water
Ramsey	4383	Oil/gas/water
Ford Shale	4440	Oil/gas/water
Olds	4453	Oil/gas/water
Cherry Canyon Lower Top	6555	Oil/gas/water
Bone Spring	8159	Oil/gas/water
Bone Spring 1 st Carbonate	8304	Oil/gas/water
Base of Bone Spring 1 st Carbonate	8400	Oil/gas/water
KOP (estimate)	8122	
Avalon A Shale Top	8677	Oil/gas/water
Avalon B Zone Top	8920	Oil/gas/water
Avalon C Shale Top	N/A	Oil/gas/water
Avalon Target	N/A	Oil/gas/water

2. Estimated depths and thickness of formations, members or zones potentially containing usable water, oil, gas, or prospectively valuable deposits of other minerals that the operator expects to encounter, and the operator's plans for protecting such resources.

Quaternary Surface-1037 (water)

Rustler & Castile 1037-4353' (salt)

All of the water bearing formations identified above will be protected by the intermediate setting of the 9 5/8" casing and circulating of cement to surface

Delaware

4353-8159 (oil/gas/water)

The prospective formation identified will be protected by the intermediate setting of the 7" casing and tying the cement into the 9 5/8" casing

Bone Spring

8159-8920 (oil/gas/water)

The geologic tops identified above from the top of the Bone Spring/Avalon are part of the target formation

3. The operator's minimum specifications for blowout prevention equipment and diverter systems to be used, including size, pressure rating, configuration, and the testing procedure and frequency.

A 5000# system will be installed, used, maintained, and tested accordingly. After nipping up, and every 30 days thereafter, 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 recorded on the daily drilling reports. Ram Type preventors will be tested to rated working pressure or 70% of the minimum internal yield of the casing. Annular type preventer(s) shall be tested to 50% of the approved BOP stack working pressure. Pressure shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer. Pursuant to Onshore Oil and Gas Order No. 2, the BOP equipment for a 5M system or greater shall include lower Kelly cock valve with handle available, safety valves and subs to fit all drill string connections in use and inside BOP or float sub shall be available. All choke lines from the drilling spool forward shall meet the requirements of the Onshore Order 2 as specified. **See Attached BOPE Schematic**

4. The proposed casing program including size, grade, weights, type of thread and coupling, and the setting depth of each string and its condition (new or acceptably reconditioned). For exploratory wells, or for wells as otherwise specified by the authorized officer, the operator shall include the minimum design factors for tensions, burst, and collapse that are incorporated into the casing design. In cases where tapered casing strings are utilized, the operator shall also include and/or setting depths of each portion.

NEW CASING:

Surface: 17 1/2" hole, 13 3/8" 54.5# J55 STC csg, set @ 1065'. Drill out with 12 1/4" bit and perform shoe test to 11.0 ppg MWE.

Burst: 2.37/Collapse: 4.92/Tension: 2.57

Intermediate 1: 12 1/4" hole, 9 5/8" 36# J55 LTC csg, set @ 4380

Burst: 2.88/Collapse: 2.62/Tension: 4.74

(This string of casing would not be subject to the production collapse load case of being pumped off to zero pressure on the inside by beam pump or ESP production pumping the fluid level down. The 9 5/8" casing would be isolated

from the beam pumping production collapse load case by the production casing that would be run. If loss of circulation occurs during the drilling phase while drilling below the 9 5/8" intermediate casing, we would expect the fluid level would fall no further than 2200' below the surface of ground before reaching hydrostatic balance with the pressure of the loss zone. Our anticipated maximum mud weight for drilling below the 9 5/8" intermediate casing is 9.3 ppg and our experience has been that we have not had severe losses with this mud weight in our previous wells in this area. The 9 5/8" casing will be filled with mud while running it by filling it at least once each 30 joints) } See log

Intermediate 2: 8 3/4" hole, 7" 29# P110 BTC csg set @ 9278MD/8822 TVD
Burst: 2.29/Collapse: 1.74/Tension: 2.81/3.31

Production Liner (Uncemented): 6" hole, 4 1/2" 11.6# P110 BTC liner set @ 9178-135639 MD Burst: 3.25/Collapse: 3.36/Tension: 5.78/6.80 (Packers and Sleeves)

The plan is to set casing and drill open hole in a northern direction to a proposed bottomhole location of 330 FNL & 2340 FEL (NWNE) of Section 17-26S-32E

ConocoPhillips will utilize casing friendly hardbanded drill pipe in a manner that is consistent with current company policy and standards with respect to minimizing or mitigating internal casing wear. The responsibility to ensure all parties are acting according to their roles and responsibilities rest with the Company. Any damage or impacts from use of casing friendly hardbanded drill pipe rest with ConocoPhillips Company.

5. The amount and type(s) of cement, including anticipated additives to be used in setting each casing string, shall be described. If stage cementing techniques are to be employed, the setting depth of the stage collars and amount and type of cement, including additives, and preflush amounts to be used in each stage, shall be given. The expected linear fill-up of each cemented string, or each stage when utilizing stage-cementing techniques, shall also be given.

