

HOBBS OGD

JUL 18 2012

RECEIVED

CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

WELL API NO.

30-025- 40410

5. Indicate Type of Lease

STATE ☒ FEE ☐

6. State Oil & Gas Lease No.

State Lease 3620

7. Lease Name or Unit Agreement Name

Red Hills West 16 State

8. Well Number # 1H

9. OGRID Number 217817

10. Pool name or Wildcat

Red Hills, Bone Springs

WC-0256-04 5263-208P; 134 4/11/12 544

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐

2. Name of Operator

ConocoPhillips Company

3. Address of Operator

P.O. Box 51810 Midland, Tx 79710

4. Well Location

Unit Letter D : 180 feet from the North line and 640 feet from the West line
Section 16 Township 26S Range 32E NMPM County Lea11. Elevation (Show whether DR, RKB, RT, GR, etc.)
3200'

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐OTHER Revise Drill Plan☒OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

ConocoPhillips Company respectfully request to amend the drill plan information as it pertains to the above approved Permit to Drill. There are no other changes to the conditions of the permit.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE

TITLE

Sr. Regulatory Advisor

DATE

7/16/2012

Type or print name

Donna Williams

E-mail address:

Donna.J.Williams@

Conocophillips.com

PHONE:

432-688-6943

For State Use Only

APPROVED BY:

TITLE

PETROLEUM ENGINEER

DATE

JUL 19 2012

Conditions of Approval (if any):

JUL 19 2012

DRILLING PLAN

PROSPECT/FIELD OWNERS WELL NO. LOCATION EST T.D.	Bonespring/Red Hills		COUNTY/STATE				Lea County, NM	
	ConocoPhillips		LEASE					
	Red Hills West 16 State 1H		FNL	FSL	FEL	FWL		
	Surface Location		180			640		
	Bottom Hole Location			330		380		
	Leg #1 13,504' MD		GROUND ELEV.				3,201' (est)	

PROGNOSIS.				LOGS.			
Based on 3,217' KB(est)				Type Interval			
MARKER		S.S. DEPTH	TVD	Open Hole GR-MWD KOP-TD			
Quaternary			Surface				
Rustler		2,469	748				
Delaware Top		-1,219	4,436				
Bone Spring		-8,247	8,247				
Bone Spring 1st Carbonate Top		-5,245	8,462				
Bone Spring 1st Carbonate Base		-5,555	8,772				
KOP			8,130				
Avalon A Shale Top		-5,555	8,772				
Avalon A Shale Base		-5,790	9,007				
Avalon A Shale Horizontal Target		-5,692	8,909				

DEVIATION			
Surf	3" max, svy every 500'		
Int #1/2	3" max, svy every 90'		
Interm #2 Curve	90" svy every 30'		
Prod Lateral	90" svy every 30'		

DST'S:			

CORES:			
No core			

SAMPLES			
Mudlogging	Start	End	
Two-Man	780'	TD	Vertical and Horizontal sections

BOP			
COP Category 3 Well Control Requirements			
Precision 827, BOPE			
(With Rotating Head)			
13-5/8" 5Mpsi Annular			
13-3/8" 5Mpsi Blind Ram			
13-3/8" 5Mpsi Cross / Choke & Kill Lines			
13-3/8" 5M psi Pipe Ram			
13-3/8" 5Mpsi Spacer Spool			

Dip Rate	(See inclination prediction)						
Max. Anticipated BHP.	0.65 psi/ft		Surface Formation				
MUD.	Interval	Type	Max	MW	Vis	WL	Remarks
Surface	0'-780'	Aquagel - Spud Mud	8.9		32-36	NC	
Intermediate 1	780'-4465'	Brine	10		28-30	5-8	
Intermediate 2	4465'-9382'	Brine	9.3		28-30	5-8	
Production	9382'-13504'	Cut Brine	9.3		30-40	<=5	

CASING:	Size	Wt pcf	Hole	Depth	Cement	WOC	Remarks
Surface	13-3/8"	54.5	17-1/2"	780'	To Surface	18hrs	
Intermediate 1	9-5/8"	40	12-1/4"	4,465'	To Surface	18hrs	
Intermediate 2	7"	29	8 3/4"	9,382'	500' into the 9-5/8"	18hrs	
Production Lat #1	4-1/2"	11.6	6"	13,504'	Packers and Sleeves	N/A	Liner

