



PHOENIX
TECHNOLOGY SERVICES

November 22, 2019

Oil Conservation Division
State of New Mexico
1625 N. French Drive
District 1 - Hobbs
Hobbs, New Mexico 88240

HOBBS OCD

DEC 10 2019

RECEIVED

Attention: Regulatory Department

Re: Conoco Phillips
Zia Hills 20 Federal Com 108H
Lea County, NM
API #30-025-45717
Job No. 64795

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Nathan Tatum	108H	1,311	21,712	9/10/19	11/20/19	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Brittany Carley

Brittany Carley
Operations Administrator

SURVEY DATA CERTIFICATION



PHOENIX
TECHNOLOGY SERVICES

Job #: 64795
 Client: Conoco Phillips
 County & State: Lea, New Mexico
 Well: Zia Hills 20 Federal Com 108H
 API No: 30-025-45717
 Proposed Direction: 177.67°

TIE-IN DATA

MD	TVD	INC	AZM	N/-S	E/-W	DATA SOURCE
1111.00 ft	1110.92 ft	2.06°	2.26°	2.85 S	6.5 E	Velocity
Data Source Company:						Phoenix Technology

SURVEY DATA

First Survey Date	First Survey Depth	INC	AZM
10-Sep-19	1,311 ft	2.56°	0.84°

Last Survey Date	Last Survey Depth	INC	AZM
20-Nov-19	21,712 ft	89.65°	179.45°

Survey Instrument Type
Velocity

Projected TD Survey Date	Projected TD Survey Depth	INC	AZM
20-Nov-19	21,745 ft	89.65°	179.45°

CORRECTION INFORMATION

Magnetic Declination Used	6.74 degrees
Grid Convergence Used	0.34 degrees
Total Correction	6.40 degrees

Corrected to True/Grid North
Grid North

TO THE BEST OF MY KNOWLEDGE, I
 CERTIFY THIS SURVEY DATA TO BE TRUE
 AND CORRECT.

Nathan Tatum

Signature

11/20/2019

Date

ConocoPhillips MCBU - Permian-Panhandle Gold Data

Planning - NM East State Zone - 3001

ZIA HILLS 20 FEDERAL COM 108H

ZIA HILLS 20 FEDERAL COM 108H

OH / 64795

Survey: 1_Zia_Hills_20_Federal_Com_108H

Standard Survey Report

21 November, 2019

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 108H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3184.30ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 108H	MD Reference:	KB @ 3184.30ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 108H	North Reference:	Grid
Wellbore:	OH / 64795	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 108H				
Site Position:		Northing:	374,419.260 usft	Latitude:	32° 1' 40.023 N
From:	Map	Easting:	697,952.970 usft	Longitude:	103° 41' 40.479 W
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.34 °

Well	ZIA HILLS 20 FEDERAL COM 108H					
Well Position	+N/-S	0.00 ft	Northing:	374,419.260 usft	Latitude:	32° 1' 40.023 N
	+E/-W	0.00 ft	Easting:	697,952.970 usft	Longitude:	103° 41' 40.479 W
Position Uncertainty		2.00 ft	Wellhead Elevation:	ft	Ground Level:	3,153.80 ft

Wellbore	OH / 64795				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	BGGM2018	6/19/2019	(°)	(°)	(nT)
			6.87	59.77	47,632.88263108

Design	Surveys (Nabors 894)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	177.67	

Survey Program	Date 11/21/2019			
From	To	Survey (Wellbore)	Tool Name	Description
(ft)	(ft)			
47.50	1,111.00	0_Zia_Hills_20_Federal_Com_108H (OH /	GOOD GYRO	GOOD GYRO
1,311.00	21,745.00	1_Zia_Hills_20_Federal_Com_108H (OH /	MWD+IFR1+MS_CoP	Fixed:v2:Eagleford, crustal dec + 3-axis corr.

