

# **EXTRACTION OIL & GAS**

**Broomfield County**

**Sec 9-T1S-R68W**

**UNITED B S16-20-15N**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**18 January, 2018**



Project: Broomfield County  
Site: Sec 9-T1S-R68W  
Well: UNITED B S16-20-15N  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1

PROJECT DETAILS: Broomfield County

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone

System Datum: Mean Sea Level



Azimuths to True North  
Magnetic North: 8.24°

Magnetic Field  
Strength: 52084.4snT  
Dip Angle: 66.47°  
Date: 1/5/2018  
Model: IGRF2015

WELL DETAILS: UNITED B S16-20-15N

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1237916.06	3139962.33	39° 59' 7.375 N	105° 0' 1.847 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	
3	1203.69	6.07	315.11	1203.12	11.39	-11.35	2.00	315.11	-10.90	
4	7168.43	6.07	315.11	7134.38	458.50	-456.80	0.00	0.00	-438.62	
5	7472.12	0.00	0.00	7437.50	469.89	-468.15	2.00	180.00	-449.52	
6	7502.12	0.00	0.00	7467.50	469.89	-468.15	0.00	0.00	-449.52	
7	8252.18	90.00	179.67	7945.00	-7.61	-465.43	12.00	179.67	27.43	UNITED B S16-15N - LP
8	17881.19	90.00	179.67	7945.00	-9636.46	-410.95	0.00	0.00	9645.22	UNITED B S16-15N - PBHL

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5090.00	5112.51	SUSSEX
7775.00	7836.22	NIOBRARA
7935.00	8154.28	NIO B TARGET

