

# **EXTRACTION OIL & GAS**

**WELD COUNTY, COLORADO (NAD 83)**

**NE SE SEC. 8 T5N R66W 6th P.M.**

**TC-COUNTRY CLUB WEST 2-9-11**

**ORIGINAL WELLBORE**

**09 January, 2017**

**Plan: PROPOSAL #2**





Project: WELD COUNTY, COLORADO (NAD 83)  
Site: NE SE SEC. 8 T5N R66W 6th P.M.  
Well: TC-COUNTRY CLUB WEST 2-9-11  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #2

ANNOTATIONS										FORMATION TOP DETAILS		
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation		TVDPath	MDPath	Formation
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 2494ft FNL & 1194ft FEL of Sec 8		3680.0	3801.8	PARKMAN
100.0	100.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE #1 (2°/100ft BUR)		4410.0	4562.7	SUSSEX
249.9	250.0	3.00	90.00	0.0	3.9	3.9	3.9	EOB TO 3° INC		4820.0	4990.0	SHANNON
349.8	350.0	3.00	90.00	0.0	9.2	9.1	9.2	START NUDGE #2 (2°/100ft DGLG)		6940.0	7244.4	SHARON SPRINGS
1076.0	1087.7	16.38	37.17	83.3	91.8	99.6	128.2	EOB & T TO 16.38° INC & 37.17° AZ		6972.0	7294.7	NIOBRARA
6628.7	6875.2	16.38	37.17	1383.7	1077.7	1210.8	1760.1	START BUILD & TURN		7092.0	7677.7	NIO B TARGET
7092.0	7677.7	90.00	90.25	1490.1	1642.9	1783.8	2345.0	HZ LP: 1010ft FNL & 460ft FWL of Sec 9				
7092.0	20305.3	90.00	90.25	1435.9	14270.3	14342.4	14972.6	BHL:1260ft FNL & 2482ft FWL of Sec 11				

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LANDING PNT - TC-COUNTRY CLUB WEST 2-9-11	7092.0	1490.1	1642.8	40.418640	-104.792780
BHL - TC-COUNTRY CLUB WEST 2-9-11	7092.0	1435.9	14270.3	40.418480	-104.747430

South(-)/North(+) (150 usft/in)

West(-)/East(+) (150 usft/in)

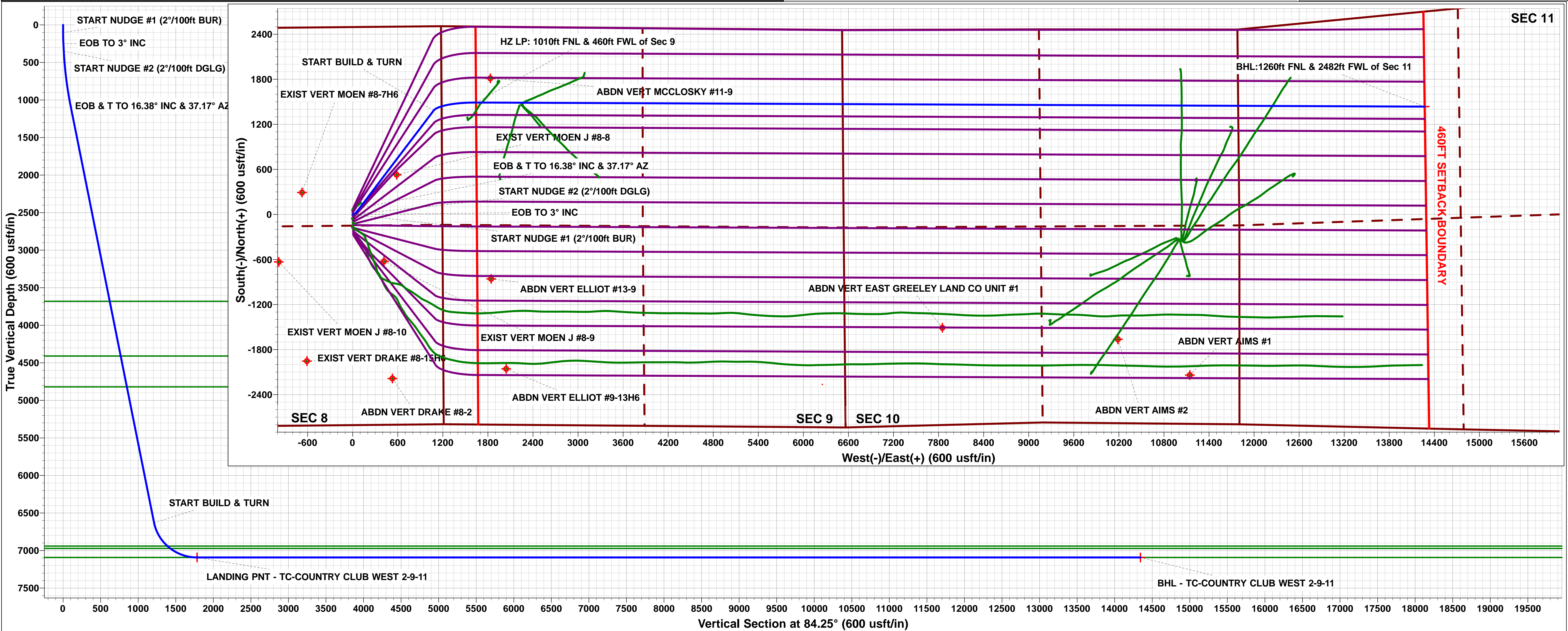
TC-MOISER HILL 2-9-7  
TC-COUNTRY CLUB WEST C1-9-11  
TC-MOISER HILL 3-9-11  
TC-COUNTRY CLUB WEST 1-9-11  
TC-COUNTRY CLUB WEST 2-9-11  
TC-COUNTRY CLUB WEST C3-9-11  
TC-COUNTRY CLUB WEST A2-9-11  
TC-COUNTRY CLUB WEST 3-9-11  
TC-AIMS C4-9-11  
TC-COUNTRY CLUB WEST 4-9-11  
TC-COUNTRY CLUB WEST 5-9-11  
TC-AIMS C5-9-11  
TC-AIMS 1-9-11  
TC-AIMS 2-9-11  
TC-HILAND KNOLLS C6-9-11  
TC-AIMS 3-9-11  
TC-AIMS 4-9-11