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(ft)	(ft)	Section	Rate	Rate	Rate
(ft)			(ft)			(ft)	(°/100ft)	(°/100ft)	(°/100ft)
1,111.00	2.06	2.26	1,110.92	-2.85	6.50	3.11	0.00	0.00	0.00
1,311.00	2.56	0.84	1,310.76	5.21	6.71	-4.93	0.25	0.25	-0.71
First Phoenix MWD Survey									
1,403.00	2.82	5.35	1,402.66	9.52	6.95	-9.23	0.36	0.28	4.90
1,497.00	0.57	315.64	1,496.61	12.15	6.84	-11.86	2.65	-2.39	-52.88
1,591.00	2.22	195.05	1,590.59	10.73	6.04	-10.47	2.72	1.76	-128.29
1,685.00	1.99	190.19	1,684.53	7.36	5.27	-7.14	0.31	-0.24	-5.17
1,778.00	1.44	190.49	1,777.49	4.63	4.78	-4.43	0.59	-0.59	0.32
1,873.00	1.22	196.72	1,872.46	2.48	4.27	-2.31	0.28	-0.23	6.56

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data		Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 108H					
Project:	Planning - NM East State Zone - 3001		TVD Reference:	KB @ 3184.30ft (Nabors 894)					
Site:	ZIA HILLS 20 FEDERAL COM 108H		MD Reference:	KB @ 3184.30ft (Nabors 894)					
Well:	ZIA HILLS 20 FEDERAL COM 108H		North Reference:	Grid					
Wellbore:	OH / 64795		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)
1,967.00	0.98	190.26	1,966.44	0.73	3.84	-0.58	0.29	-0.26	-6.87
2,062.00	0.96	195.46	2,061.43	-0.83	3.48	0.97	0.09	-0.02	5.47
2,155.00	0.69	190.04	2,154.42	-2.13	3.17	2.26	0.30	-0.29	-5.83
2,250.00	0.52	185.41	2,249.41	-3.13	3.03	3.25	0.19	-0.18	-4.87
2,343.00	0.58	197.86	2,342.41	-4.00	2.85	4.11	0.14	0.06	13.39
2,437.00	0.81	217.71	2,436.40	-4.97	2.30	5.06	0.35	0.24	21.12
2,532.00	0.59	212.39	2,531.40	-5.92	1.62	5.98	0.24	-0.23	-5.60
2,626.00	0.73	233.80	2,625.39	-6.68	0.88	6.71	0.30	0.15	22.78
2,721.00	0.53	251.66	2,720.38	-7.18	-0.02	7.17	0.29	-0.21	18.80
2,816.00	0.39	207.15	2,815.38	-7.60	-0.59	7.57	0.39	-0.15	-46.85
2,911.00	0.29	205.13	2,910.38	-8.11	-0.84	8.07	0.11	-0.11	-2.13
3,005.00	0.44	185.97	3,004.38	-8.68	-0.98	8.84	0.20	0.16	-20.38
