



Azimuths to Grid North
True North: -0.47°
Magnetic North: 6.51°

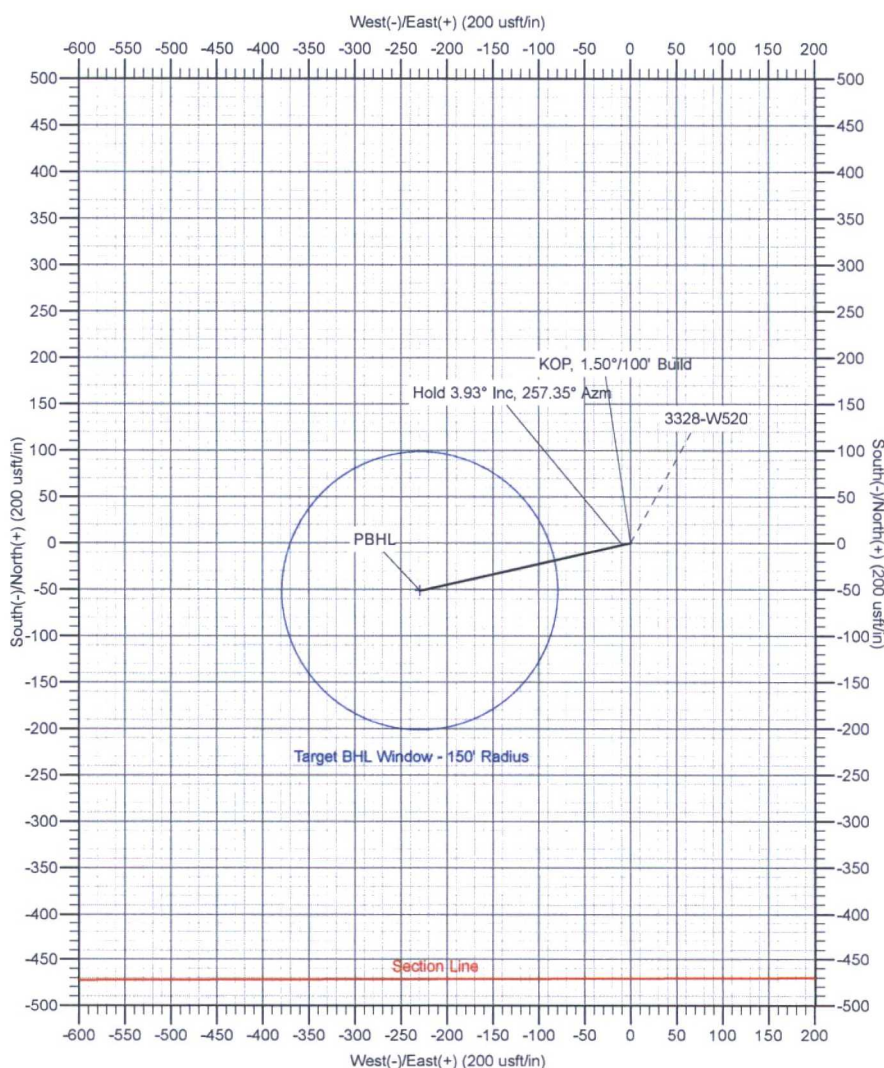
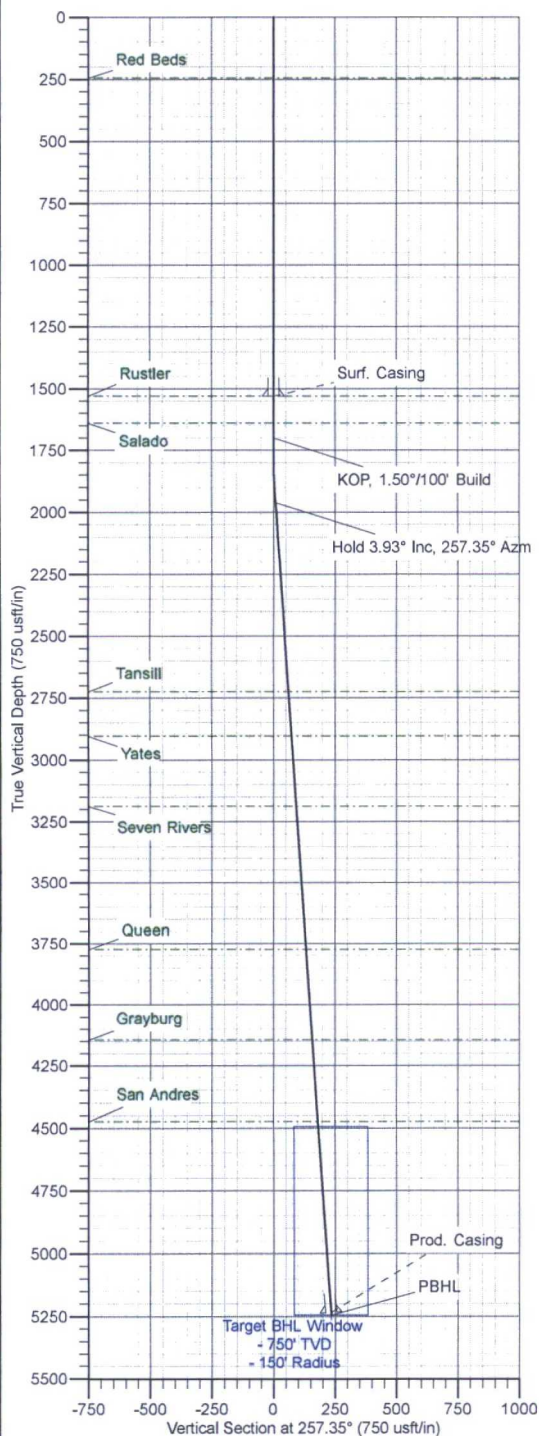
Magnetic Field
Strength: 48386.7nT
Dip Angle: 60.63°
Date: 3/29/2017
Model: BGGM2016

