

ConocoPhillips RBU Gold Data

Niobrara Central Zone

Property Reserve

Property Reserve 4-65 3-4 2CH

Property Reserve 4-65 3-4 2CH

Plan: Design B

Standard Planning Report

27 April, 2018



ConocoPhillips

Arapahoe County, Colorado

Property Reserve 4-65 3-4 2CH

Design B

Casing Depths

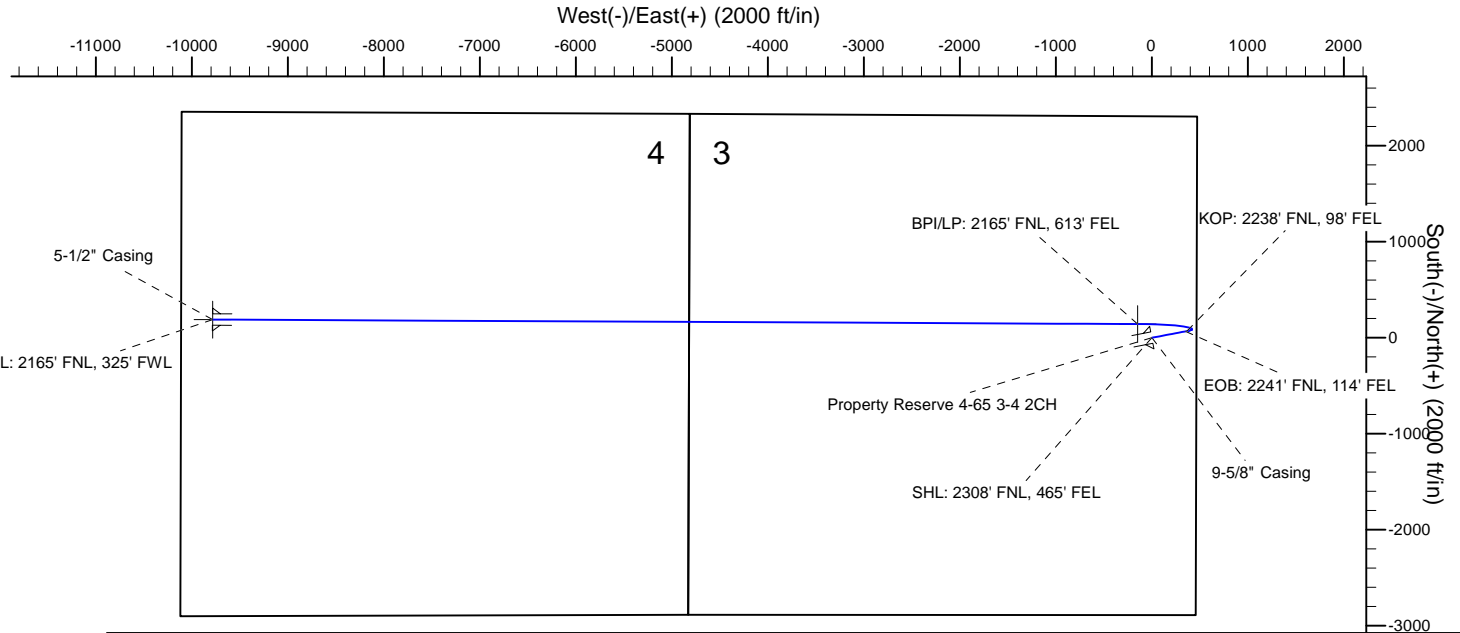
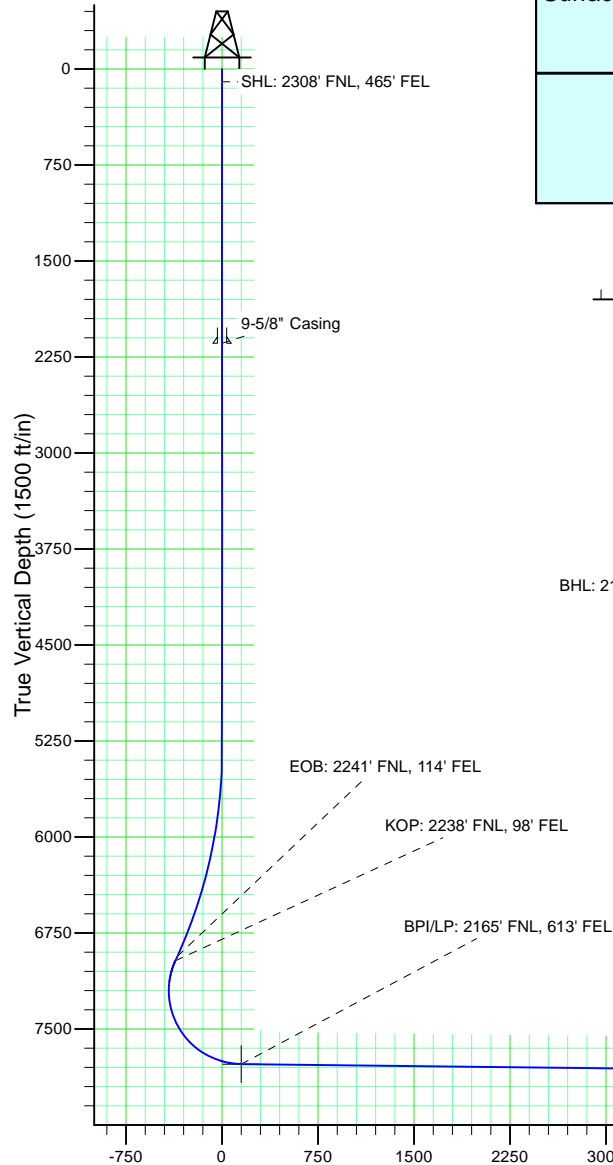
TVD	MD	Name	Size
2142.00	2142.00	9-5/8" Casing	9-5/8
7886.00	17798.97	5-1/2" Casing	5-1/2

