

Submit 1 Copy To Appropriate District Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico

HOBBBS OGD Energy, Minerals and Natural Resources

OCT 17 2012

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505

RECEIVED

Form C-103

Revised August 1, 2011

WELL API NO.

30-025- 40412

5. Indicate Type of Lease

STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name

Red Hills West 16 State

8. Well Number 3H

9. OGRID Number 217817

10. Pool name or Wildcat

Red Hills

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 B : 180 feet from the N line and 2010 feet from the -E line
Section 16 Township 26S Range 32E NMPM Lea County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

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: Revised 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 for the above well. Please see attached drill plan information.

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

10/16/12

Type or print name

Donna Williams

E-mail address:

Donna.J.Williams@

For State Use Only

Conocophillips.com

PHONE:

432-688-6943

APPROVED BY:

TITLE

DATE

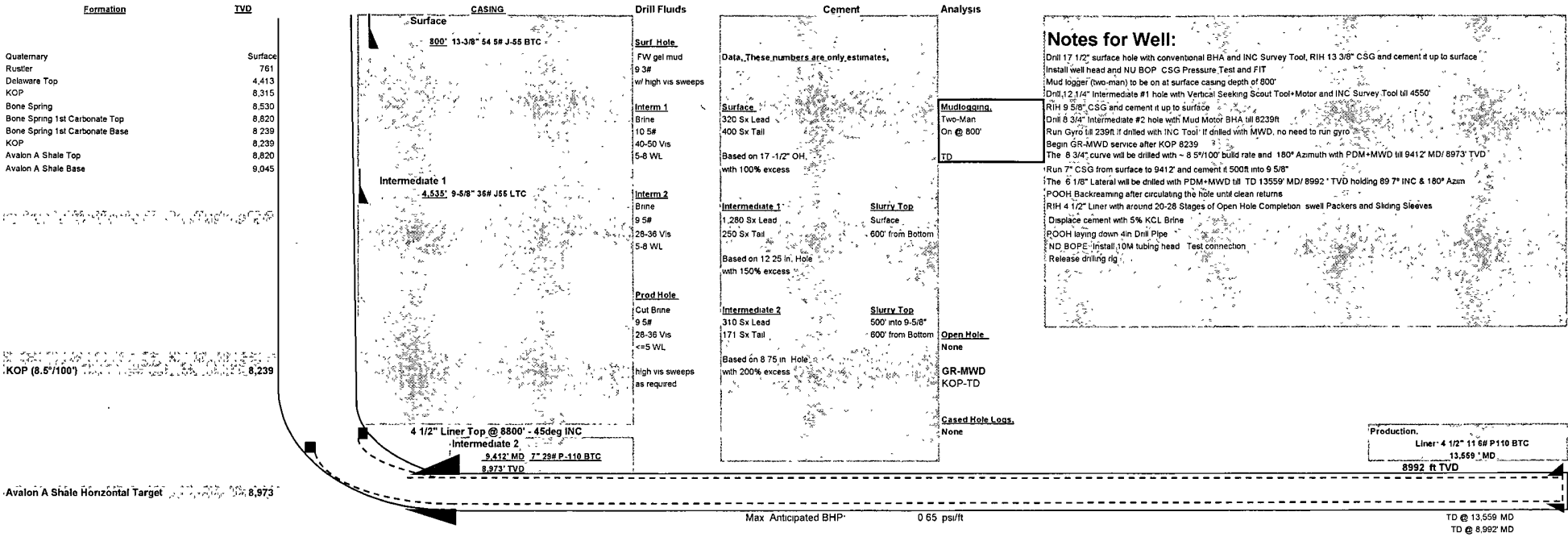
Conditions of Approval (if any):