TC-HILAND KNOLLS C7-9-11  
TC-HILAND KNOLLS 1-9-11  
TC-HILAND KNOLLS 2-9-11  
TC-HILAND KNOLLS 3-9-11  
TC-HILAND KNOLLS 4-9-11

Proposed Local Coordinates:  
SHL: 2494ft FNL & 1194ft FEL of Sec 8  
HZ LP: 1010ft FNL & 460ft FWL of Sec 9  
BHL: 1260ft FNL & 2482ft FWL of Sec 11

Formations:  
PARKMAN  
SUSSEX  
SHANNON  
SHARON SPRINGS  
NIOBRARA  
NIO B TARGET

Magnetic Field:  
Strength: 52450.1nT  
Dip Angle: 66.87°  
Date: 28/12/2016  
Model: IGRF2015



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well TC-COUNTRY CLUB WEST 2-9-11
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4804.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4804.0usft
<b>Site:</b>	NE SE SEC. 8 T5N R66W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	TC-COUNTRY CLUB WEST 2-9-11	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

<b>Project</b>	WELD COUNTY, COLORADO (NAD 83)		
<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		Using geodetic scale factor

<b>Site</b>	NE SE SEC. 8 T5N R66W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,394,363.62 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,195,288.63 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.413810
		<b>Longitude:</b>	-104.798660
		<b>Grid Convergence:</b>	0.45 °

Well	TC-COUNTRY CLUB WEST 2-9-11					
Well Position	+N/-S	269.6 usft	Northing:	1,394,633.14 usfi	Latitude:	40.414550
	+E/-W	-5.6 usft	Easting:	3,195,280.93 usfi	Longitude:	-104.798680
Position Uncertainty		0.0 usft	Wellhead Elevation:	usfi	Ground Level:	4,788.0 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	28/12/2016	8.28	66.87	52,450

<b>Design</b>	PROPOSAL #2				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0	
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	84.25	

<b>Plan Sections</b>											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100usf)	Turn Rate (°/100usf)	TFO (°)	Target
0.0	0.00	0.00	0.0	-4,804.0	0.0	0.0	0.00	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	-4,704.0	0.0	0.0	0.00	0.00	0.00	0.00	
250.0	3.00	90.00	249.9	-4,554.1	0.0	3.9	2.00	2.00	0.00	90.00	
350.0	3.00	90.00	349.8	-4,454.2	0.0	9.2	0.00	0.00	0.00	0.00	
1,087.7	16.38	37.17	1,076.1	-3,727.9	83.3	91.8	2.00	1.81	-7.16	-61.91	
6,875.2	16.38	37.17	6,628.7	1,824.7	1,383.7	1,077.7	0.00	0.00	0.00	0.00	
7,677.7	90.00	90.25	7,092.0	2,288.0	1,490.1	1,642.8	10.00	9.17	6.61	54.21	LANDING PNT - TC
20,305.3	90.00	90.25	7,092.0	2,288.0	1,435.9	14,270.3	0.00	0.00	0.00	0.00	BHL - TC-COUNTR

