

# **EXTRACTION OIL & GAS**

**Adams County**

**Sec 29-T1-R66W**

**PC 1S-66-2928-8NH**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**12 September, 2017**



Project: Adams County  
Site: Sec 29-T1-R66W  
Well: PC 1S-66-2928-8NH  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1



Azimuths to True North  
Magnetic North: 8.17°

Magnetic Field  
Strength: 52115.7nT  
Dip Angle: 66.47°  
Date: 9/11/2017  
Model: IGRF2015

#### WELL DETAILS: PC 1S-66-2928-8NH

+N/-S	+E/-W	Northing	Easting	5064.00	Latitude	Longitude	Slot
0.00	0.00	1219336.04	3194970.72	39° 56' 0.096 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	600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	
3	1590.72	19.81	323.90	1571.09	137.04	-99.93	2.00	323.90	-74.66	
4	6322.16	19.81	323.90	6022.41	1432.91	-1044.94	0.00	0.00	-780.70	
5	7312.88	0.00	0.00	6993.50	1569.95	-1144.87	2.00	180.00	-855.36	
6	7342.88	0.00	0.00	7023.50	1569.95	-1144.87	0.00	0.00	-855.36	
7	8092.93	90.00	89.99	7501.00	1570.02	-667.37	12.00	89.99	-385.09	PC 8NH LP
8	17688.55	90.00	89.99	7501.00	1571.62	8928.24	0.00	0.00	9065.51	PC 8NH PBHL

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	BUILD 2°/100'
1590.72	19.81	323.90	1571.09	137.04	-99.93	-74.66	169.61	HOLD 19.81° INC
6322.16	19.81	323.90	6022.41	1432.91	-1044.94	-780.70	1773.45	DROP 2°/100'
7312.88	0.00	0.00	6993.50	1569.95	-1144.87	-855.36	1943.06	HOLD VERTICAL
7342.88	0.00	0.00	7023.50	1569.95	-1144.87	-855.36	1943.06	KOP, BUILD 12°/100'
8092.93	90.00	89.99	7501.00	1570.02	-667.37	-385.09	2420.55	LP @ 90° INC, 89.99° AZM HOLD
17688.55	90.00	89.99	7501.00	1571.62	8928.24	9065.51	12016.17	TD at 17688.55' MD

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	39° 56'	Latitude	Longitude	Shape
PC 8NH LP	7501.00	1570.02	-667.37	1220900.79	3194291.06	39° 56'	15.612 N	104° 48' 25.596 W	Point
- plan hits target center									
PC 8NH PBHL	7501.00	1571.62	8928.24	1220977.62	3203886.37	39° 56'	15.612 N	104° 46' 22.404 W	Point
- plan hits target center									

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4188.00	4372.31	PARKMAN
4892.00	5120.62	SUSSEX
5437.00	5699.91	SHANNON
7342.00	7691.55	NIOBRARA
7491.00	7995.04	NIO B TARGET