OCT 22 2012

PROSPECT/FIELD OWNERS		DRILLING PLAN						COUNTY/STATE		Lea County, NM	
WELL NO LOCATION		Bonespring/Red Hills ConocoPhillips		LEASE		FNL	FSL	FEL	FWL		
		Red Hills West 16 State 3H		Surface Location		180		2010			
				Bottom Hole Location			330	2260			
EST. T D		Leg #1 13,559' MD		GROUND ELEV				3,214' (est)			
PROGNOSIS:		Based on 3,230' KB(est)		LOGS		Type	Interval		RKB	3,230' (est)	
MARKER		S.S. DEPTH		TVD		Open Hole			KOP-TO		
Quaternary				Surface	761	GR-MWD					
Rustler		2,469									
Delaware Top		-1,183			4,413	DEVIATION:					
Ford Shale		-1,293			4,523	Surf 3" max, svy every 500'					
Bone Spring		-5,085			8,315	Int #1/2 3" max, svy every 90'					
Bone Spring 1st Carbonate Top		-5,300			8,530	Interm #2 Curve 90°; svy every 30'					
Bone Spring 1st Carbonate Base		-5,590			8,820	Prod Lateral 90°, svy every 30'					
KOP					8,239						
Avalon A Shale Top		-5,590			8,820	DST'S:					
Avalon A Shale Base		-5,815			9,045	None					
						CORES:					
						No core					
						SAMPLES:					
						Mudlogging Two-Man	Start	End	TD	Vertical and Horizontal sections	
							800'				
						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) 0.65 ps/f											
Max Anticipated BHP.											
MUD:	Interval	Type	Max MW	Vis	WL	Remarks					
Surface	0'-800'	Aquagel [®] Spud Mud	9.3	32-36	NC						
Intermediate 1	800'-4465'	Brine	10.5	28-30	5-8						
Intermediate 2	4535'-8412'	Brine	9.5	28-30	5-8						
Production	9412'-13559'	Cut Brine	9.5	30-40	<=5						
CASING:	Size	Wt ppf	Hole	Depth	Cement	WOC	Remarks				
Surface	13-3/8"	54.5	17-1/2"	800'	To Surface	18hrs					
Intermediate 1	9-5/8"	36	12-1/4"	4,535'	To Surface	18hrs					
Intermediate 2	7"	29	8 3/4"	9,412'	500' into the 9-5/8"	18hrs					
Production Lat #1	4 1/2"	11.6	6 1/8"	13,559'	Packers and Sleeves	N/A	Liner				
DIRECTIONAL PLAN											
	MD	TVD	AZ								
	N/A	N/A	0								
Vertical KOP :	8,239'	8,239'	220.0	Directional Company DDC							
End Build/ 7"Casing (90° curve)	9,412'	8,973'	180.0	Vertical Build Rate 8.5 °/100'							
Tangent	N/A	N/A	180.0	Tan Leg Turn Rate 5.5 °/100'							
Turn	N/A	N/A	180.0								
TD	13,559'	8,992'	180.0								
Comments											
Surveys will be taken with INC Survey Tool below surface casing while drilling with PDC + Scout Vertical Seeking Tool + Straight Motor BHA Continue with MWD surveys to TD											
Prep By :Kata Filina Date: 10/15/12 Doc: IREV-1											

Red Hills West 16 State 3H		
Surface Location:	Bottom Hole Location	
180FNL	2010FEL	330FSL 2260FEL

Directional:	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI
Vertical KOP	8239	8239	0	0	0	220
End Build/ 7" Casing (90° curve)	9,412	8,973	0	0	0	180 0
Tangent	N/A	N/A	0	0	0	180 0
Turn	N/A	0	0	0	0	180 0
TD	13,559	8,992	0	0	0	180 0



David Sills
Geologist

Date
10/15/2012

Katia Filina
Drilling Engineer

Date
10/15/2012

Bonespring/Red Hills
ConocoPhillips
Red Hills West 16 State 3H

Surface Casing:

Surface Casing Depth (Ft)	800
Surface Casing O.D. (In.)	13.375
Surface Casing ID (In)	12.715
Hole O.D. (In)	17.5
Excess (%)	100%
Volume Tail (Sx)	320
Yield Tail (Cu. Ft./Sx)	1.33
Yield Lead (Cu. Ft./Sx)	1.75
Shoe Joint (Ft)	40
Shoe Volume (Cu. Ft)	35.3
Tail feet of cement	300
Calculated Total Volume (Cu. Ft.)	1,147
Calc. Tail Volume (Cu. Ft.)	417
Calc. Lead Volume (Cu. Ft.)	695
Calc. Lead Volume (Sx)	400

