



# ConocoPhillips

## Adams County, Colorado

### Bear 3-65 22-23 3DH

### Design B

Ground Level: 5569.90  
Surface Location Latitude: 39° 46' 22.100 N  
Surface Location Longitude: 104° 39' 27.180 W  
North Reference: True  
27' RKB @ 5596.90ft (27' RKB)

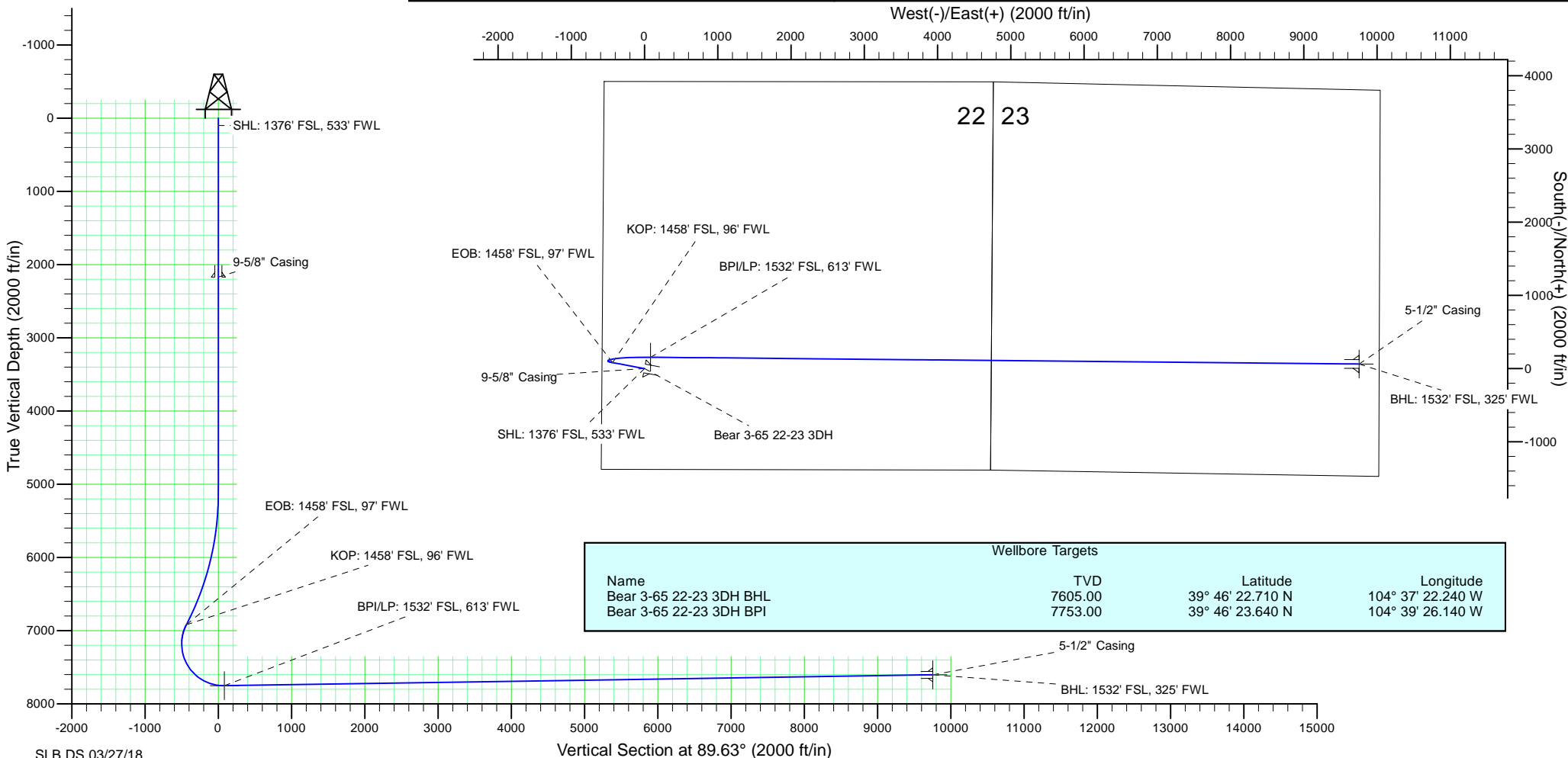
North American Datum 1983  
GRS 1980  
US State Plane 1983  
Colorado Northern Zone