DIRECTIONAL PLAN			
	MD	TVD	AZ
Surface	N/A	N/A	0
Vertical KOP	8,130	8,130	219.3
End Build / 7" Casing (90° curve)	9,382	8,909	179.6
Tangent	N/A	N/A	179.6
Turn	N/A	N/A	179.6
TD	13,504	8,902	179.6
Directional Company DDC			
Vertical Build Rate 8.0 ' /100'			
Tan Leg Turn Rate 0.0 ' /100'			

Comments:
 Surveys will be taken with INC Survey Tool below surface casing while drilling with PDC + Scout Vertical Seeking Tool + Straight Motor BHA

Prep By:	Katia Filina	Date:	7/1/12	Doc:	REV 1
----------	--------------	-------	--------	------	-------

Red Hills West 16 State 1H			
Surface Location:		Bottom Hole Location:	
180FNL	FEL	330FSL	FEL

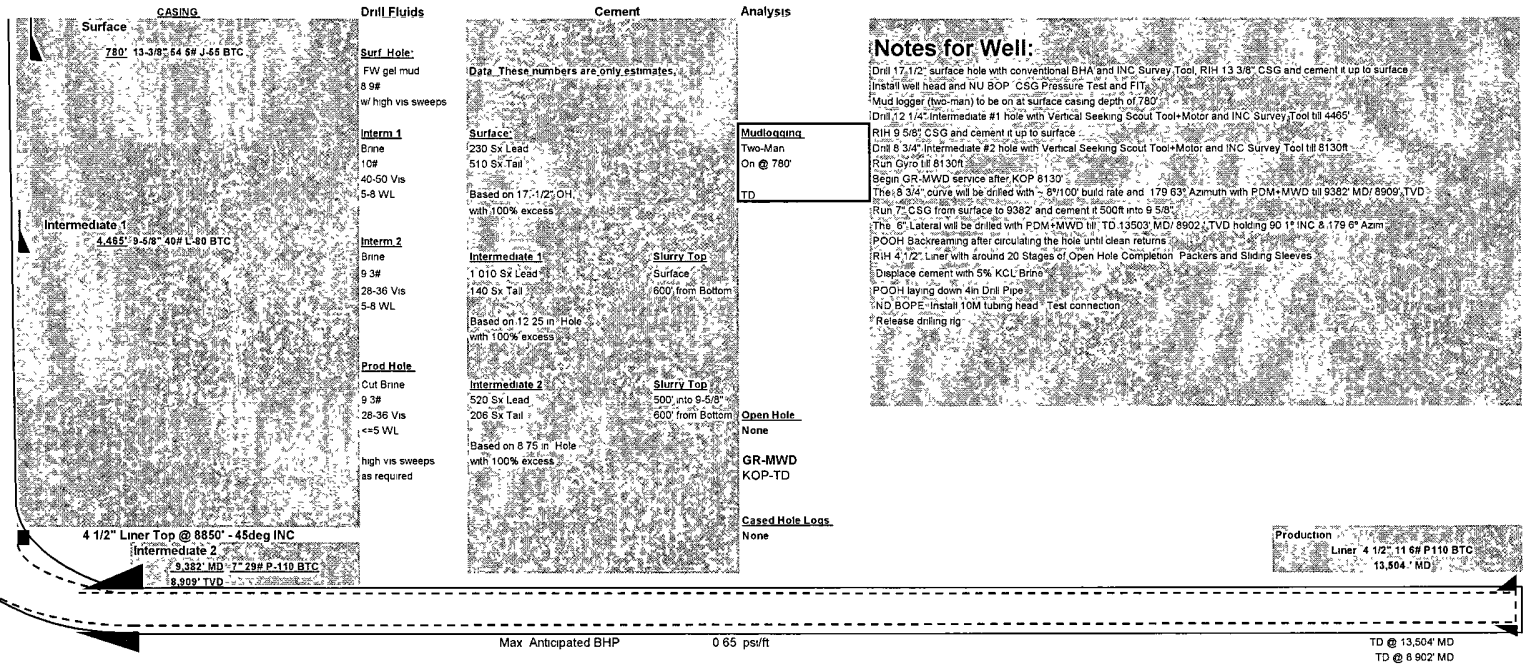
Directional	MD	TVD	FNL/FSL	FEL/FWL	S.T.R	AZI
Vertical KOP	8130	8130	0	0	0	219.28
End Build/ 7" Casing (90° curve)	9,382	8,909	0	0	0	179.6
Tangent	N/A	N/A	0	0	0	179.6
Turn	N/A	N/A	0	0	0	179.6
TD	13,504	8,902	0	0	0	179.6

