

ConocoPhillips RBU Gold Data

Niobrara Central Zone

Eastern Hills

Eastern Hills 4-65 17-18 2DH

Eastern Hills 4-65 17-18 2DH

Plan: Eastern Hills 4-65 17-18 2DH

Standard Planning Report

16 August, 2017

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Eastern Hills 4-65 17-18 2DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5659.30ft (27' RKB)
Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5659.30ft (27' RKB)
Site:	Eastern Hills	North Reference:	True
Well:	Eastern Hills 4-65 17-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Eastern Hills 4-65 17-18 2DH		
Design:	Eastern Hills 4-65 17-18 2DH		

Project	Niobrara Central Zone, Colorado Central Zone, FIPS Zone: 0502		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		Using geodetic scale factor

Site		Eastern Hills			
Site Position:		Northing:	1,684,847.875 usft	Latitude:	39° 42' 39.949 N
From:	Lat/Long	Easting:	3,220,540.398 usft	Longitude:	104° 42' 57.931 W
Position Uncertainty:	0.00 ft	Slot Radius:	26 "	Grid Convergence:	0.49 °

Well	Eastern Hills 4-65 17-18 2DH					
Well Position	+N/-S	-2,099.64 ft	Northing:	1,682,833.829 usft	Latitude:	39° 42' 19.180 N
	+E/-W	9,908.01 ft	Easting:	3,230,466.060 usft	Longitude:	104° 40' 51.160 W
Position Uncertainty		2.00 ft	Wellhead Elevation:		Ground Level:	5,632.30 ft

Wellbore	Eastern Hills 4-65 17-18 2DH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	8/15/2017	8.28	66.35	52,001.49000872

Design	Eastern Hills 4-65 17-18 2DH			
Audit Notes:	JM 8/15/2017 Rev B			
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	267.74

Plan Survey Tool Program		Date	8/16/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,183.00	Eastern Hills 4-65 17-18 2DH (Ea	Gyro-BM-MS	
				Gyro - bat/mem drop m/s	
2	2,183.00	7,365.34	Eastern Hills 4-65 17-18 2DH (Ea	MWD+IFR_No SAG	
				MWD + IFR (No SAG) correctic	
3	7,365.34	18,052.55	Eastern Hills 4-65 17-18 2DH (Ea	MWD+IFR_No SAG	
				MWD + IFR (No SAG) correctic	

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Wellbore:	Eastern Hills 4-65 17-18 2DH		
Design:	Eastern Hills 4-65 17-18 2DH		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,323.02	12.35	118.39	4,316.66	-42.00	77.70	1.50	1.50	0.00	118.39	
7,365.34	12.35	118.39	7,288.64	-351.29	649.91	0.00	0.00	0.00	0.00	
8,373.94	89.99	270.24	7,966.00	-418.89	87.00	10.00	7.70	15.06	151.29	Eastern Hills 4-65 17-
18,052.55	89.99	270.24	7,967.00	-378.65	-9,591.53	0.00	0.00	0.00	0.00	Eastern Hills 4-65 17-

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Well:	Eastern Hills 4-65 17-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Eastern Hills 4-65 17-18 2DH		
Design:	Eastern Hills 4-65 17-18 2DH		