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well TC-COUNTRY CLUB WEST 2-9-11
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4804.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4804.0usft
<b>Site:</b>	NE SE SEC. 8 T5N R66W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	TC-COUNTRY CLUB WEST 2-9-11	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>SHL: 2494ft FNL &amp; 1194ft FEL of Sec 8</b>										
0.0	0.00	0.00	0.0	4,804.00	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE #1 (2°/100ft BUR)</b>										
100.0	0.00	0.00	100.0	4,704.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	2.00	90.00	200.0	4,604.02	0.0	1.7	1.7	2.00	2.00	0.00
<b>EOB TO 3° INC</b>										
250.0	3.00	90.00	249.9	4,554.07	0.0	3.9	3.9	2.00	2.00	0.00
300.0	3.00	90.00	299.9	4,504.14	0.0	6.5	6.5	0.00	0.00	0.00
<b>START NUDGE #2 (2°/100ft DGLG)</b>										
350.0	3.00	90.00	349.8	4,454.21	0.0	9.2	9.1	0.00	0.00	0.00
400.0	3.58	75.73	399.7	4,404.29	0.4	12.0	12.0	2.00	1.16	-28.54
500.0	5.14	59.01	499.4	4,304.58	3.5	18.9	19.1	2.00	1.56	-16.72
600.0	6.94	50.45	598.9	4,205.13	9.6	27.4	28.2	2.00	1.79	-8.56
700.0	8.82	45.46	697.9	4,106.08	18.8	37.5	39.2	2.00	1.88	-4.99
800.0	10.74	42.22	796.5	4,007.54	31.1	49.2	52.1	2.00	1.92	-3.23
900.0	12.69	39.97	894.4	3,909.62	46.4	62.5	66.9	2.00	1.95	-2.26
1,000.0	14.65	38.31	991.5	3,812.46	64.8	77.4	83.5	2.00	1.96	-1.66
<b>EOB &amp; T TO 16.38° INC &amp; 37.17° AZ</b>										
1,087.7	16.38	37.17	1,076.0	3,727.96	83.3	91.8	99.6	2.00	1.97	-1.29
1,100.0	16.38	37.17	1,087.8	3,716.16	86.1	93.9	102.0	0.00	0.00	0.00
1,200.0	16.38	37.17	1,183.8	3,620.22	108.6	110.9	121.2	0.00	0.00	0.00
1,300.0	16.38	37.17	1,279.7	3,524.27	131.0	127.9	140.4	0.00	0.00	0.00
1,400.0	16.38	37.17	1,375.7	3,428.33	153.5	145.0	159.6	0.00	0.00	0.00
1,500.0	16.38	37.17	1,471.6	3,332.39	176.0	162.0	178.8	0.00	0.00	0.00
1,600.0	16.38	37.17	1,567.6	3,236.45	198.4	179.0	198.0	0.00	0.00	0.00
1,700.0	16.38	37.17	1,663.5	3,140.50	220.9	196.1	217.2	0.00	0.00	0.00
1,800.0	16.38	37.17	1,759.4	3,044.56	243.4	213.1	236.4	0.00	0.00	0.00
1,900.0	16.38	37.17	1,855.4	2,948.62	265.8	230.1	255.6	0.00	0.00	0.00
2,000.0	16.38	37.17	1,951.3	2,852.67	288.3	247.2	274.8	0.00	0.00	0.00
2,100.0	16.38	37.17	2,047.3	2,756.73	310.8	264.2	294.0	0.00	0.00	0.00
2,200.0	16.38	37.17	2,143.2	2,660.79	333.2	281.2	313.2	0.00	0.00	0.00
2,300.0	16.38	37.17	2,239.2	2,564.85	355.7	298.3	332.4	0.00	0.00	0.00
2,400.0	16.38	37.17	2,335.1	2,468.90	378.2	315.3	351.6	0.00	0.00	0.00
2,500.0	16.38	37.17	2,431.0	2,372.96	400.7	332.3	370.8	0.00	0.00	0.00
2,600.0	16.38	37.17	2,527.0	2,277.02	423.1	349.4	390.0	0.00	0.00	0.00
2,700.0	16.38	37.17	2,622.9	2,181.08	445.6	366.4	409.2	0.00	0.00	0.00
2,800.0	16.38	37.17	2,718.9	2,085.13	468.1	383.5	428.4	0.00	0.00	0.00
2,900.0	16.38	37.17	2,814.8	1,989.19	490.5	400.5	447.6	0.00	0.00	0.00
3,000.0	16.38	37.17	2,910.8	1,893.25	513.0	417.5	466.8	0.00	0.00	0.00
3,100.0	16.38	37.17	3,006.7	1,797.31	535.5	434.6	486.0	0.00	0.00	0.00
3,200.0	16.38	37.17	3,102.6	1,701.36	557.9	451.6	505.2	0.00	0.00	0.00
3,300.0	16.38	37.17	3,198.6	1,605.42	580.4	468.6	524.4	0.00	0.00	0.00
3,400.0	16.38	37.17	3,294.5	1,509.48	602.9	485.7	543.6	0.00	0.00	0.00
3,500.0	16.38	37.17	3,390.5	1,413.54	625.3	502.7	562.8	0.00	0.00	0.00
3,600.0	16.38	37.17	3,486.4	1,317.59	647.8	519.7	582.0	0.00	0.00	0.00
3,700.0	16.38	37.17	3,582.3	1,221.65	670.3	536.8	601.2	0.00	0.00	0.00
3,800.0	16.38	37.17	3,678.3	1,125.71	692.7	553.8	620.4	0.00	0.00	0.00
<b>PARKMAN</b>										
3,801.8	16.38	37.17	3,680.0	1,124.00	693.1	554.1	620.7	0.00	0.00	0.00
3,900.0	16.38	37.17	3,774.2	1,029.77	715.2	570.8	639.6	0.00	0.00	0.00
4,000.0	16.38	37.17	3,870.2	933.82	737.7	587.9	658.8	0.00	0.00	0.00
4,100.0	16.38	37.17	3,966.1	837.88	760.1	604.9	678.0	0.00	0.00	0.00
4,200.0	16.38	37.17	4,062.1	741.94	782.6	622.0	697.2	0.00	0.00	0.00