Formation	TVD
Quaternary	Surface
Rustler	748
Delaware Top	4,436
KOP	8,247
Bone Spring	8,462
Bone Spring 1st Carbonate Top	8,772
Bone Spring 1st Carbonate Base	8,130
KOP	8,130
Avalon A Shale Top	8,772
Avalon A Shale Base	9,007

Avalon A Shale Horizontal Target 8,909

KOP (8°/100') 8,130

Avalon A Shale Horizontal Target 8,909



David Sills
Geologist
Date 7/1/2012

Kata Filina
Drilling Engineer
Date 7/1/2012

Bonespring/Red Hills
ConocoPhillips
Red Hills West 16 State 1H

Surface Casing:

Surface Casing Depth (Ft)	780
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.)	1,119
Calc. Tail Volume (Cu. Ft.)	417
Calc. Lead Volume (Cu. Ft.)	667
Calc. Lead Volume (Sx)	510

Intermediate1 Casing (Lead):

Intermediate Casing O.D. (In.)	9.625
Intermediate Casing ID (In)	8.835
Hole O.D. (In)	12.25
Excess (%)	100%
cap 12-1/4 - 9-5/8"	0.0558
Calculated fill:	3,965
Yield Lead (Cu. Ft./Sx)	2.48
Calculated Total Lead (Cu. Ft.)	2,484
Calc. Lead Volume (Sx)	1,010

Intermediate2 Casing (Lead):

Intermediate Casing O.D. (In.)	7.000
Intermediate Casing ID (In)	6.184
Hole O.D. (In)	8.75
Excess (%)	125%
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")	4,167
Yield Lead (Cu. Ft./Sx)	2.0
Calculated Total Lead (Cu. Ft.)	1,035
Calc. Lead Volume (Sx)	520

3965
8,132'

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 (%)	125%
cap 7" - 8-3/4" bls/ft	0.0268
cap 7 - 9-5/8" bls/ft	0.02823
Calculated fill:	1,250
Yield Lead (Cu. Ft./Sx)	1.2
Calculated Total Tail (Cu. Ft.)	248

Required Tail Volume (Sx)

206

RED HILLS WEST 16 STATE 1H					KB	3,217
					(via survey plat)	
Notes:		A pilot hole will not be drilled. This horizontal well will be drilled from N to S into the Avalon A Shale Zone. The well will be drilled relatively flat to slightly toe up with a ~ 4,500' long lateral.				
Surface Location		Sec 16	26S	32E	Lea Co. TX, Surface Location: 180' FNL & 640' FWL	
RED HILLS WEST STATE 16 1H BHL		Sec 16	26S	32E	Lea Co. TX, Terminus Location: 330' FSL & 380' FWL	
Formation Name	Formation Top (TVD)	Subsea Depth	Gross Thickness	Gross Thickness	Gross Thickness	Comments
Quaternary	Surface					
Rustler	748	2,469				
Salado	963	2,254				
Castile	2,767	450				
Delaware Top	4,436	-1,219				
Olds	4,558	-1,341				
Ramsey	4,513	-1,296				
Ford Sh	4,570	-1,353				
Cherry Canyon	5,413	-2,196				
Brushy Canyon	7,152	-3,935				
KOP (est)	8,193	-4,976				Not a formation top.
Bone Spring Top	8,247	-5,030				
Bone Spring 1st Carbonate Top	8,462	-5,245	310			
Bone Spring 1st Carbonate Base	8,772	-5,555				
Avalon A Shale Top	8,772	-5,555				
LANDING: Avalon A Shale Horizontal Upper Target Limit	8,884	-5,667				Not a formation top.
LANDING: Avalon A Shale Horizontal Target Center	8,909	-5,692	50			Not a formation top.
LANDING: Avalon A Shale Horizontal Lower Target Limit	8,934	-5,717				Not a formation top.
TERMINUS: Avalon A Shale Horizontal Upper Target Limit	8,877	-5,660				Not a formation top.
TERMINUS: Avalon A Shale Horizontal Target Center	8,902	-5,685	50			Not a formation top.
TERMINUS: Avalon A Shale Horizontal Lower Target Limit	8,927	-5,710				Not a formation top.
Avalon A Shale Base (Should not penetrate)	9,007	-5,790				
Proposed total MD of well 13,482'.						



