

ConocoPhillips RBU Gold Data

Niobrara Central Zone

Bear

Bear 3-65 22-23 3BH

Wellbore #1

Plan: Bear 3-65 22-23 3BH Rev.A

Standard Planning Report

16 October, 2017

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:	WELL @ 5596.90ft (Original Well Elev)
Project:	Niobrara Central Zone	MD Reference:	WELL @ 5596.90ft (Original Well Elev)
Site:	Bear	North Reference:	True
Well:	Bear 3-65 22-23 3BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Bear 3-65 22-23 3BH Rev.A		

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		Bear			
Site Position:		Northing:	1,707,569.460 usft	Latitude:	39° 46' 23.050 N
From:	Lat/Long	Easting:	3,236,851.239 usft	Longitude:	104° 39' 26.530 W
Position Uncertainty:	2.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.53 °

Well	Bear 3-65 22-23 3BH					
Well Position	+N/-S	-32.38 ft	Northing:	1,707,537.077 usft	Latitude:	39° 46' 22.730 N
	+E/-W	0.00 ft	Easting:	3,236,851.540 usft	Longitude:	104° 39' 26.530 W
Position Uncertainty		2.00 ft	Wellhead Elevation:		Ground Level:	5,569.90 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	10/16/2017	8.26	66.39	52,018.48308588

Design	Bear 3-65 22-23 3BH Rev.A			
Audit Notes:				
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	86.26

Plan Survey Tool Program	Date	10/16/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	2,172.00	Bear 3-65 22-23 3BH Rev.A (Wel	SDI ADK 105 AdK w/ Gyrocompass HS refer
2	2,172.00	18,226.67	Bear 3-65 22-23 3BH Rev.A (Wel	MWD+IFR_No SAG MWD + IFR (No SAG) correctic

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Wellbore:	Wellbore #1		
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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	
2,172.00	0.00	0.00	2,172.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,650.00	0.00	0.00	3,650.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,760.27	16.65	311.06	4,744.70	105.24	-120.82	1.50	1.50	0.00	311.06	
7,368.33	16.65	311.06	7,243.36	596.17	-684.44	0.00	0.00	0.00	0.00	
8,400.28	90.62	90.53	7,928.00	725.51	-117.90	10.00	7.17	13.52	138.14	Bear 3BH BPI
18,226.67	90.62	90.53	7,821.00	634.27	9,707.49	0.00	0.00	0.00	0.00	Bear 3BH BHL

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Well:	Bear 3-65 22-23 3BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Bear 3-65 22-23 3BH Rev.A		

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
2,172.00	0.00	0.00	2,172.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
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
3,650.00	0.00	0.00	3,650.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.75	311.06	3,700.00	0.21	-0.25	-0.23	1.50	1.50	0.00
3,800.00	2.25	311.06	3,799.96	1.93	-2.22	-2.09	1.50	1.50	0.00
3,900.00	3.75	311.06	3,899.82	5.37	-6.17	-5.80	1.50	1.50	0.00
4,000.00	5.25	311.06	3,999.51	10.52	-12.08	-11.37	1.50	1.50	0.00
4,100.00	6.75	311.06	4,098.96	17.39	-19.96	-18.79	1.50	1.50	0.00
4,200.00	8.25	311.06	4,198.10	25.96	-29.81	-28.05	1.50	1.50	0.00
4,300.00	9.75	311.06	4,296.87	36.24	-41.60	-39.15	1.50	1.50	0.00
4,400.00	11.25	311.06	4,395.19	48.21	-55.34	-52.08	1.50	1.50	0.00
4,500.00	12.75	311.06	4,493.00	61.86	-71.02	-66.84	1.50	1.50	0.00
4,600.00	14.25	311.06	4,590.24	77.19	-88.62	-83.40	1.50	1.50	0.00
4,700.00	15.75	311.06	4,686.83	94.19	-108.14	-101.77	1.50	1.50	0.00
4,760.27	16.65	311.06	4,744.70	105.24	-120.82	-113.70	1.50	1.50	0.00
4,800.00	16.65	311.06	4,782.77	112.72	-129.41	-121.78	0.00	0.00	0.00
4,900.00	16.65	311.06	4,878.57	131.54	-151.02	-142.12	0.00	0.00	0.00

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Wellbore:	Wellbore #1		
Design:	Bear 3-65 22-23 3BH Rev.A		

