

KZ

ConocoPhillips MCBU - Permian-Panhandle Gold Data

Planning - NM East State Zone - 3001

ZIA HILLS 20 FEDERAL COM 105H

ZIA HILLS 20 FEDERAL COM 105H

OH / 64792

Survey: 1_Zia_Hills_20_Federal_Com_105H

Standard Survey Report

03 November, 2019

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 105H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3185.90ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 105H	MD Reference:	KB @ 3185.90ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 105H	North Reference:	Grid
Wellbore:	OH / 64792	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nabors 894)	Database:	EDT 14 Central Planning

Project	Planning - NM East State Zone - 3001, Permian Basin - New Mexico - East/South East, Planning Project for Permian wells in NM Zone 3001		
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		Using geodetic scale factor

Site	ZIA HILLS 20 FEDERAL COM 105H		
Site Position:		Northing:	374,418.350 usft
From:	Map	Easting:	697,853.910 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 40.020 N
		Longitude:	103° 41' 41.630 W
		Grid Convergence:	0.34 °

Well	ZIA HILLS 20 FEDERAL COM 105H		
Well Position	+N/-S	0.00 ft	Northing: 374,418.350 usft
	+E/-W	0.00 ft	Easting: 697,853.910 usft
Position Uncertainty	2.00 ft	Wellhead Elevation:	ft
		Latitude:	32° 1' 40.020 N
		Longitude:	103° 41' 41.630 W
		Ground Level:	3,155.40 ft

Wellbore	OH / 64792		
Magnetics	Model Name	Sample Date	Declination (°)
	BGGM2018	6/19/2019	6.87
			Dip Angle (°)
			59.77
			Field Strength (nT)
			47,632.85097816

Design	Surveys (Nabors 894)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)
	0.00	0.00	0.00
			Direction (°)
			180.88

Survey Program	Date	11/3/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
61.80	1,134.00	0_Zia_Hills_20_Federal_Com_105H (OH /	GOOD GYRO	GOOD GYRO
1,310.00	21,785.00	1_Zia_Hills_20_Federal_Com_105H (OH /	MWD+IFR1+MS_CoP	Fixed:v2:Eagleford, crustal dec + 3-axis corr.

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,134.00	1.88	4.58	1,133.92	-5.56	3.79	5.50	0.00	0.00	0.00	
1,310.00	1.81	355.83	1,309.83	0.09	3.81	-0.15	0.16	-0.04	-4.97	
First Phoenix MWD Survey										
1,401.00	1.75	354.31	1,400.78	2.91	3.57	-2.96	0.08	-0.07	-1.67	
1,495.00	1.68	348.63	1,494.74	5.68	3.16	-5.73	0.20	-0.07	-6.04	
1,589.00	0.78	307.47	1,588.72	7.43	2.38	-7.46	1.28	-0.96	-43.79	
1,684.00	0.78	260.47	1,683.71	7.71	1.23	-7.73	0.65	0.00	-49.47	
1,777.00	0.72	271.46	1,776.70	7.62	0.02	-7.62	0.17	-0.06	11.82	
1,871.00	0.68	284.93	1,870.70	7.78	-1.11	-7.76	0.18	-0.04	14.33	

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Design:	Surveys (Nabors 894)	Database:	EDT 14 Central Planning