Conoco Phillips

Lea County, New Mexico
Sec 16, T26S, R32E NMPM
Red Hills West 16 State 1H

Wellbore #1

Plan: Design #1

DDC Well Planning Report

29 June, 2012

HOBBS OCD

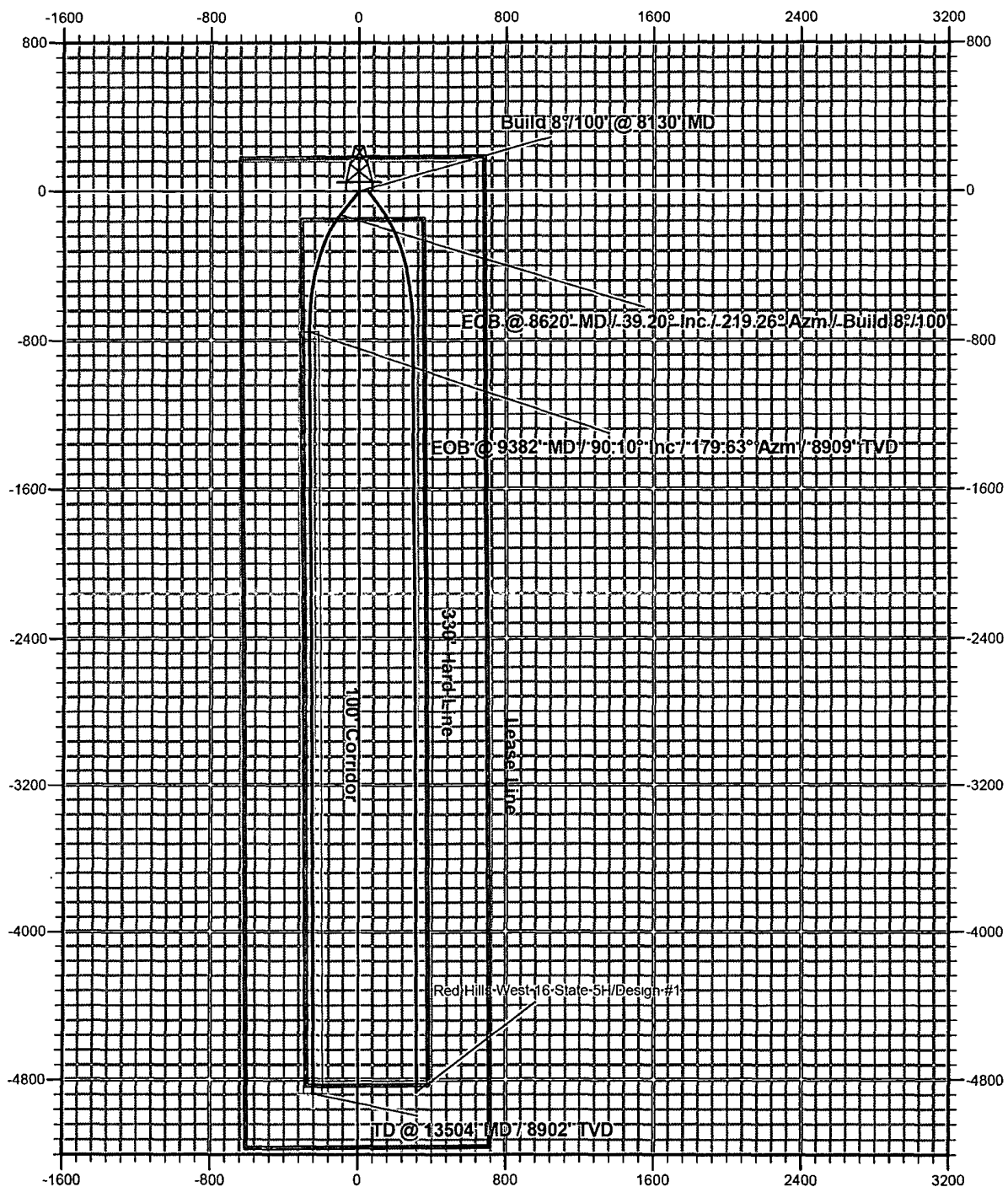
JUL 18 2012

RECEIVED



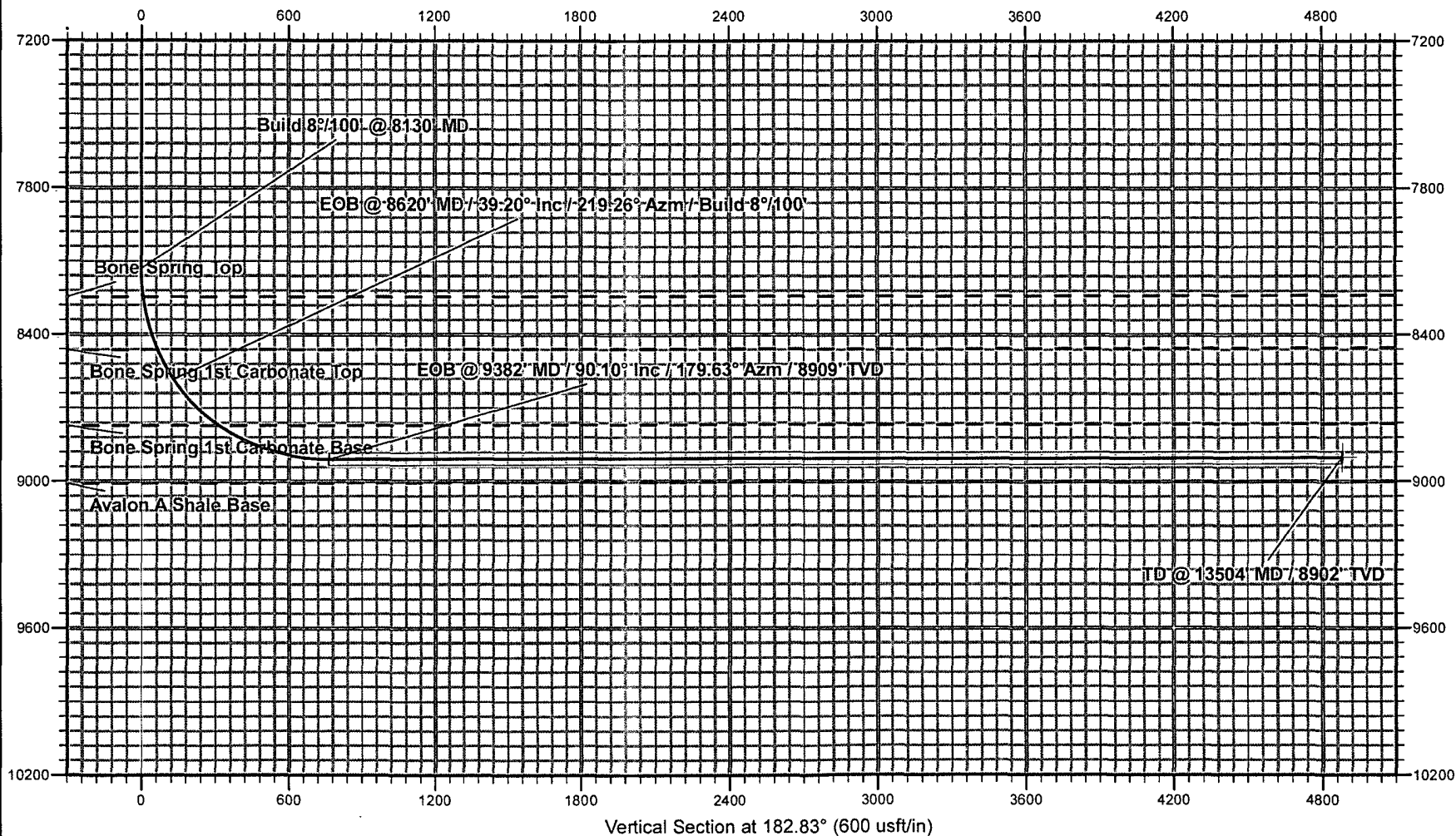
ConocoPhillips

Lea County, New Mexico
Red Hills West 16 State 1H
Design #1





Lea County, New Mexico
Red Hills West 16 State 1H
Design #1



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Red Hills West 16 State 1H
Company:	ConocoPhillips	TVD Reference:	WELL @ 3217.0usft (Precision #827)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3217.0usft (Precision #827)
Site:	Sec 16, T26S, R32E NMPM	North Reference:	Grid
Well:	Red Hills West 16 State 1H	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 16, T26S, R32E NMPM			
Site Position:		Northing:	382,382.50 usft	Latitude:	32° 2' 58.675 N
From:	Map	Easting:	700,544.80 usft	Longitude:	103° 41' 9.818 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.34