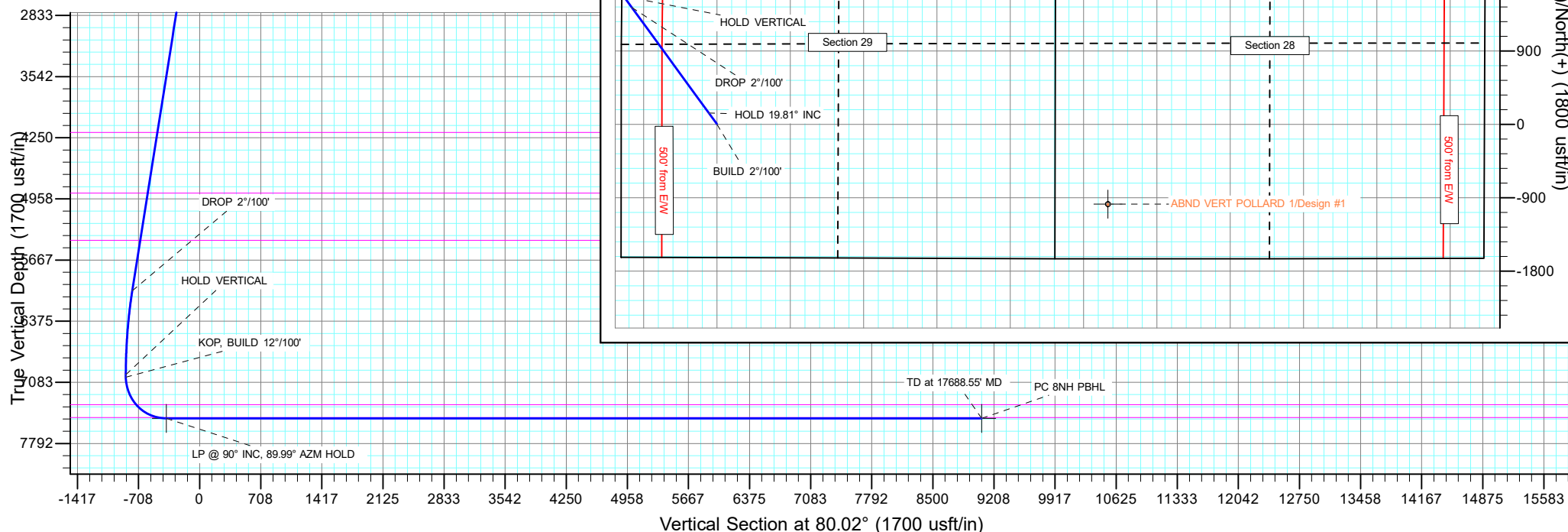
#### PROJECT DETAILS: Adams County

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

SHL:  
1635' FSL, 1175' FWL  
Sec 29-T1S-R66W

LP:  
2066' FNL, 500' FWL  
Sec 29-T1S-R66W

BHL:  
2066' FNL, 500' FEL  
Sec 28-T1S-R66W



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-8NH
<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-66-2928-8NH	<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-66-2928-8NH					
Well Position	+N/-S	1,631.96 usft	Northing:	1,219,336.04 usft	Latitude:	39° 56' 0.096 N
	+E/-W	1,177.79 usft	Easting:	3,194,970.72 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	52,115.66636538

<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	80.02

<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	17,688.55	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	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,590.72	19.81	323.90	1,571.09	137.04	-99.93	2.00	2.00	0.00	323.90	
6,322.16	19.81	323.90	6,022.41	1,432.91	-1,044.94	0.00	0.00	0.00	0.00	
7,312.88	0.00	0.00	6,993.50	1,569.95	-1,144.87	2.00	-2.00	0.00	180.00	
7,342.88	0.00	0.00	7,023.50	1,569.95	-1,144.87	0.00	0.00	0.00	0.00	
8,092.93	90.00	89.99	7,501.00	1,570.02	-667.37	12.00	12.00	12.00	89.99	PC 8NH LP
17,688.55	90.00	89.99	7,501.00	1,571.62	8,928.24	0.00	0.00	0.00	0.00	PC 8NH PBHL

