

# **EXTRACTION OIL & GAS**

**Adams County**

**Sec 29-T1-R66W**

**PC 1S-66-2928-18NH**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**12 September, 2017**



Project: Adams County  
Site: Sec 29-T1-R66W  
Well: PC 1S-66-2928-18NH  
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-66-2928-18NH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1219362.70	3195119.15	39° 56' 0.348 N	104° 48' 15.120 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	1385.54	15.71	235.70	1375.73	-60.31	-88.41	2.00	235.70	-81.78	
4	6415.49	15.71	235.70	6217.77	-827.84	-1213.58	0.00	0.00	-1122.52	
5	7201.03	0.00	0.00	6993.50	-888.15	-1301.99	2.00	180.00	-1204.30	
6	7231.03	0.00	0.00	7023.50	-888.15	-1301.99	0.00	0.00	-1204.30	
7	7981.09	90.00	90.08	7501.00	-888.80	-824.49	12.00	90.08	-729.23	PC 18NH LP
8	17574.85	90.00	90.08	7501.00	-901.84	8769.27	0.00	0.00	8815.52	PC 18NH 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'
1385.54	15.71	235.70	1375.73	-60.31	-88.41	-81.78	107.03	HOLD 15.71° INC
6415.49	15.71	235.70	6217.77	-827.84	-1213.58	-1122.52	1469.04	DROP 2°/100'
7201.03	0.00	0.00	6993.50	-888.15	-1301.99	-1204.30	1576.07	HOLD VERTICAL
7231.03	0.00	0.00	7023.50	-888.15	-1301.99	-1204.30	1576.07	KOP, BUILD 12°/100'
7981.09	90.00	90.08	7501.00	-888.80	-824.49	-729.23	2053.57	LP @ 90° INC, 90.08° AZM HOLD
17574.85	90.00	90.08	7501.00	-901.84	8769.27	8815.52	11647.34	TD at 17574.85' MD

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PC 18NH LP	7501.00	-888.80	-824.49	1218467.46	3194301.66	39° 55' 51.564 N	104° 48' 25.704 W	Point
PC 18NH PBHL	7501.00	-901.84	8769.27	1218529.70	3203895.22	39° 55' 51.420 N	104° 46' 22.548 W	Point
- plan hits target center								
- plan hits target center								