Intermediate1 Casing (Lead):

Intermediate Casing O.D. (In.)	9.625
Intermediate Casing ID (In)	8.921
Hole O.D. (In)	12.25
Excess (%)	150%
cap 12-1/4 - 9-5/8"	0.0558
Calculated fill:	4,035'
Yield Lead (Cu. Ft./Sx)	2.47
Calculated Total Lead (Cu. Ft.)	3,159
Calc. Lead Volume (Sx)	1280

Intermediate2 Casing (Lead):

Intermediate Casing O.D. (In.)	7.000
Intermediate Casing ID (In)	6.184
Hole O.D. (In)	8.75
Excess (%)	100%
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")	4,127'
Yield Lead (Cu. Ft./Sx)	2.7
Calculated Total Lead (Cu. Ft.)	828
Calc. Lead Volume (Sx)	310

4035
8,162'

Intermediate1 Casing (Tail):

Intermediate Casing O.D. (In.)	9.625
Production Casing ID (In)	8.921
Hole O.D. (In)	12.25
Excess (%)	200%
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)	17.4
Calc. Tail Volume (Cu. Ft.)	331
Required Tail Volume (Sx)	250

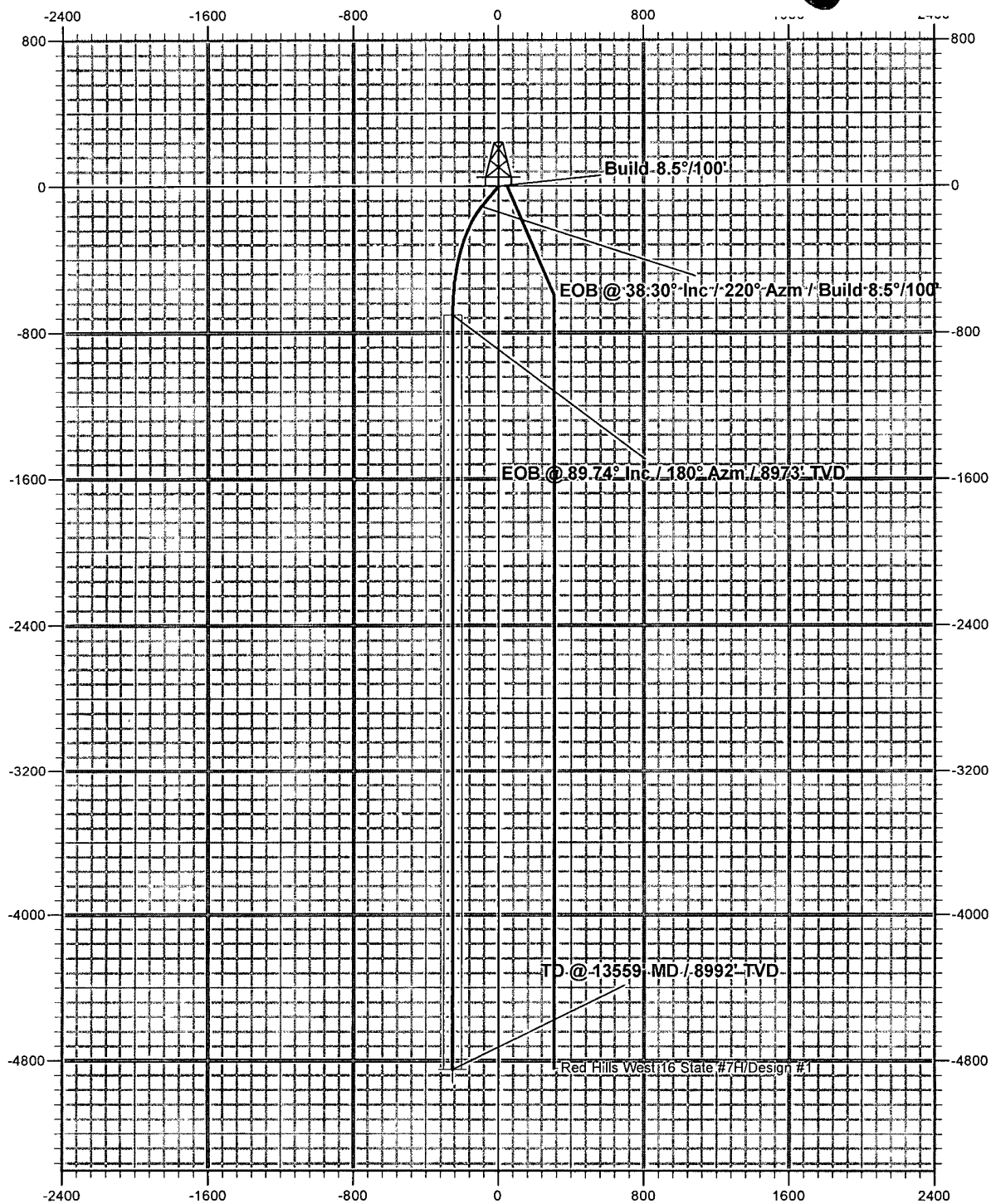
Intermediate2 Casing (Tail):