13 3/8 casing: Lead w/800 sxs Class C cmt + HalCem-C (Yield 1.33 cft)
Tail w/230 sxs Class C cmt + 1 lbm/sk EconoChem HRLTRRC (Yield 1.85 Cuft/sk). Circulated to surface based on 17 1/2" hole with 100% excess

9 5/8" casing: Lead w/990 sxs 50/50 Class C Poz + 2.5 gal/bbl WG-19 + 1 lbm/sk EconoCem-C (Yield 2.48 cft/sk), Tail w/140 sxs H + HalCem C (Yield 1.33 cft/sk) Circulatd to surface based on 12 1/4" hole w/120% excess

7" casing: Lead w/560 sxs HLH + .3% Halad9 + 5 lbs/sk silicalite + .3% HR-800 (Yield 2.0 cft/sk), Tail w/232 sxs Class H + .4% Halad-9 + .1% WG-17 + 3.0% KCl + .3% HR800 (Yield 1.2 cft/sk). Circulate cement 500' into the 9 5/8" casing based on 8 3/4" hole w/100% excess

4 1/2" Liner: Uncemented

6. The anticipated type and characteristics of the proposed circulating medium or mediums proposed for the drilling of each wellbore section, the quantities and types of mud and weighting material to be maintained, and the monitoring equipment to be used on the circulating system.

Mud Program:

0-1065	Aquagel-Spud Mud	8.9	Wt/Gl	32-36 Vis.	NC
1065-4380	Brine	10	Wt/Gl	28-30 Vis.	5-8
4380-9278	Brine	9.3	Wt/Gl	28-30 Vis.	5-8
9278-13539	Cut Brine	9.3	Wt/Gl	30-40 Vis.	<=5

Gas detection equipment and pit level flow monitoring equipment will be on location. ConocoPhillips Company will maintain sufficient mud and weighted material on location at all times.

7. The anticipated testing, logging, and coring procedures to be used, including drill stem testing procedures, equipment, and safety measures.

a. DST Program: None

b. Mud Logging: Two-Man -- 1065-TD

Logs to be run: GR/MWD *See CoA*

8. List the expected bottom-hole pressure and any anticipated abnormal pressures, temperatures or potential hazards that are expected to be encountered, such as lost circulation zones and hydrogen sulfide. The operator's plans for mitigating such hazards shall be discussed. Should the potential to encounter hydrogen sulfide exist, the mitigation procedures shall comply with the provisions of the BLM.

The expected pressure gradient is 0.433 psi/ft or 9-9.1 ppg equivalent

The average anticipated bottom hole pressure ranges on average is .65 psi/ft

No hydrogen sulfide is expected during drilling operations; however, the potential does exist for H₂S. Please see attached H₂S contingency plan to be used in the event of occurrence.

Any other facets of the proposed operation which the operator wishes to be considered in reviewing the application.

Anticipated construction date is September 1, 2012 with anticipated spud date of October 1, 2012. Construction of well pad and road will begin as soon as all agency approvals are obtained.

9. Address the proposed directional design, plan view, and vertical section in true vertical and measured depth for directional, horizontal, or coil tubing operations.

The proposed directional/horizontal documents are attached.

DRILLING PLAN

PROSPECT/FIELD	Bonespring/Red Hills				DRILLING PLAN				COUNTY/STATE		Lea County, NM		
OWNERS	ConocoPhillips				LEASE								
WELL NO.	Buck Federal 17 6H				FNL	FSL	FEL	FWL					
LOCATION					Surface Location:		28		2804				
					Bottom Hole Location:		330		2340				
EST. T.D.	Leg #1 13.539' MD				GROUND ELEV.				3,171' (est)		RKB 3,187' (est)		
PROGNOSIS:				Based on 3,187' KB(est)				LOGS:				Type Interval	
MARKER				S.S. DEPTH				TVD				Open Hole: GR-MWD KOP-TD	
Quaternary								Surface					
Rustler				2,150				1,037					
Delaware Top				-1,166				4,353					
Bone Spring				-8,159				8,159					
Bone Spring 1st Carbonate Top				-5,117				8,304					
Bone Spring 1st Carbonate Base				-5,213				8,400					
KOP								8,021					
Avalon A Shale Top				-5,490				8,677					
Avalon A Shale Base				-5,733				8,920					
Avalon A Shale Horizontal Target				-5,635				8,822					

Bonespring/Red Hills
ConocoPhillips
Buck Federal 17 6H

Surface Casing:

Surface Casing Depth (Ft)	1,065
Surface Casing O.D. (In.)	13.375
Surface Casing ID (In)	12.715
Hole O.D. (In)	17.5
Excess (%)	100%
Volume Tail (Sx)	230
Yield Tail (Cu. Ft./Sx)	1.85
Yield Lead (Cu. Ft./Sx)	1.33
Shoe Joint (Ft)	40
Shoe Volume (Cu. Ft)	35.3
Tail feet of cement	300
Calculated Total Volume (Cu. Ft.)	1,515
Calc. Tail Volume (Cu. Ft.)	417
Calc. Lead Volume (Cu. Ft.)	1,063
Calc. Lead Volume (Sx)	800

Intermediate1 Casing (Lead):

Intermediate Casing O.D. (In.)	9.625
Intermediate Casing ID (In)	8.921
Hole O.D. (In)	12.25
Excess (%)	100%
cap 12-1/4 - 9-5/8"	0.0558
Calculated fill:	3,880
Yield Lead (Cu. Ft./Sx)	2.48
Calculated Total Lead (Cu. Ft.)	2,430
Calc. Lead Volume (Sx)	990