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)	
5,000.00	16.65	311.06	4,974.38	150.36	-172.63	-162.46	0.00	0.00	0.00	
5,100.00	16.65	311.06	5,070.18	169.19	-194.24	-182.80	0.00	0.00	0.00	
5,200.00	16.65	311.06	5,165.99	188.01	-215.85	-203.13	0.00	0.00	0.00	
5,300.00	16.65	311.06	5,261.79	206.83	-237.46	-223.47	0.00	0.00	0.00	
5,400.00	16.65	311.06	5,357.60	225.66	-259.07	-243.81	0.00	0.00	0.00	
5,500.00	16.65	311.06	5,453.40	244.48	-280.68	-264.15	0.00	0.00	0.00	
5,600.00	16.65	311.06	5,549.21	263.30	-302.29	-284.48	0.00	0.00	0.00	
5,700.00	16.65	311.06	5,645.01	282.13	-323.90	-304.82	0.00	0.00	0.00	
5,800.00	16.65	311.06	5,740.82	300.95	-345.51	-325.16	0.00	0.00	0.00	
5,900.00	16.65	311.06	5,836.62	319.77	-367.13	-345.50	0.00	0.00	0.00	
6,000.00	16.65	311.06	5,932.43	338.60	-388.74	-365.83	0.00	0.00	0.00	
6,100.00	16.65	311.06	6,028.23	357.42	-410.35	-386.17	0.00	0.00	0.00	
6,200.00	16.65	311.06	6,124.04	376.24	-431.96	-406.51	0.00	0.00	0.00	
6,300.00	16.65	311.06	6,219.84	395.07	-453.57	-426.85	0.00	0.00	0.00	
6,400.00	16.65	311.06	6,315.65	413.89	-475.18	-447.18	0.00	0.00	0.00	
6,500.00	16.65	311.06	6,411.46	432.72	-496.79	-467.52	0.00	0.00	0.00	
6,600.00	16.65	311.06	6,507.26	451.54	-518.40	-487.86	0.00	0.00	0.00	
6,700.00	16.65	311.06	6,603.07	470.36	-540.01	-508.20	0.00	0.00	0.00	
6,800.00	16.65	311.06	6,698.87	489.19	-561.62	-528.53	0.00	0.00	0.00	
6,900.00	16.65	311.06	6,794.68	508.01	-583.23	-548.87	0.00	0.00	0.00	
7,000.00	16.65	311.06	6,890.48	526.83	-604.84	-569.21	0.00	0.00	0.00	
7,100.00	16.65	311.06	6,986.29	545.66	-626.45	-589.55	0.00	0.00	0.00	
7,200.00	16.65	311.06	7,082.09	564.48	-648.07	-609.88	0.00	0.00	0.00	
7,300.00	16.65	311.06	7,177.90	583.30	-669.68	-630.22	0.00	0.00	0.00	
7,368.33	16.65	311.06	7,243.36	596.17	-684.44	-644.12	0.00	0.00	0.00	
7,400.00	14.45	319.55	7,273.87	602.15	-690.43	-649.70	10.00	-6.97	26.83	
7,500.00	11.04	3.58	7,371.62	621.25	-697.94	-655.95	10.00	-3.40	44.03	
7,600.00	15.25	44.81	7,469.18	640.19	-688.05	-644.84	10.00	4.21	41.23	
7,700.00	23.26	63.45	7,563.59	658.40	-661.05	-616.71	10.00	8.00	18.64	
7,800.00	32.35	72.49	7,651.99	675.31	-617.76	-572.41	10.00	9.09	9.04	
7,900.00	41.83	77.83	7,731.69	690.43	-559.50	-513.29	10.00	9.48	5.34	
8,000.00	51.47	81.48	7,800.27	703.28	-488.04	-441.15	10.00	9.64	3.65	
8,100.00	61.20	84.26	7,855.64	713.48	-405.55	-358.17	10.00	9.73	2.78	
8,200.00	70.98	86.56	7,896.13	720.71	-314.54	-266.88	10.00	9.78	2.30	
8,300.00	80.78	88.60	7,920.50	724.77	-217.77	-170.05	10.00	9.80	2.04	
8,400.00	90.60	90.53	7,928.00	725.52	-118.18	-70.63	10.00	9.81	1.93	
8,400.28	90.62	90.53	7,928.00	725.51	-117.90	-70.34	10.00	9.82	1.91	
8,500.00	90.62	90.53	7,926.91	724.59	-18.19	29.09	0.00	0.00	0.00	
8,600.00	90.62	90.53	7,925.83	723.66	81.80	128.81	0.00	0.00	0.00	
8,700.00	90.62	90.53	7,924.74	722.73	181.79	228.52	0.00	0.00	0.00	
8,800.00	90.62	90.53	7,923.65	721.80	281.78	328.24	0.00	0.00	0.00	
8,900.00	90.62	90.53	7,922.56	720.87	381.77	427.96	0.00	0.00	0.00	
9,000.00	90.62	90.53	7,921.47	719.95	481.76	527.67	0.00	0.00	0.00	
9,100.00	90.62	90.53	7,920.38	719.02	581.75	627.39	0.00	0.00	0.00	
9,200.00	90.62	90.53	7,919.29	718.09	681.74	727.11	0.00	0.00	0.00	
9,300.00	90.62	90.53	7,918.20	717.16	781.73	826.82	0.00	0.00	0.00	
9,400.00	90.62	90.53	7,917.11	716.23	881.72	926.54	0.00	0.00	0.00	
9,500.00	90.62	90.53	7,916.03	715.30	981.71	1,026.26	0.00	0.00	0.00	
9,600.00	90.62	90.53	7,914.94	714.37	1,081.70	1,125.97	0.00	0.00	0.00	
9,700.00	90.62	90.53	7,913.85	713.45	1,181.69	1,225.69	0.00	0.00	0.00	
9,800.00	90.62	90.53	7,912.76	712.52	1,281.68	1,325.40	0.00	0.00	0.00	
9,900.00	90.62	90.53	7,911.67	711.59	1,381.67	1,425.12	0.00	0.00	0.00	
10,000.00	90.62	90.53	7,910.58	710.66	1,481.66	1,524.84	0.00	0.00	0.00	
10,100.00	90.62	90.53	7,909.49	709.73	1,581.65	1,624.55	0.00	0.00	0.00	