Planned 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)
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
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
1,600.00	0.00	0.00	1,600.00	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
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,183.00	0.00	0.00	2,183.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface									
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	1.50	118.39	3,599.99	-0.62	1.15	-1.13	1.50	1.50	0.00
3,700.00	3.00	118.39	3,699.91	-2.49	4.61	-4.50	1.50	1.50	0.00
3,800.00	4.50	118.39	3,799.69	-5.60	10.36	-10.13	1.50	1.50	0.00
3,900.00	6.00	118.39	3,899.27	-9.95	18.41	-18.00	1.50	1.50	0.00
4,000.00	7.50	118.39	3,998.57	-15.54	28.75	-28.11	1.50	1.50	0.00
4,100.00	9.00	118.39	4,097.54	-22.36	41.37	-40.46	1.50	1.50	0.00
4,200.00	10.50	118.39	4,196.09	-30.41	56.27	-55.02	1.50	1.50	0.00
4,300.00	12.00	118.39	4,294.16	-39.69	73.43	-71.81	1.50	1.50	0.00
4,323.02	12.35	118.39	4,316.66	-42.00	77.70	-75.98	1.50	1.50	0.00
4,400.00	12.35	118.39	4,391.87	-49.82	92.18	-90.14	0.00	0.00	0.00
4,500.00	12.35	118.39	4,489.55	-59.99	110.99	-108.53	0.00	0.00	0.00
4,600.00	12.35	118.39	4,587.24	-70.16	129.80	-126.93	0.00	0.00	0.00
4,700.00	12.35	118.39	4,684.93	-80.32	148.60	-145.32	0.00	0.00	0.00
4,800.00	12.35	118.39	4,782.62	-90.49	167.41	-163.71	0.00	0.00	0.00
4,900.00	12.35	118.39	4,880.31	-100.66	186.22	-182.11	0.00	0.00	0.00
5,000.00	12.35	118.39	4,977.99	-110.82	205.03	-200.50	0.00	0.00	0.00

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Planned 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)
5,100.00	12.35	118.39	5,075.68	-120.99	223.84	-218.89	0.00	0.00	0.00
5,200.00	12.35	118.39	5,173.37	-131.16	242.65	-237.28	0.00	0.00	0.00
5,300.00	12.35	118.39	5,271.06	-141.32	261.45	-255.68	0.00	0.00	0.00
5,400.00	12.35	118.39	5,368.74	-151.49	280.26	-274.07	0.00	0.00	0.00
5,500.00	12.35	118.39	5,466.43	-161.65	299.07	-292.46	0.00	0.00	0.00
5,600.00	12.35	118.39	5,564.12	-171.82	317.88	-310.85	0.00	0.00	0.00
5,700.00	12.35	118.39	5,661.81	-181.99	336.69	-329.25	0.00	0.00	0.00
5,800.00	12.35	118.39	5,759.49	-192.15	355.50	-347.64	0.00	0.00	0.00
5,900.00	12.35	118.39	5,857.18	-202.32	374.31	-366.03	0.00	0.00	0.00
6,000.00	12.35	118.39	5,954.87	-212.49	393.11	-384.43	0.00	0.00	0.00
6,100.00	12.35	118.39	6,052.56	-222.65	411.92	-402.82	0.00	0.00	0.00
6,200.00	12.35	118.39	6,150.25	-232.82	430.73	-421.21	0.00	0.00	0.00
6,300.00	12.35	118.39	6,247.93	-242.99	449.54	-439.60	0.00	0.00	0.00
6,400.00	12.35	118.39	6,345.62	-253.15	468.35	-458.00	0.00	0.00	0.00
6,500.00	12.35	118.39	6,443.31	-263.32	487.16	-476.39	0.00	0.00	0.00