ANNOTATIONS

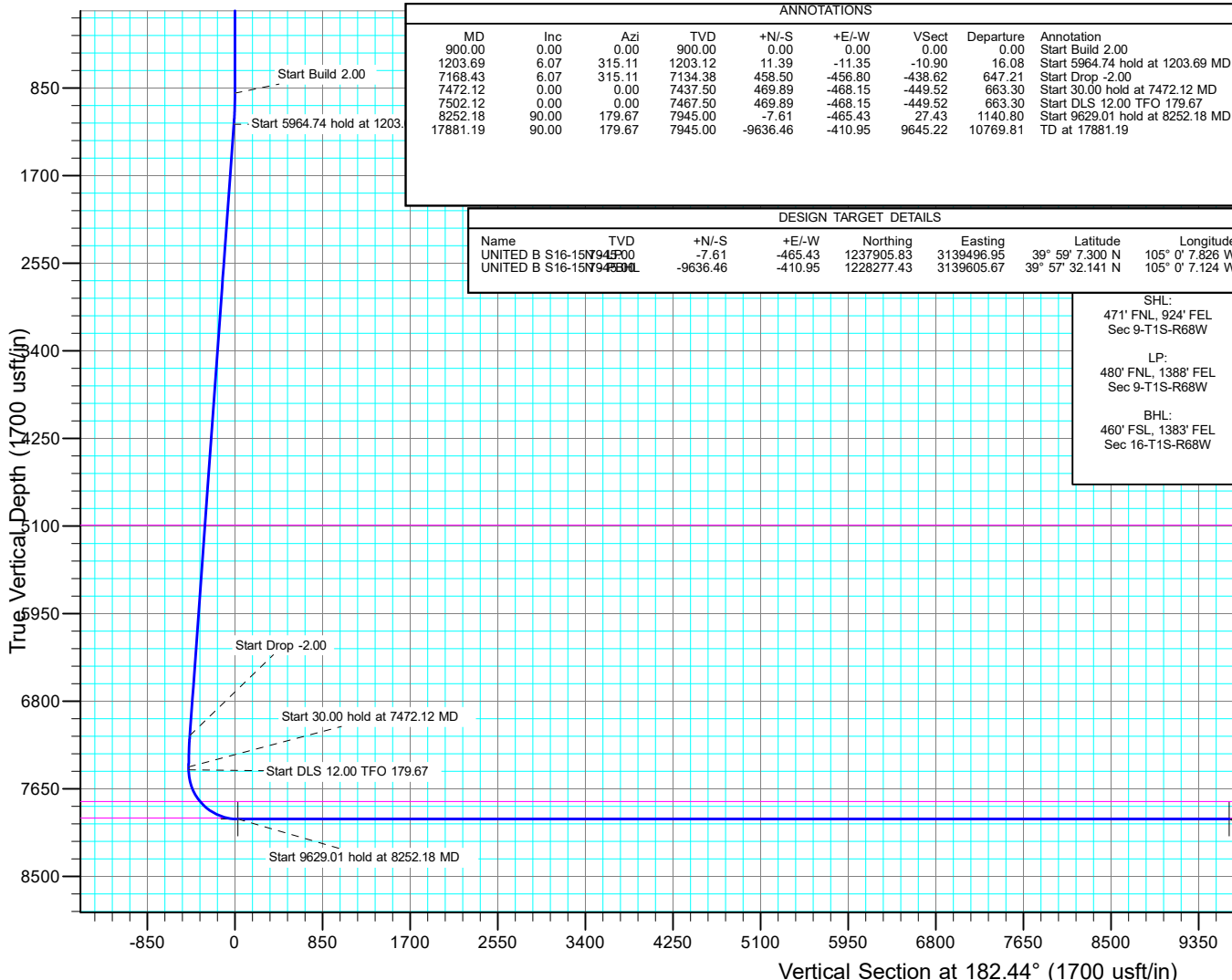
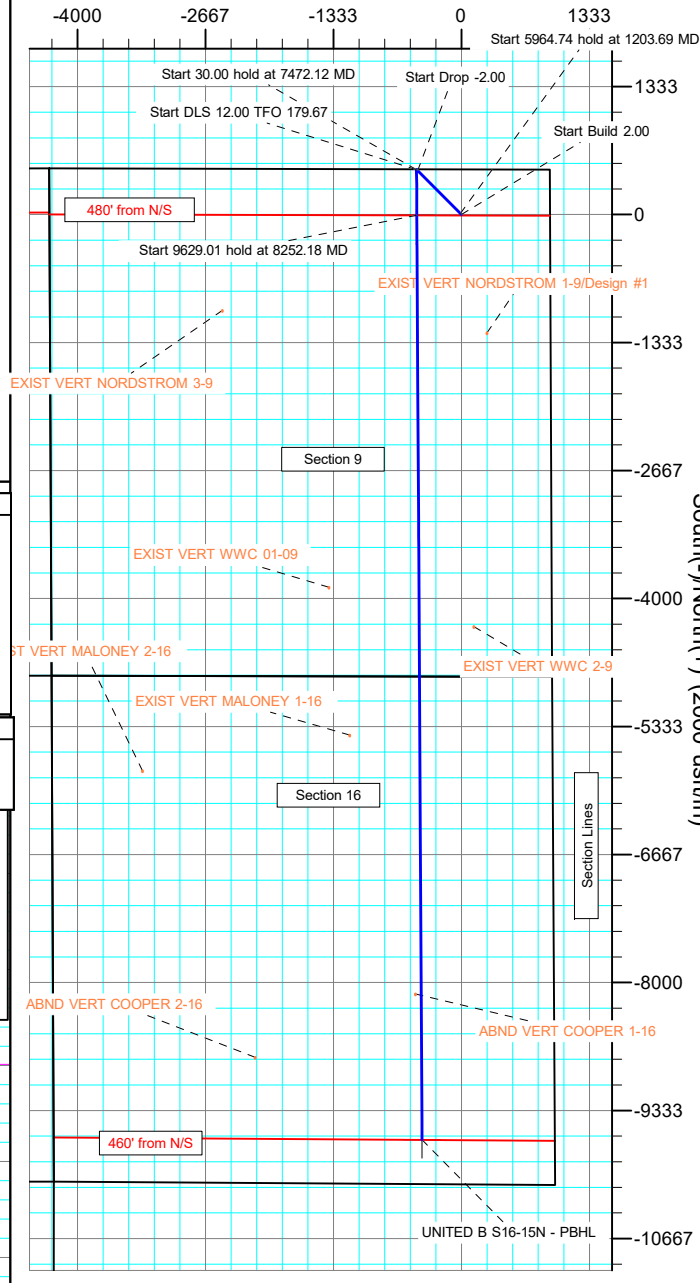
MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	Start Build 2.00
1203.69	6.07	315.11	1203.12	11.39	-11.35	-10.90	16.08	Start 5964.74 hold at 1203.69 MD
7168.43	6.07	315.11	7134.38	458.50	-456.80	-438.62	647.21	Start Drop -2.00
7472.12	0.00	0.00	7437.50	469.89	-468.15	-449.52	663.30	Start 30.00 hold at 7472.12 MD
7502.12	0.00	0.00	7467.50	469.89	-468.15	-449.52	663.30	Start DLS 12.00 TFO 179.67
8252.18	90.00	179.67	7945.00	-7.61	-465.43	27.43	1140.80	Start 9629.01 hold at 8252.18 MD
17881.19	90.00	179.67	7945.00	-9636.46	-410.95	9645.22	10769.81	TD at 17881.19