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Wellbore:	Wellbore #1		
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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)	
10,200.00	90.62	90.53	7,908.40	708.80	1,681.64	1,724.27	0.00	0.00	0.00	
10,300.00	90.62	90.53	7,907.31	707.87	1,781.63	1,823.99	0.00	0.00	0.00	
10,400.00	90.62	90.53	7,906.23	706.95	1,881.61	1,923.70	0.00	0.00	0.00	
10,500.00	90.62	90.53	7,905.14	706.02	1,981.60	2,023.42	0.00	0.00	0.00	
10,600.00	90.62	90.53	7,904.05	705.09	2,081.59	2,123.14	0.00	0.00	0.00	
10,700.00	90.62	90.53	7,902.96	704.16	2,181.58	2,222.85	0.00	0.00	0.00	
10,800.00	90.62	90.53	7,901.87	703.23	2,281.57	2,322.57	0.00	0.00	0.00	
10,900.00	90.62	90.53	7,900.78	702.30	2,381.56	2,422.29	0.00	0.00	0.00	
11,000.00	90.62	90.53	7,899.69	701.37	2,481.55	2,522.00	0.00	0.00	0.00	
11,100.00	90.62	90.53	7,898.60	700.45	2,581.54	2,621.72	0.00	0.00	0.00	
11,200.00	90.62	90.53	7,897.51	699.52	2,681.53	2,721.44	0.00	0.00	0.00	
11,300.00	90.62	90.53	7,896.43	698.59	2,781.52	2,821.15	0.00	0.00	0.00	
11,400.00	90.62	90.53	7,895.34	697.66	2,881.51	2,920.87	0.00	0.00	0.00	
11,500.00	90.62	90.53	7,894.25	696.73	2,981.50	3,020.58	0.00	0.00	0.00	
11,600.00	90.62	90.53	7,893.16	695.80	3,081.49	3,120.30	0.00	0.00	0.00	
11,700.00	90.62	90.53	7,892.07	694.87	3,181.48	3,220.02	0.00	0.00	0.00	
11,800.00	90.62	90.53	7,890.98	693.94	3,281.47	3,319.73	0.00	0.00	0.00	
11,900.00	90.62	90.53	7,889.89	693.02	3,381.46	3,419.45	0.00	0.00	0.00	
12,000.00	90.62	90.53	7,888.80	692.09	3,481.45	3,519.17	0.00	0.00	0.00	
12,100.00	90.62	90.53	7,887.71	691.16	3,581.44	3,618.88	0.00	0.00	0.00	
12,200.00	90.62	90.53	7,886.62	690.23	3,681.43	3,718.60	0.00	0.00	0.00	
12,300.00	90.62	90.53	7,885.54	689.30	3,781.42	3,818.32	0.00	0.00	0.00	
12,400.00	90.62	90.53	7,884.45	688.37	3,881.41	3,918.03	0.00	0.00	0.00	
12,500.00	90.62	90.53	7,883.36	687.44	3,981.40	4,017.75	0.00	0.00	0.00	
12,600.00	90.62	90.53	7,882.27	686.52	4,081.39	4,117.47	0.00	0.00	0.00	
12,700.00	90.62	90.53	7,881.18	685.59	4,181.38	4,217.18	0.00	0.00	0.00	