3,099.00	0.13	129.82	3,098.38	-9.11	-0.93	9.06	0.41	-0.33	-59.73
3,193.00	0.33	94.99	3,192.38	-9.20	-0.58	9.17	0.25	0.21	-37.05
3,288.00	0.35	58.60	3,287.37	-9.07	-0.06	9.06	0.22	0.02	-38.31
3,382.00	0.29	88.97	3,381.37	-8.92	0.42	8.93	0.19	-0.06	32.31
3,477.00	0.24	107.81	3,476.37	-8.98	0.85	9.00	0.11	-0.05	19.83
3,571.00	0.26	110.09	3,570.37	-9.11	1.24	9.15	0.02	0.02	2.43
3,666.00	0.27	94.07	3,665.37	-9.20	1.67	9.26	0.08	0.01	-16.86
3,760.00	0.66	106.87	3,759.37	-9.37	2.41	9.46	0.43	0.41	13.72
3,853.00	0.67	111.02	3,852.36	-9.72	3.43	9.86	0.05	0.01	4.35
3,948.00	0.78	120.30	3,947.35	-10.25	4.50	10.42	0.17	0.12	9.77
4,042.00	1.23	130.42	4,041.34	-11.23	5.82	11.45	0.51	0.48	10.77
4,137.00	0.49	115.80	4,136.33	-12.07	6.96	12.34	0.81	-0.78	-15.39
4,230.00	0.87	318.66	4,229.32	-11.71	6.86	11.98	1.44	0.41	-168.97
4,325.00	0.61	305.60	4,324.32	-10.87	5.97	11.11	0.32	-0.27	-13.75
4,419.00	0.22	289.52	4,418.31	-10.52	5.39	10.73	0.43	-0.41	-17.11
4,513.00	0.28	268.93	4,512.31	-10.46	4.99	10.66	0.11	0.06	-21.90
4,608.00	0.24	324.66	4,607.31	-10.31	4.64	10.49	0.26	-0.04	58.66
4,702.00	0.33	306.15	4,701.31	-9.99	4.31	10.15	0.14	0.10	-19.69
4,796.00	0.34	283.22	4,795.31	-9.76	3.82	9.91	0.14	0.01	-24.39
4,890.00	0.32	284.55	4,889.31	-9.63	3.30	9.76	0.02	-0.02	1.41
4,984.00	0.15	224.33	4,983.31	-9.66	2.96	9.77	0.30	-0.18	-64.06
5,079.00	0.28	238.20	5,078.31	-9.87	2.67	9.97	0.15	0.14	14.60
5,174.00	0.09	177.23	5,173.31	-10.06	2.48	10.16	0.26	-0.20	-64.18
5,269.00	0.16	238.50	5,268.30	-10.21	2.37	10.30	0.15	0.07	64.49
5,363.00	0.05	231.39	5,362.30	-10.30	2.23	10.38	0.12	-0.12	-7.56
5,457.00	0.13	245.16	5,456.30	-10.37	2.10	10.45	0.09	0.09	14.65
5,551.00	0.07	255.44	5,550.30	-10.43	1.94	10.50	0.07	-0.06	10.94
5,646.00	0.09	246.86	5,645.30	-10.47	1.82	10.54	0.02	0.02	-9.03
5,740.00	0.12	261.24	5,739.30	-10.52	1.65	10.58	0.04	0.03	15.30
5,834.00	0.16	331.15	5,833.30	-10.42	1.49	10.47	0.17	0.04	74.37