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
1700.00	0.00	0.00	1700.00	0.00	0.00	0.00	0.00	KOP, 1.50°/100' Build
1962.00	3.93	257.35	1961.80	-1.97	-8.76	8.98	8.98	Hold 3.93° Inc, 257.35° Azm
5252.84	3.93	257.35	5244.90	-51.35	-228.84	234.53	234.53	PBHL

US State Plane 1927 (Exact solution)
New Mexico East 3001

Created By: MEB
Date: 11:09, March 31 2017
Plan: Design #1





ConocoPhillips

**Lea County, New Mexico (NAD 27)
East Vacuum GBSA Unit
3328-W520**

Wellbore #1

Plan: Design #1

Standard Planning Report

30 March, 2017



Database:	EDM 5000.14 Conroe DB	Local Co-ordinate Reference:	Well 3328-W520
Company:	ConocoPhillips	TVD Reference:	WELL @ 3964.90usft (Trinidad 417)
Project:	Lea County, New Mexico (NAD 27)	MD Reference:	WELL @ 3964.90usft (Trinidad 417)
Site:	East Vacuum GBSA Unit	North Reference:	Grid
Well:	3328-W520	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Lea County, New Mexico (NAD 27)		
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		

Well	3328-W520			
Well Position	+N/-S	650,481.69 usft	Northing:	650,481.69 usft
	+E/-W	766,858.64 usft	Easting:	766,858.64 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	
			Latitude:	32° 47' 6.917 N
			Longitude:	103° 27' 54.060 W
			Ground Level:	3,947.40 usft

Wellbore	Wellbore #1		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	3/29/2017	6.98	60.63	48,387

Design	Design #1		
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Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	257.35

