



ConocoPhillips

Adams County, Colorado

Fraser 3-64 33-32 3DH

Design A

Ground Level: 5586.70
 Surface Location Latitude: 39° 44' 40.690 N
 Surface Location Longitude: 104° 32' 55.990 W
 North Reference: True
 25' RKB @ 5611.70ft (25' RKB)

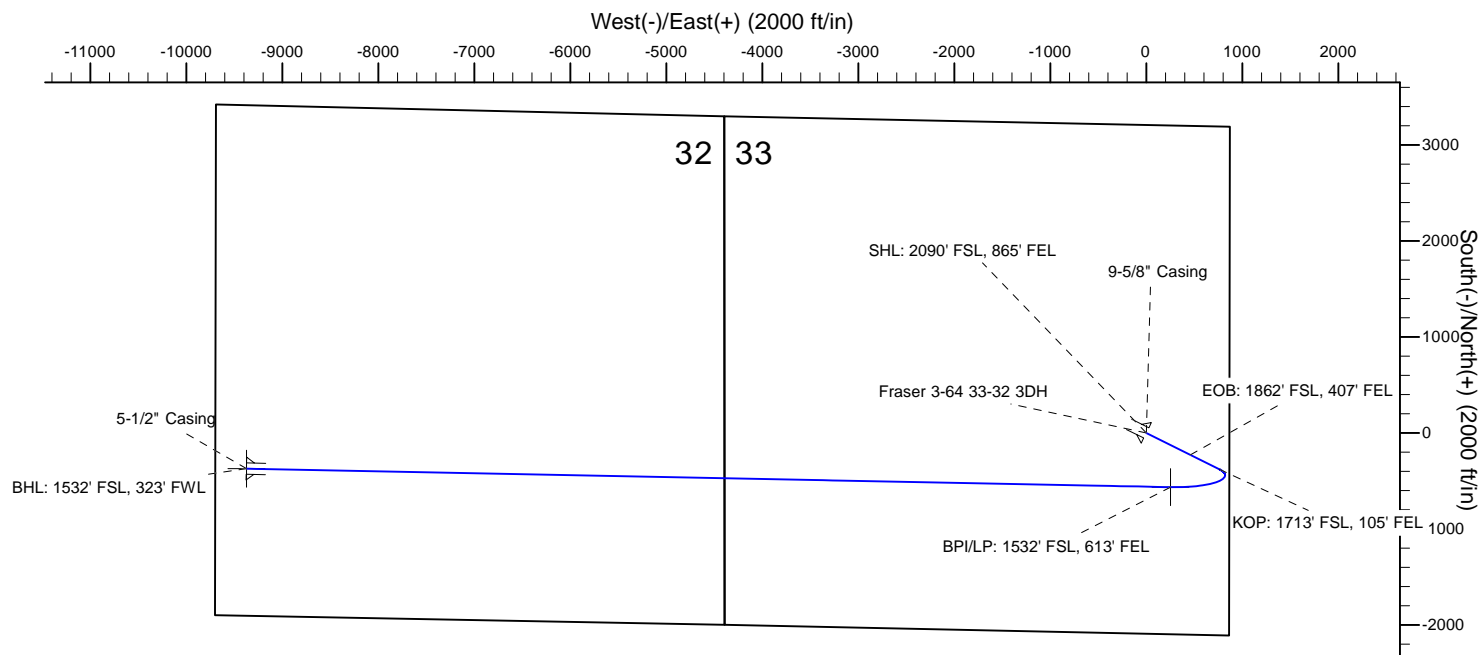
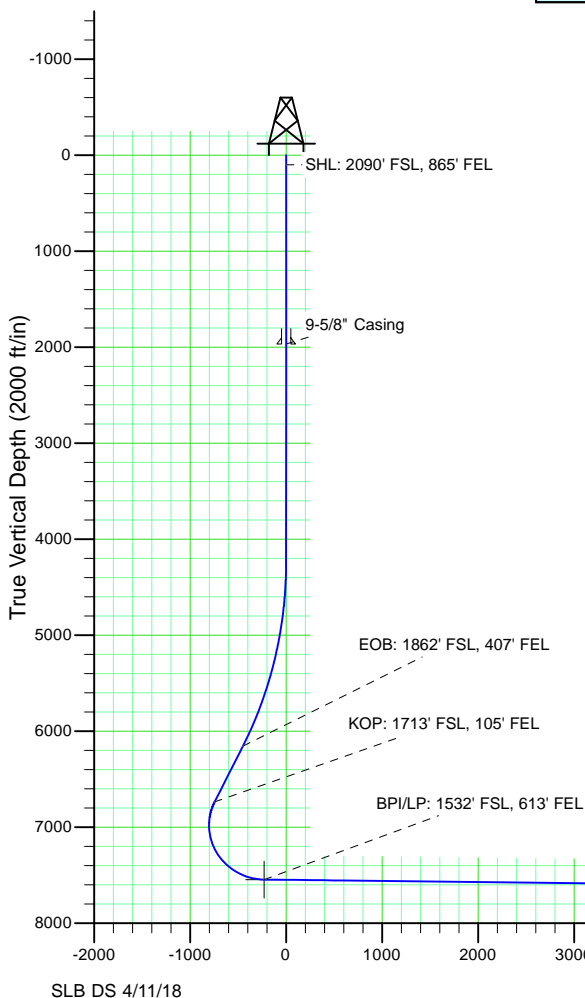
North American Datum 1983
 GRS 1980
 US State Plane 1983
 Colorado Northern Zone

