

# **EXTRACTION OIL & GAS**

**Adams County**

**Sec 29-T1-R66W**

**PC 1S-66-2928-9NH**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**12 September, 2017**



Project: Adams County  
Site: Sec 29-T1-R66W  
Well: PC 1S-66-2928-9NH  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1



Azimuths to True North  
Magnetic North: 8.17°  
Magnetic Field  
Strength: 52115.6nT  
Dip Angle: 66.47°  
Date: 9/11/2017  
Model: IGRF2015

#### WELL DETAILS: PC 1S-66-2928-9NH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1219306.90	3194970.95	39° 55' 59.808 N	104° 48' 17.028 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	700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
3	1480.97	15.62	311.65	1471.33	70.31	-79.05	2.00	311.65	-70.47	
4	6413.98	15.62	311.65	6222.17	953.04	-1071.45	0.00	0.00	-955.27	
5	7194.94	0.00	0.00	6993.50	1023.35	-1150.50	2.00	180.00	-1025.75	
6	7224.94	0.00	0.00	7023.50	1023.35	-1150.50	0.00	0.00	-1025.75	
7	7975.00	90.00	89.97	7501.00	1023.62	-673.00	12.00	89.97	-551.36	PC 9NH LP
8	17573.64	90.00	89.97	7501.00	1028.86	8925.64	0.00	0.00	8984.75	PC 9NH PBHL

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	BUILD 2°/100'
1480.97	15.62	311.65	1471.33	70.31	-79.05	-70.47	105.79	HOLD 15.62° INC
6413.98	15.62	311.65	6222.17	953.04	-1071.45	-955.27	1433.98	DROP 2°/100'
7194.94	0.00	0.00	6993.50	1023.35	-1150.50	-1025.75	1539.77	HOLD VERTICAL
7224.94	0.00	0.00	7023.50	1023.35	-1150.50	-1025.75	1539.77	KOP, BUILD 12°/100'
7975.00	90.00	89.97	7501.00	1023.62	-673.00	-551.36	2017.27	LP @ 90° INC, 89.97° AZM HOLD
17573.64	90.00	89.97	7501.00	1028.86	8925.64	8984.75	11615.92	TD at 17573.64' MD

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PC 9NH LP	7501.00	1023.62	-673.00	1220325.21	3194289.95	39° 56' 9.924 N	104° 48' 25.668 W	Point
- plan hits target center								
PC 9NH PBHL	7501.00	1028.86	8925.64	1220405.71	3203888.25	39° 56' 9.960 N	104° 46' 22.440 W	Point
- plan hits target center								

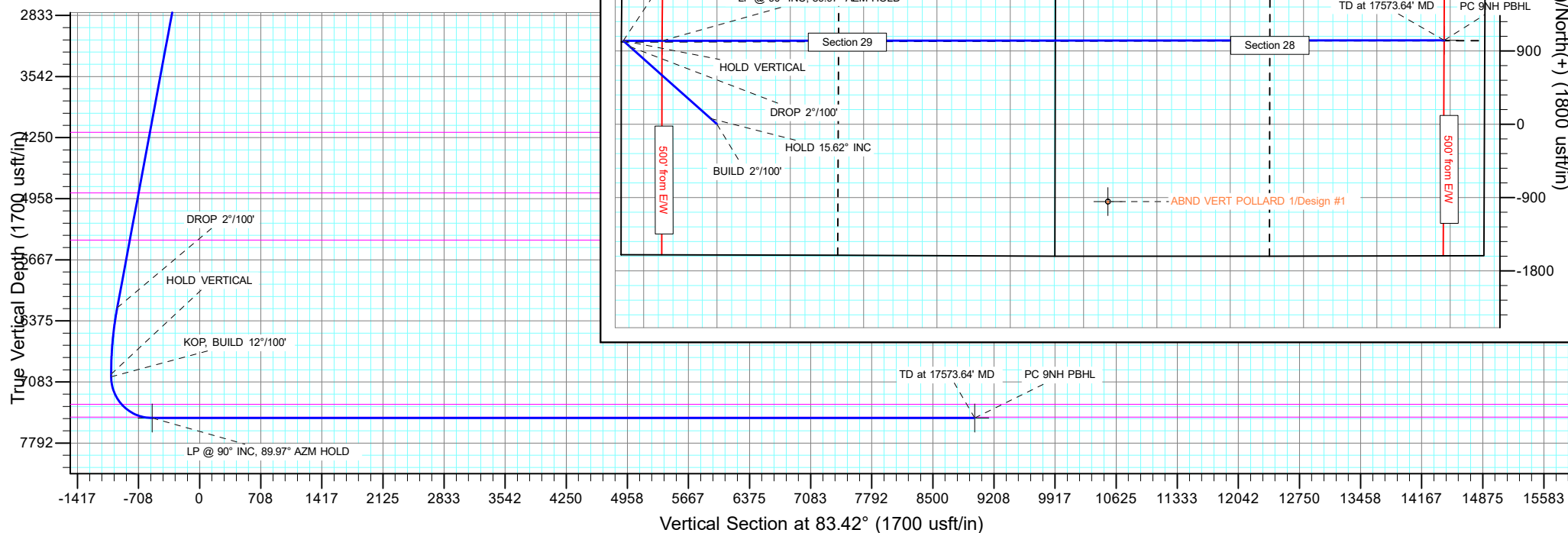
#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4188.00	4301.81	PARKMAN
4892.00	5032.80	SUSSEX
5437.00	5598.70	SHANNON
7342.00	7573.61	NIOBRARA
7491.00	7877.10	NIO B TARGET