6,600.00	12.35	118.39	6,541.00	-273.48	505.96	-494.78	0.00	0.00	0.00
6,700.00	12.35	118.39	6,638.68	-283.65	524.77	-513.18	0.00	0.00	0.00
6,800.00	12.35	118.39	6,736.37	-293.82	543.58	-531.57	0.00	0.00	0.00
6,900.00	12.35	118.39	6,834.06	-303.98	562.39	-549.96	0.00	0.00	0.00
7,000.00	12.35	118.39	6,931.75	-314.15	581.20	-568.35	0.00	0.00	0.00
7,100.00	12.35	118.39	7,029.43	-324.32	600.01	-586.75	0.00	0.00	0.00
7,200.00	12.35	118.39	7,127.12	-334.48	618.82	-605.14	0.00	0.00	0.00
7,300.00	12.35	118.39	7,224.81	-344.65	637.62	-623.53	0.00	0.00	0.00
7,365.34	12.35	118.39	7,288.64	-351.29	649.91	-635.55	0.00	0.00	0.00
7,400.00	9.45	128.58	7,322.67	-354.83	655.40	-640.89	10.00	-8.35	29.40
7,450.00	6.36	158.05	7,372.21	-359.96	659.65	-644.93	10.00	-6.17	58.93
7,500.00	6.44	204.09	7,421.93	-365.10	659.54	-644.62	10.00	0.16	92.09
7,550.00	9.61	232.65	7,471.45	-370.19	655.07	-639.96	10.00	6.33	57.12
7,600.00	13.89	245.56	7,520.40	-375.21	646.29	-630.98	10.00	8.57	25.82
7,650.00	18.53	252.30	7,568.41	-380.11	633.24	-617.76	10.00	9.28	13.48
7,700.00	23.32	256.38	7,615.10	-384.86	616.05	-600.38	10.00	9.57	8.16
7,750.00	28.17	259.12	7,660.12	-389.42	594.82	-579.00	10.00	9.71	5.49
7,800.00	33.07	261.11	7,703.14	-393.76	569.74	-553.76	10.00	9.79	3.98
7,850.00	37.99	262.64	7,743.81	-397.84	540.98	-524.86	10.00	9.84	3.05
7,900.00	42.93	263.87	7,781.85	-401.64	508.77	-492.53	10.00	9.87	2.45
7,950.00	47.88	264.88	7,816.94	-405.11	473.34	-457.00	10.00	9.90	2.03
8,000.00	52.83	265.75	7,848.83	-408.25	434.99	-418.54	10.00	9.91	1.74
8,050.00	57.79	266.51	7,877.28	-411.01	393.98	-377.46	10.00	9.92	1.52
8,100.00	62.76	267.19	7,902.07	-413.39	350.64	-334.06	10.00	9.93	1.36
8,150.00	67.73	267.81	7,923.00	-415.36	305.29	-288.67	10.00	9.94	1.25
8,200.00	72.70	268.40	7,939.92	-416.92	258.28	-241.64	10.00	9.94	1.16
8,250.00	77.67	268.95	7,952.71	-418.03	209.97	-193.32	10.00	9.94	1.10
8,300.00	82.64	269.47	7,961.25	-418.71	160.73	-144.09	10.00	9.95	1.06
8,350.00	87.61	269.99	7,965.50	-418.94	110.93	-94.32	10.00	9.95	1.04
8,373.94	89.99	270.24	7,966.00	-418.89	87.00	-70.41	10.00	9.95	1.03
8,400.00	89.99	270.24	7,966.00	-418.79	60.94	-44.37	0.00	0.00	0.00
8,500.00	89.99	270.24	7,966.01	-418.37	-39.06	55.54	0.00	0.00	0.00
8,600.00	89.99	270.24	7,966.02	-417.95	-139.06	155.44	0.00	0.00	0.00
8,700.00	89.99	270.24	7,966.03	-417.54	-239.06	255.35	0.00	0.00	0.00
8,800.00	89.99	270.24	7,966.04	-417.12	-339.06	355.25	0.00	0.00	0.00
8,900.00	89.99	270.24	7,966.05	-416.71	-439.06	455.16	0.00	0.00	0.00
9,000.00	89.99	270.24	7,966.06	-416.29	-539.06	555.06	0.00	0.00	0.00
9,100.00	89.99	270.24	7,966.08	-415.88	-639.06	654.97	0.00	0.00	0.00
9,200.00	89.99	270.24	7,966.09	-415.46	-739.06	754.87	0.00	0.00	0.00