Well:	Red Hills West 16 State 1H					
Well Position	+N/-S	0.0 usft	Northing:	382,382.50 usft	Latitude:	32° 2' 58.675 N
	+E/-W	0.0 usft	Easting:	700,544.80 usft	Longitude:	103° 41' 9.818 W
Position Uncertainty	0.0 usft	Wellhead Elevation:		Ground Level:		3,201.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/29/2012	7.50	59.98	48,396

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	182.83

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	
8,130.4	0.00	0.00	8,130.4	0.0	0.0	0.00	0.00	0.00	0.00	
8,620.4	39.20	219.26	8,583.1	-124.8	-102.0	8.00	8.00	0.00	219.26	
9,382.4	90.10	179.63	8,909.0	-752.6	-267.9	8.00	6.68	-5.20	-46.85	
13,503.8	90.10	179.63	8,902.0	-4,873.9	-241.1	0.00	0.00	0.00	0.00	PBHL Red Hills We

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Red Hills West 16 State 1H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3217.0usft (Precision #827)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3217.0usft (Precision #827)
Site:	Sec 16, T26S, R32E NMPM	North Reference:	Grid
Well:	Red Hills West 16 State 1H	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
Rustler									
748.0	0.00	0.00	748.0	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
Salado									
963.0	0.00	0.00	963.0	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
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
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
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
Castile									
2,767.0	0.00	0.00	2,767.0	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
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
Delaware Top									
4,436.0	0.00	0.00	4,436.0	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