Ground Level: 5609.70
Surface Location Latitude: 39° 44' 0.810 N
Surface Location Longitude: 104° 38' 32.480 W
North Reference: True
27' RKB @ 5636.70ft (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
5319.16	0.00	0.00	5319.16	0.00	0.00	0.00	0.00
6985.68	25.00	79.20	6933.31	67.03	351.48	1.50	-350.12
7022.42	25.00	79.20	6966.61	69.93	366.73	0.00	-365.31
8160.81	89.33	270.27	7774.00	143.70	-147.66	10.00	150.40
17798.97	89.33	270.27	7886.00	189.09	-9785.06	0.00	9786.89



Wellbore Targets

Name	TVD	Latitude	Longitude
Property Reserve 4-65 3-4 2CH BPI	7774.00	39° 44' 2.230 N	104° 38' 34.370 W
Property Reserve 4-65 3-4 2CH BHL	7886.00	39° 44' 2.660 N	104° 40' 37.730 W

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Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Property Reserve 4-65 3-4 2CH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5636.70ft (27' RKB)
Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5636.70ft (27' RKB)
Site:	Property Reserve	North Reference:	True
Well:	Property Reserve 4-65 3-4 2CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Property Reserve 4-65 3-4 2CH		
Design:	Design B		

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		Property Reserve			
Site Position: From:	Lat/Long	Northing:	1,695,476.033 usft	Latitude:	39° 44' 24.061 N
		Easting:	3,231,080.119 usft	Longitude:	104° 40' 41.840 W
		Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "

Well	Property Reserve 4-65 3-4 2CH					
Well Position	+N-S	-2,350.72 ft	Northing:	1,693,216.831 usft	Latitude:	39° 44' 0.810 N
	+E-W	10,106.25 ft	Easting:	3,241,207.176 usft	Longitude:	104° 38' 32.480 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	5,609.70 ft	Ground Level:	5,609.70 ft

Wellbore	Property Reserve 4-65 3-4 2CH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	12/1/2018	8.15	66.33	51,869.28901471

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	271.11	

Plan Survey Tool Program	Date	4/27/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,142.00	Design B (Property Reserve 4-65Gyro-BM-MS		
			Gyro - bat/mem drop m/s		
2	2,142.00	5,319.16	Design B (Property Reserve 4-65MWD+IFR_No SAG		
			MWD + IFR (No SAG) corre		
3	5,319.16	6,985.68	Design B (Property Reserve 4-65MWD+IFR_No SAG		
			MWD + IFR (No SAG) corre		
4	6,985.68	7,022.42	Design B (Property Reserve 4-65MWD+IFR_No SAG		
			MWD + IFR (No SAG) corre		
5	7,022.42	8,160.81	Design B (Property Reserve 4-65MWD+IFR_No SAG		
			MWD + IFR (No SAG) corre		
6	8,160.81	17,798.97	Design B (Property Reserve 4-65MWD+IFR_No SAG		
			MWD + IFR (No SAG) corre		