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
4244.50	0.00	0.00	4244.50	0.00	0.00	0.00	0.00
6244.40	30.00	116.40	6154.27	-227.53	458.32	1.50	-448.98
6917.87	30.00	116.40	6737.52	-377.26	759.92	0.00	-744.42
8080.24	89.33	271.15	7546.00	-563.59	251.53	10.00	-229.07
17707.19	89.33	271.15	7658.00	-370.59	-9372.84	0.00	9380.16

Casing Depths

TVD	MD	Name	Size
1966.00	1966.00	9-5/8" Casing	9-5/8
7658.00	17707.19	5-1/2" Casing	5-1/2



Wellbore Targets

Name	TVD	Latitude	Longitude
Fraser 3-64 33-32 3DH BPI	7546.00	39° 44' 35.120 N	104° 32' 52.770 W
Fraser 3-64 33-32 3DH BHL	7658.00	39° 44' 37.010 N	104° 34' 55.980 W

Vertical Section at 267.74° (2000 ft/in)

ConocoPhillips RBU Gold Data

Niobrara North Zone

Fraser

Fraser 3-64 33-32 3DH

Fraser 3-64 33-32 3DH

Plan: Design A

Standard Planning Report

12 April, 2018

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Fraser 3-64 33-32 3DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5611.70ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5611.70ft (25' RKB)
Site:	Fraser	North Reference:	True
Well:	Fraser 3-64 33-32 3DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Fraser 3-64 33-32 3DH		
Design:	Design A		

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		Fraser			
Site Position: From: Position Uncertainty:		Northing:	1,154,577.431 usft	Latitude:	39° 45' 14.490 N
	Lat/Long	Easting:	3,257,722.743 usft	Longitude:	104° 35' 0.082 W
	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.59

Well	Fraser 3-64 33-32 3DH					
Well Position	+N-S	-3,418.24 ft	Northing:	1,151,259.600 usft	Latitude:	39° 44' 40.690 N
	+E-W	9,693.10 ft	Easting:	3,267,450.581 usft	Longitude:	104° 32' 55.990 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	5,586.70 ft	Ground Level:	5,586.70 ft

Wellbore	Fraser 3-64 33-32 3DH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	12/1/2018	8.09	66.35	51,888.22145899