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 108H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3184.30ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 108H	MD Reference:	KB @ 3184.30ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 108H	North Reference:	Grid
Wellbore:	OH / 64795	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)
5,928.00	0.49	7.55	5,927.30	-9.91	1.48	9.96	0.40	0.35	38.72
6,023.00	1.35	17.32	6,022.29	-8.43	1.87	8.50	0.92	0.91	10.28
6,117.00	2.56	21.60	6,116.23	-5.43	2.97	5.54	1.30	1.29	4.55
6,211.00	3.92	24.04	6,210.08	-0.54	5.05	0.74	1.45	1.45	2.60
6,310.00	4.44	29.29	6,308.82	5.89	8.31	-5.55	0.65	0.53	5.30
6,404.00	5.63	32.43	6,402.45	12.96	12.56	-12.44	1.30	1.27	3.34
6,499.00	7.41	40.04	6,496.84	21.58	19.00	-20.79	2.08	1.87	8.01
6,593.00	7.40	54.10	6,590.06	29.77	27.80	-28.62	1.92	-0.01	14.96
6,688.00	7.32	54.66	6,684.28	36.86	37.70	-35.30	0.11	-0.08	0.59
6,782.00	6.65	62.29	6,777.58	42.86	47.40	-40.89	1.22	-0.71	8.12
6,877.00	6.13	68.75	6,871.99	47.25	57.00	-44.90	0.93	-0.55	6.80
6,971.00	5.75	69.84	6,965.49	50.70	66.10	-47.97	0.42	-0.40	1.16
7,066.00	5.49	71.70	7,060.03	53.76	74.88	-50.67	0.33	-0.27	1.96
7,160.00	5.11	66.92	7,153.63	56.82	83.00	-53.39	0.62	-0.40	-5.09
7,255.00	5.09	65.73	7,248.25	60.21	90.73	-56.47	0.11	-0.02	-1.25
7,349.00	5.09	67.61	7,341.88	63.51	98.39	-59.46	0.18	0.00	2.00
7,443.00	5.04	70.32	7,435.52	66.49	106.13	-62.12	0.26	-0.05	2.88
7,537.00	5.16	68.79	7,529.14	69.41	113.96	-64.72	0.19	0.13	-1.63
7,631.00	5.58	63.72	7,622.73	72.96	122.00	-67.94	0.67	0.45	-5.39
7,724.00	5.62	64.73	7,715.29	76.91	130.17	-71.55	0.11	0.04	1.09
7,819.00	5.60	64.69	7,809.83	80.87	138.57	-75.17	0.02	-0.02	-0.04
7,913.00	5.23	66.88	7,903.41	84.52	146.65	-78.48	0.45	-0.39	2.33
8,007.00	4.78	66.19	7,997.05	87.78	154.18	-81.44	0.48	-0.48	-0.73
8,102.00	4.60	64.40	8,091.74	91.02	161.23	-84.39	0.24	-0.19	-1.88
8,196.00	3.97	66.54	8,185.47	93.95	167.62	-87.06	0.69	-0.67	2.28
8,291.00	3.51	65.54	8,280.27	96.46	173.28	-89.34	0.49	-0.48	-1.05
8,385.00	3.06	65.50	8,374.12	98.69	178.19	-91.37	0.48	-0.48	-0.04
8,479.00	2.82	64.27	8,467.99	100.74	182.55	-93.23	0.26	-0.26	-1.31
8,573.00	2.23	63.16	8,561.90	102.57	186.27	-94.91	0.63	-0.63	-1.18
8,668.00	1.86	62.44	8,656.84	104.11	189.28	-96.33	0.39	-0.39	-0.76
8,761.00	1.98	43.62	8,749.79	105.98	191.73	-98.09	0.69	0.13	-20.24
8,856.00	1.19	70.61	8,844.75	107.49	193.79	-99.52	1.12	-0.83	28.41
8,948.00	1.61	59.58	8,936.72	108.46	195.81	-100.41	0.54	0.46	-11.99
9,041.00	1.24	55.12	9,029.70	109.70	197.76	-101.57	0.42	-0.40	-4.80
9,135.00	0.34	12.05	9,123.69	110.55	198.65	-102.39	1.08	-0.96	-45.82
9,229.00	0.29	260.98	9,217.69	110.79	198.48	-102.63	0.55	-0.05	-118.16
9,322.00	0.70	95.70	9,310.68	110.70	198.81	-102.52	1.06	0.44	-177.72
9,416.00	1.57	77.50	9,404.66	110.92	200.64	-102.67	0.99	0.93	-19.36
9,510.00	1.74	41.86	9,498.63	112.26	202.85	-103.92	1.09	0.18	-37.91
9,604.00	2.63	26.05	9,592.56	115.26	204.75	-106.84	1.13	0.95	-16.82
9,698.00	2.06	41.78	9,686.48	118.46	206.82	-109.95	0.91	-0.61	16.73
9,793.00	1.63	46.63	9,781.43	120.66	208.94	-112.06	0.48	-0.45	5.11
9,887.00	1.47	40.35	9,875.40	122.50	210.69	-113.83	0.25	-0.17	-6.68