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Red Hills West 16 State 1H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3217.0usft (Precision #827)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3217.0usft (Precision #827)
Site:	Sec 16, T26S, R32E NMPM	North Reference:	Grid
Well:	Red Hills West 16 State 1H	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)	
Ramsey										
4,513.0	0.00	0.00	4,513.0	0.0	0.0	0.0	0.00	0.00	0.00	
Olds										
4,558.0	0.00	0.00	4,558.0	0.0	0.0	0.0	0.00	0.00	0.00	
Ford SH										
4,570.0	0.00	0.00	4,570.0	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	
Cherry Canyon										
5,413.0	0.00	0.00	5,413.0	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	
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	
Brushy Canyon										
7,152.0	0.00	0.00	7,152.0	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	
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
Build 8°/100' @ 8130' MD										
8,130.4	0.00	0.00	8,130.4	0.0	0.0	0.0	0.00	0.00	0.00	
8,200.0	5.57	219.26	8,199.9	-2.6	-2.1	2.7	8.00	8.00	0.00	
Bone Spring Top										
8,247.5	9.37	219.26	8,247.0	-7.4	-6.0	7.7	8.00	8.00	0.00	
8,300.0	13.57	219.26	8,298.4	-15.5	-12.6	16.1	8.00	8.00	0.00	
8,400.0	21.57	219.26	8,393.7	-38.8	-31.7	40.3	8.00	8.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Red Hills West 16 State 1H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3217.0usft (Precision #827)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3217.0usft (Precision #827)
Site:	Sec 16, T26S, R32E NMPM	North Reference:	Grid
Well:	Red Hills West 16 State 1H	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)
Bone Spring 1st Carbonate Top									
8,475.0	27.57	219.26	8,461.9	-63.0	-51.5	65.4	8.00	8.00	0.00
8,500.0	29.57	219.26	8,483.8	-72.2	-59.0	75.0	8.00	8.00	0.00
8,600.0	37.57	219.26	8,567.1	-115.0	-94.0	119.5	8.00	8.00	0.00
EOB @ 8620' MD / 39.20° Inc / 219.26° Azm / Build 8°/100'									
8,620.4	39.20	219.26	8,583.1	-124.8	-102.0	129.7	8.00	8.00	0.00
8,700.0	43.76	212.54	8,642.7	-167.5	-132.8	173.9	8.00	5.73	-8.44
8,800.0	49.95	205.58	8,711.1	-231.3	-167.9	239.3	8.00	6.19	-6.96
8,900.0	56.49	199.81	8,771.0	-305.2	-198.6	314.6	8.00	6.53	-5.77
Bone Spring 1st Carbonate Base - Avalon A Shale Top									
8,900.9	56.54	199.76	8,771.4	-305.8	-198.9	315.3	8.00	6.67	-5.30
9,000.0	63.25	194.86	8,821.2	-387.7	-224.3	398.3	8.00	6.77	-4.94
9,100.0	70.17	190.48	8,860.7	-477.2	-244.3	488.7	8.00	6.92	-4.38
9,200.0	77.18	186.47	8,888.8	-572.1	-258.4	584.1	8.00	7.01	-4.01
9,300.0	84.25	182.68	8,904.9	-670.4	-266.2	682.7	8.00	7.07	-3.79
EOB @ 9382' MD / 90.10° Inc / 179.63° Azm / 8909' TVD									
9,382.4	90.10	179.63	8,909.0	-752.6	-267.9	764.9	8.00	7.10	-3.70
9,400.0	90.10	179.63	8,909.0	-770.2	-267.8	782.5	0.00	0.00	0.00
9,500.0	90.10	179.63	8,908.8	-870.2	-267.1	882.3	0.00	0.00	0.00
9,600.0	90.10	179.63	8,908.6	-970.2	-266.5	982.2	0.00	0.00	0.00
9,700.0	90.10	179.63	8,908.5	-1,070.2	-265.8	1,082.0	0.00	0.00	0.00
9,800.0	90.10	179.63	8,908.3	-1,170.2	-265.2	1,181.9	0.00	0.00	0.00
9,900.0	90.10	179.63	8,908.1	-1,270.2	-264.5	1,281.7	0.00	0.00	0.00
10,000.0	90.10	179.63	8,907.9	-1,370.2	-263.9	1,381.6	0.00	0.00	0.00
