

EXTRACTION OIL & GAS

Broomfield County

Sec 9-T1S-R68W

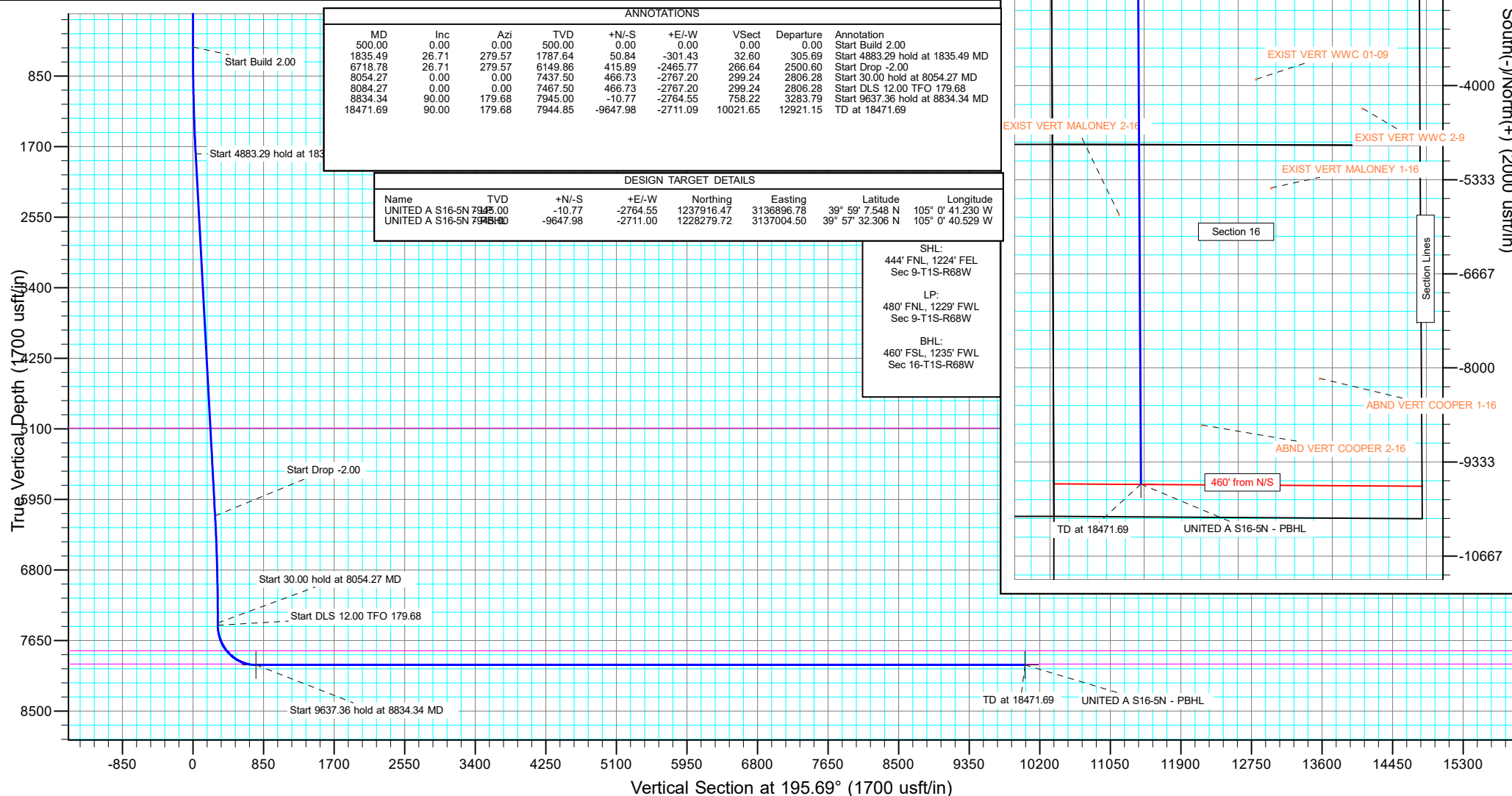
UNITED A S16-20-5N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

18 January, 2018



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well UNITED A S16-20-5N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5282.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5282.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED A S16-20-5N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Project	Broomfield County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 9-T1S-R68W			
Site Position:		Northing:	1,238,372.37 usft	Latitude:	39° 59' 12.120 N
From:	Lat/Long	Easting:	3,135,664.83 usft	Longitude:	105° 0' 57.025 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.31 °

Well		UNITED A S16-20-5N				
Well Position	+N/-S	-451.41 usft	Northing:	1,237,942.78 usft	Latitude:	39° 59' 7.656 N
	+E/-W	3,993.99 usft	Easting:	3,139,661.23 usft	Longitude:	105° 0' 5.713 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	5,257.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/4/2018	8.24	66.47	52,084.64390014

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	195.69

Plan Survey Tool Program	Date	1/18/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,471.60	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,835.49	26.71	279.57	1,787.64	50.84	-301.43	2.00	2.00	0.00	279.57	
6,718.78	26.71	279.57	6,149.86	415.89	-2,465.77	0.00	0.00	0.00	0.00	
8,054.27	0.00	0.00	7,437.50	466.73	-2,767.20	2.00	-2.00	0.00	180.00	
8,084.27	0.00	0.00	7,467.50	466.73	-2,767.20	0.00	0.00	0.00	0.00	
8,834.34	90.00	179.68	7,945.00	-10.77	-2,764.55	12.00	12.00	23.96	179.68	UNITED A S16-5N - L
18,471.69	90.00	179.68	7,945.00	-9,647.98	-2,711.00	0.00	0.00	0.00	0.00	UNITED A S16-5N - F

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Well:	UNITED A S16-20-5N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	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
Start Build 2.00									
600.00	2.00	279.57	599.98	0.29	-1.72	0.19	2.00	2.00	0.00
700.00	4.00	279.57	699.84	1.16	-6.88	0.74	2.00	2.00	0.00
800.00	6.00	279.57	799.45	2.61	-15.48	1.67	2.00	2.00	0.00
900.00	8.00	279.57	898.70	4.64	-27.49	2.97	2.00	2.00	0.00
1,000.00	10.00	279.57	997.47	7.24	-42.92	4.64	2.00	2.00	0.00
1,100.00	12.00	279.57	1,095.62	10.41	-61.73	6.68	2.00	2.00	0.00
1,200.00	14.00	279.57	1,193.06	14.15	-83.91	9.07	2.00	2.00	0.00