Design	Design A				
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	267.74	

Plan Survey Tool Program	Date	4/12/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,966.00	Design A (Fraser 3-64 33-32 3DH)	Gyro-BM-MS	
				Gyro - bat/mem drop m/s	
2	1,966.00	4,244.50	Design A (Fraser 3-64 33-32 3DH)	MWD+IFR_No SAG	
				MWD + IFR (No SAG) corre	
3	4,244.50	6,244.40	Design A (Fraser 3-64 33-32 3DH)	MWD+IFR_No SAG	
				MWD + IFR (No SAG) corre	
4	6,244.40	6,917.87	Design A (Fraser 3-64 33-32 3DH)	MWD+IFR_No SAG	
				MWD + IFR (No SAG) corre	
5	6,917.87	8,080.24	Design A (Fraser 3-64 33-32 3DH)	MWD+IFR_No SAG	
				MWD + IFR (No SAG) corre	
6	8,080.24	17,707.19	Design A (Fraser 3-64 33-32 3DH)	MWD+IFR_No SAG	
				MWD + IFR (No SAG) corre	

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Fraser 3-64 33-32 3DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5611.70ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5611.70ft (25' RKB)
Site:	Fraser	North Reference:	True
Well:	Fraser 3-64 33-32 3DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Fraser 3-64 33-32 3DH		
Design:	Design A		

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	
4,244.50	0.00	0.00	4,244.50	0.00	0.00	0.00	0.00	0.00	0.00	
6,244.40	30.00	116.40	6,154.27	-227.53	458.32	1.50	1.50	0.00	116.40	
6,917.87	30.00	116.40	6,737.52	-377.26	759.92	0.00	0.00	0.00	0.00	
8,080.24	89.33	271.15	7,546.00	-563.59	251.53	10.00	5.10	13.31	151.60	Fraser 3-64 33-32 3
17,707.19	89.33	271.15	7,658.00	-370.59	-9,372.84	0.00	0.00	0.00	0.00	Fraser 3-64 33-32 3

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Fraser 3-64 33-32 3DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5611.70ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5611.70ft (25' RKB)
Site:	Fraser	North Reference:	True
Well:	Fraser 3-64 33-32 3DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Fraser 3-64 33-32 3DH		
Design:	Design 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
SHL: 2090' FSL, 865' 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
1,606.00	0.00	0.00	1,606.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Top									
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,766.00	0.00	0.00	1,766.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Top - Fox Hills Base									
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
1,966.00	0.00	0.00	1,966.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Casing - 9-5/8" Casing									
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
2,200.00	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
4,244.50	0.00	0.00	4,244.50	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.83	116.40	4,300.00	-0.18	0.36	-0.35	1.50	1.50	0.00
4,400.00	2.33	116.40	4,399.96	-1.41	2.83	-2.78	1.50	1.50	0.00
4,500.00	3.83	116.40	4,499.81	-3.80	7.65	-7.49	1.50	1.50	0.00