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Property Reserve 4-65 3-4 2CH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5636.70ft (27' RKB)
Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5636.70ft (27' RKB)
Site:	Property Reserve	North Reference:	True
Well:	Property Reserve 4-65 3-4 2CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Property Reserve 4-65 3-4 2CH		
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	
5,319.16	0.00	0.00	5,319.16	0.00	0.00	0.00	0.00	0.00	0.00	
6,985.68	25.00	79.20	6,933.31	67.03	351.48	1.50	1.50	0.00	79.20	
7,022.42	25.00	79.20	6,966.61	69.93	366.73	0.00	0.00	0.00	0.00	
8,160.81	89.33	270.27	7,774.00	143.70	-147.66	10.00	5.65	-14.84	-167.89	Property Reserve 4
17,798.97	89.33	270.27	7,886.00	189.09	-9,785.06	0.00	0.00	0.00	0.00	Property Reserve 4

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Site:	Property Reserve	North Reference:	True
Well:	Property Reserve 4-65 3-4 2CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Property Reserve 4-65 3-4 2CH		
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: 2308' FNL, 465' FEL									
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
1,717.00	0.00	0.00	1,717.00	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
1,942.00	0.00	0.00	1,942.00	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
2,142.00	0.00	0.00	2,142.00	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 @ 5636.70ft (27' RKB)
Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5636.70ft (27' RKB)
Site:	Property Reserve	North Reference:	True
Well:	Property Reserve 4-65 3-4 2CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Property Reserve 4-65 3-4 2CH		
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
4,900.00	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
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,319.16	0.00	0.00	5,319.16	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	1.21	79.20	5,399.99	0.16	0.84	-0.84	1.50	1.50	0.00
5,500.00	2.71	79.20	5,499.93	0.80	4.20	-4.19	1.50	1.50	0.00
5,600.00	4.21	79.20	5,599.75	1.93	10.14	-10.10	1.50	1.50	0.00
5,700.00	5.71	79.20	5,699.37	3.55	18.63	-18.56	1.50	1.50	0.00
5,800.00	7.21	79.20	5,798.73	5.66	29.69	-29.58	1.50	1.50	0.00
5,900.00	8.71	79.20	5,897.76	8.26	43.30	-43.13	1.50	1.50	0.00
6,000.00	10.21	79.20	5,996.40	11.34	59.45	-59.22	1.50	1.50	0.00
6,100.00	11.71	79.20	6,094.57	14.90	78.13	-77.82	1.50	1.50	0.00
6,200.00	13.21	79.20	6,192.21	18.94	99.32	-98.94	1.50	1.50	0.00
6,300.00	14.71	79.20	6,289.26	23.46	123.02	-122.55	1.50	1.50	0.00
6,400.00	16.21	79.20	6,385.63	28.45	149.21	-148.63	1.50	1.50	0.00
6,500.00	17.71	79.20	6,481.28	33.92	177.87	-177.18	1.50	1.50	0.00
6,600.00	19.21	79.20	6,576.13	39.85	208.98	-208.17	1.50	1.50	0.00
6,700.00	20.71	79.20	6,670.12	46.25	242.51	-241.57	1.50	1.50	0.00
6,800.00	22.21	79.20	6,763.18	53.10	278.45	-277.38	1.50	1.50	0.00
6,900.00	23.71	79.20	6,855.26	60.41	316.77	-315.55	1.50	1.50	0.00
6,985.68	25.00	79.20	6,933.31	67.03	351.48	-350.12	1.50	1.50	0.00
EOB: 2241' FNL, 114' FEL									
7,000.00	25.00	79.20	6,946.29	68.16	357.43	-356.04	0.00	0.00	0.00
7,022.42	25.00	79.20	6,966.61	69.93	366.73	-365.31	0.00	0.00	0.00
KOP: 2238' FNL, 98' FEL									
7,050.00	22.31	77.68	6,991.87	72.14	377.57	-376.11	10.00	-9.75	-5.53
7,100.00	17.48	73.79	7,038.87	76.27	394.07	-392.52	10.00	-9.65	-7.77
7,150.00	12.79	67.12	7,087.13	80.52	406.39	-404.75	10.00	-9.39	-13.35
7,200.00	8.44	53.37	7,136.27	84.86	414.44	-412.72	10.00	-8.69	-27.51
7,250.00	5.38	19.21	7,185.92	89.27	418.16	-416.35	10.00	-6.13	-68.31
7,300.00	6.03	327.57	7,235.70	93.70	417.52	-415.63	10.00	1.31	-103.29
7,350.00	9.68	301.66	7,285.24	98.13	412.52	-410.55	10.00	7.30	-51.82
7,400.00	14.18	290.84	7,334.15	102.52	403.22	-401.16	10.00	8.99	-21.62
7,450.00	18.92	285.26	7,382.07	106.84	389.66	-387.53	10.00	9.49	-11.17
7,500.00	23.77	281.87	7,428.63	111.05	371.97	-369.75	10.00	9.69	-6.78
7,550.00	28.67	279.58	7,473.47	115.12	350.27	-347.98	10.00	9.79	-4.58
7,600.00	33.59	277.91	7,516.26	119.02	324.72	-322.36	10.00	9.85	-3.34
7,650.00	38.54	276.63	7,556.66	122.73	295.53	-293.11	10.00	9.89	-2.57
7,700.00	43.49	275.60	7,594.38	126.20	262.92	-260.43	10.00	9.91	-2.07
7,737.90	47.25	274.93	7,621.00	128.67	236.06	-233.53	10.00	9.92	-1.75
Niobrara Top									
7,750.00	48.45	274.74	7,629.12	129.43	227.13	-224.58	10.00	9.93	-1.61
7,800.00	53.42	274.00	7,660.62	132.37	188.43	-185.84	10.00	9.93	-1.47
7,850.00	58.39	273.35	7,688.64	135.02	147.12	-144.48	10.00	9.94	-1.29
7,900.00	63.36	272.77	7,712.97	137.35	103.52	-100.85	10.00	9.95	-1.16
7,950.00	68.34	272.24	7,733.41	139.33	57.95	-55.25	10.00	9.95	-1.07
8,000.00	73.32	271.74	7,749.83	140.97	10.77	-8.04	10.00	9.96	-0.99
8,050.00	78.30	271.27	7,762.08	142.24	-37.68	40.42	10.00	9.96	-0.94
8,059.87	79.28	271.18	7,764.00	142.44	-47.35	50.09	10.00	9.96	-0.92