1,300.00	16.00	279.57	1,289.64	18.46	-109.43	11.83	2.00	2.00	0.00
1,400.00	18.00	279.57	1,385.27	23.32	-138.26	14.95	2.00	2.00	0.00
1,500.00	20.00	279.57	1,479.82	28.73	-170.36	18.42	2.00	2.00	0.00
1,600.00	22.00	279.57	1,573.17	34.69	-205.70	22.24	2.00	2.00	0.00
1,700.00	24.00	279.57	1,665.21	41.19	-244.23	26.41	2.00	2.00	0.00
1,800.00	26.00	279.57	1,755.84	48.22	-285.90	30.92	2.00	2.00	0.00
1,835.49	26.71	279.57	1,787.64	50.84	-301.43	32.60	2.00	2.00	0.00
Start 4883.29 hold at 1835.49 MD									
1,900.00	26.71	279.57	1,845.27	55.66	-330.02	35.69	0.00	0.00	0.00
2,000.00	26.71	279.57	1,934.60	63.14	-374.34	40.48	0.00	0.00	0.00
2,100.00	26.71	279.57	2,023.93	70.61	-418.67	45.27	0.00	0.00	0.00
2,200.00	26.71	279.57	2,113.26	78.09	-462.99	50.07	0.00	0.00	0.00
2,300.00	26.71	279.57	2,202.59	85.57	-507.31	54.86	0.00	0.00	0.00
2,400.00	26.71	279.57	2,291.92	93.04	-551.63	59.65	0.00	0.00	0.00
2,500.00	26.71	279.57	2,381.24	100.52	-595.95	64.44	0.00	0.00	0.00
2,600.00	26.71	279.57	2,470.57	107.99	-640.27	69.24	0.00	0.00	0.00
2,700.00	26.71	279.57	2,559.90	115.47	-684.59	74.03	0.00	0.00	0.00
2,800.00	26.71	279.57	2,649.23	122.94	-728.91	78.82	0.00	0.00	0.00
2,900.00	26.71	279.57	2,738.56	130.42	-773.24	83.62	0.00	0.00	0.00
3,000.00	26.71	279.57	2,827.89	137.89	-817.56	88.41	0.00	0.00	0.00
3,100.00	26.71	279.57	2,917.22	145.37	-861.88	93.20	0.00	0.00	0.00
3,200.00	26.71	279.57	3,006.55	152.84	-906.20	97.99	0.00	0.00	0.00
3,300.00	26.71	279.57	3,095.88	160.32	-950.52	102.79	0.00	0.00	0.00
3,400.00	26.71	279.57	3,185.21	167.80	-994.84	107.58	0.00	0.00	0.00
3,500.00	26.71	279.57	3,274.54	175.27	-1,039.16	112.37	0.00	0.00	0.00
3,600.00	26.71	279.57	3,363.87	182.75	-1,083.48	117.17	0.00	0.00	0.00
3,700.00	26.71	279.57	3,453.20	190.22	-1,127.81	121.96	0.00	0.00	0.00
3,800.00	26.71	279.57	3,542.53	197.70	-1,172.13	126.75	0.00	0.00	0.00
3,900.00	26.71	279.57	3,631.86	205.17	-1,216.45	131.54	0.00	0.00	0.00
4,000.00	26.71	279.57	3,721.19	212.65	-1,260.77	136.34	0.00	0.00	0.00
4,100.00	26.71	279.57	3,810.52	220.12	-1,305.09	141.13	0.00	0.00	0.00
4,200.00	26.71	279.57	3,899.84	227.60	-1,349.41	145.92	0.00	0.00	0.00
4,300.00	26.71	279.57	3,989.17	235.07	-1,393.73	150.72	0.00	0.00	0.00
4,400.00	26.71	279.57	4,078.50	242.55	-1,438.05	155.51	0.00	0.00	0.00
4,500.00	26.71	279.57	4,167.83	250.03	-1,482.38	160.30	0.00	0.00	0.00
4,600.00	26.71	279.57	4,257.16	257.50	-1,526.70	165.09	0.00	0.00	0.00