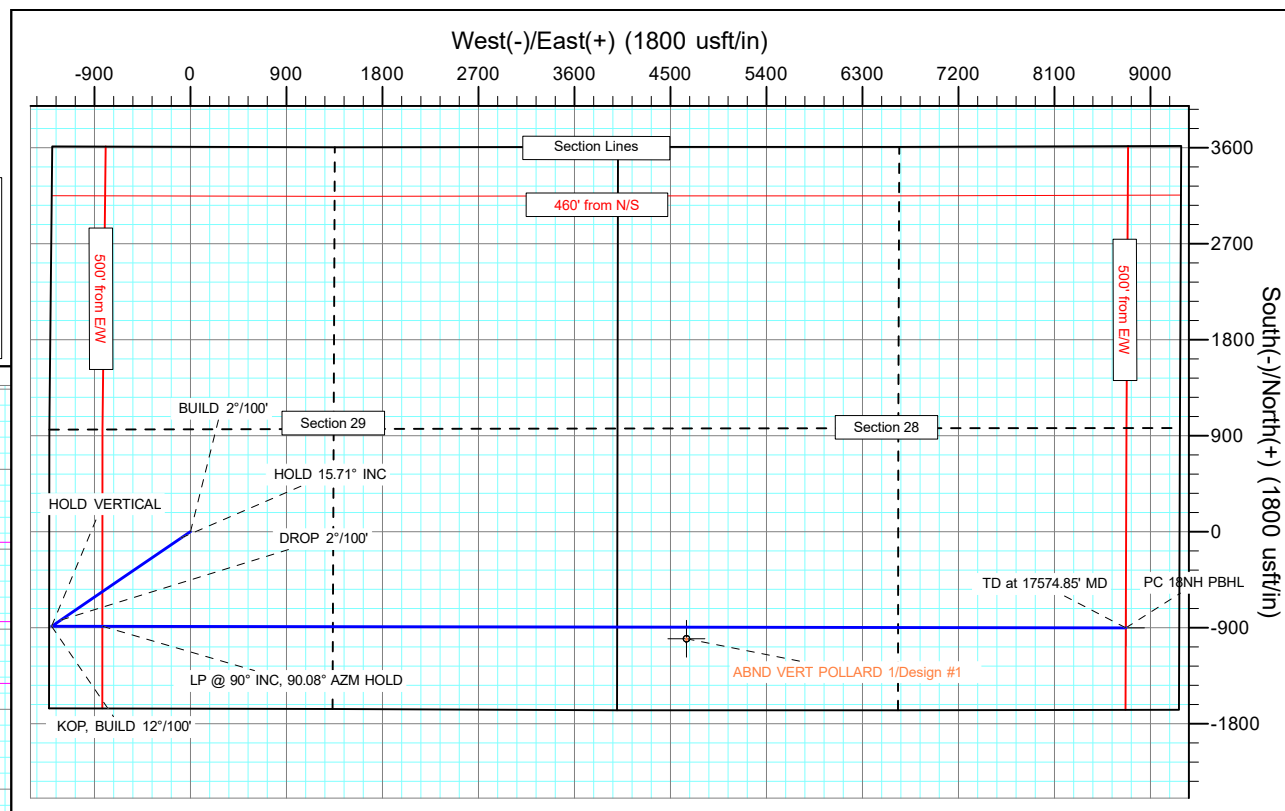
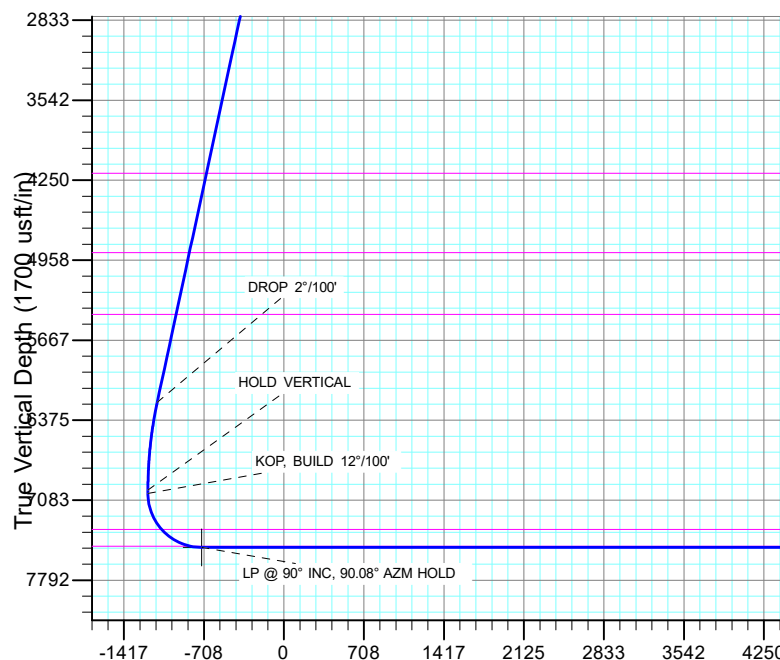
#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4188.00	4306.95	PARKMAN
4892.00	5038.27	SUSSEX
5437.00	5604.42	SHANNON
7342.00	7579.70	NIOBRARA
7491.00	7883.19	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:  
1663' FSL, 1325' FWL  
Sec 29-T1S-R66W  
LP:  
770' FSL, 500' FWL  
Sec 29-T1S-R66W  
BHL:  
770' FSL, 500' FEL  
Sec 28-T1S-R66W



#### Vertical Section at 95.87° (1700 usft/in)

TD at 17574.85' MD PC 18NH PBHL

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-18NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5091.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5091.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-18NH	<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-66-2928-18NH					
Well Position	+N/-S	1,657.46 usft	Northing:	1,219,362.70 usft	Latitude:	39° 56' 0.348 N
	+E/-W	1,326.42 usft	Easting:	3,195,119.15 usft	Longitude:	104° 48' 15.120 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,066.00 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	52,115.74344334