10,100.0	90.10	179.63	8,907.8	-1,470.2	-263.2	1,481.4	0.00	0.00	0.00
10,200.0	90.10	179.63	8,907.6	-1,570.2	-262.6	1,581.3	0.00	0.00	0.00
10,300.0	90.10	179.63	8,907.4	-1,670.2	-261.9	1,681.1	0.00	0.00	0.00
10,400.0	90.10	179.63	8,907.3	-1,770.2	-261.3	1,780.9	0.00	0.00	0.00
10,500.0	90.10	179.63	8,907.1	-1,870.2	-260.6	1,880.8	0.00	0.00	0.00
10,600.0	90.10	179.63	8,906.9	-1,970.2	-260.0	1,980.6	0.00	0.00	0.00
10,700.0	90.10	179.63	8,906.8	-2,070.2	-259.3	2,080.5	0.00	0.00	0.00
10,800.0	90.10	179.63	8,906.6	-2,170.2	-258.7	2,180.3	0.00	0.00	0.00
10,900.0	90.10	179.63	8,906.4	-2,270.2	-258.0	2,280.2	0.00	0.00	0.00
11,000.0	90.10	179.63	8,906.3	-2,370.2	-257.4	2,380.0	0.00	0.00	0.00
11,100.0	90.10	179.63	8,906.1	-2,470.2	-256.7	2,479.8	0.00	0.00	0.00
11,200.0	90.10	179.63	8,905.9	-2,570.2	-256.1	2,579.7	0.00	0.00	0.00
11,300.0	90.10	179.63	8,905.7	-2,670.2	-255.4	2,679.5	0.00	0.00	0.00
11,400.0	90.10	179.63	8,905.6	-2,770.2	-254.8	2,779.4	0.00	0.00	0.00
11,500.0	90.10	179.63	8,905.4	-2,870.2	-254.1	2,879.2	0.00	0.00	0.00
11,600.0	90.10	179.63	8,905.2	-2,970.2	-253.5	2,979.1	0.00	0.00	0.00
11,700.0	90.10	179.63	8,905.1	-3,070.2	-252.8	3,078.9	0.00	0.00	0.00
11,800.0	90.10	179.63	8,904.9	-3,170.2	-252.2	3,178.7	0.00	0.00	0.00
11,900.0	90.10	179.63	8,904.7	-3,270.2	-251.5	3,278.6	0.00	0.00	0.00
12,000.0	90.10	179.63	8,904.6	-3,370.2	-250.9	3,378.4	0.00	0.00	0.00
12,100.0	90.10	179.63	8,904.4	-3,470.2	-250.2	3,478.3	0.00	0.00	0.00
12,200.0	90.10	179.63	8,904.2	-3,570.2	-249.6	3,578.1	0.00	0.00	0.00
12,300.0	90.10	179.63	8,904.0	-3,670.1	-248.9	3,678.0	0.00	0.00	0.00
12,400.0	90.10	179.63	8,903.9	-3,770.1	-248.3	3,777.8	0.00	0.00	0.00
12,500.0	90.10	179.63	8,903.7	-3,870.1	-247.6	3,877.7	0.00	0.00	0.00
12,600.0	90.10	179.63	8,903.5	-3,970.1	-247.0	3,977.5	0.00	0.00	0.00
12,700.0	90.10	179.63	8,903.4	-4,070.1	-246.3	4,077.3	0.00	0.00	0.00
12,800.0	90.10	179.63	8,903.2	-4,170.1	-245.7	4,177.2	0.00	0.00	0.00
12,900.0	90.10	179.63	8,903.0	-4,270.1	-245.0	4,277.0	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Red Hills West 16 State 1H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3217.0usft (Precision #827)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3217.0usft (Precision #827)
Site:	Sec 16 T26S R32E NMPM	North Reference:	Grid
Well:	Red Hills West 16 State 1H	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	90.10	179.63	8,902.9	-4,370.1	-244.4	4,376.9	0.00	0.00	0.00
13,100.0	90.10	179.63	8,902.7	-4,470.1	-243.7	4,476.7	0.00	0.00	0.00
13,200.0	90.10	179.63	8,902.5	-4,570.1	-243.1	4,576.6	0.00	0.00	0.00
13,300.0	90.10	179.63	8,902.3	-4,670.1	-242.4	4,676.4	0.00	0.00	0.00
13,400.0	90.10	179.63	8,902.2	-4,770.1	-241.8	4,776.2	0.00	0.00	0.00
13,500.0	90.10	179.63	8,902.0	-4,870.1	-241.1	4,876.1	0.00	0.00	0.00
TD @ 13504' MD / 8902' TVD									
13,503.8	90.10	179.63	8,902.0	-4,873.9	-241.1	4,879.9	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
PBHL Red Hills West	- hit/miss target	89.90	179.63	8,902.0	-4,873.9	-241.1	377,508.58	700,303.68	32° 2' 10.457 N 103° 41' 12.959 W
	- Shape								
	- plan hits target center								
	- Rectangle (sides W100.0 H50.0 D4,121.4)								