4,700.00	26.71	279.57	4,346.49	264.98	-1,571.02	169.89	0.00	0.00	0.00
4,800.00	26.71	279.57	4,435.82	272.45	-1,615.34	174.68	0.00	0.00	0.00
4,900.00	26.71	279.57	4,525.15	279.93	-1,659.66	179.47	0.00	0.00	0.00

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Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
5,000.00	26.71	279.57	4,614.48	287.40	-1,703.98	184.27	0.00	0.00	0.00	
5,100.00	26.71	279.57	4,703.81	294.88	-1,748.30	189.06	0.00	0.00	0.00	
5,200.00	26.71	279.57	4,793.14	302.35	-1,792.62	193.85	0.00	0.00	0.00	
5,300.00	26.71	279.57	4,882.47	309.83	-1,836.95	198.64	0.00	0.00	0.00	
5,400.00	26.71	279.57	4,971.80	317.30	-1,881.27	203.44	0.00	0.00	0.00	
5,500.00	26.71	279.57	5,061.13	324.78	-1,925.59	208.23	0.00	0.00	0.00	
5,532.32	26.71	279.57	5,090.00	327.20	-1,939.91	209.78	0.00	0.00	0.00	
SUSSEX										
5,600.00	26.71	279.57	5,150.46	332.25	-1,969.91	213.02	0.00	0.00	0.00	
5,700.00	26.71	279.57	5,239.79	339.73	-2,014.23	217.81	0.00	0.00	0.00	
5,800.00	26.71	279.57	5,329.12	347.21	-2,058.55	222.61	0.00	0.00	0.00	
5,900.00	26.71	279.57	5,418.44	354.68	-2,102.87	227.40	0.00	0.00	0.00	
6,000.00	26.71	279.57	5,507.77	362.16	-2,147.19	232.19	0.00	0.00	0.00	
6,100.00	26.71	279.57	5,597.10	369.63	-2,191.52	236.99	0.00	0.00	0.00	
6,200.00	26.71	279.57	5,686.43	377.11	-2,235.84	241.78	0.00	0.00	0.00	
6,300.00	26.71	279.57	5,775.76	384.58	-2,280.16	246.57	0.00	0.00	0.00	
6,400.00	26.71	279.57	5,865.09	392.06	-2,324.48	251.36	0.00	0.00	0.00	
6,500.00	26.71	279.57	5,954.42	399.53	-2,368.80	256.16	0.00	0.00	0.00	
6,600.00	26.71	279.57	6,043.75	407.01	-2,413.12	260.95	0.00	0.00	0.00	
6,700.00	26.71	279.57	6,133.08	414.48	-2,457.44	265.74	0.00	0.00	0.00	
6,718.78	26.71	279.57	6,149.86	415.89	-2,465.77	266.64	0.00	0.00	0.00	
Start Drop -2.00										
6,800.00	25.09	279.57	6,222.92	421.79	-2,500.75	270.43	2.00	-2.00	0.00	
6,900.00	23.09	279.57	6,314.21	428.58	-2,540.99	274.78	2.00	-2.00	0.00	
7,000.00	21.09	279.57	6,406.86	434.83	-2,578.06	278.79	2.00	-2.00	0.00	
7,100.00	19.09	279.57	6,500.78	440.54	-2,611.92	282.45	2.00	-2.00	0.00	
7,200.00	17.09	279.57	6,595.83	445.70	-2,642.53	285.76	2.00	-2.00	0.00	
7,300.00	15.09	279.57	6,691.91	450.31	-2,669.85	288.71	2.00	-2.00	0.00	
7,400.00	13.09	279.57	6,788.90	454.36	-2,693.85	291.31	2.00	-2.00	0.00	
7,500.00	11.09	279.57	6,886.68	457.84	-2,714.49	293.54	2.00	-2.00	0.00	
7,600.00	9.09	279.57	6,985.13	460.75	-2,731.76	295.41	2.00	-2.00	0.00	