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-8NH
<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-66-2928-8NH	<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
<b>BUILD 2°/100'</b>									
700.00	2.00	323.90	699.98	1.41	-1.03	-0.77	2.00	2.00	0.00
800.00	4.00	323.90	799.84	5.64	-4.11	-3.07	2.00	2.00	0.00
900.00	6.00	323.90	899.45	12.68	-9.25	-6.91	2.00	2.00	0.00
1,000.00	8.00	323.90	998.70	22.53	-16.43	-12.27	2.00	2.00	0.00
1,100.00	10.00	323.90	1,097.47	35.17	-25.64	-19.16	2.00	2.00	0.00
1,200.00	12.00	323.90	1,195.62	50.58	-36.89	-27.56	2.00	2.00	0.00
1,300.00	14.00	323.90	1,293.06	68.76	-50.14	-37.46	2.00	2.00	0.00
1,400.00	16.00	323.90	1,389.64	89.67	-65.39	-48.85	2.00	2.00	0.00
1,500.00	18.00	323.90	1,485.27	113.29	-82.62	-61.72	2.00	2.00	0.00
1,590.72	19.81	323.90	1,571.09	137.04	-99.93	-74.66	2.00	2.00	0.00
<b>HOLD 19.81° INC</b>									
1,600.00	19.81	323.90	1,579.82	139.58	-101.79	-76.05	0.00	0.00	0.00
1,700.00	19.81	323.90	1,673.90	166.97	-121.76	-90.97	0.00	0.00	0.00
1,800.00	19.81	323.90	1,767.98	194.36	-141.73	-105.89	0.00	0.00	0.00
1,900.00	19.81	323.90	1,862.06	221.75	-161.71	-120.82	0.00	0.00	0.00
2,000.00	19.81	323.90	1,956.14	249.14	-181.68	-135.74	0.00	0.00	0.00
2,100.00	19.81	323.90	2,050.22	276.52	-201.65	-150.66	0.00	0.00	0.00
2,200.00	19.81	323.90	2,144.30	303.91	-221.63	-165.58	0.00	0.00	0.00
2,300.00	19.81	323.90	2,238.38	331.30	-241.60	-180.50	0.00	0.00	0.00
2,400.00	19.81	323.90	2,332.46	358.69	-261.57	-195.43	0.00	0.00	0.00
2,500.00	19.81	323.90	2,426.54	386.08	-281.54	-210.35	0.00	0.00	0.00
2,600.00	19.81	323.90	2,520.62	413.47	-301.52	-225.27	0.00	0.00	0.00
2,700.00	19.81	323.90	2,614.70	440.85	-321.49	-240.19	0.00	0.00	0.00
2,800.00	19.81	323.90	2,708.78	468.24	-341.46	-255.12	0.00	0.00	0.00
2,900.00	19.81	323.90	2,802.85	495.63	-361.43	-270.04	0.00	0.00	0.00
3,000.00	19.81	323.90	2,896.93	523.02	-381.41	-284.96	0.00	0.00	0.00
3,100.00	19.81	323.90	2,991.01	550.41	-401.38	-299.88	0.00	0.00	0.00
3,200.00	19.81	323.90	3,085.09	577.80	-421.35	-314.80	0.00	0.00	0.00
3,300.00	19.81	323.90	3,179.17	605.19	-441.33	-329.73	0.00	0.00	0.00
3,400.00	19.81	323.90	3,273.25	632.57	-461.30	-344.65	0.00	0.00	0.00
3,500.00	19.81	323.90	3,367.33	659.96	-481.27	-359.57	0.00	0.00	0.00
3,600.00	19.81	323.90	3,461.41	687.35	-501.24	-374.49	0.00	0.00	0.00
3,700.00	19.81	323.90	3,555.49	714.74	-521.22	-389.42	0.00	0.00	0.00
3,800.00	19.81	323.90	3,649.57	742.13	-541.19	-404.34	0.00	0.00	0.00
3,900.00	19.81	323.90	3,743.65	769.52	-561.16	-419.26	0.00	0.00	0.00
4,000.00	19.81	323.90	3,837.73	796.91	-581.13	-434.18	0.00	0.00	0.00
4,100.00	19.81	323.90	3,931.81	824.29	-601.11	-449.10	0.00	0.00	0.00
4,200.00	19.81	323.90	4,025.89	851.68	-621.08	-464.03	0.00	0.00	0.00