# Planning Report



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<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4804.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4804.0usft
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<b>Well:</b>	TC-COUNTRY CLUB WEST 2-9-11	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,300.0	16.38	37.17	4,158.0	646.00	805.1	639.0	716.4	0.00	0.00	0.00
4,400.0	16.38	37.17	4,253.9	550.05	827.5	656.0	735.6	0.00	0.00	0.00
4,500.0	16.38	37.17	4,349.9	454.11	850.0	673.1	754.8	0.00	0.00	0.00
<b>SUSSEX</b>										
<b>4,562.7</b>	<b>16.38</b>	<b>37.17</b>	<b>4,410.0</b>	<b>394.00</b>	<b>864.1</b>	<b>683.7</b>	<b>766.8</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,600.0	16.38	37.17	4,445.8	358.17	872.5	690.1	774.0	0.00	0.00	0.00
4,700.0	16.38	37.17	4,541.8	262.23	895.0	707.1	793.2	0.00	0.00	0.00
4,800.0	16.38	37.17	4,637.7	166.28	917.4	724.2	812.4	0.00	0.00	0.00
4,900.0	16.38	37.17	4,733.7	70.34	939.9	741.2	831.6	0.00	0.00	0.00
<b>SHANNON</b>										
<b>4,990.0</b>	<b>16.38</b>	<b>37.17</b>	<b>4,820.0</b>	<b>-16.00</b>	<b>960.1</b>	<b>756.5</b>	<b>848.8</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,000.0	16.38	37.17	4,829.6	-25.60	962.4	758.2	850.8	0.00	0.00	0.00
5,100.0	16.38	37.17	4,925.5	-121.54	984.8	775.3	870.0	0.00	0.00	0.00
5,200.0	16.38	37.17	5,021.5	-217.49	1,007.3	792.3	889.2	0.00	0.00	0.00
5,300.0	16.38	37.17	5,117.4	-313.43	1,029.8	809.3	908.4	0.00	0.00	0.00
5,400.0	16.38	37.17	5,213.4	-409.37	1,052.2	826.4	927.6	0.00	0.00	0.00
5,500.0	16.38	37.17	5,309.3	-505.31	1,074.7	843.4	946.8	0.00	0.00	0.00
5,600.0	16.38	37.17	5,405.3	-601.26	1,097.2	860.4	966.0	0.00	0.00	0.00
5,700.0	16.38	37.17	5,501.2	-697.20	1,119.6	877.5	985.2	0.00	0.00	0.00
5,800.0	16.38	37.17	5,597.1	-793.14	1,142.1	894.5	1,004.4	0.00	0.00	0.00
5,900.0	16.38	37.17	5,693.1	-889.08	1,164.6	911.6	1,023.6	0.00	0.00	0.00
6,000.0	16.38	37.17	5,789.0	-985.03	1,187.0	928.6	1,042.8	0.00	0.00	0.00
6,100.0	16.38	37.17	5,885.0	-1,080.97	1,209.5	945.6	1,062.0	0.00	0.00	0.00
6,200.0	16.38	37.17	5,980.9	-1,176.91	1,232.0	962.7	1,081.2	0.00	0.00	0.00
6,300.0	16.38	37.17	6,076.9	-1,272.85	1,254.4	979.7	1,100.4	0.00	0.00	0.00
6,400.0	16.38	37.17	6,172.8	-1,368.80	1,276.9	996.7	1,119.6	0.00	0.00	0.00
6,500.0	16.38	37.17	6,268.7	-1,464.74	1,299.4	1,013.8	1,138.8	0.00	0.00	0.00
6,600.0	16.38	37.17	6,364.7	-1,560.68	1,321.8	1,030.8	1,158.0	0.00	0.00	0.00
6,700.0	16.38	37.17	6,460.6	-1,656.62	1,344.3	1,047.8	1,177.2	0.00	0.00	0.00
6,800.0	16.38	37.17	6,556.6	-1,752.57	1,366.8	1,064.9	1,196.4	0.00	0.00	0.00
<b>START BUILD &amp; TURN</b>										
<b>6,875.2</b>	<b>16.38</b>	<b>37.17</b>	<b>6,628.7</b>	<b>-1,824.72</b>	<b>1,383.7</b>	<b>1,077.7</b>	<b>1,210.8</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
6,900.0	17.94	43.72	6,652.4	-1,848.41	1,389.2	1,082.4	1,216.1	10.00	6.29	26.39
7,000.0	25.69	61.02	6,745.3	-1,941.27	1,410.9	1,112.1	1,247.8	10.00	7.76	17.30
7,100.0	34.57	70.31	6,831.7	-2,027.72	1,431.0	1,157.9	1,295.4	10.00	8.87	9.29
7,200.0	43.88	76.10	6,909.1	-2,105.13	1,449.0	1,218.4	1,357.4	10.00	9.31	5.80
<b>SHARON SPRINGS</b>										