#### 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
5132.19	0.00	0.00	5132.19	0.00	0.00	0.00	0.00
6992.48	27.90	280.64	6919.81	82.04	-436.48	1.50	-435.93
6992.75	27.90	280.64	6920.05	82.06	-436.60	0.00	-436.06
8175.53	90.88	90.55	7753.00	155.84	81.23	10.00	82.25
17851.22	90.88	90.55	7605.00	63.65	9755.36	0.00	9755.56

#### Casing Depths

TVD	MD	Name	Size
2171.00	2171.00	9-5/8" Casing	9-5/8
7605.00	17851.22	5-1/2" Casing	5-1/2



# **ConocoPhillips RBU Gold Data**

**Niobrara North Zone**

**Bear**

**Bear 3-65 22-23 3DH**

**Bear 3-65 22-23 3DH**

**Plan: Design B**

## **Standard Planning Report**

**27 March, 2018**

# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Bear 3-65 22-23 3DH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Project:</b>	Niobrara North Zone	<b>MD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Site:</b>	Bear	<b>North Reference:</b>	True
<b>Well:</b>	Bear 3-65 22-23 3DH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Bear 3-65 22-23 3DH		
<b>Design:</b>	Design B		

<b>Project</b>	Niobrara North Zone, Colorado North Zone, FIPS Zone: 0501		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site	Bear				
Site Position:		Northing:	1,161,307.491 usft	Latitude:	39° 46' 23.050 N
From:	Lat/Long	Easting:	3,236,797.960 usft	Longitude:	104° 39' 27.170 W
Position Uncertainty:	2.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well	Bear 3-65 22-23 3DH					
Well Position	+N-S	-96.12 ft	Northing:	1,161,211.366 usft	Latitude:	39° 46' 22.100 N
	+E-W	-0.78 ft	Easting:	3,236,798.092 usft	Longitude:	104° 39' 27.180 W
Position Uncertainty		2.00 ft	Wellhead Elevation:	5,569.90 ft	Ground Level:	5,569.90 ft

<b>Wellbore</b>	Bear 3-65 22-23 3DH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2017	12/1/2018	8.16	66.35	51,886.59942657

Design	Design B			
Audit Notes:				
Version:	0	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	89.63

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/27/2018			
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	2,171.00	Design B (Bear 3-65 22-23 3DH) Gyro-BM-MS		
			Gyro - bat/mem drop m/s		
2	2,171.00	5,132.19	Design B (Bear 3-65 22-23 3DH) MWD+IFR_No SAG		
			MWD + IFR (No SAG) corre		
3	5,132.19	6,992.48	Design B (Bear 3-65 22-23 3DH) MWD+IFR_No SAG		
			MWD + IFR (No SAG) corre		
4	6,992.48	6,992.75	Design B (Bear 3-65 22-23 3DH) MWD+IFR_No SAG		
			MWD + IFR (No SAG) corre		
5	6,992.75	8,175.53	Design B (Bear 3-65 22-23 3DH) MWD+IFR_No SAG		
			MWD + IFR (No SAG) corre		
6	8,175.53	17,851.22	Design B (Bear 3-65 22-23 3DH) MWD+IFR_No SAG		
			MWD + IFR (No SAG) corre		

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## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Bear 3-65 22-23 3DH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Project:</b>	Niobrara North Zone	<b>MD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Site:</b>	Bear	<b>North Reference:</b>	True
<b>Well:</b>	Bear 3-65 22-23 3DH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Bear 3-65 22-23 3DH		
<b>Design:</b>	Design B		

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	
5,132.19	0.00	0.00	5,132.19	0.00	0.00	0.00	0.00	0.00	0.00	
6,992.48	27.90	280.64	6,919.81	82.04	-436.48	1.50	1.50	0.00	280.64	
6,992.75	27.90	280.64	6,920.05	82.06	-436.60	0.00	0.00	0.00	0.00	
8,175.53	90.88	90.55	7,753.00	155.84	81.23	10.00	5.32	14.36	168.51	Bear 3-65 22-23 3D
17,851.22	90.88	90.55	7,605.00	63.65	9,755.36	0.00	0.00	0.00	0.00	Bear 3-65 22-23 3D