#### PROJECT DETAILS: Adams County

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

SHL:  
1607' FSL, 1175' FWL  
Sec 29-T1S-R66W  
LP:  
2640' FNL, 500' FWL  
Sec 29-T1S-R66W  
BHL:  
2640' FNL, 500' FEL  
Sec 28-T1S-R66W



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-9NH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	Adams 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 29-T1-R66W			
Site Position:		Northing:	1,217,694.95 usft	Latitude:	39° 55' 43.968 N
From:	Lat/Long	Easting:	3,193,805.68 usft	Longitude:	104° 48' 32.148 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.45 °

Well	PC 1S-66-2928-9NH					
Well Position	+N/-S	1,602.81 usft	Northing:	1,219,306.90 usft	Latitude:	39° 55' 59.808 N
	+E/-W	1,177.80 usft	Easting:	3,194,970.95 usft	Longitude:	104° 48' 17.028 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,064.00 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	9/11/2017	8.17	66.47	52,115.62436045

<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	83.42

<b>Plan Survey Tool Program</b>	<b>Date</b>	9/12/2017		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	17,573.62	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	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,480.97	15.62	311.65	1,471.33	70.31	-79.05	2.00	2.00	0.00	311.65	
6,413.98	15.62	311.65	6,222.17	953.04	-1,071.45	0.00	0.00	0.00	0.00	
7,194.94	0.00	0.00	6,993.50	1,023.35	-1,150.50	2.00	-2.00	0.00	180.00	
7,224.94	0.00	0.00	7,023.50	1,023.35	-1,150.50	0.00	0.00	0.00	0.00	
7,975.00	90.00	89.97	7,501.00	1,023.62	-673.00	12.00	12.00	11.99	89.97	PC 9NH LP
17,573.64	90.00	89.97	7,501.00	1,028.86	8,925.64	0.00	0.00	0.00	0.00	PC 9NH PBHL