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Design:	Eastern Hills 4-65 17-18 2DH		

Planned 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)	
9,300.00	89.99	270.24	7,966.10	-415.04	-839.06	854.78	0.00	0.00	0.00	
9,400.00	89.99	270.24	7,966.11	-414.63	-939.06	954.68	0.00	0.00	0.00	
9,500.00	89.99	270.24	7,966.12	-414.21	-1,039.05	1,054.58	0.00	0.00	0.00	
9,600.00	89.99	270.24	7,966.13	-413.80	-1,139.05	1,154.49	0.00	0.00	0.00	
9,700.00	89.99	270.24	7,966.14	-413.38	-1,239.05	1,254.39	0.00	0.00	0.00	
9,800.00	89.99	270.24	7,966.15	-412.96	-1,339.05	1,354.30	0.00	0.00	0.00	
9,900.00	89.99	270.24	7,966.16	-412.55	-1,439.05	1,454.20	0.00	0.00	0.00	
10,000.00	89.99	270.24	7,966.17	-412.13	-1,539.05	1,554.11	0.00	0.00	0.00	
10,100.00	89.99	270.24	7,966.18	-411.72	-1,639.05	1,654.01	0.00	0.00	0.00	
10,200.00	89.99	270.24	7,966.19	-411.30	-1,739.05	1,753.92	0.00	0.00	0.00	
10,300.00	89.99	270.24	7,966.20	-410.88	-1,839.05	1,853.82	0.00	0.00	0.00	
10,400.00	89.99	270.24	7,966.21	-410.47	-1,939.05	1,953.73	0.00	0.00	0.00	
10,500.00	89.99	270.24	7,966.22	-410.05	-2,039.05	2,053.63	0.00	0.00	0.00	
10,600.00	89.99	270.24	7,966.23	-409.64	-2,139.04	2,153.54	0.00	0.00	0.00	
10,700.00	89.99	270.24	7,966.24	-409.22	-2,239.04	2,253.44	0.00	0.00	0.00	
10,800.00	89.99	270.24	7,966.25	-408.81	-2,339.04	2,353.35	0.00	0.00	0.00	
10,900.00	89.99	270.24	7,966.26	-408.39	-2,439.04	2,453.25	0.00	0.00	0.00	
11,000.00	89.99	270.24	7,966.27	-407.97	-2,539.04	2,553.16	0.00	0.00	0.00	
11,100.00	89.99	270.24	7,966.28	-407.56	-2,639.04	2,653.06	0.00	0.00	0.00	
11,200.00	89.99	270.24	7,966.29	-407.14	-2,739.04	2,752.97	0.00	0.00	0.00	
11,300.00	89.99	270.24	7,966.30	-406.73	-2,839.04	2,852.87	0.00	0.00	0.00	
11,400.00	89.99	270.24	7,966.31	-406.31	-2,939.04	2,952.78	0.00	0.00	0.00	
11,500.00	89.99	270.24	7,966.32	-405.89	-3,039.04	3,052.68	0.00	0.00	0.00	
11,600.00	89.99	270.24	7,966.33	-405.48	-3,139.04	3,152.59	0.00	0.00	0.00	
11,700.00	89.99	270.24	7,966.34	-405.06	-3,239.04	3,252.49	0.00	0.00	0.00	
11,800.00	89.99	270.24	7,966.35	-404.65	-3,339.03	3,352.40	0.00	0.00	0.00	