7,700.00	7.09	279.57	7,084.13	463.09	-2,745.63	296.91	2.00	-2.00	0.00	
7,800.00	5.09	279.57	7,183.56	464.85	-2,756.08	298.04	2.00	-2.00	0.00	
7,900.00	3.09	279.57	7,283.30	466.04	-2,763.11	298.80	2.00	-2.00	0.00	
8,000.00	1.09	279.57	7,383.23	466.64	-2,766.69	299.18	2.00	-2.00	0.00	
8,054.27	0.00	0.00	7,437.50	466.73	-2,767.20	299.24	2.00	-2.00	0.00	
Start 30.00 hold at 8054.27 MD										
8,084.27	0.00	0.00	7,467.50	466.73	-2,767.20	299.24	0.00	0.00	0.00	
Start DLS 12.00 TFO 179.68										
8,100.00	1.89	179.68	7,483.22	466.47	-2,767.20	299.49	12.00	12.00	0.00	
8,125.00	4.89	179.68	7,508.18	464.99	-2,767.19	300.91	12.00	12.00	0.00	
8,150.00	7.89	179.68	7,533.02	462.21	-2,767.18	303.58	12.00	12.00	0.00	
8,175.00	10.89	179.68	7,557.68	458.14	-2,767.15	307.50	12.00	12.00	0.00	
8,200.00	13.89	179.68	7,582.10	452.77	-2,767.12	312.65	12.00	12.00	0.00	
8,225.00	16.89	179.68	7,606.20	446.14	-2,767.09	319.03	12.00	12.00	0.00	
8,250.00	19.89	179.68	7,629.92	438.26	-2,767.04	326.61	12.00	12.00	0.00	
8,275.00	22.89	179.68	7,653.20	429.14	-2,766.99	335.37	12.00	12.00	0.00	
8,300.00	25.89	179.68	7,675.96	418.82	-2,766.93	345.29	12.00	12.00	0.00	
8,325.00	28.89	179.68	7,698.16	407.32	-2,766.87	356.34	12.00	12.00	0.00	
8,350.00	31.88	179.68	7,719.72	394.68	-2,766.80	368.49	12.00	12.00	0.00	
8,375.00	34.88	179.68	7,740.60	380.93	-2,766.72	381.71	12.00	12.00	0.00	
8,400.00	37.88	179.68	7,760.72	366.10	-2,766.64	395.97	12.00	12.00	0.00	
8,418.37	40.09	179.68	7,775.00	354.54	-2,766.58	407.08	12.00	12.00	0.00	
NIOBARRA										

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Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,425.00	40.88	179.68	7,780.04	350.24	-2,766.55	411.21	12.00	12.00	0.00
8,450.00	43.88	179.68	7,798.50	333.39	-2,766.46	427.41	12.00	12.00	0.00
8,475.00	46.88	179.68	7,816.06	315.59	-2,766.36	444.51	12.00	12.00	0.00
8,500.00	49.88	179.68	7,832.66	296.91	-2,766.26	462.48	12.00	12.00	0.00
8,525.00	52.88	179.68	7,848.26	277.38	-2,766.15	481.25	12.00	12.00	0.00
8,550.00	55.88	179.68	7,862.82	257.05	-2,766.04	500.78	12.00	12.00	0.00
8,575.00	58.88	179.68	7,876.29	236.00	-2,765.92	521.02	12.00	12.00	0.00
8,600.00	61.88	179.68	7,888.65	214.27	-2,765.80	541.91	12.00	12.00	0.00
8,625.00	64.88	179.68	7,899.85	191.92	-2,765.68	563.39	12.00	12.00	0.00
8,650.00	67.88	179.68	7,909.86	169.02	-2,765.55	585.40	12.00	12.00	0.00
8,675.00	70.88	179.68	7,918.66	145.62	-2,765.42	607.89	12.00	12.00	0.00