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 108H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3184.30ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 108H	MD Reference:	KB @ 3184.30ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 108H	North Reference:	Grid
Wellbore:	OH / 64795	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)
9,981.00	1.80	77.70	9,969.36	123.73	212.91	-114.97	1.16	0.35	39.73
10,076.00	2.14	91.96	10,064.31	123.99	216.14	-115.10	0.63	0.36	15.01
10,171.00	1.09	87.05	10,159.27	123.97	218.82	-114.97	1.11	-1.11	-5.17
10,265.00	0.56	112.66	10,253.26	123.84	220.14	-114.79	0.67	-0.56	27.24
10,360.00	0.61	92.36	10,348.25	123.64	221.07	-114.55	0.22	0.05	-21.37
10,454.00	0.36	94.14	10,442.25	123.60	221.86	-114.48	0.27	-0.27	1.89
10,548.00	0.15	156.15	10,536.25	123.47	222.21	-114.33	0.34	-0.22	65.97
10,641.00	0.31	173.32	10,629.25	123.10	222.29	-113.97	0.19	0.17	18.46
10,735.00	0.39	185.09	10,723.25	122.53	222.29	-113.39	0.11	0.09	12.52
10,829.00	0.37	208.56	10,817.24	121.95	222.12	-112.82	0.17	-0.02	24.97
10,923.00	0.48	189.51	10,911.24	121.29	221.90	-112.17	0.19	0.12	-20.27
11,051.00	0.28	208.26	11,039.24	120.49	221.67	-111.38	0.18	-0.16	14.65
11,117.00	0.52	198.27	11,105.24	120.06	221.50	-110.96	0.38	0.36	-15.14
11,164.00	2.73	182.47	11,152.21	118.74	221.38	-109.64	4.75	4.70	-33.62
11,211.00	4.82	181.47	11,199.11	115.65	221.28	-106.56	4.45	4.45	-2.13
11,258.00	7.64	180.66	11,245.83	110.55	221.20	-101.47	6.00	6.00	-1.72
11,306.00	10.66	176.83	11,293.21	102.92	221.41	-93.84	6.41	6.29	-7.98
11,353.00	14.93	176.44	11,339.03	92.54	222.02	-83.43	9.09	9.09	-0.83
11,400.00	20.09	175.16	11,383.84	78.44	223.08	-69.31	11.01	10.98	-2.72
11,447.00	25.16	174.98	11,427.21	60.43	224.64	-51.25	10.79	10.79	-0.38
11,494.00	29.18	174.46	11,469.02	39.07	226.62	-29.82	8.57	8.55	-1.11
11,541.00	32.99	173.90	11,509.26	14.93	229.08	-5.61	8.13	8.11	-1.19
11,588.00	36.37	172.58	11,547.90	-11.62	232.25	21.05	7.37	7.19	-2.81
11,675.00	41.87	169.64	11,615.38	-65.80	240.80	75.54	6.67	6.32	-3.38
11,705.00	45.45	166.86	11,637.08	-86.07	245.04	95.96	13.54	11.93	-9.27
11,734.00	49.69	165.10	11,656.65	-106.83	250.23	116.91	15.29	14.62	-6.07
11,765.00	52.48	165.06	11,676.12	-130.13	256.44	140.45	9.00	9.00	-0.13
11,795.00	54.24	164.95	11,694.02	-153.39	262.67	163.94	5.87	5.87	-0.37
11,825.00	55.32	166.35	11,711.32	-177.13	268.74	187.91	5.24	3.60	4.67
11,856.00	56.72	168.14	11,728.65	-202.20	274.41	213.19	6.58	4.52	5.77
11,887.00	58.17	169.52	11,745.33	-227.83	279.47	239.01	6.00	4.68	4.45
11,919.00	61.27	171.20	11,761.46	-255.07	284.09	266.41	10.70	9.69	5.25
11,949.00	65.65	171.57	11,774.87	-281.60	288.11	293.08	14.64	14.60	1.23
11,981.00	68.57	171.42	11,787.31	-310.75	292.47	322.39	9.14	9.13	-0.47
12,012.00	69.60	171.34	11,798.38	-339.38	296.81	351.17	3.33	3.32	-0.26
12,043.00	71.07	171.47	11,808.81	-368.25	301.17	380.19	4.76	4.74	0.42
12,073.00	71.74	172.18	11,818.38	-396.39	305.22	408.47	3.17	2.23	2.37
12,105.00	72.44	173.72	11,828.22	-426.61	308.95	438.82	5.07	2.19	4.81
12,135.00	72.97	174.65	11,837.14	-455.11	311.85	467.41	3.45	1.77	3.10
12,167.00	73.51	174.67	11,846.36	-485.61	314.71	498.01	1.69	1.69	0.06
12,199.00	74.78	173.96	11,855.11	-516.24	317.76	528.74	4.51	3.97	-2.22
12,230.00	77.18	173.02	11,862.62	-546.12	321.17	558.73	8.28	7.74	-3.03