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Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5636.70ft (27' RKB)
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Wellbore:	Property Reserve 4-65 3-4 2CH		
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)	
C Chalk Top										
8,100.00	83.28	270.81	7,770.08	143.13	-87.01	89.76	10.00	9.96	-0.91	
8,150.00	88.26	270.37	7,773.77	143.64	-136.85	139.60	10.00	9.96	-0.89	
8,160.81	89.33	270.27	7,774.00	143.70	-147.66	150.41	10.00	9.96	-0.89	
BPI/LP: 2165' FNL, 613' FEL										
8,200.00	89.33	270.27	7,774.46	143.89	-186.85	189.59	0.00	0.00	0.00	
8,300.00	89.33	270.27	7,775.62	144.36	-286.84	289.57	0.00	0.00	0.00	
8,400.00	89.33	270.27	7,776.78	144.83	-386.83	389.56	0.00	0.00	0.00	
8,500.00	89.33	270.27	7,777.94	145.30	-486.82	489.54	0.00	0.00	0.00	
8,600.00	89.33	270.27	7,779.10	145.77	-586.81	589.52	0.00	0.00	0.00	
8,700.00	89.33	270.27	7,780.27	146.24	-686.81	689.50	0.00	0.00	0.00	
8,800.00	89.33	270.27	7,781.43	146.71	-786.80	789.49	0.00	0.00	0.00	
8,900.00	89.33	270.27	7,782.59	147.18	-886.79	889.47	0.00	0.00	0.00	
9,000.00	89.33	270.27	7,783.75	147.65	-986.78	989.45	0.00	0.00	0.00	
9,100.00	89.33	270.27	7,784.91	148.12	-1,086.78	1,089.43	0.00	0.00	0.00	
9,200.00	89.33	270.27	7,786.08	148.60	-1,186.77	1,189.42	0.00	0.00	0.00	
9,300.00	89.33	270.27	7,787.24	149.07	-1,286.76	1,289.40	0.00	0.00	0.00	
9,400.00	89.33	270.27	7,788.40	149.54	-1,386.75	1,389.38	0.00	0.00	0.00	
9,500.00	89.33	270.27	7,789.56	150.01	-1,486.74	1,489.36	0.00	0.00	0.00	
9,600.00	89.33	270.27	7,790.72	150.48	-1,586.74	1,589.35	0.00	0.00	0.00	
9,700.00	89.33	270.27	7,791.89	150.95	-1,686.73	1,689.33	0.00	0.00	0.00	
9,800.00	89.33	270.27	7,793.05	151.42	-1,786.72	1,789.31	0.00	0.00	0.00	
9,900.00	89.33	270.27	7,794.21	151.89	-1,886.71	1,889.29	0.00	0.00	0.00	
10,000.00	89.33	270.27	7,795.37	152.36	-1,986.70	1,989.28	0.00	0.00	0.00	
10,100.00	89.33	270.27	7,796.53	152.83	-2,086.70	2,089.26	0.00	0.00	0.00	
10,200.00	89.33	270.27	7,797.70	153.30	-2,186.69	2,189.24	0.00	0.00	0.00	
10,300.00	89.33	270.27	7,798.86	153.77	-2,286.68	2,289.22	0.00	0.00	0.00	
10,400.00	89.33	270.27	7,800.02	154.25	-2,386.67	2,389.21	0.00	0.00	0.00	
10,500.00	89.33	270.27	7,801.18	154.72	-2,486.67	2,489.19	0.00	0.00	0.00	
10,600.00	89.33	270.27	7,802.34	155.19	-2,586.66	2,589.17	0.00	0.00	0.00	
10,700.00	89.33	270.27	7,803.51	155.66	-2,686.65	2,689.16	0.00	0.00	0.00	
10,800.00	89.33	270.27	7,804.67	156.13	-2,786.64	2,789.14	0.00	0.00	0.00	
10,900.00	89.33	270.27	7,805.83	156.60	-2,886.63	2,889.12	0.00	0.00	0.00	
11,000.00	89.33	270.27	7,806.99	157.07	-2,986.63	2,989.10	0.00	0.00	0.00	
11,100.00	89.33	270.27	7,808.15	157.54	-3,086.62	3,089.09	0.00	0.00	0.00	
11,200.00	89.33	270.27	7,809.32	158.01	-3,186.61	3,189.07	0.00	0.00	0.00	
11,300.00	89.33	270.27	7,810.48	158.48	-3,286.60	3,289.05	0.00	0.00	0.00	
11,400.00	89.33	270.27	7,811.64	158.95	-3,386.59	3,389.03	0.00	0.00	0.00	
11,500.00	89.33	270.27	7,812.80	159.43	-3,486.59	3,489.02	0.00	0.00	0.00	
11,600.00	89.33	270.27	7,813.97	159.90	-3,586.58	3,589.00	0.00	0.00	0.00	
11,700.00	89.33	270.27	7,815.13	160.37	-3,686.57	3,688.98	0.00	0.00	0.00	
11,800.00	89.33	270.27	7,816.29	160.84	-3,786.56	3,788.96	0.00	0.00	0.00	
11,900.00	89.33	270.27	7,817.45	161.31	-3,886.56	3,888.95	0.00	0.00	0.00	
12,000.00	89.33	270.27	7,818.61	161.78	-3,986.55	3,988.93	0.00	0.00	0.00	
12,100.00	89.33	270.27	7,819.78	162.25	-4,086.54	4,088.91	0.00	0.00	0.00	
12,200.00	89.33	270.27	7,820.94	162.72	-4,186.53	4,188.89	0.00	0.00	0.00	
12,300.00	89.33	270.27	7,822.10	163.19	-4,286.52	4,288.88	0.00	0.00	0.00	
12,400.00	89.33	270.27	7,823.26	163.66	-4,386.52	4,388.86	0.00	0.00	0.00	
12,500.00	89.33	270.27	7,824.42	164.13	-4,486.51	4,488.84	0.00	0.00	0.00	
12,600.00	89.33	270.27	7,825.59	164.60	-4,586.50	4,588.82	0.00	0.00	0.00	
12,700.00	89.33	270.27	7,826.75	165.08	-4,686.49	4,688.81	0.00	0.00	0.00	
12,800.00	89.33	270.27	7,827.91	165.55	-4,786.48	4,788.79	0.00	0.00	0.00	
12,900.00	89.33	270.27	7,829.07	166.02	-4,886.48	4,888.77	0.00	0.00	0.00	