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,966.00	0.55	270.29	1,965.69	7.93	-2.11	-7.89	0.21	-0.14	-15.41
2,060.00	0.60	270.01	2,059.69	7.93	-3.05	-7.88	0.05	0.05	-0.30
2,154.00	0.47	274.26	2,153.68	7.96	-3.93	-7.90	0.14	-0.14	4.52
2,248.00	0.16	319.27	2,247.68	8.09	-4.40	-8.02	0.40	-0.33	47.88
2,341.00	0.32	298.30	2,340.68	8.31	-4.71	-8.24	0.19	0.17	-22.55
2,435.00	0.25	285.74	2,434.68	8.49	-5.14	-8.41	0.10	-0.07	-13.36
2,530.00	0.82	210.30	2,529.67	7.96	-5.68	-7.87	0.84	0.60	-79.41
2,624.00	1.45	198.47	2,623.66	6.25	-6.40	-6.15	0.71	0.67	-12.59
2,719.00	1.27	195.68	2,718.63	4.10	-7.07	-3.99	0.20	-0.19	-2.94
2,814.00	1.08	199.58	2,813.61	2.24	-7.65	-2.12	0.22	-0.20	4.11
2,909.00	0.91	197.77	2,908.59	0.68	-8.18	-0.55	0.18	-0.18	-1.91
3,003.00	0.59	210.20	3,002.59	-0.45	-8.65	0.59	0.38	-0.34	13.22
3,098.00	0.36	192.09	3,097.58	-1.17	-8.96	1.30	0.29	-0.24	-19.06
3,191.00	0.41	182.84	3,190.58	-1.79	-9.04	1.92	0.09	0.05	-9.95
3,286.00	0.50	125.98	3,285.58	-2.37	-8.72	2.50	0.46	0.09	-59.85
3,381.00	0.51	111.30	3,380.57	-2.77	-7.99	2.89	0.14	0.01	-15.45
3,475.00	0.47	94.77	3,474.57	-2.95	-7.22	3.06	0.16	-0.04	-17.59
3,569.00	0.17	104.30	3,568.57	-3.02	-6.70	3.12	0.32	-0.32	10.14
3,664.00	0.28	93.06	3,663.57	-3.06	-6.33	3.16	0.12	0.12	-11.83
3,758.00	0.70	113.69	3,757.57	-3.31	-5.57	3.39	0.48	0.45	21.95
3,851.00	0.92	112.42	3,850.56	-3.82	-4.36	3.89	0.24	0.24	-1.37
3,946.00	1.16	128.80	3,945.54	-4.71	-2.91	4.76	0.40	0.25	17.24
4,040.00	1.65	132.06	4,039.51	-6.22	-1.16	6.23	0.53	0.52	3.47
4,135.00	1.18	125.73	4,134.48	-7.70	0.65	7.69	0.52	-0.49	-6.66
4,229.00	0.69	51.20	4,228.47	-7.91	1.87	7.88	1.27	-0.52	-79.29
4,323.00	0.42	68.50	4,322.47	-7.43	2.64	7.39	0.33	-0.29	18.40
4,417.00	0.50	79.80	4,416.47	-7.23	3.36	7.18	0.13	0.09	12.02
4,511.00	0.57	60.00	4,510.46	-6.93	4.17	6.86	0.21	0.07	-21.06
4,606.00	0.44	37.98	4,605.46	-6.40	4.80	6.33	0.24	-0.14	-23.18
4,700.00	0.35	31.16	4,699.46	-5.87	5.17	5.79	0.11	-0.10	-7.26
4,795.00	0.14	46.68	4,794.45	-5.55	5.41	5.46	0.23	-0.22	16.34
4,888.00	0.14	39.45	4,887.45	-5.38	5.56	5.29	0.02	0.00	-7.77
4,983.00	0.17	42.17	4,982.45	-5.19	5.73	5.10	0.03	0.03	2.86
5,077.00	0.24	35.64	5,076.45	-4.92	5.94	4.83	0.08	0.07	-6.95
5,172.00	0.22	1.01	5,171.45	-4.58	6.06	4.48	0.15	-0.02	-36.45
5,267.00	0.29	9.70	5,266.45	-4.16	6.10	4.06	0.08	0.07	9.15
5,362.00	0.30	22.06	5,361.45	-3.69	6.24	3.60	0.07	0.01	13.01
5,455.00	0.36	41.20	5,454.45	-3.25	6.52	3.15	0.13	0.06	20.58
5,550.00	0.23	18.11	5,549.45	-2.84	6.78	2.74	0.18	-0.14	-24.31
5,644.00	0.19	32.12	5,643.45	-2.53	6.92	2.42	0.07	-0.04	14.90
5,738.00	0.13	51.83	5,737.45	-2.33	7.08	2.22	0.09	-0.06	20.97
5,833.00	0.25	68.29	5,832.45	-2.19	7.36	2.07	0.14	0.13	17.33