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## Planning Report

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<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Project:</b>	Niobrara North Zone	<b>MD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Site:</b>	Bear	<b>North Reference:</b>	True
<b>Well:</b>	Bear 3-65 22-23 3DH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Bear 3-65 22-23 3DH		
<b>Design:</b>	Design B		

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
<b>SHL: 1376' FSL, 533' FWL</b>									
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
1,713.00	0.00	0.00	1,713.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills Top</b>									
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
1,971.00	0.00	0.00	1,971.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre Top - Fox Hills Base</b>									
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
2,171.00	0.00	0.00	2,171.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Casing - 9-5/8" Casing</b>									
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	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00

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## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Bear 3-65 22-23 3DH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Project:</b>	Niobrara North Zone	<b>MD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Site:</b>	Bear	<b>North Reference:</b>	True
<b>Well:</b>	Bear 3-65 22-23 3DH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Bear 3-65 22-23 3DH		
<b>Design:</b>	Design B		

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)
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,132.19	0.00	0.00	5,132.19	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	1.02	280.64	5,200.00	0.11	-0.59	-0.59	1.50	1.50	0.00
5,300.00	2.52	280.64	5,299.95	0.68	-3.62	-3.62	1.50	1.50	0.00
5,400.00	4.02	280.64	5,399.78	1.73	-9.22	-9.21	1.50	1.50	0.00
5,500.00	5.52	280.64	5,499.43	3.27	-17.39	-17.37	1.50	1.50	0.00
5,600.00	7.02	280.64	5,598.83	5.29	-28.12	-28.08	1.50	1.50	0.00
5,700.00	8.52	280.64	5,697.91	7.78	-41.40	-41.35	1.50	1.50	0.00
5,800.00	10.02	280.64	5,796.60	10.76	-57.23	-57.16	1.50	1.50	0.00
5,900.00	11.52	280.64	5,894.84	14.21	-75.59	-75.49	1.50	1.50	0.00
6,000.00	13.02	280.64	5,992.55	18.13	-96.47	-96.35	1.50	1.50	0.00
6,100.00	14.52	280.64	6,089.68	22.53	-119.85	-119.71	1.50	1.50	0.00
6,200.00	16.02	280.64	6,186.15	27.39	-145.73	-145.55	1.50	1.50	0.00
6,300.00	17.52	280.64	6,281.89	32.72	-174.08	-173.87	1.50	1.50	0.00
6,400.00	19.02	280.64	6,376.85	38.51	-204.89	-204.63	1.50	1.50	0.00
6,500.00	20.52	280.64	6,470.95	44.76	-238.13	-237.83	1.50	1.50	0.00
6,600.00	22.02	280.64	6,564.14	51.46	-273.77	-273.43	1.50	1.50	0.00
6,700.00	23.52	280.64	6,656.35	58.61	-311.80	-311.41	1.50	1.50	0.00
6,800.00	25.02	280.64	6,747.51	66.20	-352.19	-351.75	1.50	1.50	0.00
6,900.00	26.52	280.64	6,837.56	74.23	-394.92	-394.42	1.50	1.50	0.00
6,992.48	27.90	280.64	6,919.81	82.04	-436.48	-435.93	1.50	1.50	0.00
<b>EOB: 1458' FSL, 97' FWL</b>									
6,992.75	27.90	280.64	6,920.05	82.06	-436.60	-436.05	0.00	0.00	0.00
<b>KOP: 1458' FSL, 96' FWL</b>									
7,000.00	27.19	280.96	6,926.47	82.69	-439.89	-439.34	10.00	-9.79	4.36
7,050.00	22.32	283.64	6,971.87	87.11	-460.35	-459.77	10.00	-9.75	5.37
7,100.00	17.51	287.72	7,018.86	91.64	-476.75	-476.14	10.00	-9.61	8.15
7,150.00	12.85	294.70	7,067.11	96.25	-488.98	-488.34	10.00	-9.33	13.95
7,200.00	8.56	308.90	7,116.24	100.92	-496.93	-496.26	10.00	-8.57	28.41
7,250.00	5.61	342.84	7,165.87	105.59	-500.55	-499.85	10.00	-5.91	67.87
7,300.00	6.28	32.25	7,215.63	110.24	-499.81	-499.08	10.00	1.35	98.82
7,350.00	9.87	57.91	7,265.14	114.84	-494.72	-493.96	10.00	7.17	51.33
7,400.00	14.32	68.96	7,314.03	119.34	-485.31	-484.52	10.00	8.91	22.09
7,450.00	19.05	74.73	7,361.91	123.71	-471.66	-470.84	10.00	9.45	11.55
7,500.00	23.88	78.26	7,408.43	127.92	-453.86	-453.02	10.00	9.67	7.05
7,550.00	28.77	80.65	7,453.23	131.94	-432.07	-431.20	10.00	9.78	4.78
7,600.00	33.69	82.39	7,495.97	135.73	-406.43	-405.54	10.00	9.84	3.49
7,650.00	38.63	83.74	7,536.33	139.27	-377.15	-376.24	10.00	9.88	2.69
7,700.00	43.58	84.82	7,574.00	142.53	-344.46	-343.52	10.00	9.90	2.16
7,750.00	48.54	85.72	7,608.68	145.49	-308.59	-307.63	10.00	9.92	1.80
7,800.00	53.50	86.49	7,640.12	148.12	-269.82	-268.85	10.00	9.93	1.55
7,850.00	58.47	87.17	7,668.08	150.40	-228.45	-227.46	10.00	9.94	1.36
7,900.00	63.45	87.78	7,692.35	152.32	-184.79	-183.80	10.00	9.95	1.22
7,950.00	68.42	88.34	7,712.73	153.86	-139.18	-138.17	10.00	9.95	1.12
8,000.00	73.40	88.86	7,729.08	155.00	-91.96	-90.95	10.00	9.95	1.04
8,010.55	74.45	88.97	7,732.00	155.20	-81.83	-80.81	10.00	9.96	1.01
<b>Niobrara Top</b>									
8,050.00	78.38	89.36	7,741.27	155.75	-43.49	-42.47	10.00	9.96	0.99
8,100.00	83.35	89.84	7,749.20	156.10	5.86	6.88	10.00	9.96	0.96