Intermediate Casing O.D. (In.)	7.000
Intermediate Casing ID (In)	6.184
Hole O.D. (In)	8.75
Excess (%)	120%
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)	1.39
Calculated Total Tail (Cu. Ft.)	238
Required Tail Volume (Sx)	171

ConocoPhillips

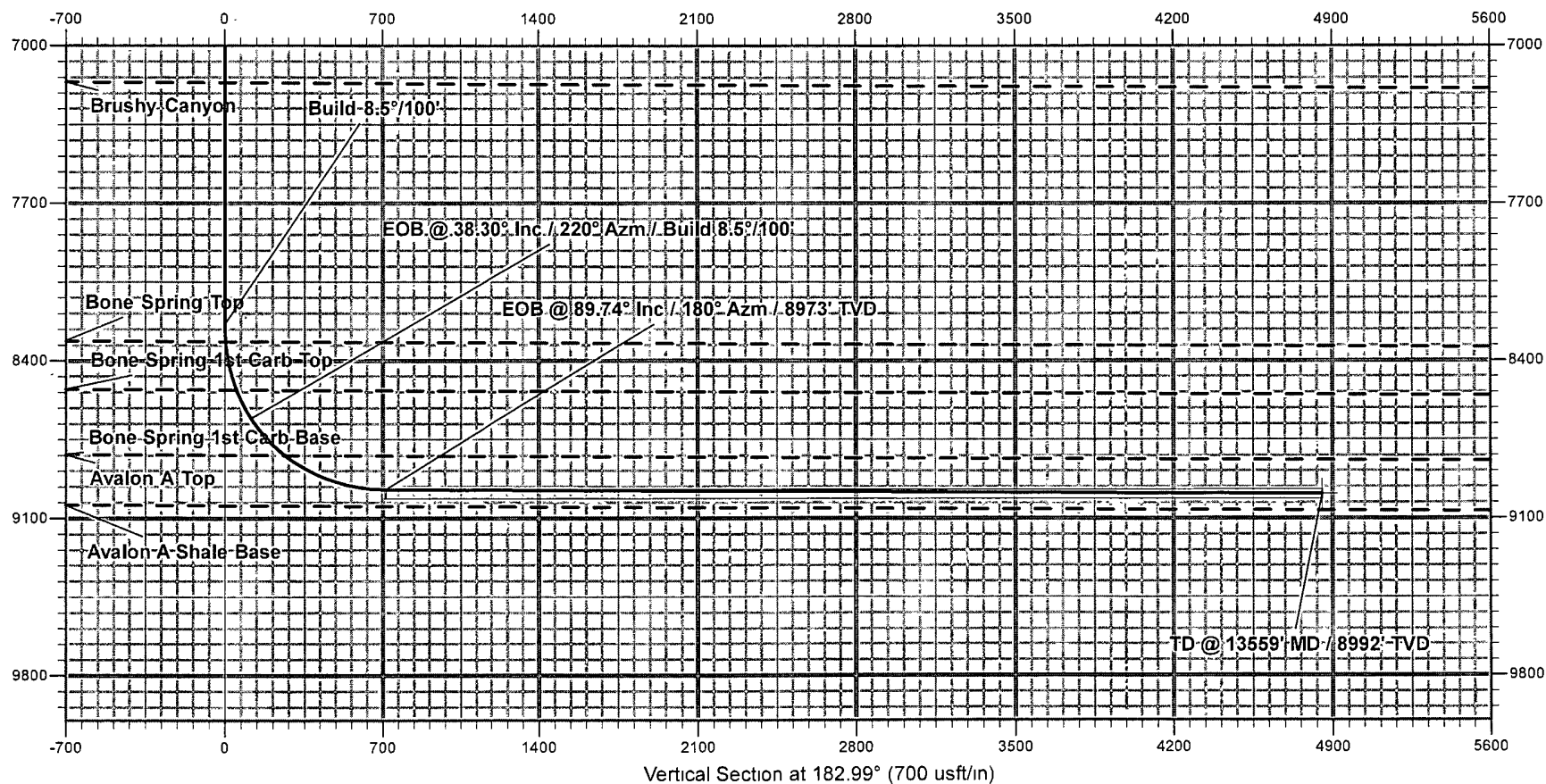
Lea County, New Mexico
Red Hills West 16 State #3H
Design #1