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
UNITED B S16-15N - LP	7945.00	-7.61	-465.43	1237905.83	3139496.95	39° 59' 7.300 N	105° 0' 7.826 W
UNITED B S16-15N - PBHL	7945.00	-9636.46	-410.95	1228277.43	3139605.67	39° 57' 32.141 N	105° 0' 7.124 W

SHL:  
471' FNL, 924' FEL  
Sec 9-T1S-R68W  
  
LP:  
480' FNL, 1388' FEL  
Sec 9-T1S-R68W  
  
BHL:  
460' FSL, 1383' FEL  
Sec 16-T1S-R68W

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



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well UNITED B S16-20-15N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5279.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5279.00usft
<b>Site:</b>	Sec 9-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	UNITED B S16-20-15N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	Broomfield County		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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 B S16-20-15N					
Well Position	+N/-S	-479.77 usft	Northing:	1,237,916.06 usft	Latitude:	39° 59' 7.375 N
	+E/-W	4,294.95 usft	Easting:	3,139,962.33 usft	Longitude:	105° 0' 1.847 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	5,254.00 usft

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	1/5/2018	8.24	66.47	52,084.42961190

<b>Design</b>	PROPOSAL 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	182.44

<b>Plan Survey Tool Program</b>	<b>Date</b>	1/18/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	17,881.03	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	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	
1,203.69	6.07	315.11	1,203.12	11.39	-11.35	2.00	2.00	0.00	315.11	
7,168.43	6.07	315.11	7,134.38	458.50	-456.80	0.00	0.00	0.00	0.00	
7,472.12	0.00	0.00	7,437.50	469.89	-468.15	2.00	-2.00	0.00	180.00	
7,502.12	0.00	0.00	7,467.50	469.89	-468.15	0.00	0.00	0.00	0.00	
8,252.18	90.00	179.67	7,945.00	-7.61	-465.43	12.00	12.00	23.95	179.67	UNITED B S16-15N -
17,881.19	90.00	179.67	7,945.00	-9,636.46	-410.95	0.00	0.00	0.00	0.00	UNITED B S16-15N -

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well UNITED B S16-20-15N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5279.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5279.00usft
<b>Site:</b>	Sec 9-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	UNITED B S16-20-15N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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
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
Start Build 2.00									
1,000.00	2.00	315.11	999.98	1.24	-1.23	-1.18	2.00	2.00	0.00
1,100.00	4.00	315.11	1,099.84	4.94	-4.93	-4.73	2.00	2.00	0.00
1,203.69	6.07	315.11	1,203.12	11.39	-11.35	-10.90	2.00	2.00	0.00
Start 5964.74 hold at 1203.69 MD									
1,300.00	6.07	315.11	1,298.89	18.61	-18.54	-17.80	0.00	0.00	0.00
1,400.00	6.07	315.11	1,398.33	26.11	-26.01	-24.98	0.00	0.00	0.00
1,500.00	6.07	315.11	1,497.77	33.60	-33.48	-32.15	0.00	0.00	0.00
1,600.00	6.07	315.11	1,597.21	41.10	-40.95	-39.32	0.00	0.00	0.00
1,700.00	6.07	315.11	1,696.65	48.59	-48.42	-46.49	0.00	0.00	0.00
1,800.00	6.07	315.11	1,796.08	56.09	-55.88	-53.66	0.00	0.00	0.00
1,900.00	6.07	315.11	1,895.52	63.59	-63.35	-60.83	0.00	0.00	0.00
2,000.00	6.07	315.11	1,994.96	71.08	-70.82	-68.00	0.00	0.00	0.00
2,100.00	6.07	315.11	2,094.40	78.58	-78.29	-75.17	0.00	0.00	0.00
2,200.00	6.07	315.11	2,193.84	86.07	-85.76	-82.34	0.00	0.00	0.00
2,300.00	6.07	315.11	2,293.28	93.57	-93.22	-89.51	0.00	0.00	0.00
2,400.00	6.07	315.11	2,392.72	101.07	-100.69	-96.68	0.00	0.00	0.00
2,500.00	6.07	315.11	2,492.15	108.56	-108.16	-103.85	0.00	0.00	0.00
2,600.00	6.07	315.11	2,591.59	116.06	-115.63	-111.03	0.00	0.00	0.00
2,700.00	6.07	315.11	2,691.03	123.55	-123.10	-118.20	0.00	0.00	0.00
2,800.00	6.07	315.11	2,790.47	131.05	-130.56	-125.37	0.00	0.00	0.00
2,900.00	6.07	315.11	2,889.91	138.54	-138.03	-132.54	0.00	0.00	0.00
3,000.00	6.07	315.11	2,989.35	146.04	-145.50	-139.71	0.00	0.00	0.00
3,100.00	6.07	315.11	3,088.79	153.54	-152.97	-146.88	0.00	0.00	0.00
3,200.00	6.07	315.11	3,188.22	161.03	-160.44	-154.05	0.00	0.00	0.00
3,300.00	6.07	315.11	3,287.66	168.53	-167.90	-161.22	0.00	0.00	0.00
3,400.00	6.07	315.11	3,387.10	176.02	-175.37	-168.39	0.00	0.00	0.00
3,500.00	6.07	315.11	3,486.54	183.52	-182.84	-175.56	0.00	0.00	0.00
3,600.00	6.07	315.11	3,585.98	191.02	-190.31	-182.73	0.00	0.00	0.00
3,700.00	6.07	315.11	3,685.42	198.51	-197.78	-189.90	0.00	0.00	0.00
3,800.00	6.07	315.11	3,784.86	206.01	-205.24	-197.07	0.00	0.00	0.00
3,900.00	6.07	315.11	3,884.30	213.50	-212.71	-204.25	0.00	0.00	0.00
4,000.00	6.07	315.11	3,983.73	221.00	-220.18	-211.42	0.00	0.00	0.00
4,100.00	6.07	315.11	4,083.17	228.49	-227.65	-218.59	0.00	0.00	0.00
4,200.00	6.07	315.11	4,182.61	235.99	-235.12	-225.76	0.00	0.00	0.00
4,300.00	6.07	315.11	4,282.05	243.49	-242.58	-232.93	0.00	0.00	0.00
4,400.00	6.07	315.11	4,381.49	250.98	-250.05	-240.10	0.00	0.00	0.00
4,500.00	6.07	315.11	4,480.93	258.48	-257.52	-247.27	0.00	0.00	0.00
4,600.00	6.07	315.11	4,580.37	265.97	-264.99	-254.44	0.00	0.00	0.00
4,700.00	6.07	315.11	4,679.80	273.47	-272.46	-261.61	0.00	0.00	0.00
4,800.00	6.07	315.11	4,779.24	280.96	-279.92	-268.78	0.00	0.00	0.00
4,900.00	6.07	315.11	4,878.68	288.46	-287.39	-275.95	0.00	0.00	0.00
5,000.00	6.07	315.11	4,978.12	295.96	-294.86	-283.12	0.00	0.00	0.00