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 108H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3184.30ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 108H	MD Reference:	KB @ 3184.30ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 108H	North Reference:	Grid
Wellbore:	OH / 64795	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)
12,260.00	80.12	172.97	11,868.52	-575.31	324.75	588.04	9.80	9.80	-0.17
12,292.00	82.27	173.20	11,873.42	-606.71	328.56	619.56	6.76	6.72	0.72
12,355.00	89.36	175.49	11,878.01	-669.19	334.74	682.24	11.82	11.25	3.63
12,450.00	91.04	175.72	11,877.68	-763.90	342.02	777.18	1.78	1.77	0.24
12,544.00	89.99	179.30	11,876.84	-857.80	346.10	871.16	3.97	-1.12	3.81
12,637.00	89.88	179.27	11,876.94	-950.79	347.26	964.12	0.12	-0.12	-0.03
12,732.00	89.47	178.36	11,877.48	-1,045.77	349.23	1,059.10	1.05	-0.43	-0.96
12,826.00	87.99	175.54	11,879.56	-1,139.60	354.23	1,153.06	3.39	-1.57	-3.00
12,920.00	92.58	178.30	11,879.10	-1,233.43	359.28	1,247.01	5.70	4.88	2.94
13,014.00	91.66	179.15	11,875.62	-1,327.34	361.37	1,340.93	1.33	-0.98	0.90
13,108.00	86.08	177.36	11,877.47	-1,421.23	364.23	1,434.87	6.23	-5.94	-1.90
13,202.00	89.51	177.96	11,881.09	-1,515.07	368.06	1,528.78	3.70	3.65	0.64
13,295.00	89.51	176.99	11,881.88	-1,607.98	372.16	1,621.78	1.04	0.00	-1.04
13,390.00	91.01	175.86	11,881.45	-1,702.79	378.08	1,716.75	1.98	1.58	-1.19
13,484.00	93.43	180.79	11,877.81	-1,798.64	380.83	1,810.64	5.84	2.57	5.24
13,578.00	92.23	182.69	11,873.17	-1,890.48	377.98	1,904.28	2.39	-1.28	2.02
13,668.00	90.39	181.56	11,871.11	-1,980.38	374.64	1,993.98	2.40	-2.04	-1.26
13,762.00	86.64	180.45	11,873.55	-2,074.32	372.99	2,087.77	4.16	-3.99	-1.18
13,857.00	88.24	181.75	11,877.79	-2,169.20	371.17	2,182.50	2.17	1.68	1.37
13,951.00	88.81	181.18	11,880.21	-2,263.14	368.77	2,276.26	0.86	0.61	-0.61
14,045.00	89.36	181.73	11,881.71	-2,357.10	366.38	2,370.04	0.83	0.59	0.59
14,138.00	90.88	181.13	11,881.51	-2,450.07	364.06	2,462.84	1.76	1.63	-0.65
14,233.00	89.87	179.70	11,880.89	-2,545.06	363.37	2,557.73	1.84	-1.06	-1.51
14,327.00	89.76	179.42	11,881.20	-2,639.05	364.09	2,651.67	0.32	-0.12	-0.30
14,421.00	89.98	179.66	11,881.41	-2,733.05	364.85	2,745.62	0.35	0.23	0.26
14,515.00	89.38	179.01	11,881.93	-2,827.04	365.94	2,839.58	0.94	-0.64	-0.69
14,609.00	90.44	180.07	11,882.08	-2,921.04	366.69	2,933.53	1.59	1.13	1.13
14,702.00	90.01	179.56	11,881.72	-3,014.03	366.99	3,026.46	0.72	-0.46	-0.55
14,795.00	90.33	179.91	11,881.44	-3,107.03	367.42	3,119.40	0.51	0.34	0.38
14,889.00	89.64	179.51	11,881.47	-3,201.03	367.90	3,213.34	0.85	-0.73	-0.43
14,984.00	89.52	180.09	11,882.16	-3,296.03	368.23	3,308.27	0.62	-0.13	0.61
15,078.00	89.53	180.24	11,882.94	-3,390.02	367.96	3,402.18	0.16	0.01	0.16
15,172.00	89.65	179.78	11,883.61	-3,484.02	367.95	3,496.10	0.51	0.13	-0.49
15,265.00	89.75	180.37	11,884.10	-3,577.02	367.82	3,589.02	0.64	0.11	0.63
15,359.00	89.67	181.21	11,884.58	-3,671.01	366.53	3,682.87	0.90	-0.09	0.89
15,453.00	89.53	180.31	11,885.23	-3,765.00	365.28	3,776.73	0.97	-0.15	-0.96
15,548.00	89.85	180.96	11,885.75	-3,859.99	364.23	3,871.60	0.76	0.34	0.68
15,642.00	89.61	178.42	11,886.19	-3,953.98	364.74	3,965.54	2.71	-0.26	-2.70
15,736.00	89.38	177.29	11,887.02	-4,047.91	368.25	4,059.53	1.23	-0.24	-1.20
15,830.00	89.84	177.63	11,887.66	-4,141.81	372.42	4,153.53	0.61	0.49	0.36
15,924.00	89.56	177.49	11,888.15	-4,235.73	376.42	4,247.53	0.33	-0.30	-0.15
16,018.00	90.04	177.32	11,888.48	-4,329.63	380.68	4,341.52	0.54	0.51	-0.18
16,113.00	89.35	177.17	11,888.98	-4,424.52	385.24	4,436.52	0.74	-0.73	-0.16