11,900.00	89.99	270.24	7,966.36	-404.23	-3,439.03	3,452.30	0.00	0.00	0.00	
12,000.00	89.99	270.24	7,966.37	-403.82	-3,539.03	3,552.21	0.00	0.00	0.00	
12,100.00	89.99	270.24	7,966.39	-403.40	-3,639.03	3,652.11	0.00	0.00	0.00	
12,200.00	89.99	270.24	7,966.40	-402.98	-3,739.03	3,752.02	0.00	0.00	0.00	
12,300.00	89.99	270.24	7,966.41	-402.57	-3,839.03	3,851.92	0.00	0.00	0.00	
12,400.00	89.99	270.24	7,966.42	-402.15	-3,939.03	3,951.83	0.00	0.00	0.00	
12,500.00	89.99	270.24	7,966.43	-401.74	-4,039.03	4,051.73	0.00	0.00	0.00	
12,600.00	89.99	270.24	7,966.44	-401.32	-4,139.03	4,151.64	0.00	0.00	0.00	
12,700.00	89.99	270.24	7,966.45	-400.90	-4,239.03	4,251.54	0.00	0.00	0.00	
12,800.00	89.99	270.24	7,966.46	-400.49	-4,339.03	4,351.45	0.00	0.00	0.00	
12,900.00	89.99	270.24	7,966.47	-400.07	-4,439.03	4,451.35	0.00	0.00	0.00	
13,000.00	89.99	270.24	7,966.48	-399.66	-4,539.02	4,551.26	0.00	0.00	0.00	
13,100.00	89.99	270.24	7,966.49	-399.24	-4,639.02	4,651.16	0.00	0.00	0.00	
13,200.00	89.99	270.24	7,966.50	-398.82	-4,739.02	4,751.07	0.00	0.00	0.00	
13,300.00	89.99	270.24	7,966.51	-398.41	-4,839.02	4,850.97	0.00	0.00	0.00	
13,400.00	89.99	270.24	7,966.52	-397.99	-4,939.02	4,950.88	0.00	0.00	0.00	
13,500.00	89.99	270.24	7,966.53	-397.58	-5,039.02	5,050.78	0.00	0.00	0.00	
13,600.00	89.99	270.24	7,966.54	-397.16	-5,139.02	5,150.69	0.00	0.00	0.00	
13,700.00	89.99	270.24	7,966.55	-396.75	-5,239.02	5,250.59	0.00	0.00	0.00	
13,800.00	89.99	270.24	7,966.56	-396.33	-5,339.02	5,350.50	0.00	0.00	0.00	
13,900.00	89.99	270.24	7,966.57	-395.91	-5,439.02	5,450.40	0.00	0.00	0.00	
14,000.00	89.99	270.24	7,966.58	-395.50	-5,539.02	5,550.31	0.00	0.00	0.00	
14,100.00	89.99	270.24	7,966.59	-395.08	-5,639.01	5,650.21	0.00	0.00	0.00	
14,200.00	89.99	270.24	7,966.60	-394.67	-5,739.01	5,750.12	0.00	0.00	0.00	
14,300.00	89.99	270.24	7,966.61	-394.25	-5,839.01	5,850.02	0.00	0.00	0.00	
14,400.00	89.99	270.24	7,966.62	-393.83	-5,939.01	5,949.93	0.00	0.00	0.00	
14,500.00	89.99	270.24	7,966.63	-393.42	-6,039.01	6,049.83	0.00	0.00	0.00	
14,600.00	89.99	270.24	7,966.64	-393.00	-6,139.01	6,149.73	0.00	0.00	0.00	