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Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Property Reserve 4-65 3-4 2CH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5636.70ft (27' RKB)
Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5636.70ft (27' RKB)
Site:	Property Reserve	North Reference:	True
Well:	Property Reserve 4-65 3-4 2CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Property Reserve 4-65 3-4 2CH		
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)	
13,000.00	89.33	270.27	7,830.23	166.49	-4,986.47	4,988.75	0.00	0.00	0.00	
13,100.00	89.33	270.27	7,831.40	166.96	-5,086.46	5,088.74	0.00	0.00	0.00	
13,200.00	89.33	270.27	7,832.56	167.43	-5,186.45	5,188.72	0.00	0.00	0.00	
13,300.00	89.33	270.27	7,833.72	167.90	-5,286.45	5,288.70	0.00	0.00	0.00	
13,400.00	89.33	270.27	7,834.88	168.37	-5,386.44	5,388.68	0.00	0.00	0.00	
13,500.00	89.33	270.27	7,836.04	168.84	-5,486.43	5,488.67	0.00	0.00	0.00	
13,600.00	89.33	270.27	7,837.21	169.31	-5,586.42	5,588.65	0.00	0.00	0.00	
13,700.00	89.33	270.27	7,838.37	169.78	-5,686.41	5,688.63	0.00	0.00	0.00	
13,800.00	89.33	270.27	7,839.53	170.26	-5,786.41	5,788.62	0.00	0.00	0.00	
13,900.00	89.33	270.27	7,840.69	170.73	-5,886.40	5,888.60	0.00	0.00	0.00	
14,000.00	89.33	270.27	7,841.85	171.20	-5,986.39	5,988.58	0.00	0.00	0.00	
14,100.00	89.33	270.27	7,843.02	171.67	-6,086.38	6,088.56	0.00	0.00	0.00	
14,200.00	89.33	270.27	7,844.18	172.14	-6,186.37	6,188.55	0.00	0.00	0.00	
14,300.00	89.33	270.27	7,845.34	172.61	-6,286.37	6,288.53	0.00	0.00	0.00	
14,400.00	89.33	270.27	7,846.50	173.08	-6,386.36	6,388.51	0.00	0.00	0.00	
14,500.00	89.33	270.27	7,847.66	173.55	-6,486.35	6,488.49	0.00	0.00	0.00	
14,600.00	89.33	270.27	7,848.83	174.02	-6,586.34	6,588.48	0.00	0.00	0.00	
14,700.00	89.33	270.27	7,849.99	174.49	-6,686.34	6,688.46	0.00	0.00	0.00	
14,800.00	89.33	270.27	7,851.15	174.96	-6,786.33	6,788.44	0.00	0.00	0.00	
14,900.00	89.33	270.27	7,852.31	175.43	-6,886.32	6,888.42	0.00	0.00	0.00	
15,000.00	89.33	270.27	7,853.47	175.91	-6,986.31	6,988.41	0.00	0.00	0.00	