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-9NH	<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
<b>BUILD 2°/100'</b>									
800.00	2.00	311.65	799.98	1.16	-1.30	-1.16	2.00	2.00	0.00
900.00	4.00	311.65	899.84	4.64	-5.21	-4.65	2.00	2.00	0.00
1,000.00	6.00	311.65	999.45	10.43	-11.73	-10.45	2.00	2.00	0.00
1,100.00	8.00	311.65	1,098.70	18.53	-20.83	-18.57	2.00	2.00	0.00
1,200.00	10.00	311.65	1,197.47	28.93	-32.52	-28.99	2.00	2.00	0.00
1,300.00	12.00	311.65	1,295.62	41.61	-46.78	-41.70	2.00	2.00	0.00
1,400.00	14.00	311.65	1,393.06	56.56	-63.58	-56.69	2.00	2.00	0.00
1,480.97	15.62	311.65	1,471.33	70.31	-79.05	-70.47	2.00	2.00	0.00
<b>HOLD 15.62° INC</b>									
1,500.00	15.62	311.65	1,489.66	73.72	-82.88	-73.89	0.00	0.00	0.00
1,600.00	15.62	311.65	1,585.97	91.61	-102.99	-91.83	0.00	0.00	0.00
1,700.00	15.62	311.65	1,682.27	109.51	-123.11	-109.76	0.00	0.00	0.00
1,800.00	15.62	311.65	1,778.58	127.40	-143.23	-127.70	0.00	0.00	0.00
1,900.00	15.62	311.65	1,874.89	145.29	-163.35	-145.63	0.00	0.00	0.00
2,000.00	15.62	311.65	1,971.20	163.19	-183.46	-163.57	0.00	0.00	0.00
2,100.00	15.62	311.65	2,067.50	181.08	-203.58	-181.51	0.00	0.00	0.00
2,200.00	15.62	311.65	2,163.81	198.98	-223.70	-199.44	0.00	0.00	0.00
2,300.00	15.62	311.65	2,260.12	216.87	-243.82	-217.38	0.00	0.00	0.00
2,400.00	15.62	311.65	2,356.42	234.77	-263.93	-235.32	0.00	0.00	0.00
2,500.00	15.62	311.65	2,452.73	252.66	-284.05	-253.25	0.00	0.00	0.00
2,600.00	15.62	311.65	2,549.04	270.55	-304.17	-271.19	0.00	0.00	0.00
2,700.00	15.62	311.65	2,645.35	288.45	-324.29	-289.12	0.00	0.00	0.00
2,800.00	15.62	311.65	2,741.65	306.34	-344.41	-307.06	0.00	0.00	0.00
2,900.00	15.62	311.65	2,837.96	324.24	-364.52	-325.00	0.00	0.00	0.00
3,000.00	15.62	311.65	2,934.27	342.13	-384.64	-342.93	0.00	0.00	0.00
3,100.00	15.62	311.65	3,030.57	360.03	-404.76	-360.87	0.00	0.00	0.00
3,200.00	15.62	311.65	3,126.88	377.92	-424.88	-378.81	0.00	0.00	0.00
3,300.00	15.62	311.65	3,223.19	395.81	-444.99	-396.74	0.00	0.00	0.00
3,400.00	15.62	311.65	3,319.50	413.71	-465.11	-414.68	0.00	0.00	0.00
3,500.00	15.62	311.65	3,415.80	431.60	-485.23	-432.61	0.00	0.00	0.00
3,600.00	15.62	311.65	3,512.11	449.50	-505.35	-450.55	0.00	0.00	0.00
3,700.00	15.62	311.65	3,608.42	467.39	-525.46	-468.49	0.00	0.00	0.00
3,800.00	15.62	311.65	3,704.73	485.29	-545.58	-486.42	0.00	0.00	0.00
3,900.00	15.62	311.65	3,801.03	503.18	-565.70	-504.36	0.00	0.00	0.00
4,000.00	15.62	311.65	3,897.34	521.07	-585.82	-522.30	0.00	0.00	0.00
4,100.00	15.62	311.65	3,993.65	538.97	-605.94	-540.23	0.00	0.00	0.00
4,200.00	15.62	311.65	4,089.95	556.86	-626.05	-558.17	0.00	0.00	0.00
4,300.00	15.62	311.65	4,186.26	574.76	-646.17	-576.10	0.00	0.00	0.00