4,300.00	19.81	323.90	4,119.97	879.07	-641.05	-478.95	0.00	0.00	0.00
4,372.31	19.81	323.90	4,188.00	898.88	-655.50	-489.74	0.00	0.00	0.00
<b>PARKMAN</b>									
4,400.00	19.81	323.90	4,214.05	906.46	-661.03	-493.87	0.00	0.00	0.00
4,500.00	19.81	323.90	4,308.13	933.85	-681.00	-508.79	0.00	0.00	0.00
4,600.00	19.81	323.90	4,402.21	961.24	-700.97	-523.72	0.00	0.00	0.00
4,700.00	19.81	323.90	4,496.29	988.62	-720.94	-538.64	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-8NH
<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-66-2928-8NH	<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	19.81	323.90	4,590.37	1,016.01	-740.92	-553.56	0.00	0.00	0.00
4,900.00	19.81	323.90	4,684.45	1,043.40	-760.89	-568.48	0.00	0.00	0.00
5,000.00	19.81	323.90	4,778.53	1,070.79	-780.86	-583.40	0.00	0.00	0.00
5,100.00	19.81	323.90	4,872.60	1,098.18	-800.84	-598.33	0.00	0.00	0.00
5,120.62	19.81	323.90	4,892.00	1,103.82	-804.95	-601.40	0.00	0.00	0.00
SUSSEX									
5,200.00	19.81	323.90	4,966.68	1,125.57	-820.81	-613.25	0.00	0.00	0.00
5,300.00	19.81	323.90	5,060.76	1,152.96	-840.78	-628.17	0.00	0.00	0.00
5,400.00	19.81	323.90	5,154.84	1,180.34	-860.75	-643.09	0.00	0.00	0.00
5,500.00	19.81	323.90	5,248.92	1,207.73	-880.73	-658.02	0.00	0.00	0.00
5,600.00	19.81	323.90	5,343.00	1,235.12	-900.70	-672.94	0.00	0.00	0.00
5,699.91	19.81	323.90	5,437.00	1,262.49	-920.65	-687.85	0.00	0.00	0.00
SHANNON									
5,700.00	19.81	323.90	5,437.08	1,262.51	-920.67	-687.86	0.00	0.00	0.00
5,800.00	19.81	323.90	5,531.16	1,289.90	-940.64	-702.78	0.00	0.00	0.00
5,900.00	19.81	323.90	5,625.24	1,317.29	-960.62	-717.70	0.00	0.00	0.00
6,000.00	19.81	323.90	5,719.32	1,344.67	-980.59	-732.63	0.00	0.00	0.00
6,100.00	19.81	323.90	5,813.40	1,372.06	-1,000.56	-747.55	0.00	0.00	0.00
6,200.00	19.81	323.90	5,907.48	1,399.45	-1,020.54	-762.47	0.00	0.00	0.00
6,300.00	19.81	323.90	6,001.56	1,426.84	-1,040.51	-777.39	0.00	0.00	0.00
6,322.16	19.81	323.90	6,022.41	1,432.91	-1,044.94	-780.70	0.00	0.00	0.00
DROP 2°/100'									
6,400.00	18.26	323.90	6,095.99	1,453.42	-1,059.89	-791.88	2.00	-2.00	0.00
6,500.00	16.26	323.90	6,191.48	1,477.39	-1,077.37	-804.93	2.00	-2.00	0.00
6,600.00	14.26	323.90	6,287.95	1,498.65	-1,092.88	-816.52	2.00	-2.00	0.00
6,700.00	12.26	323.90	6,385.28	1,517.18	-1,106.39	-826.61	2.00	-2.00	0.00
6,800.00	10.26	323.90	6,483.35	1,532.95	-1,117.89	-835.21	2.00	-2.00	0.00
6,900.00	8.26	323.90	6,582.05	1,545.95	-1,127.37	-842.29	2.00	-2.00	0.00
7,000.00	6.26	323.90	6,681.24	1,556.16	-1,134.81	-847.85	2.00	-2.00	0.00
7,100.00	4.26	323.90	6,780.81	1,563.56	-1,140.21	-851.88	2.00	-2.00	0.00
7,200.00	2.26	323.90	6,880.65	1,568.15	-1,143.56	-854.39	2.00	-2.00	0.00