12,800.00	90.62	90.53	7,880.09	684.66	4,281.37	4,316.90	0.00	0.00	0.00	
12,900.00	90.62	90.53	7,879.00	683.73	4,381.36	4,416.62	0.00	0.00	0.00	
13,000.00	90.62	90.53	7,877.91	682.80	4,481.35	4,516.33	0.00	0.00	0.00	
13,100.00	90.62	90.53	7,876.82	681.87	4,581.34	4,616.05	0.00	0.00	0.00	
13,200.00	90.62	90.53	7,875.74	680.94	4,681.33	4,715.76	0.00	0.00	0.00	
13,300.00	90.62	90.53	7,874.65	680.02	4,781.32	4,815.48	0.00	0.00	0.00	
13,400.00	90.62	90.53	7,873.56	679.09	4,881.31	4,915.20	0.00	0.00	0.00	
13,500.00	90.62	90.53	7,872.47	678.16	4,981.30	5,014.91	0.00	0.00	0.00	
13,600.00	90.62	90.53	7,871.38	677.23	5,081.29	5,114.63	0.00	0.00	0.00	
13,700.00	90.62	90.53	7,870.29	676.30	5,181.28	5,214.35	0.00	0.00	0.00	
13,800.00	90.62	90.53	7,869.20	675.37	5,281.27	5,314.06	0.00	0.00	0.00	
13,900.00	90.62	90.53	7,868.11	674.44	5,381.26	5,413.78	0.00	0.00	0.00	
14,000.00	90.62	90.53	7,867.02	673.52	5,481.25	5,513.50	0.00	0.00	0.00	
14,100.00	90.62	90.53	7,865.94	672.59	5,581.24	5,613.21	0.00	0.00	0.00	
14,200.00	90.62	90.53	7,864.85	671.66	5,681.23	5,712.93	0.00	0.00	0.00	
14,300.00	90.62	90.53	7,863.76	670.73	5,781.22	5,812.65	0.00	0.00	0.00	
14,400.00	90.62	90.53	7,862.67	669.80	5,881.21	5,912.36	0.00	0.00	0.00	
14,500.00	90.62	90.53	7,861.58	668.87	5,981.20	6,012.08	0.00	0.00	0.00	
14,600.00	90.62	90.53	7,860.49	667.94	6,081.18	6,111.80	0.00	0.00	0.00	
14,700.00	90.62	90.53	7,859.40	667.02	6,181.17	6,211.51	0.00	0.00	0.00	
14,800.00	90.62	90.53	7,858.31	666.09	6,281.16	6,311.23	0.00	0.00	0.00	
14,900.00	90.62	90.53	7,857.22	665.16	6,381.15	6,410.94	0.00	0.00	0.00	
15,000.00	90.62	90.53	7,856.14	664.23	6,481.14	6,510.66	0.00	0.00	0.00	
15,100.00	90.62	90.53	7,855.05	663.30	6,581.13	6,610.38	0.00	0.00	0.00	
15,200.00	90.62	90.53	7,853.96	662.37	6,681.12	6,710.09	0.00	0.00	0.00	
15,300.00	90.62	90.53	7,852.87	661.44	6,781.11	6,809.81	0.00	0.00	0.00	
15,400.00	90.62	90.53	7,851.78	660.52	6,881.10	6,909.53	0.00	0.00	0.00	
15,500.00	90.62	90.53	7,850.69	659.59	6,981.09	7,009.24	0.00	0.00	0.00	