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Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Fraser 3-64 33-32 3DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5611.70ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5611.70ft (25' RKB)
Site:	Fraser	North Reference:	True
Well:	Fraser 3-64 33-32 3DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Fraser 3-64 33-32 3DH		
Design:	Design 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)
4,600.00	5.33	116.40	4,599.49	-7.35	14.81	-14.50	1.50	1.50	0.00
4,700.00	6.83	116.40	4,698.92	-12.06	24.30	-23.80	1.50	1.50	0.00
4,800.00	8.33	116.40	4,798.04	-17.93	36.12	-35.38	1.50	1.50	0.00
4,900.00	9.83	116.40	4,896.79	-24.95	50.25	-49.23	1.50	1.50	0.00
5,000.00	11.33	116.40	4,995.08	-33.12	66.70	-65.34	1.50	1.50	0.00
5,100.00	12.83	116.40	5,092.87	-42.42	85.45	-83.71	1.50	1.50	0.00
5,200.00	14.33	116.40	5,190.07	-52.87	106.49	-104.31	1.50	1.50	0.00
5,300.00	15.83	116.40	5,286.62	-64.44	129.79	-127.15	1.50	1.50	0.00
5,400.00	17.33	116.40	5,382.46	-77.13	155.35	-152.19	1.50	1.50	0.00
5,500.00	18.83	116.40	5,477.52	-90.93	183.16	-179.42	1.50	1.50	0.00
5,600.00	20.33	116.40	5,571.73	-105.83	213.17	-208.83	1.50	1.50	0.00
5,700.00	21.83	116.40	5,665.03	-121.83	245.39	-240.39	1.50	1.50	0.00
5,800.00	23.33	116.40	5,757.36	-138.90	279.79	-274.08	1.50	1.50	0.00
5,900.00	24.83	116.40	5,848.66	-157.04	316.34	-309.88	1.50	1.50	0.00
6,000.00	26.33	116.40	5,938.85	-176.25	355.01	-347.77	1.50	1.50	0.00
6,100.00	27.83	116.40	6,027.88	-196.49	395.79	-387.72	1.50	1.50	0.00
6,200.00	29.33	116.40	6,115.69	-217.76	438.64	-429.69	1.50	1.50	0.00
6,244.40	30.00	116.40	6,154.27	-227.53	458.32	-448.98	1.50	1.50	0.00
EOB: 1862' FSL, 407' FEL									
6,300.00	30.00	116.40	6,202.42	-239.90	483.22	-473.37	0.00	0.00	0.00
6,400.00	30.00	116.40	6,289.03	-262.13	528.01	-517.24	0.00	0.00	0.00
6,500.00	30.00	116.40	6,375.63	-284.36	572.79	-561.11	0.00	0.00	0.00
6,600.00	30.00	116.40	6,462.24	-306.59	617.57	-604.98	0.00	0.00	0.00
6,700.00	30.00	116.40	6,548.84	-328.82	662.35	-648.85	0.00	0.00	0.00
6,800.00	30.00	116.40	6,635.44	-351.06	707.14	-692.71	0.00	0.00	0.00
6,900.00	30.00	116.40	6,722.05	-373.29	751.92	-736.58	0.00	0.00	0.00
6,917.87	30.00	116.40	6,737.52	-377.26	759.92	-744.42	0.00	0.00	0.00
KOP: 1713' FSL, 105' FEL									
6,950.00	27.21	119.74	6,765.73	-384.48	773.50	-757.70	10.00	-8.68	10.40
7,000.00	23.08	126.38	6,810.99	-395.97	791.32	-775.06	10.00	-8.27	13.28
7,050.00	19.33	135.58	6,857.61	-407.70	805.01	-788.28	10.00	-7.50	18.39
7,100.00	16.24	148.52	6,905.24	-419.58	814.46	-797.25	10.00	-6.18	25.88
7,150.00	14.24	166.06	6,953.50	-431.52	819.59	-801.91	10.00	-4.00	35.08
7,200.00	13.81	186.72	7,002.04	-443.42	820.38	-802.22	10.00	-0.85	41.33
7,250.00	15.10	206.18	7,050.49	-455.20	816.80	-798.18	10.00	2.57	38.92
7,300.00	17.73	221.33	7,098.47	-466.77	808.90	-789.83	10.00	5.25	30.29
7,350.00	21.20	232.18	7,145.62	-478.03	796.72	-777.22	10.00	6.95	21.70
7,400.00	25.17	239.92	7,191.58	-488.92	780.37	-760.45	10.00	7.95	15.49
7,450.00	29.44	245.61	7,236.01	-499.33	759.96	-739.64	10.00	8.54	11.38
7,500.00	33.90	249.94	7,278.56	-509.19	735.66	-714.97	10.00	8.91	8.67
7,550.00	38.47	253.37	7,318.91	-518.43	707.64	-686.61	10.00	9.15	6.85
7,570.84	40.40	254.60	7,335.00	-522.08	694.92	-673.75	10.00	9.27	5.90
Niobrara Top									
7,600.00	43.13	256.16	7,356.75	-526.97	676.12	-654.78	10.00	9.34	5.36
7,650.00	47.84	258.51	7,391.80	-534.76	641.35	-619.72	10.00	9.43	4.69
7,700.00	52.60	260.52	7,423.78	-541.72	603.58	-581.70	10.00	9.51	4.03
7,750.00	57.38	262.30	7,452.46	-547.82	563.09	-541.01	10.00	9.57	3.55
7,800.00	62.19	263.89	7,477.62	-553.00	520.22	-497.96	10.00	9.61	3.19
7,850.00	67.01	265.35	7,499.06	-557.22	475.26	-452.88	10.00	9.65	2.92
7,900.00	71.85	266.71	7,516.63	-560.45	428.58	-406.10	10.00	9.67	2.72
7,950.00	76.69	267.99	7,530.18	-562.67	380.52	-357.99	10.00	9.69	2.57
7,978.10	79.42	268.69	7,536.00	-563.47	353.04	-330.50	10.00	9.70	2.48
D Chalk Top									