4,301.81	15.62	311.65	4,188.00	575.08	-646.53	-576.43	0.00	0.00	0.00
<b>PARKMAN</b>									
4,400.00	15.62	311.65	4,282.57	592.65	-666.29	-594.04	0.00	0.00	0.00
4,500.00	15.62	311.65	4,378.88	610.55	-686.41	-611.98	0.00	0.00	0.00
4,600.00	15.62	311.65	4,475.18	628.44	-706.52	-629.91	0.00	0.00	0.00
4,700.00	15.62	311.65	4,571.49	646.34	-726.64	-647.85	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-9NH	<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)
4,800.00	15.62	311.65	4,667.80	664.23	-746.76	-665.78	0.00	0.00	0.00
4,900.00	15.62	311.65	4,764.10	682.12	-766.88	-683.72	0.00	0.00	0.00
5,000.00	15.62	311.65	4,860.41	700.02	-786.99	-701.66	0.00	0.00	0.00
5,032.80	15.62	311.65	4,892.00	705.89	-793.59	-707.54	0.00	0.00	0.00
<b>SUSSEX</b>									
5,100.00	15.62	311.65	4,956.72	717.91	-807.11	-719.59	0.00	0.00	0.00
5,200.00	15.62	311.65	5,053.03	735.81	-827.23	-737.53	0.00	0.00	0.00
5,300.00	15.62	311.65	5,149.33	753.70	-847.35	-755.47	0.00	0.00	0.00
5,400.00	15.62	311.65	5,245.64	771.60	-867.47	-773.40	0.00	0.00	0.00
5,500.00	15.62	311.65	5,341.95	789.49	-887.58	-791.34	0.00	0.00	0.00
5,598.70	15.62	311.65	5,437.00	807.15	-907.44	-809.04	0.00	0.00	0.00
<b>SHANNON</b>									
5,600.00	15.62	311.65	5,438.25	807.38	-907.70	-809.27	0.00	0.00	0.00
5,700.00	15.62	311.65	5,534.56	825.28	-927.82	-827.21	0.00	0.00	0.00
5,800.00	15.62	311.65	5,630.87	843.17	-947.94	-845.15	0.00	0.00	0.00
5,900.00	15.62	311.65	5,727.18	861.07	-968.05	-863.08	0.00	0.00	0.00
6,000.00	15.62	311.65	5,823.48	878.96	-988.17	-881.02	0.00	0.00	0.00
6,100.00	15.62	311.65	5,919.79	896.86	-1,008.29	-898.96	0.00	0.00	0.00
6,200.00	15.62	311.65	6,016.10	914.75	-1,028.41	-916.89	0.00	0.00	0.00
6,300.00	15.62	311.65	6,112.40	932.64	-1,048.52	-934.83	0.00	0.00	0.00
6,400.00	15.62	311.65	6,208.71	950.54	-1,068.64	-952.76	0.00	0.00	0.00
6,413.98	15.62	311.65	6,222.17	953.04	-1,071.45	-955.27	0.00	0.00	0.00
<b>DROP 2°/100'</b>									
6,500.00	13.90	311.65	6,305.35	967.60	-1,087.83	-969.87	2.00	-2.00	0.00
6,600.00	11.90	311.65	6,402.83	982.44	-1,104.51	-984.74	2.00	-2.00	0.00
6,700.00	9.90	311.65	6,501.02	995.01	-1,118.63	-997.34	2.00	-2.00	0.00
6,800.00	7.90	311.65	6,599.81	1,005.29	-1,130.19	-1,007.64	2.00	-2.00	0.00
6,900.00	5.90	311.65	6,699.08	1,013.27	-1,139.17	-1,015.64	2.00	-2.00	0.00
7,000.00	3.90	311.65	6,798.71	1,018.94	-1,145.55	-1,021.33	2.00	-2.00	0.00
7,100.00	1.90	311.65	6,898.58	1,022.30	-1,149.32	-1,024.70	2.00	-2.00	0.00
7,194.94	0.00	0.00	6,993.50	1,023.35	-1,150.50	-1,025.75	2.00	-2.00	0.00
<b>HOLD VERTICAL</b>									
7,200.00	0.00	0.00	6,998.56	1,023.35	-1,150.50	-1,025.75	0.00	0.00	0.00