DDC
The DIRECTIONAL DRILLING COMPANY





Lea County, New Mexico
Red Hills West 16 State #3H
Design #1





Conoco Phillips

Lea County, New Mexico
Sec 16, T26S, R32E NMPM
Red Hills West 16 State #3H

Wellbore #1

Plan: Design #1

DDC Well Planning Report

09 October, 2012

HOBBS OCD

OCT 17 2012

RECEIVED



Database:	EDM 5000.1 Single User.Db	Local Co-ordinate Reference:	Well Red Hills West 16 State #3H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3214.0usft (Original Well Elev)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3214.0usft (Original Well Elev)
Site:	Sec.16, T26S, R32E NMPM	North Reference:	Grid
Well:	Red Hills West 16 State #3H	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
From:	Map	Easting:	700,544.80 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 2' 58.675 N
		Longitude:	103° 41' 9.818 W
		Grid Convergence:	0.34 °

Well	Red Hills West 16 State #3H		
Well Position	+N/-S	6.9 usft	Northing:
	+E/-W	2,706.1 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level:
			3,214.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	10/9/2012	7.46
			Dip Angle
			59.97
			Field Strength
			48,369

Design	Design #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			182.99

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,239.2	0.00	0.00	8,239.2	0.0	0.0	0.00	0.00	0.00	0.00	
8,689.8	38.30	220.00	8,657.0	-111.1	-93.3	8.50	8.50	0.00	220.00	
9,412.4	89.74	180.00	8,973.0	-701.6	-252.8	8.50	7.12	-5.54	-47.05	
13,558.7	89.74	180.00	8,992.0	-4,847.8	-252.9	0.00	0.00	0.00	0.00	PBHL Red Hills We

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Site:	Sec 16, T26S, R32E NMPM	North Reference:	Grid
Well:	Red Hills West 16 State #3H	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									
761.0	0.00	0.00	761.0	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									
976.0	0.00	0.00	976.0	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									
2,780.0	0.00	0.00	2,780.0	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									
4,413.0	0.00	0.00	4,413.0	0.0	0.0	0.0	0.00	0.00	0.00
Ramsey									

Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well Red Hills West 16 State #3H
Company:	ConocoPhillips	TVD Reference:	WELL @ 3214.0usft (Original Well Elev)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3214.0usft (Original Well Elev)
Site:	Sec 16, T26S, R32E NMPM	North Reference:	Grid
Well:	Red Hills West 16 State #3H	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)
4,451.0	0.00	0.00	4,451.0	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
4,523.0	0.00	0.00	4,523.0	0.0	0.0	0.0	0.00	0.00	0.00
4,550.0	0.00	0.00	4,550.0	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
5,426.0	0.00	0.00	5,426.0	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
7,165.0	0.00	0.00	7,165.0	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
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00
8,239.2	0.00	0.00	8,239.2	0.0	0.0	0.0	0.00	0.00	0.00
8,300.0	5.17	220.00	8,299.9	-2.1	-1.8	2.2	8.50	8.50	0.00
8,315.2	6.46	220.00	8,315.0	-3.3	-2.7	3.4	8.50	8.50	0.00
8,400.0	13.67	220.00	8,398.5	-14.6	-12.3	15.2	8.50	8.50	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Red Hills West 16 State #3H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3214 0usft (Original Well Elev)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3214 0usft (Original Well Elev)
Site:	Sec 16, T26S, R32E NMPM	North Reference:	Grid
Well:	Red Hills West 16 State #3H	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)
8,500.0	22.17	220.00	8,493.5	-38.2	-32.0	39.8	8.50	8.50	0.00
Bone Spring 1st Carb Top									
8,540.1	25.58	220.00	8,530.2	-50.6	-42.5	52.8	8.50	8.50	0.00
8,600.0	30.67	220.00	8,583.0	-72.2	-60.6	75.3	8.50	8.50	0.00
EOB @ 38.30° Inc / 220° Azm / Build 8.5°/100'									
8,689.8	38.30	220.00	8,657.0	-111.1	-93.3	115.8	8.50	8.50	0.00
8,700.0	38.90	218.99	8,665.0	-116.1	-97.3	121.0	8.50	5.83	-9.91
8,800.0	45.12	210.32	8,739.3	-171.1	-135.0	177.9	8.50	6.23	-8.67
8,900.0	51.88	203.41	8,805.6	-237.9	-168.6	246.4	8.50	6.75	-6.91
Bone Spring 1st Carb Base - Avalon A Top									
8,925.9	53.68	201.84	8,821.2	-257.0	-176.5	265.8	8.50	6.99	-6.08
9,000.0	58.96	197.70	8,862.3	-315.0	-197.3	324.8	8.50	7.12	-5.58
9,100.0	66.27	192.80	8,908.3	-400.6	-220.5	411.5	8.50	7.30	-4.90
9,200.0	73.71	188.42	8,942.5	-492.9	-237.7	504.6	8.50	7.44	-4.38
9,300.0	81.23	184.37	8,964.2	-589.8	-248.5	601.9	8.50	7.52	-4.05
9,400.0	88.80	180.48	8,972.9	-689.2	-252.7	701.5	8.50	7.57	-3.89
EOB @ 89.74° Inc / 180° Azm / 8973' TVD									
9,412.4	89.74	180.00	8,973.0	-701.6	-252.8	713.8	8.50	7.57	-3.86
9,500.0	89.74	180.00	8,973.4	-789.2	-252.8	801.3	0.00	0.00	0.00
9,600.0	89.74	180.00	8,973.9	-889.2	-252.8	901.2	0.00	0.00	0.00
9,700.0	89.74	180.00	8,974.3	-989.2	-252.8	1,001.1	0.00	0.00	0.00
9,800.0	89.74	180.00	8,974.8	-1,089.2	-252.8	1,100.9	0.00	0.00	0.00
9,900.0	89.74	180.00	8,975.3	-1,189.2	-252.8	1,200.8	0.00	0.00	0.00
10,000.0	89.74	180.00	8,975.7	-1,289.2	-252.8	1,300.7	0.00	0.00	0.00
10,100.0	89.74	180.00	8,976.2	-1,389.2	-252.8	1,400.5	0.00	0.00	0.00
10,200.0	89.74	180.00	8,976.6	-1,489.2	-252.8	1,500.4	0.00	0.00	0.00
10,300.0	89.74	180.00	8,977.1	-1,589.2	-252.8	1,600.2	0.00	0.00	0.00
10,400.0	89.74	180.00	8,977.5	-1,689.2	-252.8	1,700.1	0.00	0.00	0.00
10,500.0	89.74	180.00	8,978.0	-1,789.2	-252.8	1,800.0	0.00	0.00	0.00
10,600.0	89.74	180.00	8,978.5	-1,889.2	-252.8	1,899.8	0.00	0.00	0.00
10,700.0	89.74	180.00	8,978.9	-1,989.2	-252.8	1,999.7	0.00	0.00	0.00
10,800.0	89.74	180.00	8,979.4	-2,089.2	-252.8	2,099.6	0.00	0.00	0.00