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Fraser 3-64 33-32 3DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5611.70ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5611.70ft (25' RKB)
Site:	Fraser	North Reference:	True
Well:	Fraser 3-64 33-32 3DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Fraser 3-64 33-32 3DH		
Design:	Design 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)	
8,000.00	81.54	269.23	7,539.62	-563.86	331.45	-308.91	10.00	9.70	2.45	
8,050.00	86.40	270.43	7,544.87	-564.01	281.74	-259.24	10.00	9.71	2.41	
8,080.24	89.33	271.15	7,546.00	-563.59	251.53	-229.06	10.00	9.71	2.38	
BPI/LP: 1532' FSL, 613' FEL										
8,100.00	89.33	271.15	7,546.23	-563.19	231.77	-209.34	0.00	0.00	0.00	
8,200.00	89.33	271.15	7,547.39	-561.19	131.80	-109.52	0.00	0.00	0.00	
8,300.00	89.33	271.15	7,548.56	-559.18	31.83	-9.71	0.00	0.00	0.00	
8,400.00	89.33	271.15	7,549.72	-557.18	-68.15	90.11	0.00	0.00	0.00	
8,500.00	89.33	271.15	7,550.88	-555.17	-168.12	189.92	0.00	0.00	0.00	
8,600.00	89.33	271.15	7,552.05	-553.17	-268.09	289.74	0.00	0.00	0.00	
8,700.00	89.33	271.15	7,553.21	-551.16	-368.07	389.55	0.00	0.00	0.00	
8,800.00	89.33	271.15	7,554.37	-549.16	-468.04	489.37	0.00	0.00	0.00	
8,900.00	89.33	271.15	7,555.54	-547.15	-568.01	589.19	0.00	0.00	0.00	
9,000.00	89.33	271.15	7,556.70	-545.15	-667.99	689.00	0.00	0.00	0.00	
9,100.00	89.33	271.15	7,557.86	-543.15	-767.96	788.82	0.00	0.00	0.00	
9,200.00	89.33	271.15	7,559.03	-541.14	-867.93	888.63	0.00	0.00	0.00	
9,300.00	89.33	271.15	7,560.19	-539.14	-967.91	988.45	0.00	0.00	0.00	
9,400.00	89.33	271.15	7,561.35	-537.13	-1,067.88	1,088.27	0.00	0.00	0.00	
9,500.00	89.33	271.15	7,562.52	-535.13	-1,167.85	1,188.08	0.00	0.00	0.00	
9,600.00	89.33	271.15	7,563.68	-533.12	-1,267.82	1,287.90	0.00	0.00	0.00	
9,700.00	89.33	271.15	7,564.84	-531.12	-1,367.80	1,387.71	0.00	0.00	0.00	
9,800.00	89.33	271.15	7,566.01	-529.11	-1,467.77	1,487.53	0.00	0.00	0.00	
9,900.00	89.33	271.15	7,567.17	-527.11	-1,567.74	1,587.35	0.00	0.00	0.00	
10,000.00	89.33	271.15	7,568.33	-525.10	-1,667.72	1,687.16	0.00	0.00	0.00	
10,100.00	89.33	271.15	7,569.50	-523.10	-1,767.69	1,786.98	0.00	0.00	0.00	