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Eastern Hills 4-65 17-18 2DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5659.30ft (27' RKB)
Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5659.30ft (27' RKB)
Site:	Eastern Hills	North Reference:	True
Well:	Eastern Hills 4-65 17-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Eastern Hills 4-65 17-18 2DH		
Design:	Eastern Hills 4-65 17-18 2DH		

Planned 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)
14,700.00	89.99	270.24	7,966.65	-392.59	-6,239.01	6,249.64	0.00	0.00	0.00
14,800.00	89.99	270.24	7,966.66	-392.17	-6,339.01	6,349.54	0.00	0.00	0.00
14,900.00	89.99	270.24	7,966.67	-391.76	-6,439.01	6,449.45	0.00	0.00	0.00
15,000.00	89.99	270.24	7,966.68	-391.34	-6,539.01	6,549.35	0.00	0.00	0.00
15,100.00	89.99	270.24	7,966.70	-390.92	-6,639.01	6,649.26	0.00	0.00	0.00
15,200.00	89.99	270.24	7,966.71	-390.51	-6,739.01	6,749.16	0.00	0.00	0.00
15,300.00	89.99	270.24	7,966.72	-390.09	-6,839.00	6,849.07	0.00	0.00	0.00
15,400.00	89.99	270.24	7,966.73	-389.68	-6,939.00	6,948.97	0.00	0.00	0.00
15,500.00	89.99	270.24	7,966.74	-389.26	-7,039.00	7,048.88	0.00	0.00	0.00
15,600.00	89.99	270.24	7,966.75	-388.84	-7,139.00	7,148.78	0.00	0.00	0.00
15,700.00	89.99	270.24	7,966.76	-388.43	-7,239.00	7,248.69	0.00	0.00	0.00
15,800.00	89.99	270.24	7,966.77	-388.01	-7,339.00	7,348.59	0.00	0.00	0.00
15,900.00	89.99	270.24	7,966.78	-387.60	-7,439.00	7,448.50	0.00	0.00	0.00
16,000.00	89.99	270.24	7,966.79	-387.18	-7,539.00	7,548.40	0.00	0.00	0.00
16,100.00	89.99	270.24	7,966.80	-386.77	-7,639.00	7,648.31	0.00	0.00	0.00
16,200.00	89.99	270.24	7,966.81	-386.35	-7,739.00	7,748.21	0.00	0.00	0.00
16,300.00	89.99	270.24	7,966.82	-385.93	-7,839.00	7,848.12	0.00	0.00	0.00
16,400.00	89.99	270.24	7,966.83	-385.52	-7,938.99	7,948.02	0.00	0.00	0.00
16,500.00	89.99	270.24	7,966.84	-385.10	-8,038.99	8,047.93	0.00	0.00	0.00
16,600.00	89.99	270.24	7,966.85	-384.69	-8,138.99	8,147.83	0.00	0.00	0.00
16,700.00	89.99	270.24	7,966.86	-384.27	-8,238.99	8,247.74	0.00	0.00	0.00
16,800.00	89.99	270.24	7,966.87	-383.85	-8,338.99	8,347.64	0.00	0.00	0.00
16,900.00	89.99	270.24	7,966.88	-383.44	-8,438.99	8,447.55	0.00	0.00	0.00
17,000.00	89.99	270.24	7,966.89	-383.02	-8,538.99	8,547.45	0.00	0.00	0.00
17,100.00	89.99	270.24	7,966.90	-382.61	-8,638.99	8,647.36	0.00	0.00	0.00
17,200.00	89.99	270.24	7,966.91	-382.19	-8,738.99	8,747.26	0.00	0.00	0.00
17,300.00	89.99	270.24	7,966.92	-381.77	-8,838.99	8,847.17	0.00	0.00	0.00
17,400.00	89.99	270.24	7,966.93	-381.36	-8,938.99	8,947.07	0.00	0.00	0.00
17,500.00	89.99	270.24	7,966.94	-380.94	-9,038.99	9,046.98	0.00	0.00	0.00
17,600.00	89.99	270.24	7,966.95	-380.53	-9,138.98	9,146.88	0.00	0.00	0.00
17,700.00	89.99	270.24	7,966.96	-380.11	-9,238.98	9,246.79	0.00	0.00	0.00
17,800.00	89.99	270.24	7,966.97	-379.70	-9,338.98	9,346.69	0.00	0.00	0.00
17,900.00	89.99	270.24	7,966.98	-379.28	-9,438.98	9,446.60	0.00	0.00	0.00
18,000.00	89.99	270.24	7,966.99	-378.86	-9,538.98	9,546.50	0.00	0.00	0.00
18,052.55	89.99	270.24	7,967.00	-378.65	-9,591.53	9,599.00	0.00	0.00	0.00
Production									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Eastern Hills 4-65 17-18	0.00	0.00	7,966.00	-418.89	87.00	1,682,415.741	3,230,556.833	39° 42' 15.040 N	104° 40' 50.047 W
- plan hits target center									
- Point									
Eastern Hills 4-65 17-18	0.00	0.00	7,967.00	-378.65	-9,591.53	1,682,368.723	3,220,878.433	39° 42' 15.420 N	104° 42' 53.880 W
- plan hits target center									
- Point									

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Eastern Hills 4-65 17-18 2DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5659.30ft (27' RKB)
Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5659.30ft (27' RKB)
Site:	Eastern Hills	North Reference:	True
Well:	Eastern Hills 4-65 17-18 2DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Eastern Hills 4-65 17-18 2DH		
Design:	Eastern Hills 4-65 17-18 2DH		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
2,183.00	2,183.00	Surface	9-5/8	12-1/4	
18,052.55	7,967.00	Production	5-1/2	8-1/2	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,000.00	1,000.00	0.00	0.00	SL 2063' FNL 700' FEL	
3,500.00	3,500.00	0.00	0.00	Start Build 1.50	
4,323.02	4,316.67	-42.00	77.70	Start 3042.32 hold at 4323.02 MD	
7,365.00	7,288.31	-351.26	649.85	KOP 2414' FNL 50' FEL	
7,365.34	7,288.64	-351.29	649.91	Start DLS 10.00 TFO 151.29	
8,373.00	7,966.00	-418.90	87.94	BPI 2482' FNL 612' FEL	
8,373.94	7,966.00	-418.89	87.00	Start 9678.62 hold at 8373.94 MD	
17,917.00	7,966.99	-379.21	-9,455.98	EPI 2482' FNL 460' FWL	
18,052.00	7,967.00	-378.65	-9,590.98	BHL 2482' FNL 325' FWL	
18,052.55	7,967.00	-378.65	-9,591.53	TD at 18052.55	