10,900.0	89.74	180.00	8,979.8	-2,189.2	-252.8	2,199.4	0.00	0.00	0.00
11,000.0	89.74	180.00	8,980.3	-2,289.2	-252.8	2,299.3	0.00	0.00	0.00
11,100.0	89.74	180.00	8,980.8	-2,389.2	-252.8	2,399.1	0.00	0.00	0.00
11,200.0	89.74	180.00	8,981.2	-2,489.2	-252.8	2,499.0	0.00	0.00	0.00
11,300.0	89.74	180.00	8,981.7	-2,589.2	-252.8	2,598.9	0.00	0.00	0.00
11,400.0	89.74	180.00	8,982.1	-2,689.2	-252.8	2,698.7	0.00	0.00	0.00
11,500.0	89.74	180.00	8,982.6	-2,789.2	-252.8	2,798.6	0.00	0.00	0.00
11,600.0	89.74	180.00	8,983.0	-2,889.2	-252.8	2,898.5	0.00	0.00	0.00
11,700.0	89.74	180.00	8,983.5	-2,989.2	-252.8	2,998.3	0.00	0.00	0.00
11,800.0	89.74	180.00	8,984.0	-3,089.2	-252.8	3,098.2	0.00	0.00	0.00
11,900.0	89.74	180.00	8,984.4	-3,189.2	-252.8	3,198.1	0.00	0.00	0.00
12,000.0	89.74	180.00	8,984.9	-3,289.2	-252.8	3,297.9	0.00	0.00	0.00
12,100.0	89.74	180.00	8,985.3	-3,389.2	-252.8	3,397.8	0.00	0.00	0.00
12,200.0	89.74	180.00	8,985.8	-3,489.2	-252.8	3,497.6	0.00	0.00	0.00
12,300.0	89.74	180.00	8,986.2	-3,589.2	-252.8	3,597.5	0.00	0.00	0.00
12,400.0	89.74	180.00	8,986.7	-3,689.2	-252.8	3,697.4	0.00	0.00	0.00
12,500.0	89.74	180.00	8,987.2	-3,789.2	-252.8	3,797.2	0.00	0.00	0.00
12,600.0	89.74	180.00	8,987.6	-3,889.2	-252.8	3,897.1	0.00	0.00	0.00
12,700.0	89.74	180.00	8,988.1	-3,989.2	-252.8	3,997.0	0.00	0.00	0.00
12,800.0	89.74	180.00	8,988.5	-4,089.2	-252.8	4,096.8	0.00	0.00	0.00
12,900.0	89.74	180.00	8,989.0	-4,189.2	-252.8	4,196.7	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Red Hills West 16 State #3H
Company:	Conoco Phillips	TVD Reference:	WELL @ 3214.0usft (Original Well Elev)
Project:	Lea County, New Mexico	MD Reference:	WELL @ 3214.0usft (Original Well Elev)
Site:	Sec 16 T26S, R32E-NMPM	North Reference:	Grid
Well:	Red Hills West 16 State #3H	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	89.74	180.00	8,989.4	-4,289.2	-252.8	4,296.6	0.00	0.00	0.00
13,100.0	89.74	180.00	8,989.9	-4,389.2	-252.9	4,396.4	0.00	0.00	0.00
13,200.0	89.74	180.00	8,990.4	-4,489.2	-252.9	4,496.3	0.00	0.00	0.00
13,300.0	89.74	180.00	8,990.8	-4,589.2	-252.9	4,596.1	0.00	0.00	0.00
13,400.0	89.74	180.00	8,991.3	-4,689.2	-252.9	4,696.0	0.00	0.00	0.00
13,500.0	89.74	180.00	8,991.7	-4,789.2	-252.9	4,795.9	0.00	0.00	0.00
TD @ 13559' MD / 8992' TVD									
13,558.7	89.74	180.00	8,992.0	-4,847.8	-252.9	4,854.4	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL Red Hills West	90.26	180.00	8,992.0	-4,847.8	-252.9	377,541.55	702,998.00	32° 2' 10.622 N	103° 40' 41.657 W
- plan hits target center									
- Rectangle (sides W100.0 H40.0 D4,146.3)									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
761.0	-2,453.0	Rustler		0.26	182.99	
976.0	-2,238.0	Salado		0.26	182.99	
2,780.0	-434.0	Castile		0.26	182.99	
2,215.0	0.0	Avalon A Shale Base		0.26	182.99	
4,413.0	1,199.0	Delaware Top		0.26	182.99	
4,451.0	1,237.0	Ramsey		0.26	182.99	
4,523.0	1,309.0	Ford Sh		0.26	182.99	
4,550.0	1,336.0	Olds		0.26	182.99	
5,426.0	2,212.0	Cherry Canyon		0.26	182.99	
7,165.0	3,951.0	Brushy Canyon		0.26	182.99	
8,315.2	5,101.0	Bone Spring Top		0.26	182.99	
8,540.1	5,316.2	Bone Spring 1st Carb Top		0.26	182.99	
8,925.9	5,607.2	Bone Spring 1st Carb Base		0.26	182.99	
8,925.9	5,607.2	Avalon A Top		0.26	182.99	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,239.2	8,239.2	0.0	0.0	Build 8.5°/100'
8,689.8	8,657.0	-111.1	-93.3	EOB @ 38.30° Inc / 220° Azm / Build 8.5°/100'
9,412.4	8,973.0	-701.6	-252.8	EOB @ 89.74° Inc / 180° Azm / 8973' TVD
13,558.7	8,992.0	-4,847.8	-252.9	TD @ 13559' MD / 8992' TVD