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## Planning Report

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<b>Site:</b>	Bear	<b>North Reference:</b>	True
<b>Well:</b>	Bear 3-65 22-23 3DH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Bear 3-65 22-23 3DH		
<b>Design:</b>	Design B		

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)
8,107.29	84.08	89.91	7,750.00	156.11	13.11	14.12	10.00	9.96	0.94
<b>A Chalk Top</b>									
8,150.00	88.33	90.31	7,752.82	156.03	55.71	56.73	10.00	9.96	0.94
8,175.53	90.88	90.55	7,753.00	155.84	81.24	82.25	10.00	9.96	0.93
<b>BPI/LP: 1532' FSL, 613' FWL</b>									
8,200.00	90.88	90.55	7,752.63	155.61	105.71	106.72	0.00	0.00	0.00
8,300.00	90.88	90.55	7,751.10	154.65	205.69	206.69	0.00	0.00	0.00
8,400.00	90.88	90.55	7,749.57	153.70	305.67	306.67	0.00	0.00	0.00
8,500.00	90.88	90.55	7,748.04	152.75	405.66	406.64	0.00	0.00	0.00
8,600.00	90.88	90.55	7,746.51	151.80	505.64	506.62	0.00	0.00	0.00
8,700.00	90.88	90.55	7,744.98	150.84	605.62	606.60	0.00	0.00	0.00
8,800.00	90.88	90.55	7,743.45	149.89	705.61	706.57	0.00	0.00	0.00
8,900.00	90.88	90.55	7,741.92	148.94	805.59	806.55	0.00	0.00	0.00
9,000.00	90.88	90.55	7,740.39	147.98	905.58	906.52	0.00	0.00	0.00
9,100.00	90.88	90.55	7,738.86	147.03	1,005.56	1,006.50	0.00	0.00	0.00
9,200.00	90.88	90.55	7,737.33	146.08	1,105.54	1,106.47	0.00	0.00	0.00
9,300.00	90.88	90.55	7,735.80	145.13	1,205.53	1,206.45	0.00	0.00	0.00
9,400.00	90.88	90.55	7,734.27	144.17	1,305.51	1,306.42	0.00	0.00	0.00
9,500.00	90.88	90.55	7,732.74	143.22	1,405.49	1,406.40	0.00	0.00	0.00
9,600.00	90.88	90.55	7,731.21	142.27	1,505.48	1,506.37	0.00	0.00	0.00
9,700.00	90.88	90.55	7,729.68	141.31	1,605.46	1,606.35	0.00	0.00	0.00
9,800.00	90.88	90.55	7,728.15	140.36	1,705.45	1,706.33	0.00	0.00	0.00
9,900.00	90.88	90.55	7,726.62	139.41	1,805.43	1,806.30	0.00	0.00	0.00
10,000.00	90.88	90.55	7,725.09	138.46	1,905.41	1,906.28	0.00	0.00	0.00
10,100.00	90.88	90.55	7,723.56	137.50	2,005.40	2,006.25	0.00	0.00	0.00