<b>7,244.4</b>	<b>48.09</b>	<b>78.07</b>	<b>6,940.0</b>	<b>-2,136.00</b>	<b>1,456.1</b>	<b>1,249.6</b>	<b>1,389.1</b>	<b>10.00</b>	<b>9.48</b>	<b>4.43</b>
<b>NIOBRARA</b>										
<b>7,294.7</b>	<b>52.90</b>	<b>80.01</b>	<b>6,972.0</b>	<b>-2,168.00</b>	<b>1,463.4</b>	<b>1,287.7</b>	<b>1,427.7</b>	<b>10.00</b>	<b>9.55</b>	<b>3.85</b>
7,300.0	53.40	80.20	6,975.2	-2,171.15	1,464.2	1,291.8	1,431.9	10.00	9.58	3.57
7,400.0	63.03	83.38	7,027.8	-2,223.77	1,476.2	1,375.8	1,516.7	10.00	9.63	3.18
7,500.0	72.72	86.05	7,065.4	-2,261.40	1,484.6	1,468.0	1,609.2	10.00	9.69	2.67
7,600.0	82.44	88.46	7,086.9	-2,282.88	1,489.2	1,565.4	1,706.6	10.00	9.72	2.40
<b>HZ LP: 1010ft FNL &amp; 460ft FWL of Sec 9 - NIO B TARGET</b>										
<b>7,677.7</b>	<b>90.00</b>	<b>90.25</b>	<b>7,092.0</b>	<b>-2,288.00</b>	<b>1,490.1</b>	<b>1,642.8</b>	<b>1,783.8</b>	<b>10.00</b>	<b>9.73</b>	<b>2.30</b>
7,700.0	90.00	90.25	7,092.0	-2,288.00	1,490.0	1,665.2	1,806.0	0.00	0.00	0.00
7,800.0	90.00	90.25	7,092.0	-2,288.00	1,489.6	1,765.2	1,905.4	0.00	0.00	0.00
7,900.0	90.00	90.25	7,092.0	-2,288.00	1,489.1	1,865.2	2,004.9	0.00	0.00	0.00
8,000.0	90.00	90.25	7,092.0	-2,288.00	1,488.7	1,965.1	2,104.3	0.00	0.00	0.00
8,100.0	90.00	90.25	7,092.0	-2,288.00	1,488.3	2,065.1	2,203.8	0.00	0.00	0.00
8,200.0	90.00	90.25	7,092.0	-2,288.00	1,487.9	2,165.1	2,303.2	0.00	0.00	0.00
8,300.0	90.00	90.25	7,092.0	-2,288.00	1,487.4	2,265.1	2,402.7	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well TC-COUNTRY CLUB WEST 2-9-11
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4804.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4804.0usft
<b>Site:</b>	NE SE SEC. 8 T5N R66W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	TC-COUNTRY CLUB WEST 2-9-11	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,400.0	90.00	90.25	7,092.0	-2,288.00	1,487.0	2,365.1	2,502.1	0.00	0.00	0.00
8,500.0	90.00	90.25	7,092.0	-2,288.00	1,486.6	2,465.1	2,601.6	0.00	0.00	0.00
8,600.0	90.00	90.25	7,092.0	-2,288.00	1,486.1	2,565.1	2,701.0	0.00	0.00	0.00
8,700.0	90.00	90.25	7,092.0	-2,288.00	1,485.7	2,665.1	2,800.5	0.00	0.00	0.00
8,800.0	90.00	90.25	7,092.0	-2,288.00	1,485.3	2,765.1	2,899.9	0.00	0.00	0.00
8,900.0	90.00	90.25	7,092.0	-2,288.00	1,484.9	2,865.1	2,999.4	0.00	0.00	0.00
9,000.0	90.00	90.25	7,092.0	-2,288.00	1,484.4	2,965.1	3,098.9	0.00	0.00	0.00
9,100.0	90.00	90.25	7,092.0	-2,288.00	1,484.0	3,065.1	3,198.3	0.00	0.00	0.00
9,200.0	90.00	90.25	7,092.0	-2,288.00	1,483.6	3,165.1	3,297.8	0.00	0.00	0.00
9,300.0	90.00	90.25	7,092.0	-2,288.00	1,483.1	3,265.1	3,397.2	0.00	0.00	0.00
9,400.0	90.00	90.25	7,092.0	-2,288.00	1,482.7	3,365.1	3,496.7	0.00	0.00	0.00
9,500.0	90.00	90.25	7,092.0	-2,288.00	1,482.3	3,465.1	3,596.1	0.00	0.00	0.00
9,600.0	90.00	90.25	7,092.0	-2,288.00	1,481.8	3,565.1	3,695.6	0.00	0.00	0.00
9,700.0	90.00	90.25	7,092.0	-2,288.00	1,481.4	3,665.1	3,795.0	0.00	0.00	0.00
9,800.0	90.00	90.25	7,092.0	-2,288.00	1,481.0	3,765.1	3,894.5	0.00	0.00	0.00
9,900.0	90.00	90.25	7,092.0	-2,288.00	1,480.6	3,865.1	3,993.9	0.00	0.00	0.00
10,000.0	90.00	90.25	7,092.0	-2,288.00	1,480.1	3,965.1	4,093.4	0.00	0.00	0.00
10,100.0	90.00	90.25	7,092.0	-2,288.00	1,479.7	4,065.1	4,192.8	0.00	0.00	0.00
10,200.0	90.00	90.25	7,092.0	-2,288.00	1,479.3	4,165.1	4,292.3	0.00	0.00	0.00