7,300.00	0.26	323.90	6,980.62	1,569.93	-1,144.85	-855.35	2.00	-2.00	0.00
7,312.88	0.00	0.00	6,993.50	1,569.95	-1,144.87	-855.36	2.00	-2.00	0.00
HOLD VERTICAL									
7,342.88	0.00	0.00	7,023.50	1,569.95	-1,144.87	-855.36	0.00	0.00	0.00
KOP, BUILD 12°/100'									
7,350.00	0.85	89.99	7,030.62	1,569.95	-1,144.82	-855.31	12.00	12.00	0.00
7,375.00	3.85	89.99	7,055.59	1,569.95	-1,143.79	-854.30	12.00	12.00	0.00
7,400.00	6.85	89.99	7,080.48	1,569.95	-1,141.46	-852.00	12.00	12.00	0.00
7,425.00	9.85	89.99	7,105.21	1,569.95	-1,137.83	-848.43	12.00	12.00	0.00
7,450.00	12.85	89.99	7,129.72	1,569.95	-1,132.91	-843.58	12.00	12.00	0.00
7,475.00	15.85	89.99	7,153.94	1,569.95	-1,126.71	-837.48	12.00	12.00	0.00
7,500.00	18.85	89.99	7,177.80	1,569.95	-1,119.25	-830.13	12.00	12.00	0.00
7,525.00	21.85	89.99	7,201.23	1,569.96	-1,110.56	-821.57	12.00	12.00	0.00
7,550.00	24.85	89.99	7,224.18	1,569.96	-1,100.65	-811.81	12.00	12.00	0.00
7,575.00	27.85	89.99	7,246.58	1,569.96	-1,089.56	-800.89	12.00	12.00	0.00
7,600.00	30.85	89.99	7,268.37	1,569.96	-1,077.30	-788.82	12.00	12.00	0.00
7,625.00	33.85	89.99	7,289.49	1,569.96	-1,063.93	-775.64	12.00	12.00	0.00
7,650.00	36.85	89.99	7,309.88	1,569.96	-1,049.46	-761.40	12.00	12.00	0.00
7,675.00	39.85	89.99	7,329.48	1,569.97	-1,033.95	-746.12	12.00	12.00	0.00
7,691.55	41.84	89.99	7,342.00	1,569.97	-1,023.13	-735.46	12.00	12.00	0.00
NIOBRARA									
7,700.00	42.85	89.99	7,348.24	1,569.97	-1,017.44	-729.86	12.00	12.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-8NH
<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-66-2928-8NH	<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)	
7,725.00	45.85	89.99	7,366.12	1,569.97	-999.96	-712.65	12.00	12.00	0.00	
7,750.00	48.85	89.99	7,383.06	1,569.98	-981.58	-694.54	12.00	12.00	0.00	
7,775.00	51.85	89.99	7,399.01	1,569.98	-962.33	-675.58	12.00	12.00	0.00	
7,800.00	54.85	89.99	7,413.93	1,569.98	-942.28	-655.83	12.00	12.00	0.00	
7,825.00	57.85	89.99	7,427.78	1,569.99	-921.47	-635.34	12.00	12.00	0.00	
7,850.00	60.85	89.99	7,440.52	1,569.99	-899.96	-614.16	12.00	12.00	0.00	
7,875.00	63.85	89.99	7,452.12	1,569.99	-877.82	-592.35	12.00	12.00	0.00	
7,900.00	66.85	89.99	7,462.55	1,570.00	-855.10	-569.98	12.00	12.00	0.00	
7,925.00	69.85	89.99	7,471.77	1,570.00	-831.87	-547.09	12.00	12.00	0.00	
7,950.00	72.85	89.99	7,479.77	1,570.00	-808.18	-523.77	12.00	12.00	0.00	
7,975.00	75.85	89.99	7,486.51	1,570.01	-784.11	-500.06	12.00	12.00	0.00	
7,995.04	78.25	89.99	7,491.00	1,570.01	-764.58	-480.82	12.00	12.00	0.00	
NIO B TARGET										
8,000.00	78.85	89.99	7,491.98	1,570.01	-759.72	-476.04	12.00	12.00	0.00	
8,025.00	81.85	89.99	7,496.18	1,570.01	-735.08	-451.77	12.00	12.00	0.00	
8,050.00	84.85	89.99	7,499.07	1,570.02	-710.25	-427.31	12.00	12.00	0.00	
