



ConocoPhillips

Adams County, Colorado

Bear 3-65 22-23 3BH

Design B

Ground Level: 5569.90
Surface Location Latitude: 39° 46' 22.730 N
Surface Location Longitude: 104° 39' 27.170 W
North Reference: True
27' RKB @ 5596.90ft (27' RKB)

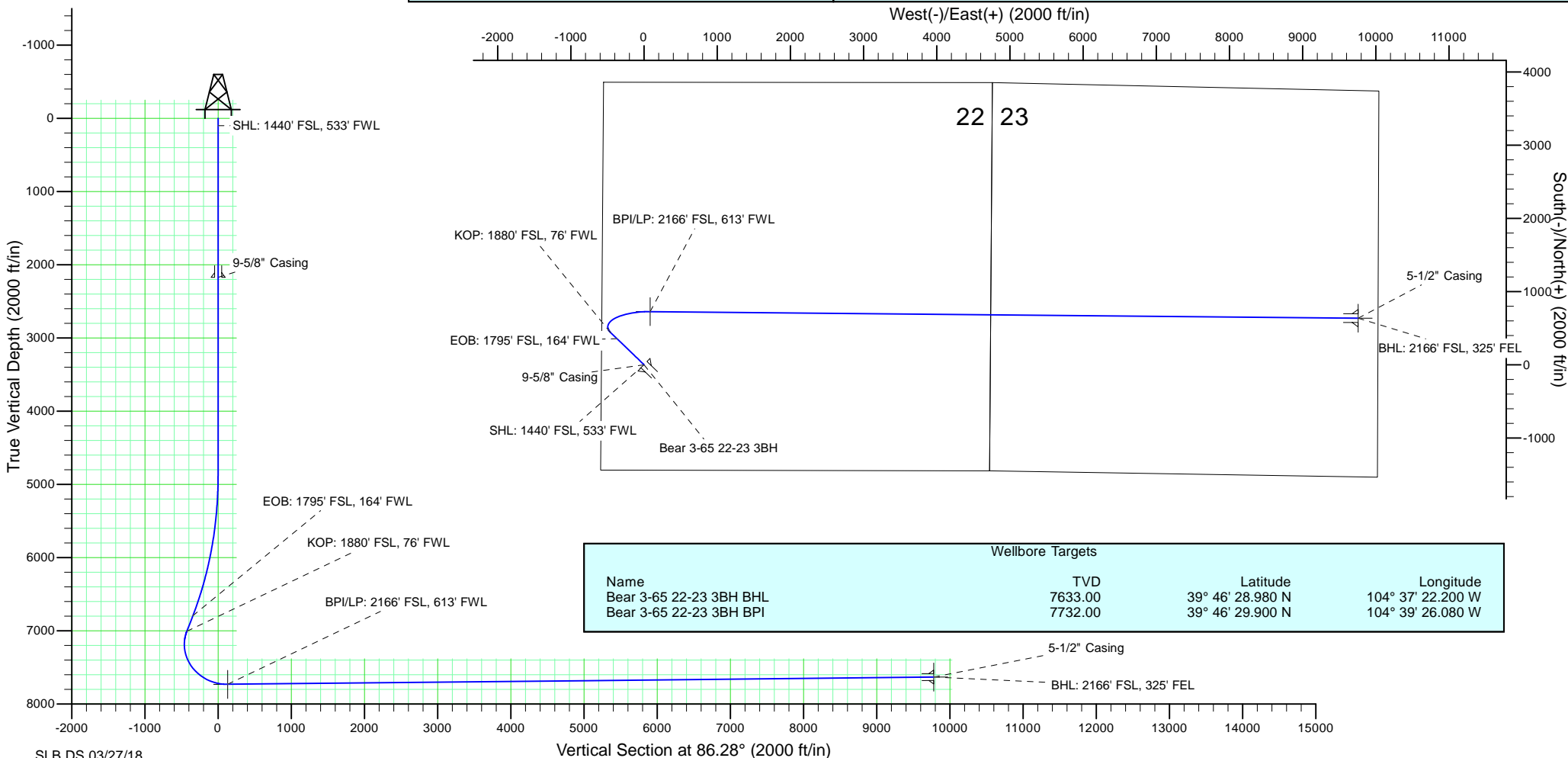
North American Datum 1983
GRS 1980
US State Plane 1983
Colorado Northern Zone