<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	95.87

<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	17,574.83	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	
1,385.54	15.71	235.70	1,375.73	-60.31	-88.41	2.00	2.00	0.00	235.70	
6,415.49	15.71	235.70	6,217.77	-827.84	-1,213.58	0.00	0.00	0.00	0.00	
7,201.03	0.00	0.00	6,993.50	-888.15	-1,301.99	2.00	-2.00	0.00	180.00	
7,231.03	0.00	0.00	7,023.50	-888.15	-1,301.99	0.00	0.00	0.00	0.00	
7,981.09	90.00	90.08	7,501.00	-888.80	-824.49	12.00	12.00	12.01	90.08	PC 18NH LP
17,574.86	90.00	90.08	7,501.00	-901.84	8,769.27	0.00	0.00	0.00	0.00	PC 18NH PBHL

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-18NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5091.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5091.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-18NH	<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	235.70	699.98	-0.98	-1.44	-1.33	2.00	2.00	0.00
800.00	4.00	235.70	799.84	-3.93	-5.76	-5.33	2.00	2.00	0.00
900.00	6.00	235.70	899.45	-8.84	-12.96	-11.99	2.00	2.00	0.00
1,000.00	8.00	235.70	998.70	-15.71	-23.03	-21.30	2.00	2.00	0.00
1,100.00	10.00	235.70	1,097.47	-24.53	-35.95	-33.26	2.00	2.00	0.00
1,200.00	12.00	235.70	1,195.62	-35.28	-51.72	-47.84	2.00	2.00	0.00
1,300.00	14.00	235.70	1,293.06	-47.95	-70.30	-65.02	2.00	2.00	0.00
1,385.54	15.71	235.70	1,375.73	-60.31	-88.41	-81.78	2.00	2.00	0.00
<b>HOLD 15.71° INC</b>									
1,400.00	15.71	235.70	1,389.65	-62.52	-91.65	-84.77	0.00	0.00	0.00
1,500.00	15.71	235.70	1,485.92	-77.78	-114.02	-105.46	0.00	0.00	0.00
1,600.00	15.71	235.70	1,582.18	-93.04	-136.39	-126.15	0.00	0.00	0.00
1,700.00	15.71	235.70	1,678.45	-108.30	-158.76	-146.85	0.00	0.00	0.00
1,800.00	15.71	235.70	1,774.71	-123.55	-181.13	-167.54	0.00	0.00	0.00
1,900.00	15.71	235.70	1,870.97	-138.81	-203.50	-188.23	0.00	0.00	0.00
2,000.00	15.71	235.70	1,967.24	-154.07	-225.86	-208.92	0.00	0.00	0.00
2,100.00	15.71	235.70	2,063.50	-169.33	-248.23	-229.61	0.00	0.00	0.00
2,200.00	15.71	235.70	2,159.77	-184.59	-270.60	-250.30	0.00	0.00	0.00
2,300.00	15.71	235.70	2,256.03	-199.85	-292.97	-270.99	0.00	0.00	0.00
2,400.00	15.71	235.70	2,352.29	-215.11	-315.34	-291.68	0.00	0.00	0.00
2,500.00	15.71	235.70	2,448.56	-230.37	-337.71	-312.37	0.00	0.00	0.00
2,600.00	15.71	235.70	2,544.82	-245.63	-360.08	-333.06	0.00	0.00	0.00
2,700.00	15.71	235.70	2,641.09	-260.89	-382.45	-353.75	0.00	0.00	0.00
2,800.00	15.71	235.70	2,737.35	-276.15	-404.82	-374.44	0.00	0.00	0.00
2,900.00	15.71	235.70	2,833.61	-291.41	-427.19	-395.14	0.00	0.00	0.00
3,000.00	15.71	235.70	2,929.88	-306.66	-449.56	-415.83	0.00	0.00	0.00
3,100.00	15.71	235.70	3,026.14	-321.92	-471.93	-436.52	0.00	0.00	0.00
3,200.00	15.71	235.70	3,122.41	-337.18	-494.30	-457.21	0.00	0.00	0.00
3,300.00	15.71	235.70	3,218.67	-352.44	-516.66	-477.90	0.00	0.00	0.00
3,400.00	15.71	235.70	3,314.93	-367.70	-539.03	-498.59	0.00	0.00	0.00
3,500.00	15.71	235.70	3,411.20	-382.96	-561.40	-519.28	0.00	0.00	0.00
3,600.00	15.71	235.70	3,507.46	-398.22	-583.77	-539.97	0.00	0.00	0.00
3,700.00	15.71	235.70	3,603.73	-413.48	-606.14	-560.66	0.00	0.00	0.00
3,800.00	15.71	235.70	3,699.99	-428.74	-628.51	-581.35	0.00	0.00	0.00
3,900.00	15.71	235.70	3,796.26	-444.00	-650.88	-602.04	0.00	0.00	0.00
4,000.00	15.71	235.70	3,892.52	-459.26	-673.25	-622.73	0.00	0.00	0.00
4,100.00	15.71	235.70	3,988.78	-474.51	-695.62	-643.43	0.00	0.00	0.00
4,200.00	15.71	235.70	4,085.05	-489.77	-717.99	-664.12	0.00	0.00	0.00
4,300.00	15.71	235.70	4,181.31	-505.03	-740.36	-684.81	0.00	0.00	0.00
4,306.95	15.71	235.70	4,188.00	-506.09	-741.91	-686.24	0.00	0.00	0.00
<b>PARKMAN</b>									
4,400.00	15.71	235.70	4,277.58	-520.29	-762.73	-705.50	0.00	0.00	0.00
4,500.00	15.71	235.70	4,373.84	-535.55	-785.10	-726.19	0.00	0.00	0.00
4,600.00	15.71	235.70	4,470.10	-550.81	-807.46	-746.88	0.00	0.00	0.00
4,700.00	15.71	235.70	4,566.37	-566.07	-829.83	-767.57	0.00	0.00	0.00