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5,927.00	0.38	58.33	5,926.44	-1.95	7.82	1.83	0.15	0.14	-10.60
6,021.00	0.31	67.49	6,020.44	-1.69	8.32	1.56	0.09	-0.07	9.74
6,115.00	0.15	58.77	6,114.44	-1.53	8.66	1.39	0.17	-0.17	-9.28
6,209.00	0.13	55.78	6,208.44	-1.40	8.85	1.27	0.02	-0.02	-3.18
6,304.00	0.04	64.40	6,303.44	-1.33	8.97	1.19	0.10	-0.09	9.07
6,398.00	0.04	157.52	6,397.44	-1.34	9.01	1.20	0.06	0.00	99.06
6,492.00	0.12	259.37	6,491.44	-1.39	8.93	1.25	0.14	0.09	108.35
6,587.00	0.13	224.57	6,586.44	-1.49	8.75	1.35	0.08	0.01	-36.63
6,681.00	0.28	224.36	6,680.44	-1.73	8.52	1.60	0.16	0.16	-0.22
6,776.00	0.48	240.25	6,775.44	-2.09	8.01	1.97	0.24	0.21	16.73
6,870.00	0.89	240.33	6,869.43	-2.65	7.03	2.54	0.44	0.44	0.09
6,965.00	1.05	240.19	6,964.42	-3.45	5.64	3.36	0.17	0.17	-0.15
7,059.00	1.11	238.85	7,058.40	-4.34	4.11	4.28	0.07	0.06	-1.43
7,154.00	1.07	234.75	7,153.38	-5.33	2.60	5.29	0.09	-0.04	-4.32
7,248.00	1.13	224.40	7,247.37	-6.50	1.23	6.48	0.22	0.06	-11.01
7,343.00	1.38	221.78	7,342.34	-8.02	-0.18	8.03	0.27	0.26	-2.76
7,438.00	1.63	235.49	7,437.31	-9.64	-2.06	9.67	0.46	0.26	14.43
7,532.00	2.06	254.95	7,531.26	-10.84	-4.79	10.91	0.80	0.46	20.70
7,626.00	3.35	277.22	7,625.16	-10.93	-9.15	11.07	1.75	1.37	23.69
7,720.00	3.52	288.29	7,718.99	-9.68	-14.61	9.90	0.73	0.18	11.78
7,813.00	3.67	292.44	7,811.81	-7.65	-20.07	7.96	0.32	0.16	4.46
7,908.00	3.88	291.20	7,906.60	-5.33	-25.88	5.72	0.24	0.22	-1.31
8,002.00	3.92	290.83	8,000.38	-3.03	-31.85	3.52	0.05	0.04	-0.39
8,096.00	3.90	289.58	8,094.17	-0.82	-37.86	1.40	0.09	-0.02	-1.33
8,191.00	4.16	287.66	8,188.93	1.31	-44.19	-0.63	0.31	0.27	-2.02
8,285.00	4.10	288.04	8,282.69	3.38	-50.64	-2.61	0.07	-0.06	0.40
8,380.00	4.74	290.05	8,377.40	5.78	-57.55	-4.90	0.69	0.67	2.12
8,474.00	5.26	294.06	8,471.05	8.87	-65.14	-7.87	0.67	0.55	4.27
8,568.00	5.19	293.42	8,564.66	12.32	-72.97	-11.19	0.10	-0.07	-0.68
8,662.00	5.92	291.20	8,658.21	15.76	-81.39	-14.51	0.81	0.78	-2.36
8,757.00	5.70	292.15	8,752.73	19.31	-90.33	-17.92	0.25	-0.23	1.00
8,850.00	5.52	289.16	8,845.28	22.52	-98.83	-21.00	0.37	-0.19	-3.22
8,944.00	5.65	284.52	8,938.83	25.16	-107.58	-23.51	0.50	0.14	-4.94
9,037.00	6.65	280.28	9,031.30	27.27	-117.31	-25.47	1.18	1.08	-4.56
9,130.00	7.07	279.69	9,123.63	29.20	-128.25	-27.22	0.46	0.45	-0.63
9,223.00	7.26	278.65	9,215.91	31.04	-139.70	-28.89	0.25	0.20	-1.12
9,317.00	7.32	281.81	9,309.15	33.16	-151.44	-30.83	0.43	0.06	3.36
9,410.00	7.58	291.26	9,401.37	36.60	-162.95	-34.09	1.35	0.28	10.16
9,505.00	7.98	292.65	9,495.49	41.41	-174.88	-38.72	0.47	0.42	1.46
9,598.00	8.21	294.90	9,587.56	46.69	-186.86	-43.82	0.42	0.25	2.42
9,693.00	7.61	300.54	9,681.66	52.74	-198.43	-49.69	1.03	-0.63	5.94
9,787.00	6.90	301.39	9,774.91	58.85	-208.61	-55.64	0.76	-0.76	0.90
9,882.00	5.38	291.02	9,869.36	63.42	-217.64	-60.07	1.97	-1.60	-10.92