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
4885.25	0.00	0.00	4885.25	0.00	0.00	0.00	0.00
6885.34	30.00	313.91	6795.19	354.93	-368.72	1.50	-344.92
7129.90	30.00	313.91	7006.98	439.73	-456.82	0.00	-427.33
8248.50	90.59	90.54	7732.00	725.53	85.11	10.00	131.99
17921.78	90.59	90.54	7633.00	634.34	9757.45	0.00	9778.05

Casing Depths

TVD	MD	Name	Size
2172.00	2172.00	9-5/8" Casing	9-5/8
7633.00	17921.78	5-1/2" Casing	5-1/2



ConocoPhillips RBU Gold Data

Niobrara North Zone

Bear

Bear 3-65 22-23 3BH

Bear 3-65 22-23 3BH

Plan: Design B

Standard Planning Report

27 March, 2018

ConocoPhillips

Planning Report

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

Project	Niobrara North Zone, Colorado North Zone, FIPS Zone: 0501		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 3BH					
Well Position	+N-S	-32.38 ft	Northing:	1,161,275.113 usft	Latitude:	39° 46' 22.730 N
	+E-W	0.00 ft	Easting:	3,236,798.267 usft	Longitude:	104° 39' 27.170 W
Position Uncertainty		2.00 ft	Wellhead Elevation:	5,569.90 ft	Ground Level:	5,569.90 ft

Wellbore	Bear 3-65 22-23 3BH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	12/1/2018	8.16	66.35	51,886.68577135

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	86.28	

Plan Survey Tool Program		Date 3/27/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,172.00	Design B (Bear 3-65 22-23 3BH)	Gyro-BM-MS	Gyro - bat/mem drop m/s
2	2,172.00	4,885.25	Design B (Bear 3-65 22-23 3BH)	MWD+IFR_No SAG	MWD + IFR (No SAG) corre
3	4,885.25	6,885.34	Design B (Bear 3-65 22-23 3BH)	MWD+IFR_No SAG	MWD + IFR (No SAG) corre
4	6,885.34	7,129.90	Design B (Bear 3-65 22-23 3BH)	MWD+IFR_No SAG	MWD + IFR (No SAG) corre
5	7,129.90	8,248.50	Design B (Bear 3-65 22-23 3BH)	MWD+IFR_No SAG	MWD + IFR (No SAG) corre
6	8,248.50	17,921.78	Design B (Bear 3-65 22-23 3BH)	MWD+IFR_No SAG	MWD + IFR (No SAG) corre

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Bear 3-65 22-23 3BH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5596.90ft (27' RKB)
Project:	Niobrara North Zone	MD Reference:	27' RKB @ 5596.90ft (27' RKB)
Site:	Bear	North Reference:	True
Well:	Bear 3-65 22-23 3BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Bear 3-65 22-23 3BH		
Design:	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	
4,885.25	0.00	0.00	4,885.25	0.00	0.00	0.00	0.00	0.00	0.00	
6,885.34	30.00	313.91	6,795.19	354.93	-368.72	1.50	1.50	0.00	313.91	
7,129.90	30.00	313.91	7,006.98	439.73	-456.82	0.00	0.00	0.00	0.00	
8,248.50	90.59	90.54	7,732.00	725.53	85.11	10.00	5.42	12.21	132.28	Bear 3-65 22-23 3B
17,921.78	90.59	90.54	7,633.00	634.34	9,757.45	0.00	0.00	0.00	0.00	Bear 3-65 22-23 3B

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Planning Report

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Site:	Bear	North Reference:	True
Well:	Bear 3-65 22-23 3BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Bear 3-65 22-23 3BH		
Design:	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
SHL: 1440' FSL, 533' FWL									
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
1,715.00	0.00	0.00	1,715.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Top									
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
1,972.00	0.00	0.00	1,972.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Top - Fox Hills Base									
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
2,172.00	0.00	0.00	2,172.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Casing - 9-5/8" Casing									
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