10,200.00	89.33	271.15	7,570.66	-521.09	-1,867.66	1,886.79	0.00	0.00	0.00	
10,300.00	89.33	271.15	7,571.82	-519.09	-1,967.64	1,986.61	0.00	0.00	0.00	
10,400.00	89.33	271.15	7,572.99	-517.08	-2,067.61	2,086.42	0.00	0.00	0.00	
10,500.00	89.33	271.15	7,574.15	-515.08	-2,167.58	2,186.24	0.00	0.00	0.00	
10,600.00	89.33	271.15	7,575.32	-513.07	-2,267.56	2,286.06	0.00	0.00	0.00	
10,700.00	89.33	271.15	7,576.48	-511.07	-2,367.53	2,385.87	0.00	0.00	0.00	
10,800.00	89.33	271.15	7,577.64	-509.06	-2,467.50	2,485.69	0.00	0.00	0.00	
10,900.00	89.33	271.15	7,578.81	-507.06	-2,567.48	2,585.50	0.00	0.00	0.00	
11,000.00	89.33	271.15	7,579.97	-505.05	-2,667.45	2,685.32	0.00	0.00	0.00	
11,100.00	89.33	271.15	7,581.13	-503.05	-2,767.42	2,785.14	0.00	0.00	0.00	
11,200.00	89.33	271.15	7,582.30	-501.04	-2,867.40	2,884.95	0.00	0.00	0.00	
11,300.00	89.33	271.15	7,583.46	-499.04	-2,967.37	2,984.77	0.00	0.00	0.00	
11,400.00	89.33	271.15	7,584.62	-497.03	-3,067.34	3,084.58	0.00	0.00	0.00	
11,500.00	89.33	271.15	7,585.79	-495.03	-3,167.31	3,184.40	0.00	0.00	0.00	
11,600.00	89.33	271.15	7,586.95	-493.02	-3,267.29	3,284.22	0.00	0.00	0.00	
11,700.00	89.33	271.15	7,588.11	-491.02	-3,367.26	3,384.03	0.00	0.00	0.00	
11,800.00	89.33	271.15	7,589.28	-489.02	-3,467.23	3,483.85	0.00	0.00	0.00	
11,900.00	89.33	271.15	7,590.44	-487.01	-3,567.21	3,583.66	0.00	0.00	0.00	
12,000.00	89.33	271.15	7,591.60	-485.01	-3,667.18	3,683.48	0.00	0.00	0.00	
12,100.00	89.33	271.15	7,592.77	-483.00	-3,767.15	3,783.29	0.00	0.00	0.00	
12,200.00	89.33	271.15	7,593.93	-481.00	-3,867.13	3,883.11	0.00	0.00	0.00	
12,300.00	89.33	271.15	7,595.09	-478.99	-3,967.10	3,982.93	0.00	0.00	0.00	
12,400.00	89.33	271.15	7,596.26	-476.99	-4,067.07	4,082.74	0.00	0.00	0.00	
12,500.00	89.33	271.15	7,597.42	-474.98	-4,167.05	4,182.56	0.00	0.00	0.00	
12,600.00	89.33	271.15	7,598.58	-472.98	-4,267.02	4,282.37	0.00	0.00	0.00	
12,700.00	89.33	271.15	7,599.75	-470.97	-4,366.99	4,382.19	0.00	0.00	0.00	
12,800.00	89.33	271.15	7,600.91	-468.97	-4,466.97	4,482.01	0.00	0.00	0.00	
12,900.00	89.33	271.15	7,602.07	-466.96	-4,566.94	4,581.82	0.00	0.00	0.00	