15,100.00	89.33	270.27	7,854.64	176.38	-7,086.30	7,088.39	0.00	0.00	0.00	
15,200.00	89.33	270.27	7,855.80	176.85	-7,186.30	7,188.37	0.00	0.00	0.00	
15,300.00	89.33	270.27	7,856.96	177.32	-7,286.29	7,288.35	0.00	0.00	0.00	
15,400.00	89.33	270.27	7,858.12	177.79	-7,386.28	7,388.34	0.00	0.00	0.00	
15,500.00	89.33	270.27	7,859.29	178.26	-7,486.27	7,488.32	0.00	0.00	0.00	
15,600.00	89.33	270.27	7,860.45	178.73	-7,586.26	7,588.30	0.00	0.00	0.00	
15,700.00	89.33	270.27	7,861.61	179.20	-7,686.26	7,688.28	0.00	0.00	0.00	
15,800.00	89.33	270.27	7,862.77	179.67	-7,786.25	7,788.27	0.00	0.00	0.00	
15,900.00	89.33	270.27	7,863.93	180.14	-7,886.24	7,888.25	0.00	0.00	0.00	
16,000.00	89.33	270.27	7,865.10	180.61	-7,986.23	7,988.23	0.00	0.00	0.00	
16,100.00	89.33	270.27	7,866.26	181.09	-8,086.23	8,088.21	0.00	0.00	0.00	
16,200.00	89.33	270.27	7,867.42	181.56	-8,186.22	8,188.20	0.00	0.00	0.00	
16,300.00	89.33	270.27	7,868.58	182.03	-8,286.21	8,288.18	0.00	0.00	0.00	
16,400.00	89.33	270.27	7,869.74	182.50	-8,386.20	8,388.16	0.00	0.00	0.00	
16,500.00	89.33	270.27	7,870.91	182.97	-8,486.19	8,488.14	0.00	0.00	0.00	
16,600.00	89.33	270.27	7,872.07	183.44	-8,586.19	8,588.13	0.00	0.00	0.00	
16,700.00	89.33	270.27	7,873.23	183.91	-8,686.18	8,688.11	0.00	0.00	0.00	
16,800.00	89.33	270.27	7,874.39	184.38	-8,786.17	8,788.09	0.00	0.00	0.00	
16,900.00	89.33	270.27	7,875.55	184.85	-8,886.16	8,888.07	0.00	0.00	0.00	
17,000.00	89.33	270.27	7,876.72	185.32	-8,986.15	8,988.06	0.00	0.00	0.00	
17,100.00	89.33	270.27	7,877.88	185.79	-9,086.15	9,088.04	0.00	0.00	0.00	
17,200.00	89.33	270.27	7,879.04	186.26	-9,186.14	9,188.02	0.00	0.00	0.00	
17,300.00	89.33	270.27	7,880.20	186.74	-9,286.13	9,288.01	0.00	0.00	0.00	
17,400.00	89.33	270.27	7,881.36	187.21	-9,386.12	9,387.99	0.00	0.00	0.00	
17,500.00	89.33	270.27	7,882.53	187.68	-9,486.12	9,487.97	0.00	0.00	0.00	
17,600.00	89.33	270.27	7,883.69	188.15	-9,586.11	9,587.95	0.00	0.00	0.00	
17,700.00	89.33	270.27	7,884.85	188.62	-9,686.10	9,687.94	0.00	0.00	0.00	
17,798.97	89.33	270.27	7,886.00	189.09	-9,785.06	9,786.89	0.00	0.00	0.00	
BHL: 2165' FNL, 325' FWL - 5-1/2" Casing										