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9,977.00	4.34	285.47	9,964.02	65.97	-225.26	-62.51	1.20	-1.09	-5.84
10,071.00	4.16	283.80	10,057.76	67.74	-232.00	-64.17	0.23	-0.19	-1.78
10,165.00	3.42	283.55	10,151.56	69.21	-238.04	-65.54	0.79	-0.79	-0.27
10,260.00	2.58	289.32	10,246.43	70.58	-242.81	-66.84	0.94	-0.88	6.07
10,354.00	1.80	284.73	10,340.36	71.65	-246.23	-67.86	0.85	-0.83	-4.88
10,449.00	1.92	290.72	10,435.31	72.60	-249.17	-68.76	0.24	0.13	6.31
10,543.00	1.80	295.35	10,529.26	73.79	-251.97	-69.91	0.20	-0.13	4.93
10,637.00	1.37	290.28	10,623.22	74.81	-254.36	-70.89	0.48	-0.46	-5.39
10,731.00	0.53	272.18	10,717.21	75.21	-255.85	-71.27	0.94	-0.89	-19.26
10,825.00	0.34	259.03	10,811.20	75.18	-256.56	-71.23	0.23	-0.20	-13.99
10,918.00	0.34	238.70	10,904.20	74.98	-257.06	-71.02	0.13	0.00	-21.86
11,015.00	0.41	213.11	11,001.20	74.54	-257.50	-70.58	0.19	0.07	-26.38
11,117.00	1.28	178.39	11,103.19	73.10	-257.67	-69.13	0.95	0.85	-34.04
11,164.00	2.73	166.02	11,150.16	71.48	-257.38	-67.52	3.20	3.09	-26.32
11,211.00	4.26	170.86	11,197.07	68.67	-256.83	-64.72	3.31	3.26	10.30
11,305.00	7.92	173.84	11,290.52	58.79	-255.58	-54.85	3.91	3.89	3.17
11,352.00	10.24	176.55	11,336.93	51.40	-254.99	-47.47	5.02	4.94	5.77
11,399.00	12.31	179.80	11,383.02	42.21	-254.72	-38.30	4.61	4.40	6.91
11,446.00	15.21	183.10	11,428.67	31.04	-255.03	-27.12	6.39	6.17	7.02
11,494.00	17.99	182.98	11,474.67	17.35	-255.76	-13.42	5.79	5.79	-0.25
11,578.00	25.19	182.78	11,552.72	-13.50	-257.30	17.45	8.57	8.57	-0.24
11,637.00	27.99	182.58	11,605.48	-39.87	-258.53	43.84	4.75	4.75	-0.34
11,683.00	32.11	180.72	11,645.28	-62.89	-259.17	66.87	9.18	8.96	-4.04
11,743.00	35.39	181.65	11,695.17	-96.21	-259.88	100.19	5.53	5.47	1.55
11,775.00	38.64	181.14	11,720.71	-115.47	-260.34	119.46	10.20	10.16	-1.59
11,807.00	43.54	178.78	11,744.83	-136.49	-260.31	140.47	16.06	15.31	-7.38
11,838.00	47.70	176.68	11,766.50	-158.62	-259.41	162.59	14.26	13.42	-6.77
11,868.00	51.35	175.51	11,785.98	-181.39	-257.85	185.33	12.52	12.17	-3.90
11,900.00	55.81	173.83	11,804.97	-207.02	-255.45	210.92	14.56	13.94	-5.25
11,931.00	59.75	173.77	11,821.49	-233.08	-252.62	236.94	12.71	12.71	-0.19
11,963.00	64.65	173.92	11,836.41	-261.22	-249.59	265.02	15.32	15.31	0.47
11,994.00	69.42	175.84	11,848.51	-289.64	-247.05	293.40	16.41	15.39	6.19
12,026.00	72.98	177.57	11,858.82	-319.88	-245.31	323.61	12.25	11.13	5.41
12,057.00	75.75	177.86	11,867.17	-349.70	-244.12	353.41	8.98	8.94	0.94
12,089.00	79.08	177.79	11,874.14	-380.91	-242.94	384.59	10.41	10.41	-0.22
12,120.00	83.01	177.25	11,878.97	-411.49	-241.61	415.16	12.79	12.68	-1.74
12,152.00	86.43	175.77	11,881.91	-443.29	-239.67	446.92	11.64	10.69	-4.63
12,182.00	87.56	175.46	11,883.49	-473.16	-237.38	476.75	3.91	3.77	-1.03
12,214.00	88.54	175.21	11,884.57	-505.04	-234.78	508.58	3.16	3.06	-0.78
12,245.00	90.56	175.07	11,884.82	-535.92	-232.15	539.43	6.53	6.52	-0.45
12,276.00	90.59	174.97	11,884.51	-566.81	-229.46	570.26	0.34	0.10	-0.32
12,347.00	90.62	176.18	11,883.76	-637.59	-223.99	640.95	1.70	0.04	1.70