7,224.94	0.00	0.00	7,023.50	1,023.35	-1,150.50	-1,025.75	0.00	0.00	0.00
<b>KOP, BUILD 12°/100'</b>									
7,250.00	3.01	89.97	7,048.55	1,023.35	-1,149.84	-1,025.09	12.00	12.00	0.00
7,275.00	6.01	89.97	7,073.47	1,023.35	-1,147.88	-1,023.14	12.00	12.00	0.00
7,300.00	9.01	89.97	7,098.25	1,023.35	-1,144.61	-1,019.90	12.00	12.00	0.00
7,325.00	12.01	89.97	7,122.83	1,023.36	-1,140.05	-1,015.37	12.00	12.00	0.00
7,350.00	15.01	89.97	7,147.13	1,023.36	-1,134.22	-1,009.57	12.00	12.00	0.00
7,375.00	18.01	89.97	7,171.10	1,023.36	-1,127.11	-1,002.51	12.00	12.00	0.00
7,400.00	21.01	89.97	7,194.66	1,023.37	-1,118.77	-994.22	12.00	12.00	0.00
7,425.00	24.01	89.97	7,217.76	1,023.37	-1,109.20	-984.72	12.00	12.00	0.00
7,450.00	27.00	89.97	7,240.32	1,023.38	-1,098.44	-974.02	12.00	12.00	0.00
7,475.00	30.00	89.97	7,262.28	1,023.39	-1,086.51	-962.17	12.00	12.00	0.00
7,500.00	33.00	89.97	7,283.60	1,023.39	-1,073.44	-949.19	12.00	12.00	0.00
7,525.00	36.00	89.97	7,304.20	1,023.40	-1,059.28	-935.13	12.00	12.00	0.00
7,550.00	39.00	89.97	7,324.03	1,023.41	-1,044.07	-920.01	12.00	12.00	0.00
7,573.61	41.84	89.97	7,342.00	1,023.42	-1,028.76	-904.80	12.00	12.00	0.00
<b>NIOBRARA</b>									
7,575.00	42.00	89.97	7,343.03	1,023.42	-1,027.83	-903.88	12.00	12.00	0.00
7,600.00	45.00	89.97	7,361.17	1,023.43	-1,010.62	-886.78	12.00	12.00	0.00
7,625.00	48.00	89.97	7,378.37	1,023.44	-992.49	-868.76	12.00	12.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-9NH	<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)	
7,650.00	51.00	89.97	7,394.60	1,023.45	-973.48	-849.88	12.00	12.00	0.00	
7,675.00	54.00	89.97	7,409.82	1,023.46	-953.65	-830.18	12.00	12.00	0.00	
7,700.00	57.00	89.97	7,423.98	1,023.47	-933.05	-809.71	12.00	12.00	0.00	
7,725.00	60.00	89.97	7,437.04	1,023.49	-911.73	-788.53	12.00	12.00	0.00	
7,750.00	63.00	89.97	7,448.96	1,023.50	-889.76	-766.71	12.00	12.00	0.00	
7,775.00	66.00	89.97	7,459.73	1,023.51	-867.20	-744.29	12.00	12.00	0.00	
7,800.00	69.00	89.97	7,469.29	1,023.52	-844.11	-721.35	12.00	12.00	0.00	
7,825.00	72.00	89.97	7,477.63	1,023.54	-820.54	-697.94	12.00	12.00	0.00	
7,850.00	75.00	89.97	7,484.73	1,023.55	-796.57	-674.13	12.00	12.00	0.00	
7,875.00	78.00	89.97	7,490.57	1,023.56	-772.27	-649.98	12.00	12.00	0.00	
7,877.10	78.25	89.97	7,491.00	1,023.57	-770.21	-647.93	12.00	12.00	0.00	
NIO B TARGET										
7,900.00	81.00	89.97	7,495.12	1,023.58	-747.69	-625.56	12.00	12.00	0.00	
7,925.00	84.00	89.97	7,498.39	1,023.59	-722.91	-600.94	12.00	12.00	0.00	
7,950.00	87.00	89.97	7,500.35	1,023.61	-697.99	-576.18	12.00	12.00	0.00	
7,975.00	90.00	89.97	7,501.00	1,023.62	-673.00	-551.36	12.00	12.00	0.00	
LP @ 90° INC, 89.97° AZM HOLD										