8,075.00	87.85	89.99	7,500.66	1,570.02	-685.30	-402.74	12.00	12.00	0.00	
8,092.93	90.00	89.99	7,501.00	1,570.02	-667.37	-385.09	12.00	12.00	0.00	
LP @ 90° INC, 89.99° AZM HOLD										
8,100.00	90.00	89.99	7,501.00	1,570.03	-660.31	-378.13	0.00	0.00	0.00	
8,200.00	90.00	89.99	7,501.00	1,570.04	-560.31	-279.64	0.00	0.00	0.00	
8,300.00	90.00	89.99	7,501.00	1,570.06	-460.31	-181.15	0.00	0.00	0.00	
8,400.00	90.00	89.99	7,501.00	1,570.07	-360.31	-82.66	0.00	0.00	0.00	
8,500.00	90.00	89.99	7,501.00	1,570.09	-260.31	15.83	0.00	0.00	0.00	
8,600.00	90.00	89.99	7,501.01	1,570.10	-160.31	114.32	0.00	0.00	0.00	
8,700.00	90.00	89.99	7,501.01	1,570.12	-60.31	212.80	0.00	0.00	0.00	
8,800.00	90.00	89.99	7,501.01	1,570.14	39.69	311.29	0.00	0.00	0.00	
8,900.00	90.00	89.99	7,501.01	1,570.15	139.69	409.78	0.00	0.00	0.00	
9,000.00	90.00	89.99	7,501.01	1,570.17	239.69	508.27	0.00	0.00	0.00	
9,100.00	90.00	89.99	7,501.01	1,570.18	339.69	606.76	0.00	0.00	0.00	
9,200.00	90.00	89.99	7,501.01	1,570.20	439.69	705.25	0.00	0.00	0.00	
9,300.00	90.00	89.99	7,501.01	1,570.21	539.69	803.74	0.00	0.00	0.00	
9,400.00	90.00	89.99	7,501.01	1,570.23	639.69	902.22	0.00	0.00	0.00	
9,500.00	90.00	89.99	7,501.01	1,570.25	739.69	1,000.71	0.00	0.00	0.00	
9,600.00	90.00	89.99	7,501.02	1,570.26	839.69	1,099.20	0.00	0.00	0.00	
9,700.00	90.00	89.99	7,501.02	1,570.28	939.69	1,197.69	0.00	0.00	0.00	
9,800.00	90.00	89.99	7,501.02	1,570.29	1,039.69	1,296.18	0.00	0.00	0.00	
9,900.00	90.00	89.99	7,501.02	1,570.31	1,139.69	1,394.67	0.00	0.00	0.00	
10,000.00	90.00	89.99	7,501.02	1,570.32	1,239.69	1,493.16	0.00	0.00	0.00	
10,100.00	90.00	89.99	7,501.02	1,570.34	1,339.69	1,591.64	0.00	0.00	0.00	
10,200.00	90.00	89.99	7,501.02	1,570.35	1,439.69	1,690.13	0.00	0.00	0.00	
10,300.00	90.00	89.99	7,501.02	1,570.37	1,539.69	1,788.62	0.00	0.00	0.00	
10,400.00	90.00	89.99	7,501.02	1,570.39	1,639.69	1,887.11	0.00	0.00	0.00	
10,500.00	90.00	89.99	7,501.03	1,570.40	1,739.69	1,985.60	0.00	0.00	0.00	
10,600.00	90.00	89.99	7,501.03	1,570.42	1,839.69	2,084.09	0.00	0.00	0.00	
10,700.00	90.00	89.99	7,501.03	1,570.43	1,939.69	2,182.58	0.00	0.00	0.00	
10,800.00	90.00	89.99	7,501.03	1,570.45	2,039.69	2,281.06	0.00	0.00	0.00	
10,900.00	90.00	89.99	7,501.03	1,570.46	2,139.69	2,379.55	0.00	0.00	0.00	
11,000.00	90.00	89.99	7,501.03	1,570.48	2,239.69	2,478.04	0.00	0.00	0.00	
11,100.00	90.00	89.99	7,501.03	1,570.50	2,339.69	2,576.53	0.00	0.00	0.00	
11,200.00	90.00	89.99	7,501.03	1,570.51	2,439.69	2,675.02	0.00	0.00	0.00	
11,300.00	90.00	89.99	7,501.03	1,570.53	2,539.69	2,773.51	0.00	0.00	0.00	
11,400.00	90.00	89.99	7,501.03	1,570.54	2,639.69	2,871.99	0.00	0.00	0.00	
11,500.00	90.00	89.99	7,501.04	1,570.56	2,739.69	2,970.48	0.00	0.00	0.00	

