



30-025-42/18

ConocoPhillips

Lea County, New Mexico (NAD 27)
East Vacuum GBSA Unit
2739-524

Wellbore #1

Design: Surveys

Standard Survey Report

13 July, 2017

Provide signature page for
directional survey

MS Energy Services®
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Company:	ConocoPhillips	Local Co-ordinate Reference:	Well 2739-524
Project:	Lea County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3952.80usft (Trinidad 417)
Site:	East Vacuum GBSA Unit	MD Reference:	WELL @ 3952.80usft (Trinidad 417)
Well:	2739-524	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Conroe DB

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	2739-524		
Well Position	+N/-S	0.00 usft	Northing: 657,591.37 usft
	+E/-W	0.00 usft	Easting: 772,720.15 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
			Latitude: 32° 48' 16.781 N
			Longitude: 103° 26' 44.707 W
			Ground Level: 3,935.30 usft

Wellbore	Wellbore #1		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	7/15/2017	6.95	60.63	48,346

Design	Surveys		
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Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	300.00

Survey Program		Date	7/13/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
200.00	5,140.88	MS MWD (Wellbore #1)	MWD - OWSG R1	MWD - OWSG R1	

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
200.00	0.10	221.80	200.00	-0.13	-0.12	0.04	0.05	0.05	0.00
387.00	0.10	213.20	387.00	-0.39	-0.31	0.08	0.01	0.00	-4.60
574.00	0.20	145.20	574.00	-0.79	-0.22	-0.21	0.10	0.05	-36.36
790.00	0.40	133.90	790.00	-1.63	0.54	-1.28	0.10	0.09	-5.23
975.00	0.50	116.80	974.99	-2.44	1.73	-2.71	0.09	0.05	-9.24
1,159.00	0.30	135.30	1,158.99	-3.14	2.78	-3.98	0.13	-0.11	10.05
1,351.00	0.60	118.70	1,350.98	-3.98	4.02	-5.47	0.17	0.16	-8.65
1,541.00	0.20	22.00	1,540.98	-4.15	5.01	-6.42	0.34	-0.21	-50.89
1,581.00	0.00	0.00	1,580.98	-4.09	5.04	-6.41	0.50	-0.50	0.00
1,740.00	0.80	356.60	1,739.97	-2.98	4.97	-5.80	0.50	0.50	0.00
1,804.00	2.20	344.10	1,803.95	-1.35	4.61	-4.67	2.23	2.19	-19.53
1,867.00	2.80	336.10	1,866.89	1.22	3.66	-2.56	1.10	0.95	-12.70
2,057.00	2.50	341.40	2,056.68	9.39	0.46	4.30	0.20	-0.16	2.79
2,247.00	3.00	310.20	2,246.48	16.53	-4.66	12.30	0.82	0.26	-16.42

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	EDM 5000.14 Conroe DB

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)
2,436.00	2.70	312.40	2,435.24	22.72	-11.73	21.52	0.17	-0.16	1.16
2,626.00	2.30	311.00	2,625.06	28.24	-17.91	29.63	0.21	-0.21	-0.74
2,816.00	1.90	325.00	2,814.93	33.32	-22.60	36.23	0.34	-0.21	7.37
3,005.00	2.10	283.20	3,003.83	36.68	-27.76	42.38	0.76	0.11	-22.12
3,196.00	1.60	271.10	3,194.73	37.53	-33.84	48.07	0.33	-0.26	-6.34
3,385.00	2.10	275.30	3,383.63	37.90	-39.92	53.52	0.27	0.26	2.22
3,575.00	2.80	270.00	3,573.45	38.22	-48.03	60.71	0.39	0.37	-2.79
3,765.00	1.80	275.10	3,763.30	38.49	-55.64	67.43	0.54	-0.53	2.68
3,981.00	2.90	274.90	3,979.11	39.25	-64.47	75.46	0.51	0.51	-0.09
Final Survey - 3981.00' MD									
5,140.88	2.90	274.90	5,137.51	44.27	-122.93	128.60	0.00	0.00	0.00
Projection to TD - 5140.88' MD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,981.00	3,979.11	39.25	-64.47	Final Survey - 3981.00' MD
5,140.88	5,137.51	44.27	-122.93	Projection to TD - 5140.88' MD

District	Field Name	API / UWI	County	State/Province	
	VACUUM	3002542118	LEA	NEW MEXICO	
Original Spud Date	Surface Legal Location	East/West Distance (ft)	East/West Reference	North/South Distance (ft)	North/South Reference
7/8/2017	027-017S-035E	2,399.00	FWL	2,271.00	FSL

VERTICAL - Original Hole, 12/12/2017 10:09:54 AM



Note: Directional schematic does not correlate to other tracks.