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 108H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3184.30ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 108H	MD Reference:	KB @ 3184.30ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 108H	North Reference:	Grid
Wellbore:	OH / 64795	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)
16,206.00	92.24	179.20	11,887.69	-4,517.45	388.19	4,529.49	3.80	3.11	2.18
16,300.00	92.79	179.77	11,883.57	-4,611.35	389.03	4,623.35	0.84	0.59	0.61
16,394.00	92.15	179.38	11,879.52	-4,705.26	389.73	4,717.21	0.80	-0.68	-0.41
16,488.00	92.12	179.62	11,876.02	-4,799.19	390.55	4,811.10	0.26	-0.03	0.26
16,581.00	88.84	177.35	11,875.24	-4,892.14	393.01	4,904.07	4.29	-3.53	-2.44
16,675.00	87.06	179.92	11,878.60	-4,986.04	395.25	4,997.98	3.32	-1.89	2.73
16,769.00	88.96	181.26	11,881.86	-5,079.97	394.28	5,091.80	2.47	2.02	1.43
16,864.00	88.73	182.70	11,883.78	-5,174.89	391.00	5,186.51	1.53	-0.24	1.52
16,957.00	88.88	181.28	11,885.72	-5,267.81	387.77	5,279.22	1.54	0.16	-1.53
17,052.00	89.30	182.12	11,887.23	-5,362.76	384.95	5,373.97	0.99	0.44	0.88
17,145.00	88.82	181.55	11,888.75	-5,455.70	381.97	5,466.72	0.80	-0.52	-0.61
17,240.00	88.68	181.78	11,890.83	-5,550.63	379.21	5,561.46	0.28	-0.15	0.24
17,334.00	89.38	181.88	11,892.42	-5,644.57	376.21	5,655.20	0.75	0.74	0.11
17,429.00	89.53	181.16	11,893.32	-5,739.53	373.69	5,749.98	0.77	0.16	-0.76
17,524.00	89.53	179.52	11,894.10	-5,834.53	373.13	5,844.87	1.73	0.00	-1.73
17,618.00	89.48	178.90	11,894.91	-5,928.51	374.43	5,938.83	0.66	-0.05	-0.66
17,711.00	89.82	179.09	11,895.48	-6,021.50	376.06	6,031.81	0.42	0.37	0.20
17,805.00	90.30	179.39	11,895.38	-6,115.49	377.30	6,125.77	0.60	0.51	0.32
17,900.00	89.35	178.43	11,895.67	-6,210.47	379.11	6,220.75	1.42	-1.00	-1.01
17,994.00	89.70	178.46	11,896.45	-6,304.43	381.66	6,314.73	0.37	0.37	0.03
18,088.00	89.70	178.55	11,896.94	-6,398.40	384.11	6,408.72	0.10	0.00	0.10
18,182.00	89.64	178.86	11,897.49	-6,492.37	386.24	6,502.71	0.34	-0.06	0.33
18,276.00	89.76	179.46	11,897.98	-6,586.36	387.62	6,596.67	0.65	0.13	0.64
18,371.00	89.39	179.25	11,898.68	-6,681.35	388.69	6,691.63	0.45	-0.39	-0.22
18,464.00	89.88	180.04	11,899.27	-6,774.35	389.26	6,784.57	1.00	0.53	0.85
18,557.00	89.85	180.10	11,899.49	-6,867.35	389.15	6,877.49	0.07	-0.03	0.06
18,652.00	89.42	179.23	11,900.10	-6,962.34	389.70	6,972.43	1.02	-0.45	-0.92
18,747.00	89.88	179.83	11,900.68	-7,057.34	390.48	7,067.38	0.80	0.48	0.63
18,841.00	90.04	178.83	11,900.74	-7,151.33	391.58	7,161.33	1.08	0.17	-1.06
18,936.00	89.73	179.98	11,900.94	-7,246.32	392.57	7,256.29	1.25	-0.33	1.21
19,030.00	89.68	179.77	11,901.42	-7,340.32	392.77	7,350.22	0.23	-0.05	-0.22
19,125.00	89.90	179.20	11,901.77	-7,435.31	393.63	7,445.17	0.64	0.23	-0.60
19,219.00	89.81	178.75	11,902.01	-7,529.30	395.31	7,539.14	0.49	-0.10	-0.48
19,313.00	89.90	178.66	11,902.24	-7,623.27	397.43	7,633.13	0.14	0.10	-0.10
19,407.00	89.72	179.37	11,902.56	-7,717.26	399.05	7,727.10	0.78	-0.19	0.76
19,501.00	89.30	178.54	11,903.36	-7,811.24	400.76	7,821.07	0.99	-0.45	-0.88
19,595.00	90.25	179.39	11,903.73	-7,905.22	402.46	7,915.05	1.36	1.01	0.90
19,689.00	89.65	180.21	11,903.81	-7,999.22	402.79	8,008.98	1.08	-0.64	0.87
19,782.00	88.18	179.55	11,905.57	-8,092.20	402.98	8,101.89	1.73	-1.58	-0.71
19,876.00	89.33	180.33	11,907.61	-8,186.17	403.08	8,195.79	1.48	1.22	0.83
19,971.00	89.84	181.69	11,908.30	-8,281.15	401.41	8,290.63	1.53	0.54	1.43
20,066.00	88.90	179.93	11,909.35	-8,376.13	400.06	8,385.47	2.10	-0.99	-1.85