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Property Reserve 4-65 3-4 2CH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	27' RKB @ 5636.70ft (27' RKB)
Project:	Niobrara Central Zone	MD Reference:	27' RKB @ 5636.70ft (27' RKB)
Site:	Property Reserve	North Reference:	True
Well:	Property Reserve 4-65 3-4 2CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Property Reserve 4-65 3-4 2CH		
Design:	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									
Property Reserve 4-6'	0.00	0.00	7,774.00	143.70	-147.66	1,693,359.132	3,241,058.172	39° 44' 2.230 N	104° 38' 34.370 W
- plan hits target center									
- Point									
Property Reserve 4-6'	0.00	0.00	7,886.00	189.09	-9,785.06	1,693,313.531	3,231,420.813	39° 44' 2.660 N	104° 40' 37.730 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
2,142.00	2,142.00	9-5/8" Casing	9-5/8	12-1/4	
17,798.97	7,886.00	5-1/2" Casing	5-1/2	8-1/2	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,717.00	1,717.00	Fox Hills Top		0.00	
1,942.00	1,942.00	Pierre Top - Fox Hills Base		0.00	
2,142.00	2,142.00	Surface Casing		0.00	
7,737.90	7,621.00	Niobrara Top		0.00	
8,059.87	7,764.00	C 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: 2308' FNL, 465' FEL
6,985.68	6,933.31	67.03	351.48	EOB: 2241' FNL, 114' FEL
7,022.42	6,966.61	69.93	366.73	KOP: 2238' FNL, 98' FEL
8,160.81	7,774.00	143.70	-147.66	BPI/LP: 2165' FNL, 613' FEL
17,798.97	7,886.00	189.09	-9,785.06	BHL: 2165' FNL, 325' FWL