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Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5596.90ft (27' RKB)
Project:	Niobrara North Zone	MD Reference:	27' RKB @ 5596.90ft (27' RKB)
Site:	Bear	North Reference:	True
Well:	Bear 3-65 22-23 3BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Bear 3-65 22-23 3BH		
Design:	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
4,885.25	0.00	0.00	4,885.25	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.22	313.91	4,900.00	0.02	-0.02	-0.02	1.50	1.50	0.00
5,000.00	1.72	313.91	4,999.98	1.20	-1.24	-1.16	1.50	1.50	0.00
5,100.00	3.22	313.91	5,099.89	4.19	-4.35	-4.07	1.50	1.50	0.00
5,200.00	4.72	313.91	5,199.64	8.99	-9.34	-8.73	1.50	1.50	0.00
5,300.00	6.22	313.91	5,299.19	15.60	-16.21	-15.16	1.50	1.50	0.00
5,400.00	7.72	313.91	5,398.44	24.02	-24.95	-23.34	1.50	1.50	0.00
5,500.00	9.22	313.91	5,497.35	34.23	-35.56	-33.27	1.50	1.50	0.00
5,600.00	10.72	313.91	5,595.84	46.24	-48.04	-44.94	1.50	1.50	0.00
5,700.00	12.22	313.91	5,693.84	60.03	-62.37	-58.34	1.50	1.50	0.00
5,800.00	13.72	313.91	5,791.28	75.60	-78.54	-73.47	1.50	1.50	0.00
5,900.00	15.22	313.91	5,888.11	92.93	-96.54	-90.31	1.50	1.50	0.00
6,000.00	16.72	313.91	5,984.24	112.01	-116.36	-108.85	1.50	1.50	0.00
6,100.00	18.22	313.91	6,079.63	132.83	-137.99	-129.08	1.50	1.50	0.00
6,200.00	19.72	313.91	6,174.19	155.37	-161.41	-150.99	1.50	1.50	0.00
6,300.00	21.22	313.91	6,267.87	179.63	-186.61	-174.56	1.50	1.50	0.00
6,400.00	22.72	313.91	6,360.61	205.57	-213.56	-199.78	1.50	1.50	0.00
6,500.00	24.22	313.91	6,452.33	233.19	-242.26	-226.62	1.50	1.50	0.00
6,600.00	25.72	313.91	6,542.98	262.47	-272.67	-255.07	1.50	1.50	0.00
6,700.00	27.22	313.91	6,632.50	293.38	-304.79	-285.11	1.50	1.50	0.00
6,800.00	28.72	313.91	6,720.81	325.91	-338.58	-316.72	1.50	1.50	0.00
6,885.34	30.00	313.91	6,795.19	354.93	-368.72	-344.92	1.50	1.50	0.00
EOB: 1795' FSL, 164' FWL									
6,900.00	30.00	313.91	6,807.88	360.01	-374.00	-349.86	0.00	0.00	0.00
7,000.00	30.00	313.91	6,894.48	394.69	-410.03	-383.56	0.00	0.00	0.00
7,100.00	30.00	313.91	6,981.09	429.36	-446.05	-417.26	0.00	0.00	0.00
7,129.90	30.00	313.91	7,006.98	439.73	-456.82	-427.33	0.00	0.00	0.00
KOP: 1880' FSL, 76' FWL									
7,150.00	28.68	317.01	7,024.50	446.75	-463.73	-433.77	10.00	-6.56	15.42
7,200.00	25.76	325.90	7,068.98	464.53	-478.02	-446.87	10.00	-5.84	17.78
7,250.00	23.50	336.62	7,114.45	482.69	-488.07	-455.73	10.00	-4.53	21.44
7,300.00	22.10	349.03	7,160.57	501.09	-493.82	-460.27	10.00	-2.80	24.82
7,350.00	21.73	2.42	7,206.98	519.58	-495.22	-460.47	10.00	-0.75	26.78
7,400.00	22.43	15.61	7,253.35	538.02	-492.26	-456.32	10.00	1.41	26.39
7,450.00	24.12	27.54	7,299.30	556.28	-484.96	-447.85	10.00	3.39	23.86
7,500.00	26.62	37.69	7,344.50	574.22	-473.38	-435.14	10.00	4.98	20.28
7,550.00	29.70	46.04	7,388.59	591.69	-457.61	-418.26	10.00	6.17	16.70
7,600.00	33.22	52.86	7,431.25	608.57	-437.76	-397.36	10.00	7.03	13.64
7,650.00	37.04	58.47	7,472.14	624.72	-413.99	-372.59	10.00	7.65	11.21
7,700.00	41.09	63.14	7,510.96	640.04	-386.48	-344.15	10.00	8.09	9.34
7,750.00	45.29	67.09	7,547.42	654.38	-355.44	-312.24	10.00	8.41	7.92
7,800.00	49.62	70.51	7,581.22	667.66	-321.10	-277.11	10.00	8.64	6.83
7,850.00	54.03	73.51	7,612.13	679.77	-283.72	-239.03	10.00	8.82	6.00
7,900.00	58.50	76.19	7,639.89	690.61	-243.60	-198.28	10.00	8.95	5.36
7,950.00	63.03	78.62	7,664.30	700.10	-201.03	-155.19	10.00	9.06	4.86
8,000.00	67.60	80.86	7,685.18	708.18	-156.34	-110.07	10.00	9.13	4.49
8,050.00	72.19	82.96	7,702.37	714.77	-109.87	-63.27	10.00	9.19	4.20
8,080.58	75.01	84.19	7,711.00	718.05	-80.71	-33.96	10.00	9.23	4.02
Niobrara Top									
8,100.00	76.81	84.95	7,715.73	719.83	-61.97	-15.14	10.00	9.24	3.93
8,150.00	81.44	86.87	7,725.16	723.33	-13.01	33.95	10.00	9.26	3.84