Intermediate2 Casing (Lead):

Intermediate Casing O.D. (In.)	7,000
Intermediate Casing ID (In)	6.184
Hole O.D. (In)	8.75
Excess (%)	135%
cap 7" - 8-3/4" bls/ft	0.0268
cap 7 - 9-5/8" bls/ft	0.02823
Calculated fill: (500' into 9-5/8")	4,098
Yield Lead (Cu. Ft./Sx)	2.0
Calculated Total Lead (Cu. Ft.)	1,118
Calc. Lead Volume (Sx)	560

3880
7,978'

Intermediate1 Casing (Tail):

Intermediate Casing O.D. (In.)	9.625
Production Casing ID (In)	8.835
Hole O.D. (In)	12.25
Excess (%)	100%
cap 12-1/4 - 9-5/8"	0.0558
Calculated fill:	500
Yield Tail (Cu. Ft./Sx)	1.33
Shoe Joint (Ft)	40
Shoe Volume (Cu. Ft)	17.0
Calc. Tail Volume (Cu. Ft.)	174
Required Tail Volume (Sx)	140

Intermediate2 Casing (Tail):

Intermediate Casing O.D. (In.)	7,000
Intermediate Casing ID (In)	6.184
Hole O.D. (In)	8.75
Excess (%)	135%
cap 7" - 8-3/4" bls/ft	0.0268
cap 7 - 9-5/8" bls/ft	0.02823
Calculated fill:	1,300
Yield Lead (Cu. Ft./Sx)	1.2
Calculated Total Tail (Cu. Ft.)	278
Required Tail Volume (Sx)	232

Buck Federal 17 6H Proposed Tops				GL 3,171	KB 16' (via survey plat)	3,187
Notes:		No pilot hole will be drilled. This horizontal well will be drilled from S to N into the Avalon A Shale Zone. The surface location will require that the well be drilled "3D", with the borehole drilled initially NE and then curved north in order to place the lateral portion of the borehole within the Avalon A 160 acre spacing window. The well will be drilled slightly toe down with a ~4265' long lateral.				
Surface Location		Sec 17	T26 S	R32E		Lea Co. NM, Surface Location: 100' FSL & 2,310' FEL
Bottom Hole Location		Sec 17	T26 S	R32E		Lea Co. NM, Terminus Location: 330' FNL & 2,340' FEL
Formation Name	Formation Top (TVD)	Subsea Depth	Gross Thickness	Gross Thickness	Gross Thickness	Comments
Quaternary	Surface					
Rustler	1,037	2,150				
Salado Top	1,414	1,773				
Castile Top	2,566	621				
Delaware Top	4,353	-1,166				
Ramsey	4,383	-1,196				
Ford Sh	4,440	-1,253				
Olds	4,453	-1,266				
Cherry Canyon Lower Top	6,555	-3,368				
KOP (est)	8,122					
Bone Spring Top	8,159	-4,972				
Bone Spring 1st Carbonate Top	8,304	-5,117	96			
Bone Spring 1st Carbonate Base	8,400	-5,213				
Avalon A Shale Top	8,677	-5,490		243		
LANDING: Avalon A Shale Horizontal Upper Target Limit	8,797	-5,610				Not a formation top.
LANDING: Avalon A Shale Horizontal Target Center	8,822	-5,635	50			Not a formation top.
LANDING: Avalon A Shale Horizontal Lower Target Limit	8,847	-5,660				Not a formation top.
TERMINUS: Avalon A Shale Horizontal Upper Target Limit	8,803	-5,616				Not a formation top.
TERMINUS: Avalon A Shale Horizontal Target Center	8,828	-5,641	50			Not a formation top.
TERMINUS: Avalon A Shale Horizontal Lower Target Limit	8,853	-5,666				Not a formation top.
Avalon A Shale Base (Should not penetrate)	8,920	-5,733				
Proposed total MD of well ~12,850'.						

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Buck Federal 17 #6H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3187.0usft (Precision #827)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3187.0usft (Precision #827)
Site:	Sec 20, T26S, 32E	North Reference:	Grid
Well:	Buck Federal 17 #6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Lea County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Sec 20, T26S, 32E		
Site Position:		Northing:	376,829.70 usft
From:	Map	Easting:	698,257.30 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 2' 3.859 N
		Longitude:	103° 41' 36.778 W
		Grid Convergence:	0.34 °

Well	Buck Federal 17 #6H		
Well Position	+N/-S	388.6 usft	Northing:
	+E/-W	-913.4 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	377,218.28 usft
		Ground Level:	3,171.0 usft
		Latitude:	32° 2' 7.758 N
		Longitude:	103° 41' 47.362 W

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/15/2012	7.51	59.97	48,390

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	2.55

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,021.1	0.00	0.00	8,021.1	0.0	0.0	0.00	0.00	0.00	0.00	
8,372.3	28.10	50.00	8,358.4	54.3	64.7	8.00	8.00	0.00	50.00	
9,277.9	89.92	359.62	8,822.0	737.7	250.5	8.00	6.83	-5.56	-53.89	
13,539.4	89.92	359.62	8,828.0	4,999.1	222.3	0.00	0.00	0.00	0.00	Buck Federal 17 #6