ConocoPhillips

Survey Report

Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	Local Co-ordinate Reference:	Well ZIA HILLS 20 FEDERAL COM 108H
Project:	Planning - NM East State Zone - 3001	TVD Reference:	KB @ 3184.30ft (Nabors 894)
Site:	ZIA HILLS 20 FEDERAL COM 108H	MD Reference:	KB @ 3184.30ft (Nabors 894)
Well:	ZIA HILLS 20 FEDERAL COM 108H	North Reference:	Grid
Wellbore:	OH / 64795	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)
20,160.00	89.87	180.87	11,910.36	-8,470.13	399.41	8,479.36	1.44	1.03	1.00
20,252.00	89.68	180.73	11,910.72	-8,562.12	398.12	8,571.22	0.26	-0.21	-0.15
20,346.00	89.79	181.14	11,911.15	-8,656.10	396.59	8,665.07	0.45	0.12	0.44
20,441.00	90.36	181.28	11,911.03	-8,751.08	394.58	8,759.89	0.62	0.60	0.15
20,534.00	89.98	181.72	11,910.75	-8,844.05	392.15	8,852.68	0.63	-0.41	0.47
20,628.00	89.84	180.59	11,910.90	-8,938.03	390.25	8,946.50	1.21	-0.15	-1.20
20,723.00	88.56	178.27	11,912.23	-9,033.00	391.20	9,041.44	2.79	-1.35	-2.44
20,816.00	89.81	178.43	11,913.55	-9,125.95	393.88	9,134.42	1.36	1.34	0.17
20,910.00	89.38	178.90	11,914.21	-9,219.93	396.07	9,228.41	0.68	-0.46	0.50
21,005.00	89.67	179.84	11,915.00	-9,314.92	397.11	9,323.36	1.04	0.31	0.99
21,098.00	89.90	180.06	11,915.35	-9,407.91	397.19	9,416.28	0.34	0.25	0.24
21,193.00	89.99	179.68	11,915.44	-9,502.91	397.41	9,511.21	0.41	0.09	-0.40
21,287.00	90.04	179.17	11,915.42	-9,596.91	398.35	9,605.17	0.55	0.05	-0.54
21,381.00	89.55	179.49	11,915.75	-9,690.90	399.45	9,699.13	0.62	-0.52	0.34
21,475.00	89.92	179.44	11,916.19	-9,784.90	400.33	9,793.08	0.40	0.39	-0.05
21,570.00	89.24	178.93	11,916.88	-9,879.88	401.68	9,888.05	0.89	-0.72	-0.54
21,663.00	89.42	179.07	11,917.97	-9,972.86	403.30	9,981.01	0.25	0.19	0.15
21,712.00	89.65	179.45	11,918.37	-10,021.86	403.94	10,029.99	0.91	0.47	0.78
Final Phoenix MWD Survey									
21,745.00	89.65	179.45	11,918.57	-10,054.85	404.25	10,062.98	0.00	0.00	0.00
Projection to TD									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")
1,200.14	1,200.00	13 3/8" Casing		13-3/8	17-1/2
12,380.00	11,878.19	9 5/8" Casing		9-5/8	12-1/4
21,657.33	11,917.91	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)		
1,311.00	1,310.76	5.21	6.71	First Phoenix MWD Survey	
21,712.00	11,920.40	-10,021.86	403.94	Final Phoenix MWD Survey	
21,745.00	11,920.60	-10,054.85	404.25	Projection to TD	