8,000.00	90.00	89.97	7,501.00	1,023.64	-648.00	-526.52	0.00	0.00	0.00	
8,100.00	90.00	89.97	7,501.00	1,023.69	-548.00	-427.17	0.00	0.00	0.00	
8,200.00	90.00	89.97	7,501.00	1,023.75	-448.00	-327.82	0.00	0.00	0.00	
8,300.00	90.00	89.97	7,501.00	1,023.81	-348.00	-228.47	0.00	0.00	0.00	
8,400.00	90.00	89.97	7,501.00	1,023.86	-248.00	-129.12	0.00	0.00	0.00	
8,500.00	90.00	89.97	7,501.00	1,023.92	-148.00	-29.77	0.00	0.00	0.00	
8,600.00	90.00	89.97	7,501.00	1,023.98	-48.00	69.58	0.00	0.00	0.00	
8,700.00	90.00	89.97	7,501.00	1,024.03	52.00	168.92	0.00	0.00	0.00	
8,800.00	90.00	89.97	7,501.00	1,024.09	152.00	268.27	0.00	0.00	0.00	
8,900.00	90.00	89.97	7,501.00	1,024.15	252.00	367.62	0.00	0.00	0.00	
9,000.00	90.00	89.97	7,501.00	1,024.20	352.00	466.97	0.00	0.00	0.00	
9,100.00	90.00	89.97	7,501.00	1,024.26	452.00	566.32	0.00	0.00	0.00	
9,200.00	90.00	89.97	7,501.00	1,024.32	552.00	665.67	0.00	0.00	0.00	
9,300.00	90.00	89.97	7,501.00	1,024.37	652.00	765.02	0.00	0.00	0.00	
9,400.00	90.00	89.97	7,501.00	1,024.43	752.00	864.37	0.00	0.00	0.00	
9,500.00	90.00	89.97	7,501.00	1,024.49	852.00	963.71	0.00	0.00	0.00	
9,600.00	90.00	89.97	7,501.00	1,024.54	952.00	1,063.06	0.00	0.00	0.00	
9,700.00	90.00	89.97	7,501.00	1,024.60	1,052.00	1,162.41	0.00	0.00	0.00	
9,800.00	90.00	89.97	7,500.99	1,024.66	1,152.00	1,261.76	0.00	0.00	0.00	
9,900.00	90.00	89.97	7,500.99	1,024.72	1,252.00	1,361.11	0.00	0.00	0.00	
10,000.00	90.00	89.97	7,500.99	1,024.77	1,352.00	1,460.46	0.00	0.00	0.00	
10,100.00	90.00	89.97	7,500.99	1,024.83	1,452.00	1,559.81	0.00	0.00	0.00	
10,200.00	90.00	89.97	7,500.99	1,024.89	1,552.00	1,659.15	0.00	0.00	0.00	
10,300.00	90.00	89.97	7,500.99	1,024.94	1,652.00	1,758.50	0.00	0.00	0.00	
10,400.00	90.00	89.97	7,500.99	1,025.00	1,752.00	1,857.85	0.00	0.00	0.00	
10,500.00	90.00	89.97	7,500.99	1,025.06	1,852.00	1,957.20	0.00	0.00	0.00	
10,600.00	90.00	89.97	7,500.99	1,025.11	1,952.00	2,056.55	0.00	0.00	0.00	
10,700.00	90.00	89.97	7,500.99	1,025.17	2,052.00	2,155.90	0.00	0.00	0.00	
10,800.00	90.00	89.97	7,500.99	1,025.23	2,152.00	2,255.25	0.00	0.00	0.00	
10,900.00	90.00	89.97	7,500.99	1,025.28	2,252.00	2,354.60	0.00	0.00	0.00	
11,000.00	90.00	89.97	7,500.99	1,025.34	2,352.00	2,453.94	0.00	0.00	0.00	
11,100.00	90.00	89.97	7,500.99	1,025.40	2,452.00	2,553.29	0.00	0.00	0.00	
11,200.00	90.00	89.97	7,500.99	1,025.45	2,552.00	2,652.64	0.00	0.00	0.00	
11,300.00	90.00	89.97	7,500.99	1,025.51	2,652.00	2,751.99	0.00	0.00	0.00	
11,400.00	90.00	89.97	7,500.99	1,025.57	2,752.00	2,851.34	0.00	0.00	0.00	
11,500.00	90.00	89.97	7,500.99	1,025.62	2,852.00	2,950.69	0.00	0.00	0.00	
11,600.00	90.00	89.97	7,500.99	1,025.68	2,952.00	3,050.04	0.00	0.00	0.00	