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-8NH
<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-66-2928-8NH	<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)
11,600.00	90.00	89.99	7,501.04	1,570.57	2,839.69	3,068.97	0.00	0.00	0.00
11,700.00	90.00	89.99	7,501.04	1,570.59	2,939.69	3,167.46	0.00	0.00	0.00
11,800.00	90.00	89.99	7,501.04	1,570.61	3,039.69	3,265.95	0.00	0.00	0.00
11,900.00	90.00	89.99	7,501.04	1,570.62	3,139.69	3,364.44	0.00	0.00	0.00
12,000.00	90.00	89.99	7,501.04	1,570.64	3,239.69	3,462.93	0.00	0.00	0.00
12,100.00	90.00	89.99	7,501.04	1,570.65	3,339.69	3,561.41	0.00	0.00	0.00
12,200.00	90.00	89.99	7,501.04	1,570.67	3,439.69	3,659.90	0.00	0.00	0.00
12,300.00	90.00	89.99	7,501.04	1,570.68	3,539.69	3,758.39	0.00	0.00	0.00
12,400.00	90.00	89.99	7,501.04	1,570.70	3,639.69	3,856.88	0.00	0.00	0.00
12,500.00	90.00	89.99	7,501.05	1,570.71	3,739.69	3,955.37	0.00	0.00	0.00
12,600.00	90.00	89.99	7,501.05	1,570.73	3,839.69	4,053.86	0.00	0.00	0.00
12,700.00	90.00	89.99	7,501.05	1,570.75	3,939.69	4,152.35	0.00	0.00	0.00
12,800.00	90.00	89.99	7,501.05	1,570.76	4,039.69	4,250.83	0.00	0.00	0.00
12,900.00	90.00	89.99	7,501.05	1,570.78	4,139.69	4,349.32	0.00	0.00	0.00
13,000.00	90.00	89.99	7,501.05	1,570.79	4,239.69	4,447.81	0.00	0.00	0.00
13,100.00	90.00	89.99	7,501.05	1,570.81	4,339.69	4,546.30	0.00	0.00	0.00
13,200.00	90.00	89.99	7,501.05	1,570.82	4,439.69	4,644.79	0.00	0.00	0.00
13,300.00	90.00	89.99	7,501.05	1,570.84	4,539.69	4,743.28	0.00	0.00	0.00
13,400.00	90.00	89.99	7,501.06	1,570.86	4,639.69	4,841.77	0.00	0.00	0.00
13,500.00	90.00	89.99	7,501.06	1,570.87	4,739.69	4,940.25	0.00	0.00	0.00
13,600.00	90.00	89.99	7,501.06	1,570.89	4,839.69	5,038.74	0.00	0.00	0.00
13,700.00	90.00	89.99	7,501.06	1,570.90	4,939.69	5,137.23	0.00	0.00	0.00
13,800.00	90.00	89.99	7,501.06	1,570.92	5,039.69	5,235.72	0.00	0.00	0.00
13,900.00	90.00	89.99	7,501.06	1,570.93	5,139.69	5,334.21	0.00	0.00	0.00
14,000.00	90.00	89.99	7,501.06	1,570.95	5,239.69	5,432.70	0.00	0.00	0.00
14,100.00	90.00	89.99	7,501.06	1,570.97	5,339.69	5,531.18	0.00	0.00	0.00
14,200.00	90.00	89.99	7,501.06	1,570.98	5,439.69	5,629.67	0.00	0.00	0.00
14,300.00	90.00	89.99	7,501.06	1,571.00	5,539.69	5,728.16	0.00	0.00	0.00
14,400.00	90.00	89.99	7,501.07	1,571.01	5,639.69	5,826.65	0.00	0.00	0.00
14,500.00	90.00	89.99	7,501.07	1,571.03	5,739.69	5,925.14	0.00	0.00	0.00
14,600.00	90.00	89.99	7,501.07	1,571.04	5,839.69	6,023.63	0.00	0.00	0.00
14,700.00	90.00	89.99	7,501.07	1,571.06	5,939.69	6,122.12	0.00	0.00	0.00
14,800.00	90.00	89.99	7,501.07	1,571.07	6,039.69	6,220.60	0.00	0.00	0.00
14,900.00	90.00	89.99	7,501.07	1,571.09	6,139.69	6,319.09	0.00	0.00	0.00
15,000.00	90.00	89.99	7,501.07	1,571.11	6,239.69	6,417.58	0.00	0.00	0.00
15,100.00	90.00	89.99	7,501.07	1,571.12	6,339.69	6,516.07	0.00	0.00	0.00
15,200.00	90.00	89.99	7,501.07	1,571.14	6,439.69	6,614.56	0.00	0.00	0.00
15,300.00	90.00	89.99	7,501.07	1,571.15	6,539.69	6,713.05	0.00	0.00	0.00