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Fraser 3-64 33-32 3DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5611.70ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5611.70ft (25' RKB)
Site:	Fraser	North Reference:	True
Well:	Fraser 3-64 33-32 3DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Fraser 3-64 33-32 3DH		
Design:	Design 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)	
13,000.00	89.33	271.15	7,603.24	-464.96	-4,666.91	4,681.64	0.00	0.00	0.00	
13,100.00	89.33	271.15	7,604.40	-462.95	-4,766.88	4,781.45	0.00	0.00	0.00	
13,200.00	89.33	271.15	7,605.56	-460.95	-4,866.86	4,881.27	0.00	0.00	0.00	
13,300.00	89.33	271.15	7,606.73	-458.94	-4,966.83	4,981.08	0.00	0.00	0.00	
13,400.00	89.33	271.15	7,607.89	-456.94	-5,066.80	5,080.90	0.00	0.00	0.00	
13,500.00	89.33	271.15	7,609.05	-454.93	-5,166.78	5,180.72	0.00	0.00	0.00	
13,600.00	89.33	271.15	7,610.22	-452.93	-5,266.75	5,280.53	0.00	0.00	0.00	
13,700.00	89.33	271.15	7,611.38	-450.92	-5,366.72	5,380.35	0.00	0.00	0.00	
13,800.00	89.33	271.15	7,612.54	-448.92	-5,466.70	5,480.16	0.00	0.00	0.00	
13,900.00	89.33	271.15	7,613.71	-446.91	-5,566.67	5,579.98	0.00	0.00	0.00	
14,000.00	89.33	271.15	7,614.87	-444.91	-5,666.64	5,679.80	0.00	0.00	0.00	
14,100.00	89.33	271.15	7,616.03	-442.90	-5,766.62	5,779.61	0.00	0.00	0.00	
14,200.00	89.33	271.15	7,617.20	-440.90	-5,866.59	5,879.43	0.00	0.00	0.00	
14,300.00	89.33	271.15	7,618.36	-438.89	-5,966.56	5,979.24	0.00	0.00	0.00	
14,400.00	89.33	271.15	7,619.52	-436.89	-6,066.54	6,079.06	0.00	0.00	0.00	
14,500.00	89.33	271.15	7,620.69	-434.89	-6,166.51	6,178.88	0.00	0.00	0.00	
14,600.00	89.33	271.15	7,621.85	-432.88	-6,266.48	6,278.69	0.00	0.00	0.00	
14,700.00	89.33	271.15	7,623.01	-430.88	-6,366.45	6,378.51	0.00	0.00	0.00	
14,800.00	89.33	271.15	7,624.18	-428.87	-6,466.43	6,478.32	0.00	0.00	0.00	
14,900.00	89.33	271.15	7,625.34	-426.87	-6,566.40	6,578.14	0.00	0.00	0.00	
15,000.00	89.33	271.15	7,626.50	-424.86	-6,666.37	6,677.95	0.00	0.00	0.00	
15,100.00	89.33	271.15	7,627.67	-422.86	-6,766.35	6,777.77	0.00	0.00	0.00	
15,200.00	89.33	271.15	7,628.83	-420.85	-6,866.32	6,877.59	0.00	0.00	0.00	
15,300.00	89.33	271.15	7,629.99	-418.85	-6,966.29	6,977.40	0.00	0.00	0.00	
15,400.00	89.33	271.15	7,631.16	-416.84	-7,066.27	7,077.22	0.00	0.00	0.00	
15,500.00	89.33	271.15	7,632.32	-414.84	-7,166.24	7,177.03	0.00	0.00	0.00	
15,600.00	89.33	271.15	7,633.49	-412.83	-7,266.21	7,276.85	0.00	0.00	0.00	
15,700.00	89.33	271.15	7,634.65	-410.83	-7,366.19	7,376.67	0.00	0.00	0.00	
15,800.00	89.33	271.15	7,635.81	-408.82	-7,466.16	7,476.48	0.00	0.00	0.00	
15,900.00	89.33	271.15	7,636.98	-406.82	-7,566.13	7,576.30	0.00	0.00	0.00	
16,000.00	89.33	271.15	7,638.14	-404.81	-7,666.11	7,676.11	0.00	0.00	0.00	
16,100.00	89.33	271.15	7,639.30	-402.81	-7,766.08	7,775.93	0.00	0.00	0.00	
16,200.00	89.33	271.15	7,640.47	-400.80	-7,866.05	7,875.75	0.00	0.00	0.00	
16,300.00	89.33	271.15	7,641.63	-398.80	-7,966.03	7,975.56	0.00	0.00	0.00	
16,400.00	89.33	271.15	7,642.79	-396.79	-8,066.00	8,075.38	0.00	0.00	0.00	
16,500.00	89.33	271.15	7,643.96	-394.79	-8,165.97	8,175.19	0.00	0.00	0.00	
16,600.00	89.33	271.15	7,645.12	-392.78	-8,265.94	8,275.01	0.00	0.00	0.00	
16,700.00	89.33	271.15	7,646.28	-390.78	-8,365.92	8,374.82	0.00	0.00	0.00	
16,800.00	89.33	271.15	7,647.45	-388.77	-8,465.89	8,474.64	0.00	0.00	0.00	
16,900.00	89.33	271.15	7,648.61	-386.77	-8,565.86	8,574.46	0.00	0.00	0.00	
17,000.00	89.33	271.15	7,649.77	-384.76	-8,665.84	8,674.27	0.00	0.00	0.00	
17,100.00	89.33	271.15	7,650.94	-382.76	-8,765.81	8,774.09	0.00	0.00	0.00	
17,200.00	89.33	271.15	7,652.10	-380.76	-8,865.78	8,873.90	0.00	0.00	0.00	
17,300.00	89.33	271.15	7,653.26	-378.75	-8,965.76	8,973.72	0.00	0.00	0.00	
17,400.00	89.33	271.15	7,654.43	-376.75	-9,065.73	9,073.54	0.00	0.00	0.00	
17,500.00	89.33	271.15	7,655.59	-374.74	-9,165.70	9,173.35	0.00	0.00	0.00	
17,600.00	89.33	271.15	7,656.75	-372.74	-9,265.68	9,273.17	0.00	0.00	0.00	
17,707.19	89.33	271.15	7,658.00	-370.59	-9,372.84	9,380.16	0.00	0.00	0.00	
BHL: 1532' FSL, 323' FWL - 5-1/2" Casing										