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-9NH	<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)
11,700.00	90.00	89.97	7,500.99	1,025.74	3,052.00	3,149.38	0.00	0.00	0.00
11,800.00	90.00	89.97	7,500.99	1,025.79	3,152.00	3,248.73	0.00	0.00	0.00
11,900.00	90.00	89.97	7,500.99	1,025.85	3,252.00	3,348.08	0.00	0.00	0.00
12,000.00	90.00	89.97	7,500.99	1,025.91	3,352.00	3,447.43	0.00	0.00	0.00
12,100.00	90.00	89.97	7,500.99	1,025.97	3,452.00	3,546.78	0.00	0.00	0.00
12,200.00	90.00	89.97	7,500.99	1,026.02	3,552.00	3,646.13	0.00	0.00	0.00
12,300.00	90.00	89.97	7,500.99	1,026.08	3,652.00	3,745.48	0.00	0.00	0.00
12,400.00	90.00	89.97	7,500.99	1,026.14	3,752.00	3,844.83	0.00	0.00	0.00
12,500.00	90.00	89.97	7,500.99	1,026.19	3,852.00	3,944.17	0.00	0.00	0.00
12,600.00	90.00	89.97	7,500.99	1,026.25	3,952.00	4,043.52	0.00	0.00	0.00
12,700.00	90.00	89.97	7,500.99	1,026.31	4,052.00	4,142.87	0.00	0.00	0.00
12,800.00	90.00	89.97	7,500.99	1,026.36	4,152.00	4,242.22	0.00	0.00	0.00
12,900.00	90.00	89.97	7,500.99	1,026.42	4,252.00	4,341.57	0.00	0.00	0.00
13,000.00	90.00	89.97	7,500.99	1,026.48	4,352.00	4,440.92	0.00	0.00	0.00
13,100.00	90.00	89.97	7,500.99	1,026.53	4,452.00	4,540.27	0.00	0.00	0.00
13,200.00	90.00	89.97	7,500.99	1,026.59	4,552.00	4,639.62	0.00	0.00	0.00
13,300.00	90.00	89.97	7,500.98	1,026.65	4,652.00	4,738.96	0.00	0.00	0.00
13,400.00	90.00	89.97	7,500.98	1,026.70	4,752.00	4,838.31	0.00	0.00	0.00
13,500.00	90.00	89.97	7,500.98	1,026.76	4,852.00	4,937.66	0.00	0.00	0.00
13,600.00	90.00	89.97	7,500.98	1,026.82	4,952.00	5,037.01	0.00	0.00	0.00
13,700.00	90.00	89.97	7,500.98	1,026.87	5,052.00	5,136.36	0.00	0.00	0.00
13,800.00	90.00	89.97	7,500.98	1,026.93	5,152.00	5,235.71	0.00	0.00	0.00
13,900.00	90.00	89.97	7,500.98	1,026.99	5,252.00	5,335.06	0.00	0.00	0.00
14,000.00	90.00	89.97	7,500.98	1,027.05	5,352.00	5,434.40	0.00	0.00	0.00
14,100.00	90.00	89.97	7,500.98	1,027.10	5,452.00	5,533.75	0.00	0.00	0.00
14,200.00	90.00	89.97	7,500.98	1,027.16	5,552.00	5,633.10	0.00	0.00	0.00
14,300.00	90.00	89.97	7,500.98	1,027.22	5,652.00	5,732.45	0.00	0.00	0.00
14,400.00	90.00	89.97	7,500.98	1,027.27	5,752.00	5,831.80	0.00	0.00	0.00
14,500.00	90.00	89.97	7,500.98	1,027.33	5,852.00	5,931.15	0.00	0.00	0.00
14,600.00	90.00	89.97	7,500.98	1,027.39	5,952.00	6,030.50	0.00	0.00	0.00
14,700.00	90.00	89.97	7,500.98	1,027.44	6,052.00	6,129.85	0.00	0.00	0.00
14,800.00	90.00	89.97	7,500.98	1,027.50	6,152.00	6,229.19	0.00	0.00	0.00
14,900.00	90.00	89.97	7,500.98	1,027.56	6,252.00	6,328.54	0.00	0.00	0.00
15,000.00	90.00	89.97	7,500.98	1,027.61	6,352.00	6,427.89	0.00	0.00	0.00
15,100.00	90.00	89.97	7,500.98	1,027.67	6,452.00	6,527.24	0.00	0.00	0.00
15,200.00	90.00	89.97	7,500.98	1,027.73	6,552.00	6,626.59	0.00	0.00	0.00
15,300.00	90.00	89.97	7,500.98	1,027.78	6,652.00	6,725.94	0.00	0.00	0.00
15,400.00	90.00	89.97	7,500.98	1,027.84	6,752.00	6,825.29	0.00	0.00	0.00