RED HILLS WEST 16 STATE 3H					KB (via survey plat)		3,230
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 down with a ~ 4,500' long lateral.					
Surface Location		Sec 16	26S	32E		Lea Co. TX, Surface Location: 180' FNL & 2010' FEL	
RED HILLS WEST STATE 16 3H BHL		Sec 16	26S	32E		Lea Co. TX, Terminus Location: 330' FSL & 2260' FEL	
Formation Name	Formation Top (TVD)	Subsea Depth	Gross Thickness	Gross Thickness	Gross Thickness	Comments	
Quaternary	Surface						
Rustler	761	2,469					
Salado	976	2,254					
Castile	2,780	450					
Delaware Top	4,413	-1,183					
Ramsey	4,451	-1,221					
Ford Sh	4,523	-1,293					
Olds	4,550	-1,320					
Cherry Canyon	5,426	-2,196					
Brushy Canyon	7,165	-3,935					
KOP (est)	8,257	-5,027				Not a formation top.	
Bone Spring Top	8,315	-5,085					
Bone Spring 1st Carbonate Top	8,530	-5,300	290				
Bone Spring 1st Carbonate Base	8,820	-5,590					
Avalon A Shale Top	8,820	-5,590		225			
LANDING: Avalon A Shale Horizontal Upper Target Limit	8,975	-5,745	40			Not a formation top.	
LANDING: Avalon A Shale Horizontal Target Center	8,973	-5,743				Not a formation top.	
LANDING: Avalon A Shale Horizontal Lower Target Limit	9,015	-5,785				Not a formation top.	
TERMINUS: Avalon A Shale Horizontal Upper Target Limit	8,970	-5,740	40			Not a formation top.	
TERMINUS: Avalon A Shale Horizontal Target Center	8,992	-5,762				Not a formation top.	
TERMINUS: Avalon A Shale Horizontal Lower Target Limit	9,010	-5,780			Not a formation top.		
Avalon A Shale Base (Should not penetrate)	9,045	-5,815					
Proposed total MD of well 12,877'.							