DDC Well Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Buck Federal 17 #6H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3187.0usft (Precision #827)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3187.0usft (Precision #827)
Site:	Sec 20, T26S, 32E	North Reference:	Grid
Well:	Buck Federal 17 #6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
Rustler									
1,037.0	0.00	0.00	1,037.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
Salado Top									
1,414.0	0.00	0.00	1,414.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Castile Top									
2,566.0	0.00	0.00	2,566.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
Delaware Top									
4,353.0	0.00	0.00	4,353.0	0.0	0.0	0.0	0.00	0.00	0.00
Ramsey									
4,383.0	0.00	0.00	4,383.0	0.0	0.0	0.0	0.00	0.00	0.00



DDC
Well Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Buck Federal 17 #6H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3187.0usft (Precision #827)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3187.0usft (Precision #827)
Site:	Sec 20, T26S, 32E	North Reference:	Grid
Well:	Buck Federal 17 #6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
Ford Sh									
4,440.0	0.00	0.00	4,440.0	0.0	0.0	0.0	0.00	0.00	0.00
Olds									
4,453.0	0.00	0.00	4,453.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Cherry Canyon Lower Top									
6,555.0	0.00	0.00	6,555.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
Build 8°/100' @ 8021' MD									
8,021.1	0.00	0.00	8,021.1	0.0	0.0	0.0	0.00	0.00	0.00
8,100.0	6.31	50.00	8,099.8	2.8	3.3	2.9	8.00	8.00	0.00
Bone Spring Top									
8,159.9	11.10	50.00	8,159.0	8.6	10.3	9.1	8.00	8.00	0.00
8,200.0	14.31	50.00	8,198.1	14.3	17.0	15.0	8.00	8.00	0.00
8,300.0	22.31	50.00	8,293.0	34.5	41.1	36.3	8.00	8.00	0.00
Bone Spring 1st Carbonate Top									
8,312.0	23.27	50.00	8,304.1	37.5	44.6	39.4	8.00	8.00	0.00
EOB @ 8372' MD / 28.10° Inc / 50° Azm / Build 8°/100'									