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 105H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3185.90ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 105H	MD Reference:	KB @ 3185.90ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 105H	North Reference:	Grid
Wellbore:	OH / 64792	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nabors 894)	Database:	EDT 14 Central Planning

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,442.00	91.63	175.56	11,881.89	-732.32	-217.14	735.57	1.25	1.06	-0.65
12,536.00	91.41	173.99	11,879.40	-825.90	-208.59	829.00	1.69	-0.23	-1.67
12,629.00	91.16	175.53	11,877.31	-918.48	-200.10	921.45	1.68	-0.27	1.66
12,724.00	88.95	176.72	11,877.22	-1,013.26	-193.68	1,016.11	2.64	-2.33	1.25
12,818.00	89.68	179.73	11,878.35	-1,107.19	-190.77	1,109.99	3.29	0.78	3.20
12,912.00	90.89	180.47	11,877.88	-1,201.19	-190.93	1,203.98	1.51	1.29	0.79
13,006.00	91.18	177.74	11,876.18	-1,295.15	-189.46	1,297.91	2.92	0.31	-2.90
13,100.00	90.25	179.05	11,875.01	-1,389.11	-186.83	1,391.81	1.71	-0.99	1.39
13,194.00	89.73	181.57	11,875.02	-1,483.10	-187.34	1,485.80	2.74	-0.55	2.68
13,287.00	91.07	181.34	11,874.37	-1,576.06	-189.70	1,578.79	1.46	1.44	-0.25
13,382.00	91.03	180.58	11,872.63	-1,671.03	-191.29	1,673.77	0.80	-0.04	-0.80
13,477.00	89.50	181.27	11,872.19	-1,766.02	-192.82	1,768.77	1.77	-1.61	0.73
13,570.00	89.75	182.32	11,872.80	-1,858.97	-195.74	1,861.75	1.16	0.27	1.13
13,664.00	89.93	181.49	11,873.06	-1,952.91	-198.86	1,955.74	0.90	0.19	-0.88
13,758.00	89.79	181.55	11,873.29	-2,046.88	-201.36	2,049.73	0.16	-0.15	0.06
13,852.00	89.53	181.23	11,873.85	-2,140.85	-203.64	2,143.73	0.44	-0.28	-0.34
13,947.00	89.85	179.88	11,874.37	-2,235.84	-204.56	2,238.72	1.46	0.34	-1.42
14,041.00	90.79	181.99	11,873.84	-2,329.82	-206.09	2,332.71	2.46	1.00	2.24
14,134.00	90.95	179.61	11,872.43	-2,422.80	-207.39	2,425.70	2.56	0.17	-2.56
14,229.00	90.98	178.39	11,870.83	-2,517.77	-205.73	2,520.63	1.28	0.03	-1.28
14,323.00	90.86	178.13	11,869.32	-2,611.71	-202.88	2,614.52	0.30	-0.13	-0.28