8,700.00	73.88	179.68	7,926.23	121.80	-2,765.29	630.79	12.00	12.00	0.00
8,725.00	76.88	179.68	7,932.54	97.61	-2,765.15	654.04	12.00	12.00	0.00
8,736.43	78.25	179.68	7,935.00	86.45	-2,765.09	664.77	12.00	12.00	0.00
NIO B TARGET									
8,750.00	79.88	179.68	7,937.57	73.13	-2,765.02	677.58	12.00	12.00	0.00
8,775.00	82.88	179.68	7,941.32	48.41	-2,764.88	701.33	12.00	12.00	0.00
8,800.00	85.88	179.68	7,943.77	23.54	-2,764.74	725.25	12.00	12.00	0.00
8,825.00	88.88	179.68	7,944.91	-1.44	-2,764.60	749.25	12.00	12.00	0.00
8,834.34	90.00	179.68	7,945.00	-10.77	-2,764.55	758.22	12.00	12.00	0.00
Start 9637.36 hold at 8834.34 MD									
8,900.00	90.00	179.68	7,945.00	-76.43	-2,764.19	821.34	0.00	0.00	0.00
9,000.00	90.00	179.68	7,945.00	-176.43	-2,763.63	917.46	0.00	0.00	0.00
9,100.00	90.00	179.68	7,945.00	-276.43	-2,763.08	1,013.58	0.00	0.00	0.00
9,200.00	90.00	179.68	7,944.99	-376.43	-2,762.52	1,109.70	0.00	0.00	0.00
9,300.00	90.00	179.68	7,944.99	-476.43	-2,761.97	1,205.82	0.00	0.00	0.00
9,400.00	90.00	179.68	7,944.99	-576.43	-2,761.41	1,301.94	0.00	0.00	0.00
9,500.00	90.00	179.68	7,944.99	-676.42	-2,760.86	1,398.06	0.00	0.00	0.00
9,600.00	90.00	179.68	7,944.99	-776.42	-2,760.30	1,494.18	0.00	0.00	0.00
9,700.00	90.00	179.68	7,944.99	-876.42	-2,759.75	1,590.30	0.00	0.00	0.00
9,800.00	90.00	179.68	7,944.99	-976.42	-2,759.20	1,686.42	0.00	0.00	0.00
9,900.00	90.00	179.68	7,944.98	-1,076.42	-2,758.64	1,782.54	0.00	0.00	0.00
10,000.00	90.00	179.68	7,944.98	-1,176.42	-2,758.09	1,878.66	0.00	0.00	0.00
10,100.00	90.00	179.68	7,944.98	-1,276.42	-2,757.53	1,974.78	0.00	0.00	0.00
10,200.00	90.00	179.68	7,944.98	-1,376.41	-2,756.98	2,070.90	0.00	0.00	0.00
10,300.00	90.00	179.68	7,944.98	-1,476.41	-2,756.42	2,167.02	0.00	0.00	0.00
10,400.00	90.00	179.68	7,944.98	-1,576.41	-2,755.87	2,263.14	0.00	0.00	0.00
10,500.00	90.00	179.68	7,944.97	-1,676.41	-2,755.31	2,359.26	0.00	0.00	0.00
10,600.00	90.00	179.68	7,944.97	-1,776.41	-2,754.76	2,455.38	0.00	0.00	0.00
10,700.00	90.00	179.68	7,944.97	-1,876.41	-2,754.20	2,551.50	0.00	0.00	0.00
10,800.00	90.00	179.68	7,944.97	-1,976.40	-2,753.65	2,647.62	0.00	0.00	0.00
10,900.00	90.00	179.68	7,944.97	-2,076.40	-2,753.09	2,743.74	0.00	0.00	0.00
11,000.00	90.00	179.68	7,944.97	-2,176.40	-2,752.54	2,839.86	0.00	0.00	0.00
11,100.00	90.00	179.68	7,944.97	-2,276.40	-2,751.98	2,935.98	0.00	0.00	0.00
11,200.00	90.00	179.68	7,944.96	-2,376.40	-2,751.43	3,032.10	0.00	0.00	0.00