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
748.0	748.0	Rustler		-0.10	182.83	
963.0	963.0	Salado		-0.10	182.83	
2,767.0	2,767.0	Castile		-0.10	182.83	
4,436.0	4,436.0	Delaware Top		-0.10	182.83	
4,513.0	4,513.0	Ramsey		-0.10	182.83	
4,558.0	4,558.0	Olds		-0.10	182.83	
4,570.0	4,570.0	Ford Sh		-0.10	182.83	
5,413.0	5,413.0	Cherry Canyon		-0.10	182.83	
7,152.0	7,152.0	Brushy Canyon		-0.10	182.83	
8,247.5	8,247.0	Bone Spring Top		-0.10	182.83	
8,475.0	8,461.9	Bone Spring 1st Carbonate Top		-0.10	182.83	
8,900.9	8,771.4	Bone Spring 1st Carbonate Base		-0.10	182.83	
8,900.9	8,771.4	Avalon A Shale Top		-0.10	182.83	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,130.4	8,130.4	0.0	0.0	Build 8°/100' @ 8130' MD
8,620.4	8,583.1	-124.8	-102.0	EOB @ 8620' MD / 39.20° Inc / 219.26° Azm / Build 8°/100'
9,382.4	8,909.0	-752.6	-267.9	EOB @ 9382' MD / 90.10° Inc / 179.63° Azm / 8909' TVD
13,503.8	8,902.0	-4,873.9	-241.1	TD @ 13504' MD / 8902' TVD