10,200.00	90.88	90.55	7,722.03	136.55	2,105.38	2,106.23	0.00	0.00	0.00
10,300.00	90.88	90.55	7,720.50	135.60	2,205.36	2,206.20	0.00	0.00	0.00
10,400.00	90.88	90.55	7,718.97	134.64	2,305.35	2,306.18	0.00	0.00	0.00
10,500.00	90.88	90.55	7,717.44	133.69	2,405.33	2,406.15	0.00	0.00	0.00
10,600.00	90.88	90.55	7,715.92	132.74	2,505.32	2,506.13	0.00	0.00	0.00
10,700.00	90.88	90.55	7,714.39	131.79	2,605.30	2,606.10	0.00	0.00	0.00
10,800.00	90.88	90.55	7,712.86	130.83	2,705.28	2,706.08	0.00	0.00	0.00
10,900.00	90.88	90.55	7,711.33	129.88	2,805.27	2,806.05	0.00	0.00	0.00
11,000.00	90.88	90.55	7,709.80	128.93	2,905.25	2,906.03	0.00	0.00	0.00
11,100.00	90.88	90.55	7,708.27	127.97	3,005.23	3,006.01	0.00	0.00	0.00
11,200.00	90.88	90.55	7,706.74	127.02	3,105.22	3,105.98	0.00	0.00	0.00
11,300.00	90.88	90.55	7,705.21	126.07	3,205.20	3,205.96	0.00	0.00	0.00
11,400.00	90.88	90.55	7,703.68	125.12	3,305.19	3,305.93	0.00	0.00	0.00
11,500.00	90.88	90.55	7,702.15	124.16	3,405.17	3,405.91	0.00	0.00	0.00
11,600.00	90.88	90.55	7,700.62	123.21	3,505.15	3,505.88	0.00	0.00	0.00
11,700.00	90.88	90.55	7,699.09	122.26	3,605.14	3,605.86	0.00	0.00	0.00
11,800.00	90.88	90.55	7,697.56	121.30	3,705.12	3,705.83	0.00	0.00	0.00
11,900.00	90.88	90.55	7,696.03	120.35	3,805.10	3,805.81	0.00	0.00	0.00
12,000.00	90.88	90.55	7,694.50	119.40	3,905.09	3,905.78	0.00	0.00	0.00
12,100.00	90.88	90.55	7,692.97	118.45	4,005.07	4,005.76	0.00	0.00	0.00
12,200.00	90.88	90.55	7,691.44	117.49	4,105.06	4,105.74	0.00	0.00	0.00
12,300.00	90.88	90.55	7,689.91	116.54	4,205.04	4,205.71	0.00	0.00	0.00
12,400.00	90.88	90.55	7,688.38	115.59	4,305.02	4,305.69	0.00	0.00	0.00
12,500.00	90.88	90.55	7,686.85	114.63	4,405.01	4,405.66	0.00	0.00	0.00
12,600.00	90.88	90.55	7,685.32	113.68	4,504.99	4,505.64	0.00	0.00	0.00
12,700.00	90.88	90.55	7,683.79	112.73	4,604.97	4,605.61	0.00	0.00	0.00
12,800.00	90.88	90.55	7,682.26	111.78	4,704.96	4,705.59	0.00	0.00	0.00
12,900.00	90.88	90.55	7,680.73	110.82	4,804.94	4,805.56	0.00	0.00	0.00
13,000.00	90.88	90.55	7,679.20	109.87	4,904.93	4,905.54	0.00	0.00	0.00

# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Bear 3-65 22-23 3DH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Project:</b>	Niobrara North Zone	<b>MD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Site:</b>	Bear	<b>North Reference:</b>	True
<b>Well:</b>	Bear 3-65 22-23 3DH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Bear 3-65 22-23 3DH		
<b>Design:</b>	Design B		

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)	
13,100.00	90.88	90.55	7,677.68	108.92	5,004.91	5,005.51	0.00	0.00	0.00	
13,200.00	90.88	90.55	7,676.15	107.97	5,104.89	5,105.49	0.00	0.00	0.00	
13,300.00	90.88	90.55	7,674.62	107.01	5,204.88	5,205.46	0.00	0.00	0.00	
13,400.00	90.88	90.55	7,673.09	106.06	5,304.86	5,305.44	0.00	0.00	0.00	
13,500.00	90.88	90.55	7,671.56	105.11	5,404.84	5,405.42	0.00	0.00	0.00	
13,600.00	90.88	90.55	7,670.03	104.15	5,504.83	5,505.39	0.00	0.00	0.00	
13,700.00	90.88	90.55	7,668.50	103.20	5,604.81	5,605.37	0.00	0.00	0.00	
13,800.00	90.88	90.55	7,666.97	102.25	5,704.80	5,705.34	0.00	0.00	0.00	
13,900.00	90.88	90.55	7,665.44	101.30	5,804.78	5,805.32	0.00	0.00	0.00	
14,000.00	90.88	90.55	7,663.91	100.34	5,904.76	5,905.29	0.00	0.00	0.00	
14,100.00	90.88	90.55	7,662.38	99.39	6,004.75	6,005.27	0.00	0.00	0.00	
14,200.00	90.88	90.55	7,660.85	98.44	6,104.73	6,105.24	0.00	0.00	0.00	
14,300.00	90.88	90.55	7,659.32	97.48	6,204.71	6,205.22	0.00	0.00	0.00	
14,400.00	90.88	90.55	7,657.79	96.53	6,304.70	6,305.19	0.00	0.00	0.00	
14,500.00	90.88	90.55	7,656.26	95.58	6,404.68	6,405.17	0.00	0.00	0.00	
14,600.00	90.88	90.55	7,654.73	94.63	6,504.67	6,505.15	0.00	0.00	0.00	
14,700.00	90.88	90.55	7,653.20	93.67	6,604.65	6,605.12	0.00	0.00	0.00	
14,800.00	90.88	90.55	7,651.67	92.72	6,704.63	6,705.10	0.00	0.00	0.00	
14,900.00	90.88	90.55	7,650.14	91.77	6,804.62	6,805.07	0.00	0.00	0.00	
15,000.00	90.88	90.55	7,648.61	90.81	6,904.60	6,905.05	0.00	0.00	0.00	
15,100.00	90.88	90.55	7,647.08	89.86	7,004.58	7,005.02	0.00	0.00	0.00	
15,200.00	90.88	90.55	7,645.55	88.91	7,104.57	7,105.00	0.00	0.00	0.00	
15,300.00	90.88	90.55	7,644.02	87.96	7,204.55	7,204.97	0.00	0.00	0.00	
15,400.00	90.88	90.55	7,642.49	87.00	7,304.54	7,304.95	0.00	0.00	0.00	
15,500.00	90.88	90.55	7,640.96	86.05	7,404.52	7,404.92	0.00	0.00	0.00	
15,600.00	90.88	90.55	7,639.43	85.10	7,504.50	7,504.90	0.00	0.00	0.00	
15,700.00	90.88	90.55	7,637.91	84.14	7,604.49	7,604.87	0.00	0.00	0.00	
15,800.00	90.88	90.55	7,636.38	83.19	7,704.47	7,704.85	0.00	0.00	0.00	
15,900.00	90.88	90.55	7,634.85	82.24	7,804.46	7,804.83	0.00	0.00	0.00	
16,000.00	90.88	90.55	7,633.32	81.29	7,904.44	7,904.80	0.00	0.00	0.00	
16,100.00	90.88	90.55	7,631.79	80.33	8,004.42	8,004.78	0.00	0.00	0.00	
16,200.00	90.88	90.55	7,630.26	79.38	8,104.41	8,104.75	0.00	0.00	0.00	
16,300.00	90.88	90.55	7,628.73	78.43	8,204.39	8,204.73	0.00	0.00	0.00	
16,400.00	90.88	90.55	7,627.20	77.47	8,304.37	8,304.70	0.00	0.00	0.00	
16,500.00	90.88	90.55	7,625.67	76.52	8,404.36	8,404.68	0.00	0.00	0.00	
16,600.00	90.88	90.55	7,624.14	75.57	8,504.34	8,504.65	0.00	0.00	0.00	
16,700.00	90.88	90.55	7,622.61	74.62	8,604.33	8,604.63	0.00	0.00	0.00	
16,800.00	90.88	90.55	7,621.08	73.66	8,704.31	8,704.60	0.00	0.00	0.00	
16,900.00	90.88	90.55	7,619.55	72.71	8,804.29	8,804.58	0.00	0.00	0.00	
17,000.00	90.88	90.55	7,618.02	71.76	8,904.28	8,904.56	0.00	0.00	0.00	
17,100.00	90.88	90.55	7,616.49	70.80	9,004.26	9,004.53	0.00	0.00	0.00	
17,200.00	90.88	90.55	7,614.96	69.85	9,104.24	9,104.51	0.00	0.00	0.00	
17,300.00	90.88	90.55	7,613.43	68.90	9,204.23	9,204.48	0.00	0.00	0.00	
17,400.00	90.88	90.55	7,611.90	67.95	9,304.21	9,304.46	0.00	0.00	0.00	
17,500.00	90.88	90.55	7,610.37	66.99	9,404.20	9,404.43	0.00	0.00	0.00	
17,600.00	90.88	90.55	7,608.84	66.04	9,504.18	9,504.41	0.00	0.00	0.00	
17,700.00	90.88	90.55	7,607.31	65.09	9,604.16	9,604.38	0.00	0.00	0.00	
17,800.00	90.88	90.55	7,605.78	64.13	9,704.15	9,704.36	0.00	0.00	0.00	
17,851.22	90.88	90.55	7,605.00	63.65	9,755.36	9,755.56	0.00	0.00	0.00	
BHL: 1532' FSL, 325' FWL										