15,500.00	90.00	89.97	7,500.98	1,027.90	6,852.00	6,924.63	0.00	0.00	0.00
15,600.00	90.00	89.97	7,500.98	1,027.95	6,952.00	7,023.98	0.00	0.00	0.00
15,700.00	90.00	89.97	7,500.98	1,028.01	7,052.00	7,123.33	0.00	0.00	0.00
15,800.00	90.00	89.97	7,500.98	1,028.07	7,152.00	7,222.68	0.00	0.00	0.00
15,900.00	90.00	89.97	7,500.98	1,028.12	7,252.00	7,322.03	0.00	0.00	0.00
16,000.00	90.00	89.97	7,500.98	1,028.18	7,352.00	7,421.38	0.00	0.00	0.00
16,100.00	90.00	89.97	7,500.98	1,028.24	7,452.00	7,520.73	0.00	0.00	0.00
16,200.00	90.00	89.97	7,500.98	1,028.30	7,552.00	7,620.08	0.00	0.00	0.00
16,300.00	90.00	89.97	7,500.98	1,028.35	7,652.00	7,719.42	0.00	0.00	0.00
16,400.00	90.00	89.97	7,500.98	1,028.41	7,752.00	7,818.77	0.00	0.00	0.00
16,500.00	90.00	89.97	7,500.98	1,028.47	7,852.00	7,918.12	0.00	0.00	0.00
16,600.00	90.00	89.97	7,500.98	1,028.52	7,952.00	8,017.47	0.00	0.00	0.00
16,700.00	90.00	89.97	7,500.98	1,028.58	8,052.00	8,116.82	0.00	0.00	0.00
16,800.00	90.00	89.97	7,500.97	1,028.64	8,152.00	8,216.17	0.00	0.00	0.00
16,900.00	90.00	89.97	7,500.97	1,028.69	8,252.00	8,315.52	0.00	0.00	0.00
17,000.00	90.00	89.97	7,500.97	1,028.75	8,352.00	8,414.87	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-9NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5089.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5089.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-9NH	<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)	
17,100.00	90.00	89.97	7,500.97	1,028.81	8,452.00	8,514.21	0.00	0.00	0.00	
17,200.00	90.00	89.97	7,500.97	1,028.86	8,552.00	8,613.56	0.00	0.00	0.00	
17,300.00	90.00	89.97	7,500.97	1,028.92	8,652.00	8,712.91	0.00	0.00	0.00	
17,400.00	90.00	89.97	7,500.97	1,028.98	8,752.00	8,812.26	0.00	0.00	0.00	
17,500.00	90.00	89.97	7,500.97	1,029.03	8,852.00	8,911.61	0.00	0.00	0.00	
17,573.64	90.00	89.97	7,501.00	1,028.86	8,925.64	8,984.75	0.00	0.00	0.00	
TD at 17573.64' MD										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PC 9NH PBHL - plan hits target center - Point	0.00	0.00	7,501.00	1,028.86	8,925.64	1,220,405.70	3,203,888.26	39° 56' 9.960 N	104° 46' 22.440 W	
PC 9NH LP - plan hits target center - Point	0.00	0.00	7,501.00	1,023.62	-673.00	1,220,325.21	3,194,289.95	39° 56' 9.924 N	104° 48' 25.668 W	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,301.81	4,188.00	PARKMAN				
5,032.80	4,892.00	SUSSEX				
5,598.70	5,437.00	SHANNON				
7,573.61	7,342.00	NIOBRARA				
7,877.10	7,491.00	NIO B TARGET				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
700.00	700.00	0.00	0.00	BUILD 2°/100'	
1,480.97	1,471.33	70.31	-79.05	HOLD 15.62° INC	
6,413.98	6,222.17	953.04	-1,071.45	DROP 2°/100'	
7,194.94	6,993.50	1,023.35	-1,150.50	HOLD VERTICAL	
7,224.94	7,023.50	1,023.35	-1,150.50	KOP, BUILD 12°/100'	
7,975.00	7,501.00	1,023.62	-673.00	LP @ 90° INC, 89.97° AZM HOLD	
17,573.64	7,501.00	1,028.86	8,925.64	TD at 17573.64' MD	