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Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Bear 3-65 22-23 3BH
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Project:	Niobrara North Zone	MD Reference:	27' RKB @ 5596.90ft (27' RKB)
Site:	Bear	North Reference:	True
Well:	Bear 3-65 22-23 3BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Bear 3-65 22-23 3BH		
Design:	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)
8,181.00	84.32	88.04	7,729.00	724.69	17.72	64.70	10.00	9.28	3.76
A Chalk Top									
8,200.00	86.08	88.74	7,730.59	725.22	36.65	83.62	10.00	9.29	3.73
8,248.50	90.59	90.54	7,732.00	725.53	85.11	132.00	10.00	9.29	3.70
BPI/LP: 2166' FSL, 613' FWL									
8,300.00	90.59	90.54	7,731.47	725.04	136.60	183.35	0.00	0.00	0.00
8,400.00	90.59	90.54	7,730.45	724.10	236.60	283.07	0.00	0.00	0.00
8,500.00	90.59	90.54	7,729.43	723.16	336.59	382.79	0.00	0.00	0.00
8,600.00	90.59	90.54	7,728.40	722.21	436.58	482.51	0.00	0.00	0.00
8,700.00	90.59	90.54	7,727.38	721.27	536.57	582.23	0.00	0.00	0.00
8,800.00	90.59	90.54	7,726.36	720.33	636.56	681.95	0.00	0.00	0.00
8,900.00	90.59	90.54	7,725.33	719.39	736.55	781.66	0.00	0.00	0.00
9,000.00	90.59	90.54	7,724.31	718.44	836.54	881.38	0.00	0.00	0.00
9,100.00	90.59	90.54	7,723.29	717.50	936.53	981.10	0.00	0.00	0.00
9,200.00	90.59	90.54	7,722.26	716.56	1,036.52	1,080.82	0.00	0.00	0.00
9,300.00	90.59	90.54	7,721.24	715.62	1,136.51	1,180.54	0.00	0.00	0.00
9,400.00	90.59	90.54	7,720.22	714.67	1,236.50	1,280.26	0.00	0.00	0.00
9,500.00	90.59	90.54	7,719.19	713.73	1,336.49	1,379.98	0.00	0.00	0.00
9,600.00	90.59	90.54	7,718.17	712.79	1,436.48	1,479.69	0.00	0.00	0.00
9,700.00	90.59	90.54	7,717.14	711.84	1,536.47	1,579.41	0.00	0.00	0.00
9,800.00	90.59	90.54	7,716.12	710.90	1,636.46	1,679.13	0.00	0.00	0.00
9,900.00	90.59	90.54	7,715.10	709.96	1,736.45	1,778.85	0.00	0.00	0.00
10,000.00	90.59	90.54	7,714.07	709.02	1,836.44	1,878.57	0.00	0.00	0.00
10,100.00	90.59	90.54	7,713.05	708.07	1,936.43	1,978.29	0.00	0.00	0.00
10,200.00	90.59	90.54	7,712.03	707.13	2,036.42	2,078.01	0.00	0.00	0.00
10,300.00	90.59	90.54	7,711.00	706.19	2,136.41	2,177.72	0.00	0.00	0.00
10,400.00	90.59	90.54	7,709.98	705.25	2,236.40	2,277.44	0.00	0.00	0.00
10,500.00	90.59	90.54	7,708.96	704.30	2,336.39	2,377.16	0.00	0.00	0.00
10,600.00	90.59	90.54	7,707.93	703.36	2,436.38	2,476.88	0.00	0.00	0.00
10,700.00	90.59	90.54	7,706.91	702.42	2,536.37	2,576.60	0.00	0.00	0.00
10,800.00	90.59	90.54	7,705.89	701.48	2,636.36	2,676.32	0.00	0.00	0.00
10,900.00	90.59	90.54	7,704.86	700.53	2,736.35	2,776.04	0.00	0.00	0.00
11,000.00	90.59	90.54	7,703.84	699.59	2,836.34	2,875.75	0.00	0.00	0.00
11,100.00	90.59	90.54	7,702.82	698.65	2,936.33	2,975.47	0.00	0.00	0.00