# Planning Report

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<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5279.00usft
<b>Site:</b>	Sec 9-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	UNITED B S16-20-15N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
5,100.00	6.07	315.11	5,077.56	303.45	-302.33	-290.30	0.00	0.00	0.00
5,112.51	6.07	315.11	5,090.00	304.39	-303.26	-291.19	0.00	0.00	0.00
<b>SUSSEX</b>									
5,200.00	6.07	315.11	5,177.00	310.95	-309.80	-297.47	0.00	0.00	0.00
5,300.00	6.07	315.11	5,276.44	318.44	-317.26	-304.64	0.00	0.00	0.00
5,400.00	6.07	315.11	5,375.87	325.94	-324.73	-311.81	0.00	0.00	0.00
5,500.00	6.07	315.11	5,475.31	333.44	-332.20	-318.98	0.00	0.00	0.00
5,600.00	6.07	315.11	5,574.75	340.93	-339.67	-326.15	0.00	0.00	0.00
5,700.00	6.07	315.11	5,674.19	348.43	-347.14	-333.32	0.00	0.00	0.00
5,800.00	6.07	315.11	5,773.63	355.92	-354.60	-340.49	0.00	0.00	0.00
5,900.00	6.07	315.11	5,873.07	363.42	-362.07	-347.66	0.00	0.00	0.00
6,000.00	6.07	315.11	5,972.51	370.91	-369.54	-354.83	0.00	0.00	0.00
6,100.00	6.07	315.11	6,071.95	378.41	-377.01	-362.00	0.00	0.00	0.00
6,200.00	6.07	315.11	6,171.38	385.91	-384.48	-369.17	0.00	0.00	0.00
6,300.00	6.07	315.11	6,270.82	393.40	-391.94	-376.34	0.00	0.00	0.00
6,400.00	6.07	315.11	6,370.26	400.90	-399.41	-383.52	0.00	0.00	0.00
6,500.00	6.07	315.11	6,469.70	408.39	-406.88	-390.69	0.00	0.00	0.00
6,600.00	6.07	315.11	6,569.14	415.89	-414.35	-397.86	0.00	0.00	0.00
6,700.00	6.07	315.11	6,668.58	423.38	-421.82	-405.03	0.00	0.00	0.00
6,800.00	6.07	315.11	6,768.02	430.88	-429.29	-412.20	0.00	0.00	0.00
6,900.00	6.07	315.11	6,867.45	438.38	-436.75	-419.37	0.00	0.00	0.00
7,000.00	6.07	315.11	6,966.89	445.87	-444.22	-426.54	0.00	0.00	0.00
7,100.00	6.07	315.11	7,066.33	453.37	-451.69	-433.71	0.00	0.00	0.00
7,168.43	6.07	315.11	7,134.38	458.50	-456.80	-438.62	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
7,200.00	5.44	315.11	7,165.79	460.74	-459.04	-440.76	2.00	-2.00	0.00
7,300.00	3.44	315.11	7,265.48	466.23	-464.50	-446.01	2.00	-2.00	0.00
7,400.00	1.44	315.11	7,365.39	469.25	-467.51	-448.90	2.00	-2.00	0.00
7,472.12	0.00	0.00	7,437.50	469.89	-468.15	-449.52	2.00	-2.00	0.00
<b>Start 30.00 hold at 7472.12 MD</b>									
7,502.12	0.00	0.00	7,467.50	469.89	-468.15	-449.52	0.00	0.00	0.00
<b>Start DLS 12.00 TFO 179.67</b>									
7,525.00	2.75	179.67	7,490.37	469.34	-468.15	-448.97	12.00	12.00	0.00
7,550.00	5.75	179.67	7,515.30	467.49	-468.14	-447.12	12.00	12.00	0.00
7,575.00	8.74	179.67	7,540.10	464.34	-468.12	-443.97	12.00	12.00	0.00
7,600.00	11.74	179.67	7,564.70	459.89	-468.09	-439.53	12.00	12.00	0.00
7,625.00	14.74	179.67	7,589.03	454.17	-468.06	-433.81	12.00	12.00	0.00
7,650.00	17.74	179.67	7,613.03	447.17	-468.02	-426.83	12.00	12.00	0.00
7,675.00	20.74	179.67	7,636.63	438.94	-467.97	-418.60	12.00	12.00	0.00
7,700.00	23.74	179.67	7,659.76	429.47	-467.92	-409.15	12.00	12.00	0.00
7,725.00	26.74	179.67	7,682.37	418.81	-467.86	-398.50	12.00	12.00	0.00
7,750.00	29.74	179.67	7,704.39	406.98	-467.79	-386.68	12.00	12.00	0.00
7,775.00	32.74	179.67	7,725.77	394.02	-467.72	-373.73	12.00	12.00	0.00
7,800.00	35.74	179.67	7,746.43	379.95	-467.64	-359.68	12.00	12.00	0.00
7,825.00	38.74	179.67	7,766.33	364.83	-467.55	-344.57	12.00	12.00	0.00
7,836.22	40.09	179.67	7,775.00	357.70	-467.51	-337.46	12.00	12.00	0.00
<b>NIOBRARA</b>									
7,850.00	41.74	179.67	7,785.41	348.68	-467.46	-328.44	12.00	12.00	0.00