10,300.0	90.00	90.25	7,092.0	-2,288.00	1,478.8	4,265.1	4,391.8	0.00	0.00	0.00
10,400.0	90.00	90.25	7,092.0	-2,288.00	1,478.4	4,365.1	4,491.2	0.00	0.00	0.00
10,500.0	90.00	90.25	7,092.0	-2,288.00	1,478.0	4,465.1	4,590.7	0.00	0.00	0.00
10,600.0	90.00	90.25	7,092.0	-2,288.00	1,477.6	4,565.1	4,690.1	0.00	0.00	0.00
10,700.0	90.00	90.25	7,092.0	-2,288.00	1,477.1	4,665.1	4,789.6	0.00	0.00	0.00
10,800.0	90.00	90.25	7,092.0	-2,288.00	1,476.7	4,765.1	4,889.0	0.00	0.00	0.00
10,900.0	90.00	90.25	7,092.0	-2,288.00	1,476.3	4,865.1	4,988.5	0.00	0.00	0.00
11,000.0	90.00	90.25	7,092.0	-2,288.00	1,475.8	4,965.1	5,087.9	0.00	0.00	0.00
11,100.0	90.00	90.25	7,092.0	-2,288.00	1,475.4	5,065.1	5,187.4	0.00	0.00	0.00
11,200.0	90.00	90.25	7,092.0	-2,288.00	1,475.0	5,165.1	5,286.8	0.00	0.00	0.00
11,300.0	90.00	90.25	7,092.0	-2,288.00	1,474.5	5,265.1	5,386.3	0.00	0.00	0.00
11,400.0	90.00	90.25	7,092.0	-2,288.00	1,474.1	5,365.1	5,485.7	0.00	0.00	0.00
11,500.0	90.00	90.25	7,092.0	-2,288.00	1,473.7	5,465.1	5,585.2	0.00	0.00	0.00
11,600.0	90.00	90.25	7,092.0	-2,288.00	1,473.3	5,565.1	5,684.7	0.00	0.00	0.00
11,700.0	90.00	90.25	7,092.0	-2,288.00	1,472.8	5,665.1	5,784.1	0.00	0.00	0.00
11,800.0	90.00	90.25	7,092.0	-2,288.00	1,472.4	5,765.1	5,883.6	0.00	0.00	0.00
11,900.0	90.00	90.25	7,092.0	-2,288.00	1,472.0	5,865.1	5,983.0	0.00	0.00	0.00
12,000.0	90.00	90.25	7,092.0	-2,288.00	1,471.5	5,965.1	6,082.5	0.00	0.00	0.00
12,100.0	90.00	90.25	7,092.0	-2,288.00	1,471.1	6,065.1	6,181.9	0.00	0.00	0.00
12,200.0	90.00	90.25	7,092.0	-2,288.00	1,470.7	6,165.1	6,281.4	0.00	0.00	0.00
12,300.0	90.00	90.25	7,092.0	-2,288.00	1,470.3	6,265.1	6,380.8	0.00	0.00	0.00
12,400.0	90.00	90.25	7,092.0	-2,288.00	1,469.8	6,365.1	6,480.3	0.00	0.00	0.00
12,500.0	90.00	90.25	7,092.0	-2,288.00	1,469.4	6,465.1	6,579.7	0.00	0.00	0.00
12,600.0	90.00	90.25	7,092.0	-2,288.00	1,469.0	6,565.1	6,679.2	0.00	0.00	0.00
12,700.0	90.00	90.25	7,092.0	-2,288.00	1,468.5	6,665.1	6,778.6	0.00	0.00	0.00
12,800.0	90.00	90.25	7,092.0	-2,288.00	1,468.1	6,765.1	6,878.1	0.00	0.00	0.00
12,900.0	90.00	90.25	7,092.0	-2,288.00	1,467.7	6,865.1	6,977.5	0.00	0.00	0.00
13,000.0	90.00	90.25	7,092.0	-2,288.00	1,467.2	6,965.1	7,077.0	0.00	0.00	0.00
13,100.0	90.00	90.25	7,092.0	-2,288.00	1,466.8	7,065.1	7,176.5	0.00	0.00	0.00
13,200.0	90.00	90.25	7,092.0	-2,288.00	1,466.4	7,165.1	7,275.9	0.00	0.00	0.00
13,300.0	90.00	90.25	7,092.0	-2,288.00	1,466.0	7,265.1	7,375.4	0.00	0.00	0.00
13,400.0	90.00	90.25	7,092.0	-2,288.00	1,465.5	7,365.1	7,474.8	0.00	0.00	0.00
13,500.0	90.00	90.25	7,092.0	-2,288.00	1,465.1	7,465.1	7,574.3	0.00	0.00	0.00
13,600.0	90.00	90.25	7,092.0	-2,288.00	1,464.7	7,565.1	7,673.7	0.00	0.00	0.00
13,700.0	90.00	90.25	7,092.0	-2,288.00	1,464.2	7,665.1	7,773.2	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well TC-COUNTRY CLUB WEST 2-9-11
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4804.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4804.0usft
<b>Site:</b>	NE SE SEC. 8 T5N R66W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	TC-COUNTRY CLUB WEST 2-9-11	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,800.0	90.00	90.25	7,092.0	-2,288.00	1,463.8	7,765.1	7,872.6	0.00	0.00	0.00