14,417.00	90.47	177.89	11,868.23	-2,705.65	-199.61	2,708.39	0.49	-0.41	-0.26
14,511.00	91.41	179.00	11,866.69	-2,799.60	-197.06	2,802.29	1.55	1.00	1.18
14,605.00	90.67	179.76	11,864.98	-2,893.58	-196.05	2,896.24	1.13	-0.79	0.81
14,698.00	90.08	179.58	11,864.37	-2,986.57	-195.51	2,989.22	0.66	-0.63	-0.19
14,791.00	90.19	179.92	11,864.15	-3,079.57	-195.10	3,082.20	0.38	0.12	0.37
14,885.00	90.02	180.12	11,863.98	-3,173.57	-195.14	3,176.19	0.28	-0.18	0.21
14,980.00	90.01	180.70	11,863.96	-3,268.57	-195.82	3,271.19	0.61	-0.01	0.61
15,074.00	90.50	180.66	11,863.54	-3,362.56	-196.93	3,365.19	0.52	0.52	-0.04
15,168.00	89.75	178.73	11,863.33	-3,456.55	-196.43	3,459.16	2.20	-0.80	-2.05
15,261.00	89.87	179.43	11,863.64	-3,549.54	-194.94	3,552.11	0.76	0.13	0.75
15,355.00	90.22	178.83	11,863.57	-3,643.53	-193.51	3,646.07	0.74	0.37	-0.64
15,449.00	89.53	179.92	11,863.77	-3,737.52	-192.49	3,740.04	1.37	-0.73	1.16
15,544.00	89.54	182.18	11,864.54	-3,832.49	-194.23	3,835.03	2.38	0.01	2.38
15,637.00	88.84	180.28	11,865.86	-3,925.46	-196.22	3,928.01	2.18	-0.75	-2.04
15,732.00	90.19	179.13	11,866.66	-4,020.45	-195.73	4,022.98	1.87	1.42	-1.21
15,826.00	89.90	177.33	11,866.59	-4,114.40	-192.83	4,116.88	1.94	-0.31	-1.91
15,920.00	88.84	179.73	11,867.62	-4,208.36	-190.42	4,210.79	2.79	-1.13	2.55
16,014.00	89.98	180.46	11,868.59	-4,302.35	-190.57	4,304.77	1.44	1.21	0.78
16,108.00	88.44	182.30	11,869.89	-4,396.31	-192.84	4,398.75	2.55	-1.64	1.96
16,202.00	89.53	180.59	11,871.55	-4,490.26	-195.21	4,492.73	2.16	1.16	-1.82
16,296.00	89.38	178.94	11,872.45	-4,584.25	-194.82	4,586.70	1.76	-0.16	-1.76
16,390.00	90.08	179.29	11,872.89	-4,678.24	-193.37	4,680.65	0.83	0.74	0.37

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 105H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3185.90ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 105H	MD Reference:	KB @ 3185.90ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 105H	North Reference:	Grid
Wellbore:	OH / 64792	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nabors 894)	Database:	EDT 14 Central Planning