7,875.00	44.74	179.67	7,803.62	331.55	-467.36	-311.34	12.00	12.00	0.00
7,900.00	47.74	179.67	7,820.91	313.50	-467.26	-293.30	12.00	12.00	0.00
7,925.00	50.74	179.67	7,837.23	294.56	-467.15	-274.39	12.00	12.00	0.00
7,950.00	53.74	179.67	7,852.54	274.80	-467.04	-254.65	12.00	12.00	0.00
7,975.00	56.74	179.67	7,866.79	254.26	-466.92	-234.14	12.00	12.00	0.00
8,000.00	59.74	179.67	7,879.94	233.01	-466.80	-212.91	12.00	12.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well UNITED B S16-20-15N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5279.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5279.00usft
<b>Site:</b>	Sec 9-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	UNITED B S16-20-15N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
8,025.00	62.74	179.67	7,891.97	211.10	-466.68	-191.02	12.00	12.00	0.00
8,050.00	65.74	179.67	7,902.83	188.58	-466.55	-168.53	12.00	12.00	0.00
8,075.00	68.74	179.67	7,912.50	165.53	-466.42	-145.51	12.00	12.00	0.00
8,100.00	71.74	179.67	7,920.96	142.01	-466.28	-122.01	12.00	12.00	0.00
8,125.00	74.74	179.67	7,928.16	118.07	-466.15	-98.11	12.00	12.00	0.00
8,150.00	77.74	179.67	7,934.11	93.79	-466.01	-73.85	12.00	12.00	0.00
8,154.28	78.25	179.67	7,935.00	89.61	-465.98	-69.67	12.00	12.00	0.00
NIO B TARGET									
8,175.00	80.74	179.67	7,938.78	69.24	-465.87	-49.33	12.00	12.00	0.00
8,200.00	83.74	179.67	7,942.15	44.47	-465.73	-24.59	12.00	12.00	0.00
8,225.00	86.74	179.67	7,944.23	19.56	-465.58	0.30	12.00	12.00	0.00
8,252.18	90.00	179.67	7,945.00	-7.61	-465.43	27.43	12.00	12.00	0.00
Start 9629.01 hold at 8252.18 MD									
8,300.00	90.00	179.67	7,945.00	-55.43	-465.16	75.19	0.00	0.00	0.00
8,400.00	90.00	179.67	7,945.00	-155.42	-464.59	175.08	0.00	0.00	0.00
8,500.00	90.00	179.67	7,945.00	-255.42	-464.02	274.96	0.00	0.00	0.00
8,600.00	90.00	179.67	7,944.99	-355.42	-463.45	374.84	0.00	0.00	0.00
8,700.00	90.00	179.67	7,944.99	-455.42	-462.88	474.73	0.00	0.00	0.00
8,800.00	90.00	179.67	7,944.99	-555.42	-462.31	574.61	0.00	0.00	0.00
8,900.00	90.00	179.67	7,944.99	-655.42	-461.74	674.49	0.00	0.00	0.00
9,000.00	90.00	179.67	7,944.99	-755.41	-461.17	774.38	0.00	0.00	0.00
9,100.00	90.00	179.67	7,944.99	-855.41	-460.60	874.26	0.00	0.00	0.00
9,200.00	90.00	179.67	7,944.98	-955.41	-460.03	974.14	0.00	0.00	0.00
9,300.00	90.00	179.67	7,944.98	-1,055.41	-459.46	1,074.03	0.00	0.00	0.00
9,400.00	90.00	179.67	7,944.98	-1,155.41	-458.89	1,173.91	0.00	0.00	0.00
9,500.00	90.00	179.67	7,944.98	-1,255.41	-458.32	1,273.79	0.00	0.00	0.00
9,600.00	90.00	179.67	7,944.98	-1,355.40	-457.75	1,373.68	0.00	0.00	0.00
9,700.00	90.00	179.67	7,944.98	-1,455.40	-457.18	1,473.56	0.00	0.00	0.00
9,800.00	90.00	179.67	7,944.98	-1,555.40	-456.61	1,573.44	0.00	0.00	0.00
9,900.00	90.00	179.67	7,944.97	-1,655.40	-456.04	1,673.33	0.00	0.00	0.00
10,000.00	90.00	179.67	7,944.97	-1,755.40	-455.47	1,773.21	0.00	0.00	0.00
10,100.00	90.00	179.67	7,944.97	-1,855.40	-454.90	1,873.09	0.00	0.00	0.00
10,200.00	90.00	179.67	7,944.97	-1,955.39	-454.33	1,972.98	0.00	0.00	0.00
10,300.00	90.00	179.67	7,944.97	-2,055.39	-453.76	2,072.86	0.00	0.00	0.00
10,400.00	90.00	179.67	7,944.97	-2,155.39	-453.19	2,172.74	0.00	0.00	0.00
10,500.00	90.00	179.67	7,944.96	-2,255.39	-452.62	2,272.63	0.00	0.00	0.00
10,600.00	90.00	179.67	7,944.96	-2,355.39	-452.05	2,372.51	0.00	0.00	0.00
10,700.00	90.00	179.67	7,944.96	-2,455.39	-451.48	2,472.39	0.00	0.00	0.00
10,800.00	90.00	179.67	7,944.96	-2,555.38	-450.91	2,572.28	0.00	0.00	0.00