Azimuths to Grid North
 True North: -0.48°
 Magnetic North: 6.47°

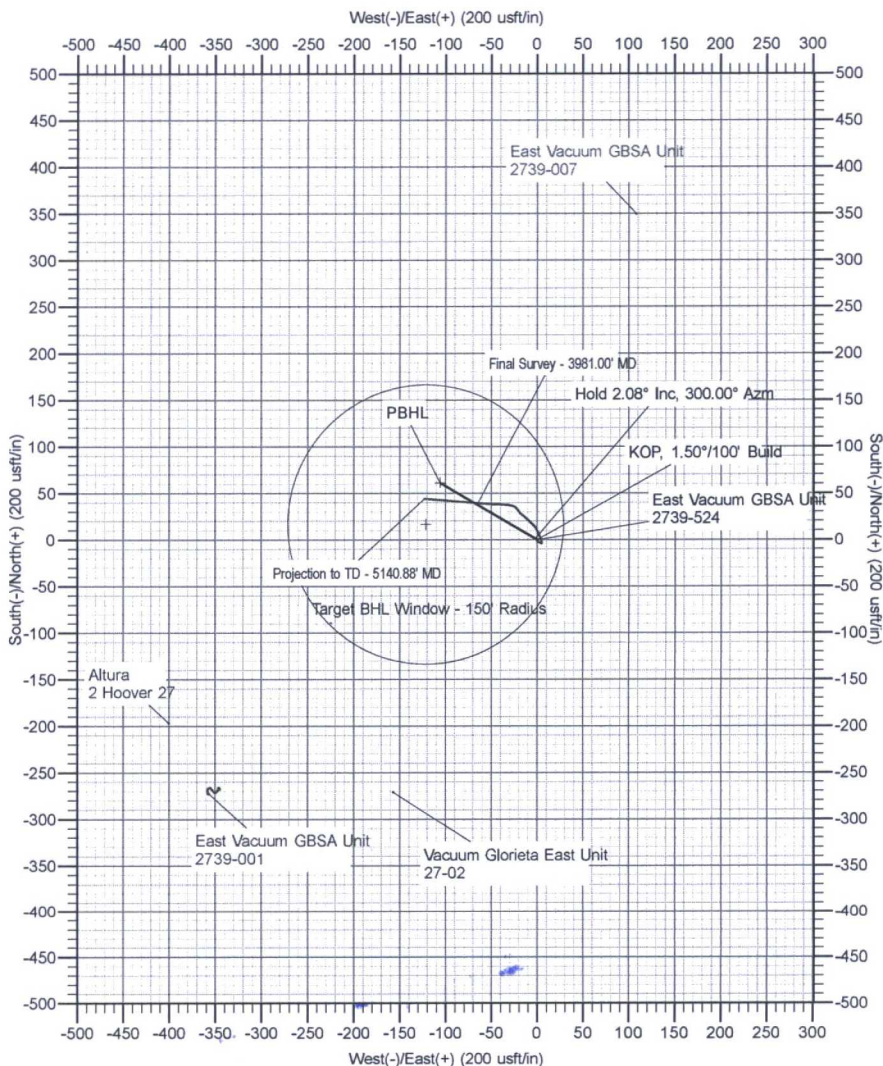
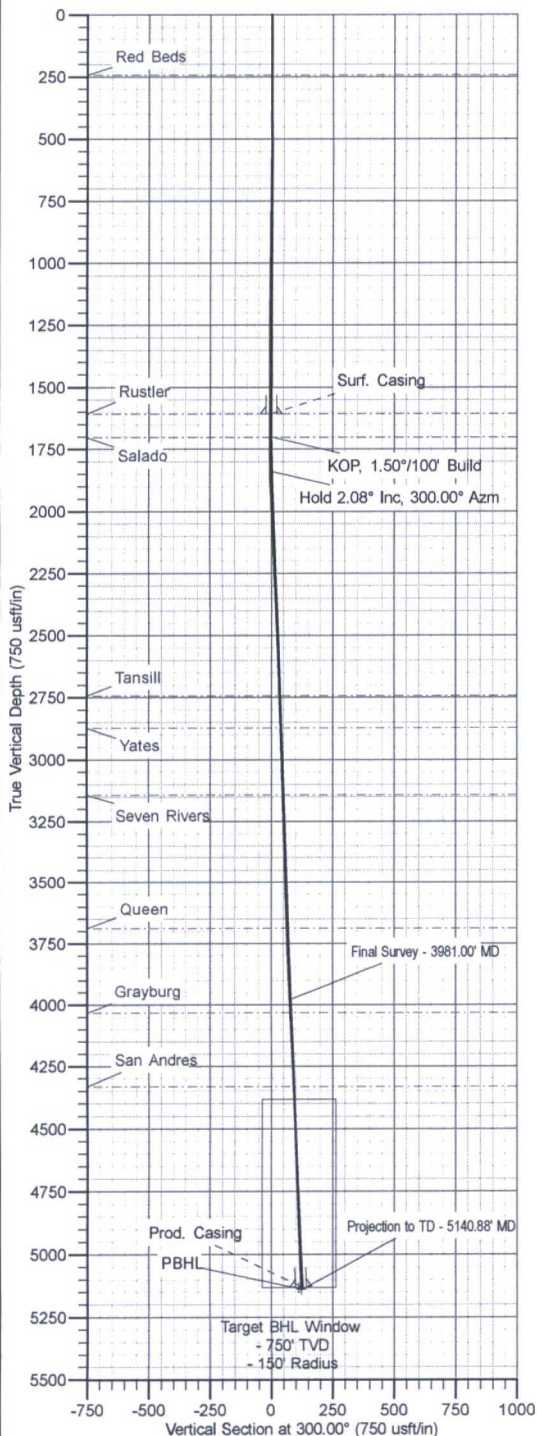
Magnetic Field
 Strength: 48346.3snT
 Dip Angle: 60.63°
 Date: 7/15/2017
 Model: BGGM2017

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

Created By: MEB
 Date: 11:09, July 13 2017
 Plan: Design #2

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
1838.67	2.08	300.00	1838.64	1.26	-2.18	2.52	2.52	Hold 2.08° Inc, 300.00° Azm
5140.88	2.08	300.00	5138.67	61.19	-105.98	122.37	122.37	PBHL



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