11,300.00	90.00	179.68	7,944.96	-2,476.40	-2,750.87	3,128.22	0.00	0.00	0.00
11,400.00	90.00	179.68	7,944.96	-2,576.40	-2,750.32	3,224.34	0.00	0.00	0.00
11,500.00	90.00	179.68	7,944.96	-2,676.39	-2,749.77	3,320.46	0.00	0.00	0.00
11,600.00	90.00	179.68	7,944.96	-2,776.39	-2,749.21	3,416.58	0.00	0.00	0.00
11,700.00	90.00	179.68	7,944.96	-2,876.39	-2,748.66	3,512.70	0.00	0.00	0.00
11,800.00	90.00	179.68	7,944.95	-2,976.39	-2,748.10	3,608.82	0.00	0.00	0.00
11,900.00	90.00	179.68	7,944.95	-3,076.39	-2,747.55	3,704.94	0.00	0.00	0.00
12,000.00	90.00	179.68	7,944.95	-3,176.39	-2,746.99	3,801.06	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well UNITED A S16-20-5N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5282.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5282.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED A S16-20-5N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
12,100.00	90.00	179.68	7,944.95	-3,276.38	-2,746.44	3,897.18	0.00	0.00	0.00	
12,200.00	90.00	179.68	7,944.95	-3,376.38	-2,745.88	3,993.30	0.00	0.00	0.00	
12,300.00	90.00	179.68	7,944.95	-3,476.38	-2,745.33	4,089.42	0.00	0.00	0.00	
12,400.00	90.00	179.68	7,944.95	-3,576.38	-2,744.77	4,185.54	0.00	0.00	0.00	
12,500.00	90.00	179.68	7,944.94	-3,676.38	-2,744.22	4,281.66	0.00	0.00	0.00	
12,600.00	90.00	179.68	7,944.94	-3,776.38	-2,743.66	4,377.78	0.00	0.00	0.00	
12,700.00	90.00	179.68	7,944.94	-3,876.38	-2,743.11	4,473.90	0.00	0.00	0.00	
12,800.00	90.00	179.68	7,944.94	-3,976.37	-2,742.55	4,570.02	0.00	0.00	0.00	
12,900.00	90.00	179.68	7,944.94	-4,076.37	-2,742.00	4,666.14	0.00	0.00	0.00	
13,000.00	90.00	179.68	7,944.94	-4,176.37	-2,741.45	4,762.26	0.00	0.00	0.00	
13,100.00	90.00	179.68	7,944.93	-4,276.37	-2,740.89	4,858.38	0.00	0.00	0.00	
13,200.00	90.00	179.68	7,944.93	-4,376.37	-2,740.34	4,954.50	0.00	0.00	0.00	
13,300.00	90.00	179.68	7,944.93	-4,476.37	-2,739.78	5,050.62	0.00	0.00	0.00	
13,400.00	90.00	179.68	7,944.93	-4,576.36	-2,739.23	5,146.74	0.00	0.00	0.00	
13,500.00	90.00	179.68	7,944.93	-4,676.36	-2,738.67	5,242.86	0.00	0.00	0.00	
13,600.00	90.00	179.68	7,944.93	-4,776.36	-2,738.12	5,338.98	0.00	0.00	0.00	
13,700.00	90.00	179.68	7,944.93	-4,876.36	-2,737.56	5,435.10	0.00	0.00	0.00	
13,800.00	90.00	179.68	7,944.92	-4,976.36	-2,737.01	5,531.22	0.00	0.00	0.00	
13,900.00	90.00	179.68	7,944.92	-5,076.36	-2,736.45	5,627.34	0.00	0.00	0.00	