10,900.00	90.00	179.67	7,944.96	-2,655.38	-450.34	2,672.16	0.00	0.00	0.00
11,000.00	90.00	179.67	7,944.96	-2,755.38	-449.77	2,772.04	0.00	0.00	0.00
11,100.00	90.00	179.67	7,944.95	-2,855.38	-449.20	2,871.93	0.00	0.00	0.00
11,200.00	90.00	179.67	7,944.95	-2,955.38	-448.63	2,971.81	0.00	0.00	0.00
11,300.00	90.00	179.67	7,944.95	-3,055.38	-448.06	3,071.69	0.00	0.00	0.00
11,400.00	90.00	179.67	7,944.95	-3,155.37	-447.49	3,171.58	0.00	0.00	0.00
11,500.00	90.00	179.67	7,944.95	-3,255.37	-446.92	3,271.46	0.00	0.00	0.00
11,600.00	90.00	179.67	7,944.95	-3,355.37	-446.35	3,371.34	0.00	0.00	0.00
11,700.00	90.00	179.67	7,944.94	-3,455.37	-445.78	3,471.23	0.00	0.00	0.00
11,800.00	90.00	179.67	7,944.94	-3,555.37	-445.21	3,571.11	0.00	0.00	0.00
11,900.00	90.00	179.67	7,944.94	-3,655.37	-444.64	3,670.99	0.00	0.00	0.00
12,000.00	90.00	179.67	7,944.94	-3,755.37	-444.07	3,770.88	0.00	0.00	0.00
12,100.00	90.00	179.67	7,944.94	-3,855.36	-443.50	3,870.76	0.00	0.00	0.00
12,200.00	90.00	179.67	7,944.94	-3,955.36	-442.93	3,970.64	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well UNITED B S16-20-15N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5279.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5279.00usft
<b>Site:</b>	Sec 9-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	UNITED B S16-20-15N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
12,300.00	90.00	179.67	7,944.93	-4,055.36	-442.36	4,070.53	0.00	0.00	0.00
12,400.00	90.00	179.67	7,944.93	-4,155.36	-441.79	4,170.41	0.00	0.00	0.00
12,500.00	90.00	179.67	7,944.93	-4,255.36	-441.22	4,270.29	0.00	0.00	0.00
12,600.00	90.00	179.67	7,944.93	-4,355.36	-440.65	4,370.18	0.00	0.00	0.00
12,700.00	90.00	179.67	7,944.93	-4,455.35	-440.08	4,470.06	0.00	0.00	0.00
12,800.00	90.00	179.67	7,944.93	-4,555.35	-439.51	4,569.94	0.00	0.00	0.00
12,900.00	90.00	179.67	7,944.92	-4,655.35	-438.94	4,669.82	0.00	0.00	0.00
13,000.00	90.00	179.67	7,944.92	-4,755.35	-438.37	4,769.71	0.00	0.00	0.00
13,100.00	90.00	179.67	7,944.92	-4,855.35	-437.80	4,869.59	0.00	0.00	0.00
13,200.00	90.00	179.67	7,944.92	-4,955.35	-437.23	4,969.47	0.00	0.00	0.00
13,300.00	90.00	179.67	7,944.92	-5,055.34	-436.66	5,069.36	0.00	0.00	0.00
13,400.00	90.00	179.67	7,944.92	-5,155.34	-436.09	5,169.24	0.00	0.00	0.00
13,500.00	90.00	179.67	7,944.91	-5,255.34	-435.52	5,269.12	0.00	0.00	0.00
13,600.00	90.00	179.67	7,944.91	-5,355.34	-434.95	5,369.01	0.00	0.00	0.00
13,700.00	90.00	179.67	7,944.91	-5,455.34	-434.38	5,468.89	0.00	0.00	0.00
13,800.00	90.00	179.67	7,944.91	-5,555.34	-433.81	5,568.77	0.00	0.00	0.00
13,900.00	90.00	179.67	7,944.91	-5,655.33	-433.24	5,668.66	0.00	0.00	0.00
14,000.00	90.00	179.67	7,944.91	-5,755.33	-432.67	5,768.54	0.00	0.00	0.00
14,100.00	90.00	179.67	7,944.91	-5,855.33	-432.10	5,868.42	0.00	0.00	0.00
14,200.00	90.00	179.67	7,944.90	-5,955.33	-431.53	5,968.31	0.00	0.00	0.00
14,300.00	90.00	179.67	7,944.90	-6,055.33	-430.96	6,068.19	0.00	0.00	0.00
14,400.00	90.00	179.67	7,944.90	-6,155.33	-430.39	6,168.07	0.00	0.00	0.00
14,500.00	90.00	179.67	7,944.90	-6,255.32	-429.82	6,267.96	0.00	0.00	0.00
14,600.00	90.00	179.67	7,944.90	-6,355.32	-429.25	6,367.84	0.00	0.00	0.00
14,700.00	90.00	179.67	7,944.90	-6,455.32	-428.68	6,467.72	0.00	0.00	0.00
14,800.00	90.00	179.67	7,944.89	-6,555.32	-428.11	6,567.61	0.00	0.00	0.00
14,900.00	90.00	179.67	7,944.89	-6,655.32	-427.54	6,667.49	0.00	0.00	0.00
15,000.00	90.00	179.67	7,944.89	-6,755.32	-426.97	6,767.37	0.00	0.00	0.00
15,100.00	90.00	179.67	7,944.89	-6,855.31	-426.41	6,867.26	0.00	0.00	0.00