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Buck Federal 17 #6H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3187.0usft (Precision #827)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3187.0usft (Precision #827)
Site:	Sec 20, T26S, 32E	North Reference:	Grid
Well:	Buck Federal 17 #6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,372.3	28.10	50.00	8,358.4	54.3	64.7	57.1	8.00	8.00	0.00
8,400.0	29.45	46.36	8,382.7	63.1	74.6	66.4	8.00	4.89	-13.15
Bone Spring 1st Carbonate Top									
8,420.1	30.50	43.91	8,400.1	70.2	81.7	73.8	8.00	5.18	-12.20
8,500.0	35.02	35.55	8,467.3	103.5	109.1	108.3	8.00	5.66	-10.47
8,600.0	41.31	27.51	8,545.9	156.2	141.1	162.3	8.00	6.29	-8.04
8,700.0	48.02	21.31	8,617.0	220.2	169.9	227.6	8.00	6.72	-6.20
Avalon A Shale Top									
8,796.8	54.78	16.47	8,677.4	291.8	194.2	300.1	8.00	6.98	-5.00
8,800.0	55.01	16.33	8,679.3	294.3	195.0	302.7	8.00	7.08	-4.55
8,900.0	62.17	12.13	8,731.4	377.0	215.8	386.2	8.00	7.16	-4.19
9,000.0	69.44	8.47	8,772.3	466.6	232.0	476.5	8.00	7.27	-3.67
9,100.0	76.78	5.14	8,801.4	561.6	243.3	571.8	8.00	7.34	-3.33
9,200.0	84.16	2.00	8,817.9	659.9	249.4	670.4	8.00	7.38	-3.13
EOB @ 9278' MD / 89.92° Inc / 359.62° Azm / 8822' TVD									
9,277.9	89.92	359.62	8,822.0	737.7	250.5	748.1	8.00	7.40	-3.06
9,300.0	89.92	359.62	8,822.0	759.8	250.3	770.1	0.00	0.00	0.00
9,400.0	89.92	359.62	8,822.1	859.8	249.7	870.0	0.00	0.00	0.00
9,500.0	89.92	359.62	8,822.3	959.8	249.0	969.9	0.00	0.00	0.00
9,600.0	89.92	359.62	8,822.4	1,059.8	248.4	1,069.8	0.00	0.00	0.00
9,700.0	89.92	359.62	8,822.6	1,159.8	247.7	1,169.6	0.00	0.00	0.00
9,800.0	89.92	359.62	8,822.7	1,259.8	247.0	1,269.5	0.00	0.00	0.00
9,900.0	89.92	359.62	8,822.8	1,359.8	246.4	1,369.4	0.00	0.00	0.00
10,000.0	89.92	359.62	8,823.0	1,459.8	245.7	1,469.2	0.00	0.00	0.00
10,100.0	89.92	359.62	8,823.1	1,559.8	245.0	1,569.1	0.00	0.00	0.00
10,200.0	89.92	359.62	8,823.3	1,659.8	244.4	1,669.0	0.00	0.00	0.00
10,300.0	89.92	359.62	8,823.4	1,759.8	243.7	1,768.8	0.00	0.00	0.00
10,400.0	89.92	359.62	8,823.5	1,859.8	243.1	1,868.7	0.00	0.00	0.00
10,500.0	89.92	359.62	8,823.7	1,959.8	242.4	1,968.6	0.00	0.00	0.00
10,600.0	89.92	359.62	8,823.8	2,059.7	241.7	2,068.5	0.00	0.00	0.00
10,700.0	89.92	359.62	8,824.0	2,159.7	241.1	2,168.3	0.00	0.00	0.00
10,800.0	89.92	359.62	8,824.1	2,259.7	240.4	2,268.2	0.00	0.00	0.00
10,900.0	89.92	359.62	8,824.3	2,359.7	239.7	2,368.1	0.00	0.00	0.00
11,000.0	89.92	359.62	8,824.4	2,459.7	239.1	2,467.9	0.00	0.00	0.00
11,100.0	89.92	359.62	8,824.5	2,559.7	238.4	2,567.8	0.00	0.00	0.00
11,200.0	89.92	359.62	8,824.7	2,659.7	237.8	2,667.7	0.00	0.00	0.00
11,300.0	89.92	359.62	8,824.8	2,759.7	237.1	2,767.5	0.00	0.00	0.00
11,400.0	89.92	359.62	8,825.0	2,859.7	236.4	2,867.4	0.00	0.00	0.00
11,500.0	89.92	359.62	8,825.1	2,959.7	235.8	2,967.3	0.00	0.00	0.00
11,600.0	89.92	359.62	8,825.2	3,059.7	235.1	3,067.2	0.00	0.00	0.00
11,700.0	89.92	359.62	8,825.4	3,159.7	234.5	3,167.0	0.00	0.00	0.00
11,800.0	89.92	359.62	8,825.5	3,259.7	233.8	3,266.9	0.00	0.00	0.00
11,900.0	89.92	359.62	8,825.7	3,359.7	233.1	3,366.8	0.00	0.00	0.00
12,000.0	89.92	359.62	8,825.8	3,459.7	232.5	3,466.6	0.00	0.00	0.00
12,100.0	89.92	359.62	8,826.0	3,559.7	231.8	3,566.5	0.00	0.00	0.00
12,200.0	89.92	359.62	8,826.1	3,659.7	231.1	3,666.4	0.00	0.00	0.00
12,300.0	89.92	359.62	8,826.2	3,759.7	230.5	3,766.2	0.00	0.00	0.00
12,400.0	89.92	359.62	8,826.4	3,859.7	229.8	3,866.1	0.00	0.00	0.00
12,500.0	89.92	359.62	8,826.5	3,959.7	229.2	3,966.0	0.00	0.00	0.00
12,600.0	89.92	359.62	8,826.7	4,059.7	228.5	4,065.8	0.00	0.00	0.00
12,700.0	89.92	359.62	8,826.8	4,159.7	227.8	4,165.7	0.00	0.00	0.00
12,800.0	89.92	359.62	8,827.0	4,259.7	227.2	4,265.6	0.00	0.00	0.00
12,900.0	89.92	359.62	8,827.1	4,359.7	226.5	4,365.5	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Buck Federal 17 #6H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3187.0usft (Precision #827)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3187.0usft (Precision #827)
Site:	Sec 20, T26S, 32E	North Reference:	Grid
Well:	Buck Federal 17 #6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,000.0	89.92	359.62	8,827.2	4,459.7	225.8	4,465.3	0.00	0.00	0.00
13,100.0	89.92	359.62	8,827.4	4,559.7	225.2	4,565.2	0.00	0.00	0.00
13,200.0	89.92	359.62	8,827.5	4,659.7	224.5	4,665.1	0.00	0.00	0.00
13,300.0	89.92	359.62	8,827.7	4,759.7	223.9	4,764.9	0.00	0.00	0.00
13,400.0	89.92	359.62	8,827.8	4,859.7	223.2	4,864.8	0.00	0.00	0.00
13,500.0	89.92	359.62	8,827.9	4,959.7	222.5	4,964.7	0.00	0.00	0.00
TD @ 13539' MD / 8828' TVD									
13,539.4	89.92	359.62	8,828.0	4,999.1	222.3	5,004.0	0.00	0.00	0.00

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
Buck Federal 17 #6H	90.08	359.62	8,828.0	4,999.1	222.3	382,217.34	697,566.22	32° 2' 57.216 N	103° 41' 44.437 W
- plan hits target center									
- Rectangle (sides W100.0 H50.0 D4,261.5)									