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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:	WELL @ 5596.90ft (Original Well Elev)
Project:	Niobrara Central Zone	MD Reference:	WELL @ 5596.90ft (Original Well Elev)
Site:	Bear	North Reference:	True
Well:	Bear 3-65 22-23 3BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Bear 3-65 22-23 3BH Rev.A		

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)	
15,600.00	90.62	90.53	7,849.60	658.66	7,081.08	7,108.96	0.00	0.00	0.00	
15,700.00	90.62	90.53	7,848.51	657.73	7,181.07	7,208.68	0.00	0.00	0.00	
15,800.00	90.62	90.53	7,847.42	656.80	7,281.06	7,308.39	0.00	0.00	0.00	
15,900.00	90.62	90.53	7,846.34	655.87	7,381.05	7,408.11	0.00	0.00	0.00	
16,000.00	90.62	90.53	7,845.25	654.94	7,481.04	7,507.83	0.00	0.00	0.00	
16,100.00	90.62	90.53	7,844.16	654.02	7,581.03	7,607.54	0.00	0.00	0.00	
16,200.00	90.62	90.53	7,843.07	653.09	7,681.02	7,707.26	0.00	0.00	0.00	
16,300.00	90.62	90.53	7,841.98	652.16	7,781.01	7,806.98	0.00	0.00	0.00	
16,400.00	90.62	90.53	7,840.89	651.23	7,881.00	7,906.69	0.00	0.00	0.00	
16,500.00	90.62	90.53	7,839.80	650.30	7,980.99	8,006.41	0.00	0.00	0.00	
16,600.00	90.62	90.53	7,838.71	649.37	8,080.98	8,106.12	0.00	0.00	0.00	
16,700.00	90.62	90.53	7,837.62	648.44	8,180.97	8,205.84	0.00	0.00	0.00	
16,800.00	90.62	90.53	7,836.54	647.52	8,280.96	8,305.56	0.00	0.00	0.00	
16,900.00	90.62	90.53	7,835.45	646.59	8,380.95	8,405.27	0.00	0.00	0.00	
17,000.00	90.62	90.53	7,834.36	645.66	8,480.94	8,504.99	0.00	0.00	0.00	
17,100.00	90.62	90.53	7,833.27	644.73	8,580.93	8,604.71	0.00	0.00	0.00	
17,200.00	90.62	90.53	7,832.18	643.80	8,680.92	8,704.42	0.00	0.00	0.00	
17,300.00	90.62	90.53	7,831.09	642.87	8,780.91	8,804.14	0.00	0.00	0.00	
17,400.00	90.62	90.53	7,830.00	641.94	8,880.90	8,903.86	0.00	0.00	0.00	
17,500.00	90.62	90.53	7,828.91	641.02	8,980.89	9,003.57	0.00	0.00	0.00	
17,600.00	90.62	90.53	7,827.82	640.09	9,080.88	9,103.29	0.00	0.00	0.00	
17,700.00	90.62	90.53	7,826.74	639.16	9,180.87	9,203.01	0.00	0.00	0.00	
17,800.00	90.62	90.53	7,825.65	638.23	9,280.86	9,302.72	0.00	0.00	0.00	
17,900.00	90.62	90.53	7,824.56	637.30	9,380.85	9,402.44	0.00	0.00	0.00	
18,000.00	90.62	90.53	7,823.47	636.37	9,480.84	9,502.16	0.00	0.00	0.00	
18,100.00	90.62	90.53	7,822.38	635.44	9,580.83	9,601.87	0.00	0.00	0.00	
18,200.00	90.62	90.53	7,821.29	634.52	9,680.82	9,701.59	0.00	0.00	0.00	
18,226.00	90.62	90.53	7,821.01	634.27	9,706.81	9,727.51	0.00	0.00	0.00	
5 1/2" x 8 1/2"										
18,226.67	90.62	90.53	7,821.00	634.27	9,707.49	9,728.18	0.00	0.00	0.00	

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 3BH BHL	0.00	0.00	7,821.00	634.27	9,707.49	1,708,261.358	3,246,552.750	39° 46' 28.980 N	104° 37' 22.200 W	
- plan hits target center										
- Point										
Bear 3BH BPI	0.00	0.00	7,928.00	725.51	-117.90	1,708,261.468	3,236,726.917	39° 46' 29.900 N	104° 39' 28.040 W	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
2,172.00	2,172.00	9 5/8"	9-5/8	12-1/4	
18,226.00	7,821.01	5 1/2" x 8 1/2"	5-1/2	8-1/2	