15,200.00	90.00	179.67	7,944.89	-6,955.31	-425.84	6,967.14	0.00	0.00	0.00
15,300.00	90.00	179.67	7,944.89	-7,055.31	-425.27	7,067.02	0.00	0.00	0.00
15,400.00	90.00	179.67	7,944.88	-7,155.31	-424.70	7,166.91	0.00	0.00	0.00
15,500.00	90.00	179.67	7,944.88	-7,255.31	-424.13	7,266.79	0.00	0.00	0.00
15,600.00	90.00	179.67	7,944.88	-7,355.31	-423.56	7,366.67	0.00	0.00	0.00
15,700.00	90.00	179.67	7,944.88	-7,455.31	-422.99	7,466.56	0.00	0.00	0.00
15,800.00	90.00	179.67	7,944.88	-7,555.30	-422.42	7,566.44	0.00	0.00	0.00
15,900.00	90.00	179.67	7,944.88	-7,655.30	-421.85	7,666.32	0.00	0.00	0.00
16,000.00	90.00	179.67	7,944.87	-7,755.30	-421.28	7,766.21	0.00	0.00	0.00
16,100.00	90.00	179.67	7,944.87	-7,855.30	-420.71	7,866.09	0.00	0.00	0.00
16,200.00	90.00	179.67	7,944.87	-7,955.30	-420.14	7,965.97	0.00	0.00	0.00
16,300.00	90.00	179.67	7,944.87	-8,055.30	-419.57	8,065.86	0.00	0.00	0.00
16,400.00	90.00	179.67	7,944.87	-8,155.29	-419.00	8,165.74	0.00	0.00	0.00
16,500.00	90.00	179.67	7,944.87	-8,255.29	-418.43	8,265.62	0.00	0.00	0.00
16,600.00	90.00	179.67	7,944.86	-8,355.29	-417.86	8,365.51	0.00	0.00	0.00
16,700.00	90.00	179.67	7,944.86	-8,455.29	-417.29	8,465.39	0.00	0.00	0.00
16,800.00	90.00	179.67	7,944.86	-8,555.29	-416.72	8,565.27	0.00	0.00	0.00
16,900.00	90.00	179.67	7,944.86	-8,655.29	-416.15	8,665.16	0.00	0.00	0.00
17,000.00	90.00	179.67	7,944.86	-8,755.28	-415.58	8,765.04	0.00	0.00	0.00
17,100.00	90.00	179.67	7,944.86	-8,855.28	-415.01	8,864.92	0.00	0.00	0.00
17,200.00	90.00	179.67	7,944.85	-8,955.28	-414.44	8,964.81	0.00	0.00	0.00
17,300.00	90.00	179.67	7,944.85	-9,055.28	-413.87	9,064.69	0.00	0.00	0.00
17,400.00	90.00	179.67	7,944.85	-9,155.28	-413.30	9,164.57	0.00	0.00	0.00
17,500.00	90.00	179.67	7,944.85	-9,255.28	-412.73	9,264.46	0.00	0.00	0.00
17,600.00	90.00	179.67	7,944.85	-9,355.27	-412.16	9,364.34	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well UNITED B S16-20-15N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5279.00usft
<b>Project:</b>	Broomfield County	<b>MD Reference:</b>	KB 25' @ 5279.00usft
<b>Site:</b>	Sec 9-T1S-R68W	<b>North Reference:</b>	True
<b>Well:</b>	UNITED B S16-20-15N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
17,700.00	90.00	179.67	7,944.85	-9,455.27	-411.59	9,464.22	0.00	0.00	0.00
17,800.00	90.00	179.67	7,944.85	-9,555.27	-411.02	9,564.11	0.00	0.00	0.00
17,881.19	90.00	179.67	7,945.00	-9,636.46	-410.95	9,645.22	0.00	0.00	0.00
TD at 17881.19									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
UNITED B S16-15N - LF	0.00	0.00	7,945.00	-7.61	-465.43	1,237,905.83	3,139,496.95	39° 59' 7.300 N	105° 0' 7.826 W
- plan hits target center									
- Point									
UNITED B S16-15N - PE	0.00	0.00	7,945.00	-9,636.46	-410.95	1,228,277.43	3,139,605.67	39° 57' 32.141 N	105° 0' 7.124 W
- plan hits target center									
- Point									

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,112.51	5,090.00	SUSSEX			
7,836.22	7,775.00	NIOBRARA			
8,154.28	7,935.00	NIO B TARGET			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
900.00	900.00	0.00	0.00	Start Build 2.00
1,203.69	1,203.12	11.39	-11.35	Start 5964.74 hold at 1203.69 MD
7,168.43	7,134.38	458.50	-456.80	Start Drop -2.00
7,472.12	7,437.50	469.89	-468.15	Start 30.00 hold at 7472.12 MD
7,502.12	7,467.50	469.89	-468.15	Start DLS 12.00 TFO 179.67
8,252.18	7,945.00	-7.61	-465.43	Start 9629.01 hold at 8252.18 MD
17,881.19	7,945.00	-9,636.46	-410.95	TD at 17881.19