13,900.0	90.00	90.25	7,092.0	-2,288.00	1,463.4	7,865.1	7,972.1	0.00	0.00	0.00
14,000.0	90.00	90.25	7,092.0	-2,288.00	1,463.0	7,965.1	8,071.5	0.00	0.00	0.00
14,100.0	90.00	90.25	7,092.0	-2,288.00	1,462.5	8,065.1	8,171.0	0.00	0.00	0.00
14,200.0	90.00	90.25	7,092.0	-2,288.00	1,462.1	8,165.1	8,270.4	0.00	0.00	0.00
14,300.0	90.00	90.25	7,092.0	-2,288.00	1,461.7	8,265.1	8,369.9	0.00	0.00	0.00
14,400.0	90.00	90.25	7,092.0	-2,288.00	1,461.2	8,365.1	8,469.4	0.00	0.00	0.00
14,500.0	90.00	90.25	7,092.0	-2,288.00	1,460.8	8,465.1	8,568.8	0.00	0.00	0.00
14,600.0	90.00	90.25	7,092.0	-2,288.00	1,460.4	8,565.1	8,668.3	0.00	0.00	0.00
14,700.0	90.00	90.25	7,092.0	-2,288.00	1,459.9	8,665.1	8,767.7	0.00	0.00	0.00
14,800.0	90.00	90.25	7,092.0	-2,288.00	1,459.5	8,765.1	8,867.2	0.00	0.00	0.00
14,900.0	90.00	90.25	7,092.0	-2,288.00	1,459.1	8,865.1	8,966.6	0.00	0.00	0.00
15,000.0	90.00	90.25	7,092.0	-2,288.00	1,458.7	8,965.1	9,066.1	0.00	0.00	0.00
15,100.0	90.00	90.25	7,092.0	-2,288.00	1,458.2	9,065.1	9,165.5	0.00	0.00	0.00
15,200.0	90.00	90.25	7,092.0	-2,288.00	1,457.8	9,165.1	9,265.0	0.00	0.00	0.00
15,300.0	90.00	90.25	7,092.0	-2,288.00	1,457.4	9,265.1	9,364.4	0.00	0.00	0.00
15,400.0	90.00	90.25	7,092.0	-2,288.00	1,456.9	9,365.1	9,463.9	0.00	0.00	0.00
15,500.0	90.00	90.25	7,092.0	-2,288.00	1,456.5	9,465.1	9,563.3	0.00	0.00	0.00
15,600.0	90.00	90.25	7,092.0	-2,288.00	1,456.1	9,565.1	9,662.8	0.00	0.00	0.00
15,700.0	90.00	90.25	7,092.0	-2,288.00	1,455.7	9,665.1	9,762.3	0.00	0.00	0.00
15,800.0	90.00	90.25	7,092.0	-2,288.00	1,455.2	9,765.1	9,861.7	0.00	0.00	0.00
15,900.0	90.00	90.25	7,092.0	-2,288.00	1,454.8	9,865.1	9,961.2	0.00	0.00	0.00
16,000.0	90.00	90.25	7,092.0	-2,288.00	1,454.4	9,965.1	10,060.6	0.00	0.00	0.00
16,100.0	90.00	90.25	7,092.0	-2,288.00	1,453.9	10,065.1	10,160.1	0.00	0.00	0.00
16,200.0	90.00	90.25	7,092.0	-2,288.00	1,453.5	10,165.1	10,259.5	0.00	0.00	0.00
16,300.0	90.00	90.25	7,092.0	-2,288.00	1,453.1	10,265.1	10,359.0	0.00	0.00	0.00
16,400.0	90.00	90.25	7,092.0	-2,288.00	1,452.6	10,365.1	10,458.4	0.00	0.00	0.00
16,500.0	90.00	90.25	7,092.0	-2,288.00	1,452.2	10,465.1	10,557.9	0.00	0.00	0.00
16,600.0	90.00	90.25	7,092.0	-2,288.00	1,451.8	10,565.1	10,657.3	0.00	0.00	0.00
16,700.0	90.00	90.25	7,092.0	-2,288.00	1,451.4	10,665.1	10,756.8	0.00	0.00	0.00
16,800.0	90.00	90.25	7,092.0	-2,288.00	1,450.9	10,765.1	10,856.2	0.00	0.00	0.00
16,900.0	90.00	90.25	7,092.0	-2,288.00	1,450.5	10,865.1	10,955.7	0.00	0.00	0.00
17,000.0	90.00	90.25	7,092.0	-2,288.00	1,450.1	10,965.1	11,055.2	0.00	0.00	0.00
17,100.0	90.00	90.25	7,092.0	-2,288.00	1,449.6	11,065.1	11,154.6	0.00	0.00	0.00
17,200.0	90.00	90.25	7,092.0	-2,288.00	1,449.2	11,165.1	11,254.1	0.00	0.00	0.00
17,300.0	90.00	90.25	7,092.0	-2,288.00	1,448.8	11,265.1	11,353.5	0.00	0.00	0.00
17,400.0	90.00	90.25	7,092.0	-2,288.00	1,448.4	11,365.1	11,453.0	0.00	0.00	0.00
17,500.0	90.00	90.25	7,092.0	-2,288.00	1,447.9	11,465.1	11,552.4	0.00	0.00	0.00
17,600.0	90.00	90.25	7,092.0	-2,288.00	1,447.5	11,565.1	11,651.9	0.00	0.00	0.00
17,700.0	90.00	90.25	7,092.0	-2,288.00	1,447.1	11,665.1	11,751.3	0.00	0.00	0.00
17,800.0	90.00	90.25	7,092.0	-2,288.00	1,446.6	11,765.1	11,850.8	0.00	0.00	0.00
17,900.0	90.00	90.25	7,092.0	-2,288.00	1,446.2	11,865.1	11,950.2	0.00	0.00	0.00