Plan Survey Tool Program	Date	3/29/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	5,252.84	Design #1 (Wellbore #1)	MWD - OWSG R1
				MWD - OWSG R1

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,962.00	3.93	257.35	1,961.80	-1.97	-8.76	1.50	1.50	-39.18	257.35	
5,252.84	3.93	257.35	5,244.90	-51.35	-228.84	0.00	0.00	0.00	0.00	PBHL - EVGBSA U

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Project:	Lea County, New Mexico (NAD 27)	MD Reference:	WELL @ 3964.90usft (Trinidad 417)
Site:	East Vacuum GBSA Unit	North Reference:	Grid
Well:	3328-W520	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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
244.90	0.00	0.00	244.90	0.00	0.00	0.00	0.00	0.00	0.00
Red Beds									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,530.90	0.00	0.00	1,530.90	0.00	0.00	0.00	0.00	0.00	0.00
Rustler - Surf. Casing									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,639.90	0.00	0.00	1,639.90	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 1.50°/100' Build									
1,800.00	1.50	257.35	1,799.99	-0.29	-1.28	1.31	1.50	1.50	0.00
1,900.00	3.00	257.35	1,899.91	-1.15	-5.11	5.23	1.50	1.50	0.00
1,962.00	3.93	257.35	1,961.80	-1.97	-8.76	8.98	1.50	1.50	0.00
Hold 3.93° Inc, 257.35° Azm									
2,000.00	3.93	257.35	1,999.71	-2.54	-11.31	11.59	0.00	0.00	0.00
2,100.00	3.93	257.35	2,099.47	-4.04	-17.99	18.44	0.00	0.00	0.00
2,200.00	3.93	257.35	2,199.23	-5.54	-24.68	25.29	0.00	0.00	0.00
2,300.00	3.93	257.35	2,299.00	-7.04	-31.37	32.15	0.00	0.00	0.00
2,400.00	3.93	257.35	2,398.76	-8.54	-38.06	39.00	0.00	0.00	0.00
2,500.00	3.93	257.35	2,498.53	-10.04	-44.74	45.86	0.00	0.00	0.00
2,600.00	3.93	257.35	2,598.29	-11.54	-51.43	52.71	0.00	0.00	0.00
2,700.00	3.93	257.35	2,698.06	-13.04	-58.12	59.56	0.00	0.00	0.00
2,726.90	3.93	257.35	2,724.90	-13.44	-59.92	61.41	0.00	0.00	0.00
Tansill									
2,800.00	3.93	257.35	2,797.82	-14.54	-64.81	66.42	0.00	0.00	0.00
2,900.00	3.93	257.35	2,897.59	-16.04	-71.49	73.27	0.00	0.00	0.00
2,907.33	3.93	257.35	2,904.90	-16.15	-71.98	73.77	0.00	0.00	0.00
Yates									
3,000.00	3.93	257.35	2,997.35	-17.54	-78.18	80.12	0.00	0.00	0.00
3,100.00	3.93	257.35	3,097.12	-19.04	-84.87	86.98	0.00	0.00	0.00
3,192.00	3.93	257.35	3,188.90	-20.42	-91.02	93.28	0.00	0.00	0.00
Seven Rivers									
3,200.00	3.93	257.35	3,196.88	-20.54	-91.56	93.83	0.00	0.00	0.00
3,300.00	3.93	257.35	3,296.65	-22.05	-98.24	100.69	0.00	0.00	0.00
3,400.00	3.93	257.35	3,396.41	-23.55	-104.93	107.54	0.00	0.00	0.00
3,500.00	3.93	257.35	3,496.18	-25.05	-111.62	114.39	0.00	0.00	0.00
3,600.00	3.93	257.35	3,595.94	-26.55	-118.31	121.25	0.00	0.00	0.00
3,700.00	3.93	257.35	3,695.71	-28.05	-124.99	128.10	0.00	0.00	0.00