11,200.00	90.59	90.54	7,701.79	697.71	3,036.32	3,075.19	0.00	0.00	0.00
11,300.00	90.59	90.54	7,700.77	696.76	3,136.31	3,174.91	0.00	0.00	0.00
11,400.00	90.59	90.54	7,699.75	695.82	3,236.30	3,274.63	0.00	0.00	0.00
11,500.00	90.59	90.54	7,698.72	694.88	3,336.30	3,374.35	0.00	0.00	0.00
11,600.00	90.59	90.54	7,697.70	693.93	3,436.29	3,474.07	0.00	0.00	0.00
11,700.00	90.59	90.54	7,696.68	692.99	3,536.28	3,573.78	0.00	0.00	0.00
11,800.00	90.59	90.54	7,695.65	692.05	3,636.27	3,673.50	0.00	0.00	0.00
11,900.00	90.59	90.54	7,694.63	691.11	3,736.26	3,773.22	0.00	0.00	0.00
12,000.00	90.59	90.54	7,693.61	690.16	3,836.25	3,872.94	0.00	0.00	0.00
12,100.00	90.59	90.54	7,692.58	689.22	3,936.24	3,972.66	0.00	0.00	0.00
12,200.00	90.59	90.54	7,691.56	688.28	4,036.23	4,072.38	0.00	0.00	0.00
12,300.00	90.59	90.54	7,690.54	687.34	4,136.22	4,172.10	0.00	0.00	0.00
12,400.00	90.59	90.54	7,689.51	686.39	4,236.21	4,271.81	0.00	0.00	0.00
12,500.00	90.59	90.54	7,688.49	685.45	4,336.20	4,371.53	0.00	0.00	0.00
12,600.00	90.59	90.54	7,687.47	684.51	4,436.19	4,471.25	0.00	0.00	0.00
12,700.00	90.59	90.54	7,686.44	683.57	4,536.18	4,570.97	0.00	0.00	0.00
12,800.00	90.59	90.54	7,685.42	682.62	4,636.17	4,670.69	0.00	0.00	0.00
12,900.00	90.59	90.54	7,684.39	681.68	4,736.16	4,770.41	0.00	0.00	0.00
13,000.00	90.59	90.54	7,683.37	680.74	4,836.15	4,870.12	0.00	0.00	0.00
13,100.00	90.59	90.54	7,682.35	679.80	4,936.14	4,969.84	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Bear 3-65 22-23 3BH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5596.90ft (27' RKB)
Project:	Niobrara North Zone	MD Reference:	27' RKB @ 5596.90ft (27' RKB)
Site:	Bear	North Reference:	True
Well:	Bear 3-65 22-23 3BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Bear 3-65 22-23 3BH		
Design:	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)	
13,200.00	90.59	90.54	7,681.32	678.85	5,036.13	5,069.56	0.00	0.00	0.00	
13,300.00	90.59	90.54	7,680.30	677.91	5,136.12	5,169.28	0.00	0.00	0.00	
13,400.00	90.59	90.54	7,679.28	676.97	5,236.11	5,269.00	0.00	0.00	0.00	
13,500.00	90.59	90.54	7,678.25	676.03	5,336.10	5,368.72	0.00	0.00	0.00	
13,600.00	90.59	90.54	7,677.23	675.08	5,436.09	5,468.44	0.00	0.00	0.00	
13,700.00	90.59	90.54	7,676.21	674.14	5,536.08	5,568.15	0.00	0.00	0.00	
13,800.00	90.59	90.54	7,675.18	673.20	5,636.07	5,667.87	0.00	0.00	0.00	
13,900.00	90.59	90.54	7,674.16	672.25	5,736.06	5,767.59	0.00	0.00	0.00	
14,000.00	90.59	90.54	7,673.14	671.31	5,836.05	5,867.31	0.00	0.00	0.00	
14,100.00	90.59	90.54	7,672.11	670.37	5,936.04	5,967.03	0.00	0.00	0.00	
14,200.00	90.59	90.54	7,671.09	669.43	6,036.03	6,066.75	0.00	0.00	0.00	
14,300.00	90.59	90.54	7,670.07	668.48	6,136.02	6,166.47	0.00	0.00	0.00	