# Planning Report

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<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5091.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-18NH	<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	15.71	235.70	4,662.63	-581.33	-852.20	-788.26	0.00	0.00	0.00
4,900.00	15.71	235.70	4,758.90	-596.59	-874.57	-808.95	0.00	0.00	0.00
5,000.00	15.71	235.70	4,855.16	-611.85	-896.94	-829.64	0.00	0.00	0.00
5,038.27	15.71	235.70	4,892.00	-617.69	-905.50	-837.56	0.00	0.00	0.00
<b>SUSSEX</b>									
5,100.00	15.71	235.70	4,951.42	-627.11	-919.31	-850.33	0.00	0.00	0.00
5,200.00	15.71	235.70	5,047.69	-642.37	-941.68	-871.02	0.00	0.00	0.00
5,300.00	15.71	235.70	5,143.95	-657.62	-964.05	-891.72	0.00	0.00	0.00
5,400.00	15.71	235.70	5,240.22	-672.88	-986.42	-912.41	0.00	0.00	0.00
5,500.00	15.71	235.70	5,336.48	-688.14	-1,008.79	-933.10	0.00	0.00	0.00
5,600.00	15.71	235.70	5,432.75	-703.40	-1,031.16	-953.79	0.00	0.00	0.00
5,604.42	15.71	235.70	5,437.00	-704.08	-1,032.15	-954.70	0.00	0.00	0.00
<b>SHANNON</b>									
5,700.00	15.71	235.70	5,529.01	-718.66	-1,053.53	-974.48	0.00	0.00	0.00
5,800.00	15.71	235.70	5,625.27	-733.92	-1,075.90	-995.17	0.00	0.00	0.00
5,900.00	15.71	235.70	5,721.54	-749.18	-1,098.26	-1,015.86	0.00	0.00	0.00
6,000.00	15.71	235.70	5,817.80	-764.44	-1,120.63	-1,036.55	0.00	0.00	0.00
6,100.00	15.71	235.70	5,914.07	-779.70	-1,143.00	-1,057.24	0.00	0.00	0.00
6,200.00	15.71	235.70	6,010.33	-794.96	-1,165.37	-1,077.93	0.00	0.00	0.00
6,300.00	15.71	235.70	6,106.59	-810.22	-1,187.74	-1,098.62	0.00	0.00	0.00
6,400.00	15.71	235.70	6,202.86	-825.47	-1,210.11	-1,119.31	0.00	0.00	0.00
6,415.49	15.71	235.70	6,217.77	-827.84	-1,213.58	-1,122.52	0.00	0.00	0.00
<b>DROP 2°/100'</b>									
6,500.00	14.02	235.70	6,299.45	-840.06	-1,231.49	-1,139.09	2.00	-2.00	0.00
6,600.00	12.02	235.70	6,396.87	-852.75	-1,250.10	-1,156.30	2.00	-2.00	0.00
6,700.00	10.02	235.70	6,495.02	-863.52	-1,265.89	-1,170.91	2.00	-2.00	0.00
6,800.00	8.02	235.70	6,593.78	-872.36	-1,278.84	-1,182.89	2.00	-2.00	0.00
6,900.00	6.02	235.70	6,693.03	-879.25	-1,288.94	-1,192.23	2.00	-2.00	0.00
7,000.00	4.02	235.70	6,792.64	-884.18	-1,296.17	-1,198.91	2.00	-2.00	0.00
7,100.00	2.02	235.70	6,892.49	-887.15	-1,300.52	-1,202.94	2.00	-2.00	0.00
7,201.03	0.00	0.00	6,993.50	-888.15	-1,301.99	-1,204.30	2.00	-2.00	0.00
<b>HOLD VERTICAL</b>									
7,231.03	0.00	0.00	7,023.50	-888.15	-1,301.99	-1,204.30	0.00	0.00	0.00
<b>KOP, BUILD 12°/100'</b>									