Formations

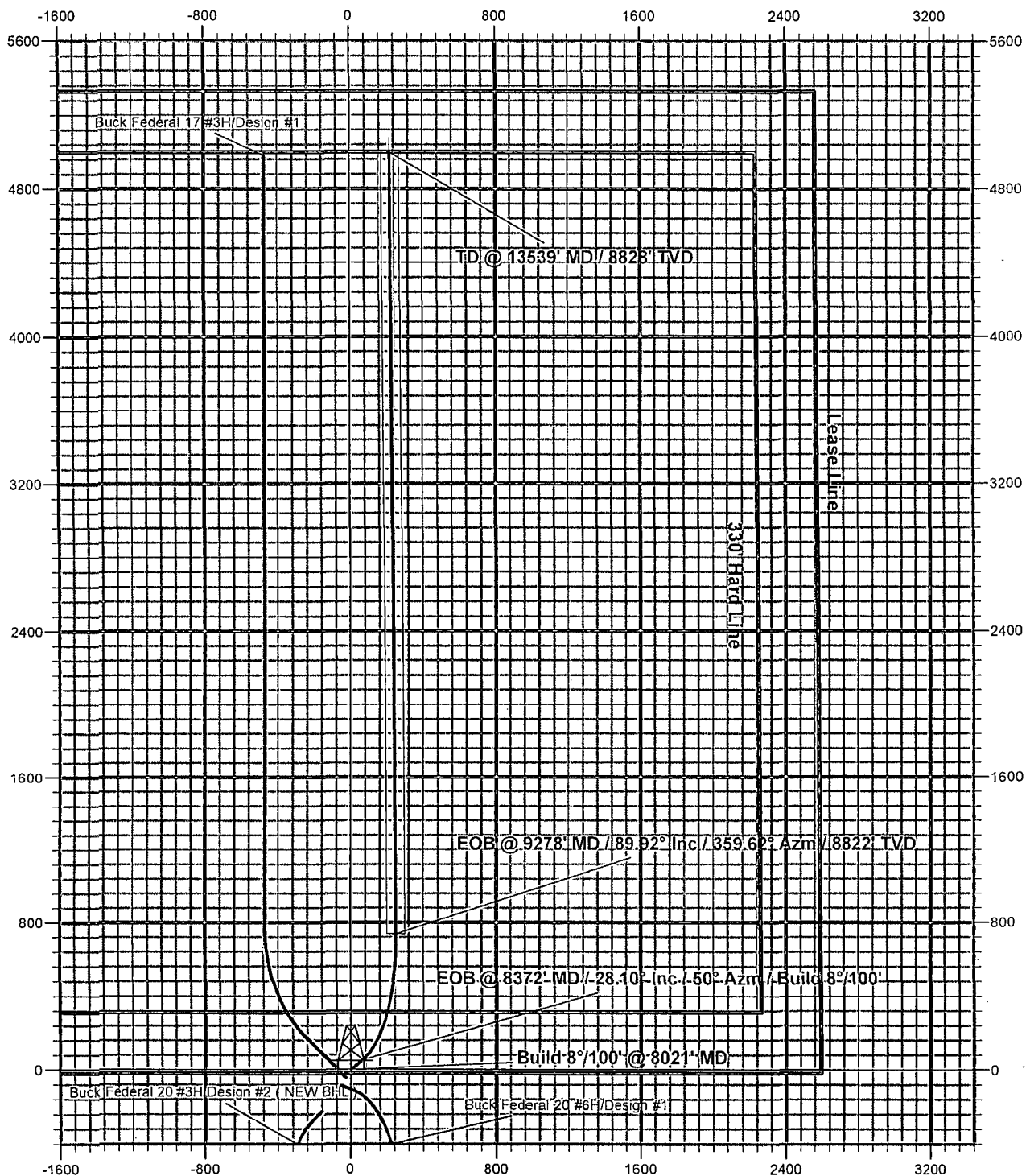
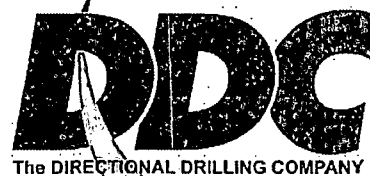
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,037.0	1,037.0	Rustler		0.08	2.89
1,414.0	1,414.0	Salado Top		0.08	2.89
2,566.0	2,566.0	Castile Top		0.08	2.89
4,353.0	4,353.0	Delaware Top		0.08	2.89
4,383.0	4,383.0	Ramsey		0.08	2.89
4,440.0	4,440.0	Ford Sh		0.08	2.89
4,453.0	4,453.0	Olds		0.08	2.89
6,555.0	6,555.0	Cherry Canyon Lower Top		0.08	2.89
8,159.9	8,159.0	Bone Spring Top		0.08	2.89
8,312.0	8,304.1	Bone Spring 1st Carbonate Top		0.08	2.89
8,420.1	8,400.1	Bone Spring 1st Carbonate Top		0.08	2.89
8,796.8	8,677.4	Avalon A Shale Top		0.08	2.89

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,021.1	8,021.1	0.0	0.0	Build 8°/100' @ 8021' MD
8,372.3	8,358.4	54.3	64.7	EOB @ 8372' MD / 28.10° Inc / 50° Azm / Build 8°/100'
9,277.9	8,822.0	737.7	250.5	EOB @ 9278' MD / 89.92° Inc / 359.62° Azm / 8822' TVD
13,539.4	8,828.0	4,999.1	222.3	TD @ 13539' MD / 8828' TVD