14,400.00	90.59	90.54	7,669.04	667.54	6,236.01	6,266.18	0.00	0.00	0.00	
14,500.00	90.59	90.54	7,668.02	666.60	6,336.00	6,365.90	0.00	0.00	0.00	
14,600.00	90.59	90.54	7,667.00	665.66	6,436.00	6,465.62	0.00	0.00	0.00	
14,700.00	90.59	90.54	7,665.97	664.71	6,535.99	6,565.34	0.00	0.00	0.00	
14,800.00	90.59	90.54	7,664.95	663.77	6,635.98	6,665.06	0.00	0.00	0.00	
14,900.00	90.59	90.54	7,663.93	662.83	6,735.97	6,764.78	0.00	0.00	0.00	
15,000.00	90.59	90.54	7,662.90	661.89	6,835.96	6,864.50	0.00	0.00	0.00	
15,100.00	90.59	90.54	7,661.88	660.94	6,935.95	6,964.21	0.00	0.00	0.00	
15,200.00	90.59	90.54	7,660.86	660.00	7,035.94	7,063.93	0.00	0.00	0.00	
15,300.00	90.59	90.54	7,659.83	659.06	7,135.93	7,163.65	0.00	0.00	0.00	
15,400.00	90.59	90.54	7,658.81	658.12	7,235.92	7,263.37	0.00	0.00	0.00	
15,500.00	90.59	90.54	7,657.79	657.17	7,335.91	7,363.09	0.00	0.00	0.00	
15,600.00	90.59	90.54	7,656.76	656.23	7,435.90	7,462.81	0.00	0.00	0.00	
15,700.00	90.59	90.54	7,655.74	655.29	7,535.89	7,562.53	0.00	0.00	0.00	
15,800.00	90.59	90.54	7,654.72	654.34	7,635.88	7,662.24	0.00	0.00	0.00	
15,900.00	90.59	90.54	7,653.69	653.40	7,735.87	7,761.96	0.00	0.00	0.00	
16,000.00	90.59	90.54	7,652.67	652.46	7,835.86	7,861.68	0.00	0.00	0.00	
16,100.00	90.59	90.54	7,651.64	651.52	7,935.85	7,961.40	0.00	0.00	0.00	
16,200.00	90.59	90.54	7,650.62	650.57	8,035.84	8,061.12	0.00	0.00	0.00	
16,300.00	90.59	90.54	7,649.60	649.63	8,135.83	8,160.84	0.00	0.00	0.00	
16,400.00	90.59	90.54	7,648.57	648.69	8,235.82	8,260.56	0.00	0.00	0.00	
16,500.00	90.59	90.54	7,647.55	647.75	8,335.81	8,360.27	0.00	0.00	0.00	
16,600.00	90.59	90.54	7,646.53	646.80	8,435.80	8,459.99	0.00	0.00	0.00	
16,700.00	90.59	90.54	7,645.50	645.86	8,535.79	8,559.71	0.00	0.00	0.00	
16,800.00	90.59	90.54	7,644.48	644.92	8,635.78	8,659.43	0.00	0.00	0.00	
16,900.00	90.59	90.54	7,643.46	643.98	8,735.77	8,759.15	0.00	0.00	0.00	
17,000.00	90.59	90.54	7,642.43	643.03	8,835.76	8,858.87	0.00	0.00	0.00	
17,100.00	90.59	90.54	7,641.41	642.09	8,935.75	8,958.58	0.00	0.00	0.00	
17,200.00	90.59	90.54	7,640.39	641.15	9,035.74	9,058.30	0.00	0.00	0.00	
17,300.00	90.59	90.54	7,639.36	640.21	9,135.73	9,158.02	0.00	0.00	0.00	
17,400.00	90.59	90.54	7,638.34	639.26	9,235.72	9,257.74	0.00	0.00	0.00	
17,500.00	90.59	90.54	7,637.32	638.32	9,335.71	9,357.46	0.00	0.00	0.00	
17,600.00	90.59	90.54	7,636.29	637.38	9,435.70	9,457.18	0.00	0.00	0.00	
17,700.00	90.59	90.54	7,635.27	636.44	9,535.70	9,556.90	0.00	0.00	0.00	
17,800.00	90.59	90.54	7,634.25	635.49	9,635.69	9,656.61	0.00	0.00	0.00	
17,900.00	90.59	90.54	7,633.22	634.55	9,735.68	9,756.33	0.00	0.00	0.00	
17,921.78	90.59	90.54	7,633.00	634.34	9,757.45	9,778.05	0.00	0.00	0.00	
BHL: 2166' FSL, 325' FEL										