15,400.00	90.00	89.99	7,501.08	1,571.17	6,639.69	6,811.54	0.00	0.00	0.00
15,500.00	90.00	89.99	7,501.08	1,571.18	6,739.69	6,910.02	0.00	0.00	0.00
15,600.00	90.00	89.99	7,501.08	1,571.20	6,839.69	7,008.51	0.00	0.00	0.00
15,700.00	90.00	89.99	7,501.08	1,571.22	6,939.69	7,107.00	0.00	0.00	0.00
15,800.00	90.00	89.99	7,501.08	1,571.23	7,039.69	7,205.49	0.00	0.00	0.00
15,900.00	90.00	89.99	7,501.08	1,571.25	7,139.69	7,303.98	0.00	0.00	0.00
16,000.00	90.00	89.99	7,501.08	1,571.26	7,239.69	7,402.47	0.00	0.00	0.00
16,100.00	90.00	89.99	7,501.08	1,571.28	7,339.69	7,500.96	0.00	0.00	0.00
16,200.00	90.00	89.99	7,501.08	1,571.29	7,439.69	7,599.44	0.00	0.00	0.00
16,300.00	90.00	89.99	7,501.09	1,571.31	7,539.69	7,697.93	0.00	0.00	0.00
16,400.00	90.00	89.99	7,501.09	1,571.33	7,639.69	7,796.42	0.00	0.00	0.00
16,500.00	90.00	89.99	7,501.09	1,571.34	7,739.69	7,894.91	0.00	0.00	0.00
16,600.00	90.00	89.99	7,501.09	1,571.36	7,839.69	7,993.40	0.00	0.00	0.00
16,700.00	90.00	89.99	7,501.09	1,571.37	7,939.69	8,091.89	0.00	0.00	0.00
16,800.00	90.00	89.99	7,501.09	1,571.39	8,039.69	8,190.38	0.00	0.00	0.00
16,900.00	90.00	89.99	7,501.09	1,571.40	8,139.69	8,288.86	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-8NH
<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-66-2928-8NH	<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)	
17,000.00	90.00	89.99	7,501.09	1,571.42	8,239.69	8,387.35	0.00	0.00	0.00	
17,100.00	90.00	89.99	7,501.09	1,571.43	8,339.69	8,485.84	0.00	0.00	0.00	
17,200.00	90.00	89.99	7,501.09	1,571.45	8,439.69	8,584.33	0.00	0.00	0.00	
17,300.00	90.00	89.99	7,501.10	1,571.47	8,539.69	8,682.82	0.00	0.00	0.00	
17,400.00	90.00	89.99	7,501.10	1,571.48	8,639.69	8,781.31	0.00	0.00	0.00	
17,500.00	90.00	89.99	7,501.10	1,571.50	8,739.69	8,879.79	0.00	0.00	0.00	
17,600.00	90.00	89.99	7,501.10	1,571.51	8,839.69	8,978.28	0.00	0.00	0.00	
17,688.55	90.00	89.99	7,501.00	1,571.62	8,928.24	9,065.51	0.00	0.00	0.00	
TD at 17688.55' MD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
PC 8NH LP	0.00	0.00	7,501.00	1,570.02	-667.37	1,220,900.78	3,194,291.06	39° 56' 15.612 N		104° 48' 25.596 W
- plan hits target center										
- Point										
PC 8NH PBHL	0.00	0.00	7,501.00	1,571.62	8,928.24	1,220,977.61	3,203,886.37	39° 56' 15.612 N		104° 46' 22.404 W
- plan hits target center										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,372.31	4,188.00	PARKMAN				
5,120.62	4,892.00	SUSSEX				
5,699.91	5,437.00	SHANNON				
7,691.55	7,342.00	NIOBRARA				
7,995.04	7,491.00	NIO B TARGET				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
600.00	600.00	0.00	0.00	BUILD 2°/100'	
1,590.72	1,571.09	137.04	-99.93	HOLD 19.81° INC	
6,322.16	6,022.41	1,432.91	-1,044.94	DROP 2°/100'	
7,312.88	6,993.50	1,569.95	-1,144.87	HOLD VERTICAL	
7,342.88	7,023.50	1,569.95	-1,144.87	KOP, BUILD 12°/100'	
8,092.93	7,501.00	1,570.02	-667.37	LP @ 90° INC, 89.99° AZM HOLD	
17,688.55	7,501.00	1,571.62	8,928.24	TD at 17688.55' MD	