18,000.0	90.00	90.25	7,092.0	-2,288.00	1,445.8	11,965.1	12,049.7	0.00	0.00	0.00
18,100.0	90.00	90.25	7,092.0	-2,288.00	1,445.3	12,065.1	12,149.1	0.00	0.00	0.00
18,200.0	90.00	90.25	7,092.0	-2,288.00	1,444.9	12,165.1	12,248.6	0.00	0.00	0.00
18,300.0	90.00	90.25	7,092.0	-2,288.00	1,444.5	12,265.1	12,348.0	0.00	0.00	0.00
18,400.0	90.00	90.25	7,092.0	-2,288.00	1,444.1	12,365.1	12,447.5	0.00	0.00	0.00
18,500.0	90.00	90.25	7,092.0	-2,288.00	1,443.6	12,465.1	12,547.0	0.00	0.00	0.00
18,600.0	90.00	90.25	7,092.0	-2,288.00	1,443.2	12,565.1	12,646.4	0.00	0.00	0.00
18,700.0	90.00	90.25	7,092.0	-2,288.00	1,442.8	12,665.1	12,745.9	0.00	0.00	0.00
18,800.0	90.00	90.25	7,092.0	-2,288.00	1,442.3	12,765.1	12,845.3	0.00	0.00	0.00
18,900.0	90.00	90.25	7,092.0	-2,288.00	1,441.9	12,865.0	12,944.8	0.00	0.00	0.00
19,000.0	90.00	90.25	7,092.0	-2,288.00	1,441.5	12,965.0	13,044.2	0.00	0.00	0.00
19,100.0	90.00	90.25	7,092.0	-2,288.00	1,441.1	13,065.0	13,143.7	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well TC-COUNTRY CLUB WEST 2-9-11
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4804.0usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4804.0usft
<b>Site:</b>	NE SE SEC. 8 T5N R66W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	TC-COUNTRY CLUB WEST 2-9-11	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,200.0	90.00	90.25	7,092.0	-2,288.00	1,440.6	13,165.0	13,243.1	0.00	0.00	0.00
19,300.0	90.00	90.25	7,092.0	-2,288.00	1,440.2	13,265.0	13,342.6	0.00	0.00	0.00
19,400.0	90.00	90.25	7,092.0	-2,288.00	1,439.8	13,365.0	13,442.0	0.00	0.00	0.00
19,500.0	90.00	90.25	7,092.0	-2,288.00	1,439.3	13,465.0	13,541.5	0.00	0.00	0.00
19,600.0	90.00	90.25	7,092.0	-2,288.00	1,438.9	13,565.0	13,640.9	0.00	0.00	0.00
19,700.0	90.00	90.25	7,092.0	-2,288.00	1,438.5	13,665.0	13,740.4	0.00	0.00	0.00
19,800.0	90.00	90.25	7,092.0	-2,288.00	1,438.0	13,765.0	13,839.9	0.00	0.00	0.00
19,900.0	90.00	90.25	7,092.0	-2,288.00	1,437.6	13,865.0	13,939.3	0.00	0.00	0.00
20,000.0	90.00	90.25	7,092.0	-2,288.00	1,437.2	13,965.0	14,038.8	0.00	0.00	0.00
20,100.0	90.00	90.25	7,092.0	-2,288.00	1,436.8	14,065.0	14,138.2	0.00	0.00	0.00
20,200.0	90.00	90.25	7,092.0	-2,288.00	1,436.3	14,165.0	14,237.7	0.00	0.00	0.00
20,300.0	90.00	90.25	7,092.0	-2,288.00	1,435.9	14,265.0	14,337.1	0.00	0.00	0.00
<b>BHL:1260ft FNL &amp; 2482ft FWL of Sec 11</b>										
<b>20,305.3</b>	<b>90.00</b>	<b>90.25</b>	<b>7,092.0</b>	<b>-2,288.00</b>	<b>1,435.9</b>	<b>14,270.3</b>	<b>14,342.4</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,801.8	3,680.0	PARKMAN		0.00	
4,562.7	4,410.0	SUSSEX		0.00	
4,990.0	4,820.0	SHANNON		0.00	
7,244.4	6,940.0	SHARON SPRINGS		0.00	
7,294.7	6,972.0	NIOBRARA		0.00	
7,677.7	7,092.0	NIO B TARGET		0.00	

## Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 2494ft FNL & 1194ft FEL of Sec 8
100.0	100.0	0.0	0.0	START NUDGE #1 (2°/100ft BUR)
250.0	249.9	0.0	3.9	EOB TO 3° INC
350.0	349.8	0.0	9.2	START NUDGE #2 (2°/100ft DGLG)
1,087.7	1,076.0	83.3	91.8	EOB & T TO 16.38° INC & 37.17° AZ
6,875.2	6,628.7	1,383.7	1,077.7	START BUILD & TURN
7,677.7	7,092.0	1,490.1	1,642.9	HZ LP: 1010ft FNL & 460ft FWL of Sec 9
20,305.3	7,092.0	1,435.9	14,270.3	BHL:1260ft FNL & 2482ft FWL of Sec 11