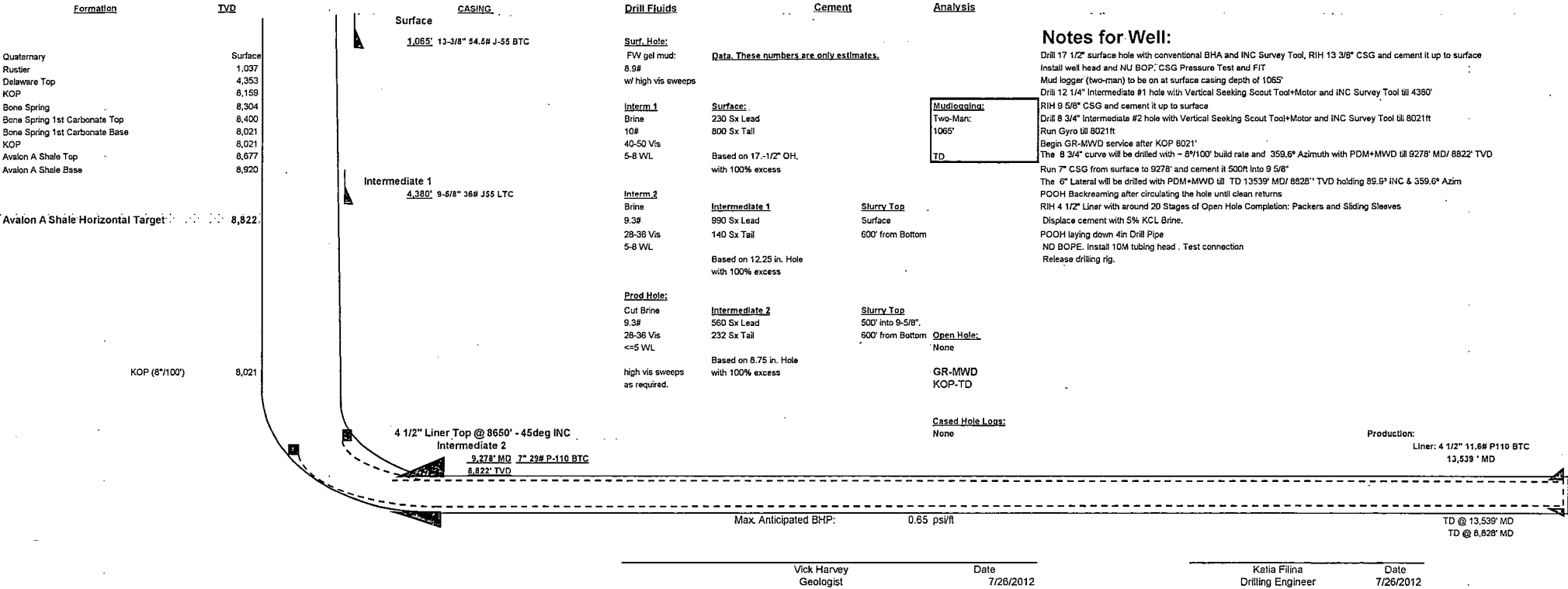


Lea County, New Mexico
Buck Federal 17 #6H
Quote 120463



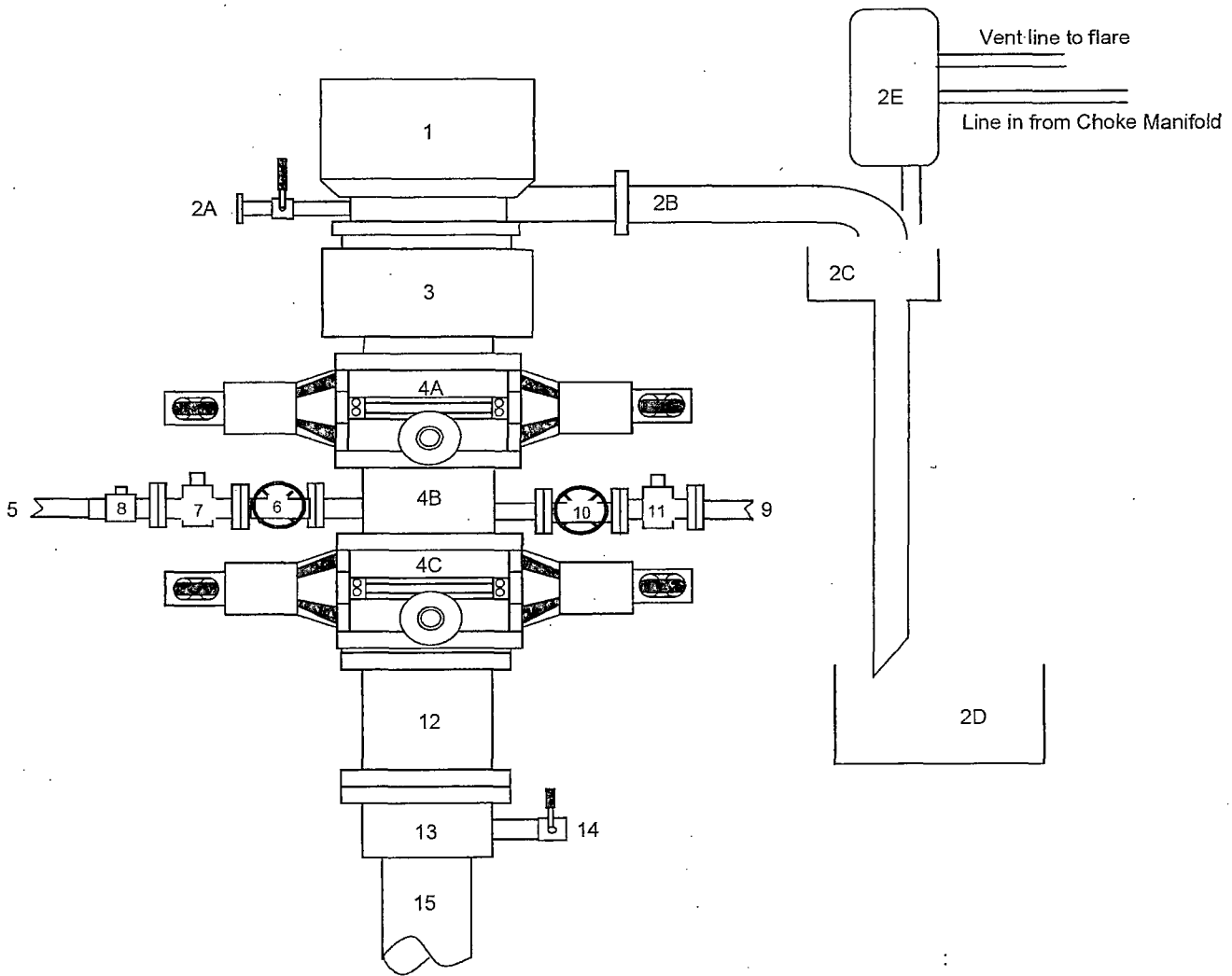
Buck Federal 17 6H			
Surface Location:		Bottom Hole Location	
FNL	2604FEL	FSL	2340FEL