# ConocoPhillips

## Planning Report

<b>Database:</b>	EDT 14 Central Planning	<b>Local Co-ordinate Reference:</b>	Well Bear 3-65 22-23 3DH
<b>Company:</b>	ConocoPhillips RBU Gold Data	<b>TVD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Project:</b>	Niobrara North Zone	<b>MD Reference:</b>	27' RKB @ 5596.90ft (27' RKB)
<b>Site:</b>	Bear	<b>North Reference:</b>	True
<b>Well:</b>	Bear 3-65 22-23 3DH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Bear 3-65 22-23 3DH		
<b>Design:</b>	Design B		

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									
Bear 3-65 22-23 3DH	0.00	0.00	7,605.00	63.65	9,755.36	1,161,367.686	3,246,552.299	39° 46' 22.710 N	104° 37' 22.240 W
- plan hits target center									
- Point									
Bear 3-65 22-23 3DH	0.00	0.00	7,753.00	155.84	81.23	1,161,367.970	3,236,877.841	39° 46' 23.640 N	104° 39' 26.140 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
2,171.00	2,171.00	9-5/8" Casing	9-5/8	12-1/4	
17,851.22	7,605.00	5-1/2" Casing	5-1/2	8-1/2	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,713.00	1,713.00	Fox Hills Top		0.00	
1,971.00	1,971.00	Pierre Top - Fox Hills Base		0.00	
2,171.00	2,171.00	Surface Casing		0.00	
8,010.55	7,732.00	Niobrara Top		0.00	
8,107.29	7,750.00	A Chalk Top		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
100.00	100.00	0.00	0.00	SHL: 1376' FSL, 533' FWL
6,992.48	6,919.81	82.04	-436.48	EOB: 1458' FSL, 97' FWL
6,992.75	6,920.05	82.06	-436.60	KOP: 1458' FSL, 96' FWL
8,175.53	7,753.00	155.84	81.24	BPI/LP: 1532' FSL, 613' FWL
17,851.22	7,605.00	63.65	9,755.36	BHL: 1532' FSL, 325' FWL