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Company:	ConocoPhillips	TVD Reference:	WELL @ 3964.90usft (Trinidad 417)
Project:	Lea County, New Mexico (NAD 27)	MD Reference:	WELL @ 3964.90usft (Trinidad 417)
Site:	East Vacuum GBSA Unit	North Reference:	Grid
Well:	3328-W520	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)
3,779.38	3.93	257.35	3,774.90	-29.24	-130.30	133.54	0.00	0.00	0.00
Queen									
3,800.00	3.93	257.35	3,795.47	-29.55	-131.68	134.96	0.00	0.00	0.00
3,900.00	3.93	257.35	3,895.24	-31.05	-138.37	141.81	0.00	0.00	0.00
4,000.00	3.93	257.35	3,995.00	-32.55	-145.06	148.66	0.00	0.00	0.00
4,100.00	3.93	257.35	4,094.77	-34.05	-151.74	155.52	0.00	0.00	0.00
4,150.25	3.93	257.35	4,144.90	-34.80	-155.10	158.96	0.00	0.00	0.00
Grayburg									
4,200.00	3.93	257.35	4,194.53	-35.55	-158.43	162.37	0.00	0.00	0.00
4,300.00	3.93	257.35	4,294.30	-37.05	-165.12	169.22	0.00	0.00	0.00
4,400.00	3.93	257.35	4,394.06	-38.55	-171.81	176.08	0.00	0.00	0.00
4,481.03	3.93	257.35	4,474.90	-39.77	-177.22	181.63	0.00	0.00	0.00
San Andres									
4,500.00	3.93	257.35	4,493.83	-40.05	-178.49	182.93	0.00	0.00	0.00
4,600.00	3.93	257.35	4,593.59	-41.55	-185.18	189.79	0.00	0.00	0.00
4,700.00	3.93	257.35	4,693.36	-43.05	-191.87	196.64	0.00	0.00	0.00
4,800.00	3.93	257.35	4,793.12	-44.55	-198.56	203.49	0.00	0.00	0.00
4,900.00	3.93	257.35	4,892.89	-46.06	-205.24	210.35	0.00	0.00	0.00
5,000.00	3.93	257.35	4,992.65	-47.56	-211.93	217.20	0.00	0.00	0.00
5,100.00	3.93	257.35	5,092.42	-49.06	-218.62	224.05	0.00	0.00	0.00
5,200.00	3.93	257.35	5,192.18	-50.56	-225.31	230.91	0.00	0.00	0.00
5,242.82	3.93	257.35	5,234.90	-51.20	-228.17	233.84	0.00	0.00	0.00
Prod. Casing									
5,252.84	3.93	257.35	5,244.90	-51.35	-228.84	234.53	0.00	0.00	0.00
PBHL									

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 - EVGBSA Unit	0.00	0.00	5,244.90	-51.35	-228.84	650,430.34	766,629.80	32° 47' 6.428 N	103° 27' 56.745 W
- plan hits target center									
- Circle (radius 150.00)									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,530.90	1,530.90	Surf. Casing	9-5/8	12-1/4
5,242.82	5,234.90	Prod. Casing	5-1/2	7-7/8

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Site:	East Vacuum GBSA Unit	North Reference:	Grid
Well:	3328-W520	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
244.90	244.90	Red Beds				
1,530.90	1,530.90	Rustler				
1,639.90	1,639.90	Salado				
2,726.90	2,724.90	Tansill				
2,907.33	2,904.90	Yates				
3,192.00	3,188.90	Seven Rivers				
3,779.38	3,774.90	Queen				
4,150.25	4,144.90	Grayburg				
4,481.03	4,474.90	San Andres				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,700.00	1,700.00	0.00	0.00	KOP, 1.50°/100' Build	
1,962.00	1,961.80	-1.97	-8.76	Hold 3.93° Inc, 257.35° Azm	
5,252.84	5,244.90	-51.35	-228.84	PBHL	