Directional:						
	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI
Vertical KOP:	8021	8021	0	0	0	0
End Build/ 7"Casing (90° curve):	9,278'	8,822'	0	0	0	359.6
Tangent:	N/A	N/A	0	0	0	359.6
Turn:	N/A	N/A	0	0	0	359.6
TD:	13,539'	8,828'	0	0	0	359.6



BLOWOUT PREVENTER ARRANGEMENT

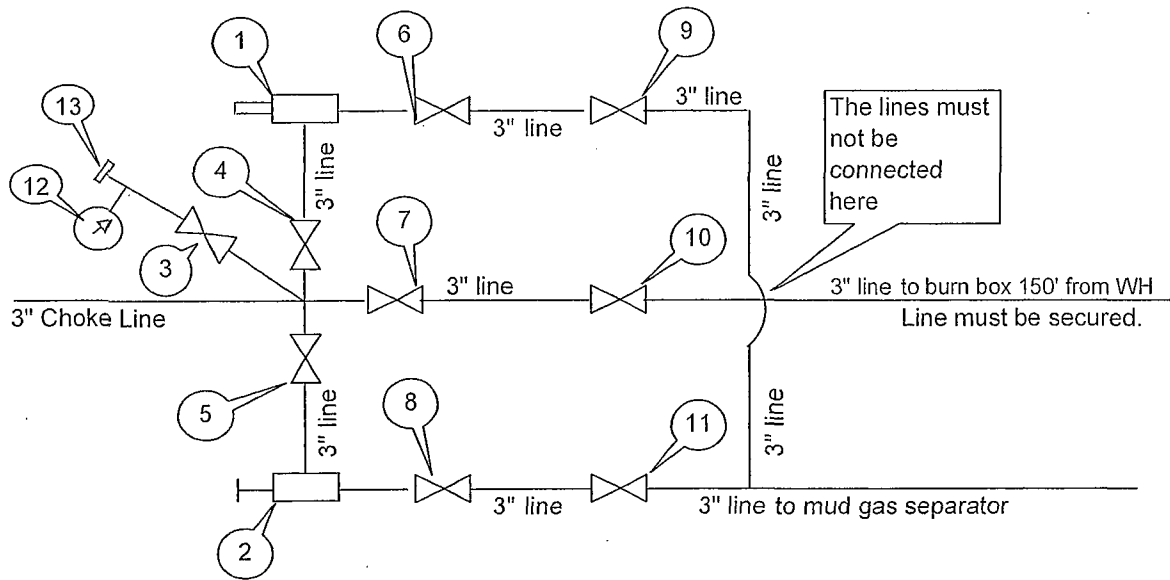
3M System per Onshore Oil and Gas Order No. 2 utilizing 5M Rated Equipment



Item	Description
1	Rotating Head, 13-5/8"
2A	Fill up Line and Valve
2B	Flow Line (10")
2C	Shale Shakers and Solids Settling Tank
2D	Cuttings Bins for Zero Discharge
2E	Mud Gas Separator with vent line to flare and return line to mud system
3	Annular BOP (13-5/8", 5M)
4A	Single Ram (13-3/8", 5M, equipped with Blind Rams)
4B	Drilling Spool (13-3/8" 5M)
4C	Single Ram (13-3/8", 5M, equipped with Pipe Rams)
5	Kill Line (3", 5000 psi WP, steel line) (not a flexible line)
6	Kill Line Valve, Inner (3-1/8", 5000 psi WP)
7	Kill Line Valve, Outer (3-1/8", 5000 psi WP, Hydraulically Operated)
8	Kill Line Check Valve (3-1/8", 5000 psi WP)
9	Choke Line (3", 5000 psi WP, steel line) (not a flexible line)
10	Choke Line Valve, Inner (3-1/8", 5000 psi WP)
11	Choke Line Valve, Outer, (Hydraulically operated, 3-1/8", 5000 psi WP)
12	Spacer Spool (13-3/8", 5M, with rotating bottom flange)
13	Casing Head (11", 5M)
14	Ball Valve and Threaded Nipple on Casing Head Outlet, 2" 5M
15	Surface Casing

CHOKE MANIFOLD ARRANGEMENT

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



All Tees must be targeted

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

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

Drawn by:

Steven O. Moore

Chief Drilling Engineer, Mid-Continent Business Unit, ConocoPhillips Company

Date: 25-Sept-2012