ConocoPhillips

Arapahoe County, Colorado

Eastern Hills 4-65 17-18 2DH

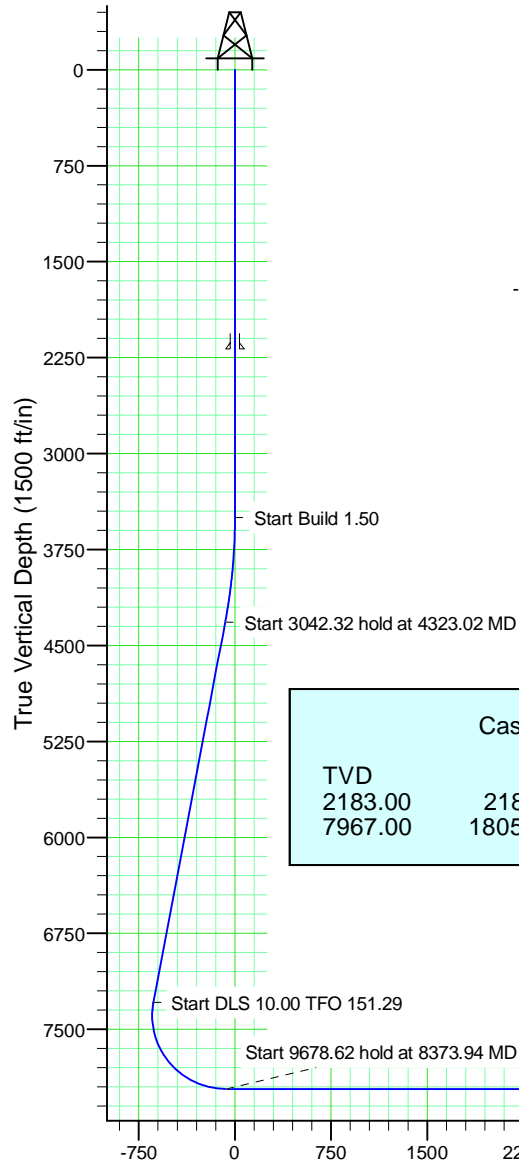
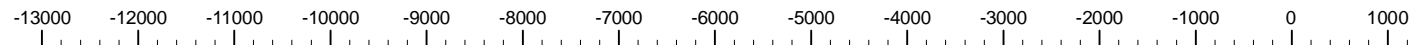
Ground Level: 5632.30
Surface Location Latitude: 39° 42' 19.180 N
Surface Location Longitude: 104° 40' 51.160 W
North Reference: True
27' RKB @ 5659.30ft (27' RKB)

North American Datum 1983
GRS 1980
US State Plane 1983
Colorado Central Zone

Well Profile Data

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00
4323.02	12.35	118.39	4316.67	-42.00	77.70	1.50	-75.98
7365.34	12.35	118.39	7288.64	-351.30	649.91	0.00	-635.55
8373.94	89.99	270.24	7966.00	-418.90	87.00	10.00	-70.41
18052.55	89.99	270.24	7967.00	-378.65	-9591.53	0.00	9599.00

West(-)/East(+) (2000 ft/in)



Casing Depths

TVD	MD	Name	Size
2183.00	2183.00	Surface	9-5/8
7967.00	18052.55	Production	5-1/2

Section Lines

BHL 2482' FNL 325' FWL
EPI 2482' FNL 460' FWL
SL 2063' FNL 700' FEL
Eastern Hills 4-65 17-18 2DH
BPI 2482' FNL 612' FEL
KOP 2414' FNL 50' FEL
TD at 18052.55

Eastern Hills 4-65 17-18 2DH

18

17

Wellbore Targets

Name	TVD	Latitude	Longitude
Eastern Hills 4-65 17-18 2DH BPI	7966.00	39° 42' 15.040 N	104° 40' 50.047 W
Eastern Hills 4-65 17-18 2DH BHL	7967.00	39° 42' 15.420 N	104° 42' 53.880 W

TD at 18052.55

Vertical Section at 267.74° (1500 ft/in)