7,250.00	2.28	90.08	7,042.47	-888.15	-1,301.61	-1,203.93	12.00	12.00	0.00
7,275.00	5.28	90.08	7,067.41	-888.15	-1,299.97	-1,202.29	12.00	12.00	0.00
7,300.00	8.28	90.08	7,092.23	-888.16	-1,297.02	-1,199.35	12.00	12.00	0.00
7,325.00	11.28	90.08	7,116.87	-888.16	-1,292.77	-1,195.13	12.00	12.00	0.00
7,350.00	14.28	90.08	7,141.25	-888.17	-1,287.25	-1,189.63	12.00	12.00	0.00
7,375.00	17.28	90.08	7,165.30	-888.18	-1,280.45	-1,182.87	12.00	12.00	0.00
7,400.00	20.28	90.08	7,188.97	-888.19	-1,272.40	-1,174.87	12.00	12.00	0.00
7,425.00	23.27	90.08	7,212.18	-888.20	-1,263.13	-1,165.64	12.00	12.00	0.00
7,450.00	26.27	90.08	7,234.88	-888.22	-1,252.66	-1,155.22	12.00	12.00	0.00
7,475.00	29.27	90.08	7,256.99	-888.23	-1,241.01	-1,143.63	12.00	12.00	0.00
7,500.00	32.27	90.08	7,278.47	-888.25	-1,228.22	-1,130.90	12.00	12.00	0.00
7,525.00	35.27	90.08	7,299.25	-888.27	-1,214.32	-1,117.08	12.00	12.00	0.00
7,550.00	38.27	90.08	7,319.27	-888.29	-1,199.36	-1,102.19	12.00	12.00	0.00
7,575.00	41.27	90.08	7,338.49	-888.31	-1,183.36	-1,086.28	12.00	12.00	0.00
7,579.70	41.84	90.08	7,342.00	-888.32	-1,180.25	-1,083.18	12.00	12.00	0.00
<b>NIOBRARA</b>									
7,600.00	44.27	90.08	7,356.83	-888.33	-1,166.39	-1,069.39	12.00	12.00	0.00
7,625.00	47.27	90.08	7,374.27	-888.36	-1,148.48	-1,051.57	12.00	12.00	0.00
7,650.00	50.27	90.08	7,390.74	-888.38	-1,129.68	-1,032.87	12.00	12.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-18NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5091.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5091.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-18NH	<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)
7,675.00	53.27	90.08	7,406.21	-888.41	-1,110.04	-1,013.33	12.00	12.00	0.00
7,700.00	56.27	90.08	7,420.63	-888.44	-1,089.62	-993.01	12.00	12.00	0.00
7,725.00	59.27	90.08	7,433.96	-888.47	-1,068.47	-971.98	12.00	12.00	0.00
7,750.00	62.27	90.08	7,446.17	-888.50	-1,046.66	-950.27	12.00	12.00	0.00
7,775.00	65.27	90.08	7,457.21	-888.53	-1,024.23	-927.96	12.00	12.00	0.00
7,800.00	68.27	90.08	7,467.07	-888.56	-1,001.26	-905.11	12.00	12.00	0.00
7,825.00	71.27	90.08	7,475.72	-888.59	-977.81	-881.77	12.00	12.00	0.00
7,850.00	74.27	90.08	7,483.12	-888.62	-953.93	-858.02	12.00	12.00	0.00
7,875.00	77.27	90.08	7,489.26	-888.66	-929.70	-833.91	12.00	12.00	0.00
7,883.19	78.25	90.08	7,491.00	-888.67	-921.70	-825.95	12.00	12.00	0.00
NIO B TARGET									
7,900.00	80.27	90.08	7,494.13	-888.69	-905.18	-809.52	12.00	12.00	0.00