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,484.00	89.67	178.79	11,873.09	-4,772.22	-191.80	4,774.60	0.69	-0.44	-0.53
16,578.00	89.03	180.76	11,874.16	-4,866.21	-191.43	4,868.58	2.20	-0.68	2.10
16,672.00	90.05	180.69	11,874.91	-4,960.20	-192.62	4,962.57	1.09	1.09	-0.07
16,766.00	88.10	180.14	11,876.43	-5,054.18	-193.30	5,056.55	2.16	-2.07	-0.59
16,860.00	90.61	180.79	11,877.49	-5,148.16	-194.06	5,150.53	2.76	2.67	0.69
16,954.00	90.93	181.61	11,876.23	-5,242.13	-196.03	5,244.52	0.94	0.34	0.87
17,048.00	91.15	181.61	11,874.52	-5,336.08	-198.67	5,338.50	0.23	0.23	0.00
17,142.00	89.85	180.56	11,873.70	-5,430.06	-200.45	5,432.49	1.78	-1.38	-1.12
17,236.00	89.42	179.32	11,874.30	-5,524.05	-200.35	5,526.48	1.40	-0.46	-1.32
17,331.00	89.56	180.91	11,875.14	-5,619.04	-200.54	5,621.46	1.68	0.15	1.67
17,425.00	89.88	179.99	11,875.60	-5,713.04	-201.28	5,715.46	1.04	0.34	-0.98
17,520.00	90.13	179.29	11,875.60	-5,808.04	-200.68	5,810.43	0.78	0.26	-0.74
17,614.00	89.65	178.16	11,875.78	-5,902.01	-198.59	5,904.36	1.31	-0.51	-1.20
17,707.00	89.22	177.04	11,876.69	-5,994.92	-194.70	5,997.21	1.29	-0.46	-1.20
17,801.00	88.36	175.89	11,878.68	-6,088.72	-188.90	6,090.90	1.53	-0.91	-1.22
17,895.00	89.76	175.31	11,880.22	-6,182.43	-181.69	6,184.49	1.61	1.49	-0.62
17,990.00	90.98	174.52	11,879.61	-6,277.05	-173.27	6,278.97	1.53	1.28	-0.83
18,083.00	91.01	173.34	11,877.99	-6,369.51	-163.44	6,371.27	1.27	0.03	-1.27
18,177.00	93.51	173.50	11,874.29	-6,462.81	-152.68	6,464.40	2.67	2.66	0.17
18,272.00	93.41	173.76	11,868.55	-6,557.06	-142.16	6,558.47	0.29	-0.11	0.27
18,366.00	92.33	173.98	11,863.85	-6,650.40	-132.13	6,651.64	1.17	-1.15	0.23
18,459.00	92.24	176.48	11,860.14	-6,743.00	-124.40	6,744.11	2.69	-0.10	2.69
18,553.00	90.61	180.12	11,857.80	-6,836.91	-121.62	6,837.97	4.24	-1.73	3.87
18,648.00	89.70	184.28	11,857.54	-6,931.81	-125.26	6,932.92	4.48	-0.96	4.38
18,743.00	89.93	184.83	11,857.85	-7,026.51	-132.81	7,027.72	0.63	0.24	0.58
18,837.00	89.81	185.93	11,858.06	-7,120.10	-141.62	7,121.43	1.18	-0.13	1.17
18,931.00	89.76	184.86	11,858.41	-7,213.68	-150.46	7,215.14	1.14	-0.05	-1.14
19,026.00	89.85	183.79	11,858.74	-7,308.41	-157.62	7,309.97	1.13	0.09	-1.13
19,121.00	89.84	182.52	11,858.99	-7,403.26	-162.85	7,404.89	1.34	-0.01	-1.34
19,214.00	89.93	181.97	11,859.18	-7,496.19	-166.50	7,497.86	0.60	0.10	-0.59
19,308.00	89.76	181.63	11,859.44	-7,590.14	-169.45	7,591.85	0.40	-0.18	-0.36
19,403.00	89.82	181.34	11,859.78	-7,685.11	-171.91	7,686.84	0.31	0.06	-0.31
19,496.00	89.79	180.62	11,860.10	-7,778.09	-173.50	7,779.84	0.77	-0.03	-0.77
19,591.00	89.78	180.85	11,860.46	-7,873.09	-174.72	7,874.84	0.24	-0.01	0.24
19,685.00	89.82	180.15	11,860.78	-7,967.08	-175.54	7,968.84	0.75	0.04	-0.74
19,778.00	89.96	179.87	11,860.96	-8,060.08	-175.56	8,061.83	0.34	0.15	-0.30
19,872.00	89.79	179.72	11,861.17	-8,154.08	-175.22	8,155.81	0.24	-0.18	-0.16
19,967.00	89.87	179.64	11,861.45	-8,249.08	-174.69	8,250.79	0.12	0.08	-0.08
20,061.00	89.85	179.03	11,861.68	-8,343.07	-173.60	8,344.75	0.65	-0.02	-0.65
20,155.00	89.82	179.31	11,861.95	-8,437.06	-172.24	8,438.71	0.30	-0.03	0.30
20,248.00	89.84	179.07	11,862.23	-8,530.05	-170.92	8,531.67	0.26	0.02	-0.26
20,342.00	89.81	179.21	11,862.51	-8,624.04	-169.51	8,625.63	0.15	-0.03	0.15