ConocoPhillips

Planning Report

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

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Bear 3-65 22-23 3BH - plan hits target center - Point	0.00	0.00	7,633.00	634.34	9,757.45	1,162,002.121	3,246,549.146	39° 46' 28.980 N	104° 37' 22.200 W
Bear 3-65 22-23 3BH - plan hits target center - Point	0.00	0.00	7,732.00	725.53	85.11	1,162,001.408	3,236,876.475	39° 46' 29.900 N	104° 39' 26.080 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
2,172.00	2,172.00	9-5/8" Casing	9-5/8	12-1/4
17,921.78	7,633.00	5-1/2" Casing	5-1/2	8-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,715.00	1,715.00	Fox Hills Top		0.00	
1,972.00	1,972.00	Pierre Top - Fox Hills Base		0.00	
2,172.00	2,172.00	Surface Casing		0.00	
8,080.58	7,711.00	Niobrara Top		0.00	
8,181.00	7,729.00	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: 1440' FSL, 533' FWL
6,885.34	6,795.19	354.93	-368.72	EOB: 1795' FSL, 164' FWL
7,129.90	7,006.98	439.73	-456.82	KOP: 1880' FSL, 76' FWL
8,248.50	7,732.00	725.53	85.11	BPI/LP: 2166' FSL, 613' FWL
17,921.78	7,633.00	634.34	9,757.45	BHL: 2166' FSL, 325' FEL