ConocoPhillips

Planning Report

Database:	EDT 14 Central Planning	Local Co-ordinate Reference:	Well Fraser 3-64 33-32 3DH
Company:	ConocoPhillips RBU Gold Data	TVD Reference:	25' RKB @ 5611.70ft (25' RKB)
Project:	Niobrara North Zone	MD Reference:	25' RKB @ 5611.70ft (25' RKB)
Site:	Fraser	North Reference:	True
Well:	Fraser 3-64 33-32 3DH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Fraser 3-64 33-32 3DH		
Design:	Design A		

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
Fraser 3-64 33-32 3DI - plan hits target center - Point	0.00	0.00	7,546.00	-563.59	251.53	1,150,698.745	3,267,708.137	39° 44' 35.120 N	104° 32' 52.770 W
Fraser 3-64 33-32 3DI - plan hits target center - Point	0.00	0.00	7,658.00	-370.59	-9,372.84	1,150,788.508	3,258,082.316	39° 44' 37.010 N	104° 34' 55.980 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,966.00	1,966.00	9-5/8" Casing	9-5/8	12-1/4
17,707.19	7,658.00	5-1/2" Casing	5-1/2	8-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,606.00	1,606.00	Fox Hills Top		0.00	
1,766.00	1,766.00	Pierre Top - Fox Hills Base		0.00	
1,966.00	1,966.00	Surface Casing		0.00	
7,570.84	7,335.00	Niobrara Top		0.00	
7,978.10	7,536.00	D 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: 2090' FSL, 865' FEL
6,244.40	6,154.27	-227.53	458.32	EOB: 1862' FSL, 407' FEL
6,917.87	6,737.52	-377.26	759.92	KOP: 1713' FSL, 105' FEL
8,080.24	7,546.00	-563.59	251.53	BPI/LP: 1532' FSL, 613' FEL
17,707.19	7,658.00	-370.59	-9,372.84	BHL: 1532' FSL, 323' FWL