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 105H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3185.90ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 105H	MD Reference:	KB @ 3185.90ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 105H	North Reference:	Grid
Wellbore:	OH / 64792	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Nabors 894)	Database:	EDT 14 Central Planning

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
20,437.00	89.87	180.06	11,862.78	-8,719.04	-168.91	8,720.60	0.90	0.06	0.89
20,530.00	89.81	179.61	11,863.04	-8,812.04	-168.64	8,813.59	0.49	-0.06	-0.48
20,623.00	89.78	179.51	11,863.37	-8,905.03	-167.92	8,906.56	0.11	-0.03	-0.11
20,718.00	89.72	179.41	11,863.79	-9,000.03	-167.03	9,001.53	0.12	-0.06	-0.11
20,811.00	89.73	178.72	11,864.23	-9,093.01	-165.51	9,094.48	0.74	0.01	-0.74
20,906.00	90.30	179.34	11,864.21	-9,188.00	-163.90	9,189.43	0.89	0.60	0.65
21,000.00	89.81	180.26	11,864.12	-9,282.00	-163.57	9,283.41	1.11	-0.52	0.98
21,093.00	89.44	179.51	11,864.73	-9,374.99	-163.39	9,376.40	0.90	-0.40	-0.81
21,188.00	89.84	179.35	11,865.32	-9,469.99	-162.44	9,471.36	0.45	0.42	-0.17
21,283.00	89.75	179.23	11,865.66	-9,564.98	-161.27	9,566.33	0.16	-0.09	-0.13
21,377.00	90.45	181.11	11,865.50	-9,658.97	-161.54	9,660.32	2.13	0.74	2.00
21,471.00	89.76	180.58	11,865.33	-9,752.96	-162.93	9,754.31	0.93	-0.73	-0.56
21,565.00	90.27	180.97	11,865.30	-9,846.95	-164.20	9,848.31	0.68	0.54	0.41
21,659.00	89.85	179.31	11,865.20	-9,940.95	-164.43	9,942.30	1.82	-0.45	-1.77
21,750.00	90.28	179.30	11,865.10	-10,031.94	-163.33	10,033.27	0.47	0.47	-0.01
Final Phoenix MWD Survey									
21,785.00	90.28	179.30	11,864.93	-10,066.94	-162.90	10,068.25	0.00	0.00	0.00
Projection to TD									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,200.12	1,200.00	13 3/8" Casing	13-3/8	17-1/2	
12,370.00	11,883.46	9 5/8" Casing	9-5/8	12-1/4	
21,650.00	11,865.18	5 1/2" Casing	5-1/2	8-1/2	

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,310.00	1,309.83	0.09	3.81	First Phoenix MWD Survey
21,750.00	11,865.10	-10,031.94	-163.33	Final Phoenix MWD Survey
21,785.00	11,864.93	-10,066.94	-162.90	Projection to TD