14,000.00	90.00	179.68	7,944.92	-5,176.36	-2,735.90	5,723.46	0.00	0.00	0.00	
14,100.00	90.00	179.68	7,944.92	-5,276.35	-2,735.34	5,819.58	0.00	0.00	0.00	
14,200.00	90.00	179.68	7,944.92	-5,376.35	-2,734.79	5,915.70	0.00	0.00	0.00	
14,300.00	90.00	179.68	7,944.92	-5,476.35	-2,734.23	6,011.82	0.00	0.00	0.00	
14,400.00	90.00	179.68	7,944.91	-5,576.35	-2,733.68	6,107.94	0.00	0.00	0.00	
14,500.00	90.00	179.68	7,944.91	-5,676.35	-2,733.12	6,204.06	0.00	0.00	0.00	
14,600.00	90.00	179.68	7,944.91	-5,776.35	-2,732.57	6,300.18	0.00	0.00	0.00	
14,700.00	90.00	179.68	7,944.91	-5,876.34	-2,732.02	6,396.30	0.00	0.00	0.00	
14,800.00	90.00	179.68	7,944.91	-5,976.34	-2,731.46	6,492.42	0.00	0.00	0.00	
14,900.00	90.00	179.68	7,944.91	-6,076.34	-2,730.91	6,588.54	0.00	0.00	0.00	
15,000.00	90.00	179.68	7,944.91	-6,176.34	-2,730.35	6,684.66	0.00	0.00	0.00	
15,100.00	90.00	179.68	7,944.90	-6,276.34	-2,729.80	6,780.78	0.00	0.00	0.00	
15,200.00	90.00	179.68	7,944.90	-6,376.34	-2,729.24	6,876.90	0.00	0.00	0.00	
15,300.00	90.00	179.68	7,944.90	-6,476.34	-2,728.69	6,973.02	0.00	0.00	0.00	
15,400.00	90.00	179.68	7,944.90	-6,576.33	-2,728.13	7,069.14	0.00	0.00	0.00	
15,500.00	90.00	179.68	7,944.90	-6,676.33	-2,727.58	7,165.26	0.00	0.00	0.00	
15,600.00	90.00	179.68	7,944.90	-6,776.33	-2,727.02	7,261.38	0.00	0.00	0.00	
15,700.00	90.00	179.68	7,944.89	-6,876.33	-2,726.47	7,357.50	0.00	0.00	0.00	
15,800.00	90.00	179.68	7,944.89	-6,976.33	-2,725.91	7,453.62	0.00	0.00	0.00	
15,900.00	90.00	179.68	7,944.89	-7,076.33	-2,725.36	7,549.74	0.00	0.00	0.00	
16,000.00	90.00	179.68	7,944.89	-7,176.32	-2,724.80	7,645.86	0.00	0.00	0.00	
16,100.00	90.00	179.68	7,944.89	-7,276.32	-2,724.25	7,741.98	0.00	0.00	0.00	
16,200.00	90.00	179.68	7,944.89	-7,376.32	-2,723.70	7,838.10	0.00	0.00	0.00	
16,300.00	90.00	179.68	7,944.89	-7,476.32	-2,723.14	7,934.22	0.00	0.00	0.00	
16,400.00	90.00	179.68	7,944.88	-7,576.32	-2,722.59	8,030.34	0.00	0.00	0.00	
16,500.00	90.00	179.68	7,944.88	-7,676.32	-2,722.03	8,126.46	0.00	0.00	0.00	
16,600.00	90.00	179.68	7,944.88	-7,776.32	-2,721.48	8,222.58	0.00	0.00	0.00	
16,700.00	90.00	179.68	7,944.88	-7,876.31	-2,720.92	8,318.70	0.00	0.00	0.00	
16,800.00	90.00	179.68	7,944.88	-7,976.31	-2,720.37	8,414.82	0.00	0.00	0.00	
16,900.00	90.00	179.68	7,944.88	-8,076.31	-2,719.81	8,510.94	0.00	0.00	0.00	
17,000.00	90.00	179.68	7,944.87	-8,176.31	-2,719.26	8,607.06	0.00	0.00	0.00	
17,100.00	90.00	179.68	7,944.87	-8,276.31	-2,718.70	8,703.18	0.00	0.00	0.00	