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:	WELL @ 5596.90ft (Original Well Elev)
Project:	Niobrara Central Zone	MD Reference:	WELL @ 5596.90ft (Original Well Elev)
Site:	Bear	North Reference:	True
Well:	Bear 3-65 22-23 3BH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Bear 3-65 22-23 3BH Rev.A		



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Bear 3-65 22-23 3BH Rev.A

Ground Level: 5569.90
Surface Location Latitude: 39° 46' 22.730 N
Surface Location Longitude: 104° 39' 26.530 W
North Reference: True
WELL @ 5596.90ft (Original Well Elev)

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

Well Profile Data

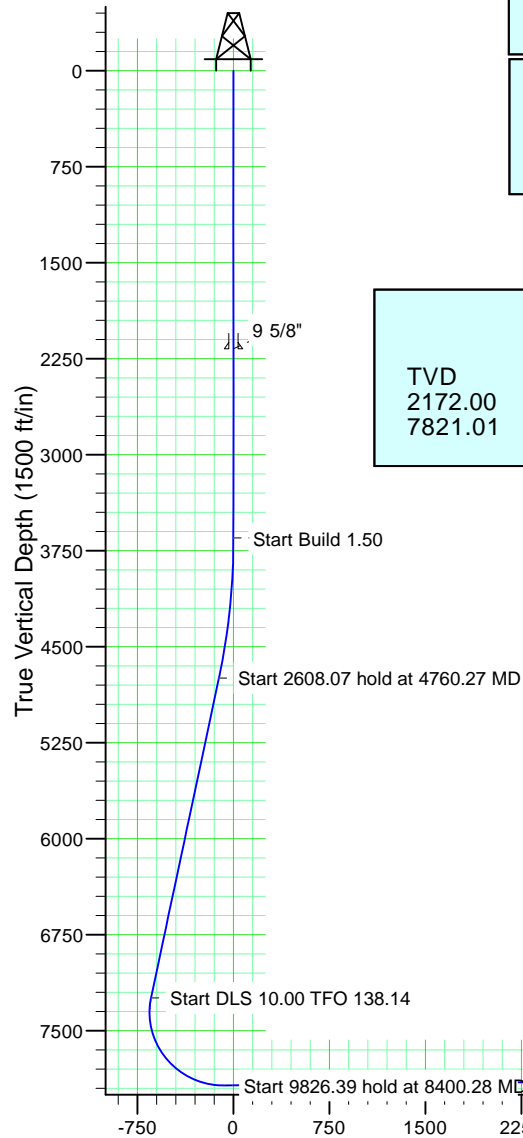
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2172.00	0.00	0.00	2172.00	0.00	0.00	0.00	0.00
3650.00	0.00	0.00	3650.00	0.00	0.00	0.00	0.00
4760.27	16.65	311.06	4744.70	105.24	-120.82	1.50	-113.70
7368.33	16.65	311.06	7243.36	596.17	-684.44	0.00	-644.12
8400.28	90.62	90.53	7928.00	725.51	-117.90	10.00	-70.34
18226.67	90.62	90.53	7821.00	634.27	9707.49	0.00	9728.18

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

-2000 -1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000

Casing Depths

TVD	MD	Name	Size
2172.00	2172.00	9 5/8"	9-5/8
7821.01	18226.005	1 1/2" x 8 1/2"	5-1/2



22

12

SL 1440' FSL 583' FWL

BPI 2166' FSL 460' FWL

BHL 2166' FSL 325' FEL

KOP 2036' FSL 101' FEL

9 5/8" 65 22-23 3BH

EPI 2166' FSL 460' FEL

TD at 18226.67

Section Lines

Wellbore Targets

Name	TVD	Latitude	Longitude
Bear 3BH BHL	7821.00	39° 46' 28.980 N	104° 37' 22.200 W
Bear 3BH BPI	7928.00	39° 46' 29.900 N	104° 39' 28.040 W

Vertical Section at 86.26° (1500 ft/in)

South(-)/North(+) (2000 ft/in)

4000

3000

2000

1000

0

-1000

22

23

5 1/2" x 8 1/2"