17,200.00	90.00	179.68	7,944.87	-8,376.31	-2,718.15	8,799.30	0.00	0.00	0.00	
17,300.00	90.00	179.68	7,944.87	-8,476.30	-2,717.59	8,895.42	0.00	0.00	0.00	
17,400.00	90.00	179.68	7,944.87	-8,576.30	-2,717.04	8,991.54	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well UNITED A S16-20-5N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5282.00usft
Project:	Broomfield County	MD Reference:	KB 25' @ 5282.00usft
Site:	Sec 9-T1S-R68W	North Reference:	True
Well:	UNITED A S16-20-5N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
17,500.00	90.00	179.68	7,944.87	-8,676.30	-2,716.48	9,087.66	0.00	0.00	0.00	
17,600.00	90.00	179.68	7,944.87	-8,776.30	-2,715.93	9,183.78	0.00	0.00	0.00	
17,700.00	90.00	179.68	7,944.86	-8,876.30	-2,715.37	9,279.90	0.00	0.00	0.00	
17,800.00	90.00	179.68	7,944.86	-8,976.30	-2,714.82	9,376.02	0.00	0.00	0.00	
17,900.00	90.00	179.68	7,944.86	-9,076.30	-2,714.27	9,472.14	0.00	0.00	0.00	
18,000.00	90.00	179.68	7,944.86	-9,176.29	-2,713.71	9,568.26	0.00	0.00	0.00	
18,100.00	90.00	179.68	7,944.86	-9,276.29	-2,713.16	9,664.38	0.00	0.00	0.00	
18,200.00	90.00	179.68	7,944.86	-9,376.29	-2,712.60	9,760.50	0.00	0.00	0.00	
18,300.00	90.00	179.68	7,944.85	-9,476.29	-2,712.05	9,856.62	0.00	0.00	0.00	
18,400.00	90.00	179.68	7,944.85	-9,576.29	-2,711.49	9,952.74	0.00	0.00	0.00	
18,471.69	90.00	179.68	7,945.00	-9,647.98	-2,711.00	10,021.62	0.00	0.00	0.00	
TD at 18471.69										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
UNITED A S16-5N - LP - hit/miss target - Shape - Point	0.00	0.00	7,945.00	-10.77	-2,764.55	1,237,916.47	3,136,896.78	39° 59' 7.548 N	105° 0' 41.230 W	
UNITED A S16-5N - PB - plan hits target center - Point	0.00	0.00	7,945.00	-9,647.98	-2,711.00	1,228,279.72	3,137,004.50	39° 57' 32.306 N	105° 0' 40.529 W	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
5,532.32	5,090.00	SUSSEX				
8,418.37	7,775.00	NIORARA				
8,736.43	7,935.00	NIO B TARGET				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
500.00	500.00	0.00	0.00	Start Build 2.00	
1,835.49	1,787.64	50.84	-301.43	Start 4883.29 hold at 1835.49 MD	
6,718.78	6,149.86	415.89	-2,465.77	Start Drop -2.00	
8,054.27	7,437.50	466.73	-2,767.20	Start 30.00 hold at 8054.27 MD	
8,084.27	7,467.50	466.73	-2,767.20	Start DLS 12.00 TFO 179.68	
8,834.34	7,945.00	-10.77	-2,764.55	Start 9637.36 hold at 8834.34 MD	
18,471.69	7,945.00	-9,647.98	-2,711.00	TD at 18471.69	