7,925.00	83.27	90.08	7,497.71	-888.72	-880.44	-784.91	12.00	12.00	0.00
7,950.00	86.27	90.08	7,499.99	-888.76	-855.55	-760.14	12.00	12.00	0.00
7,975.00	89.27	90.08	7,500.96	-888.79	-830.57	-735.29	12.00	12.00	0.00
7,981.09	90.00	90.08	7,501.00	-888.80	-824.49	-729.23	12.00	12.00	0.00
LP @ 90° INC, 90.08° AZM HOLD									
8,000.00	90.00	90.08	7,501.00	-888.83	-805.57	-710.42	0.00	0.00	0.00
8,100.00	90.00	90.08	7,501.00	-888.96	-705.57	-610.93	0.00	0.00	0.00
8,200.00	90.00	90.08	7,501.00	-889.10	-605.57	-511.44	0.00	0.00	0.00
8,300.00	90.00	90.08	7,501.00	-889.24	-505.57	-411.95	0.00	0.00	0.00
8,400.00	90.00	90.08	7,501.00	-889.37	-405.57	-312.46	0.00	0.00	0.00
8,500.00	90.00	90.08	7,500.99	-889.51	-305.57	-212.97	0.00	0.00	0.00
8,600.00	90.00	90.08	7,500.99	-889.64	-205.57	-113.48	0.00	0.00	0.00
8,700.00	90.00	90.08	7,500.99	-889.78	-105.57	-13.99	0.00	0.00	0.00
8,800.00	90.00	90.08	7,500.99	-889.92	-5.57	85.49	0.00	0.00	0.00
8,900.00	90.00	90.08	7,500.99	-890.05	94.43	184.98	0.00	0.00	0.00
9,000.00	90.00	90.08	7,500.99	-890.19	194.43	284.47	0.00	0.00	0.00
9,100.00	90.00	90.08	7,500.99	-890.33	294.43	383.96	0.00	0.00	0.00
9,200.00	90.00	90.08	7,500.99	-890.46	394.43	483.45	0.00	0.00	0.00
9,300.00	90.00	90.08	7,500.99	-890.60	494.43	582.94	0.00	0.00	0.00
9,400.00	90.00	90.08	7,500.98	-890.73	594.43	682.43	0.00	0.00	0.00
9,500.00	90.00	90.08	7,500.98	-890.87	694.42	781.92	0.00	0.00	0.00
9,600.00	90.00	90.08	7,500.98	-891.01	794.42	881.41	0.00	0.00	0.00
9,700.00	90.00	90.08	7,500.98	-891.14	894.42	980.90	0.00	0.00	0.00
9,800.00	90.00	90.08	7,500.98	-891.28	994.42	1,080.39	0.00	0.00	0.00
9,900.00	90.00	90.08	7,500.98	-891.42	1,094.42	1,179.88	0.00	0.00	0.00
10,000.00	90.00	90.08	7,500.98	-891.55	1,194.42	1,279.36	0.00	0.00	0.00
10,100.00	90.00	90.08	7,500.98	-891.69	1,294.42	1,378.85	0.00	0.00	0.00
10,200.00	90.00	90.08	7,500.97	-891.83	1,394.42	1,478.34	0.00	0.00	0.00
10,300.00	90.00	90.08	7,500.97	-891.96	1,494.42	1,577.83	0.00	0.00	0.00
10,400.00	90.00	90.08	7,500.97	-892.10	1,594.42	1,677.32	0.00	0.00	0.00
10,500.00	90.00	90.08	7,500.97	-892.23	1,694.42	1,776.81	0.00	0.00	0.00
10,600.00	90.00	90.08	7,500.97	-892.37	1,794.42	1,876.30	0.00	0.00	0.00
10,700.00	90.00	90.08	7,500.97	-892.51	1,894.42	1,975.79	0.00	0.00	0.00
10,800.00	90.00	90.08	7,500.97	-892.64	1,994.42	2,075.28	0.00	0.00	0.00
10,900.00	90.00	90.08	7,500.97	-892.78	2,094.42	2,174.77	0.00	0.00	0.00
11,000.00	90.00	90.08	7,500.97	-892.92	2,194.42	2,274.26	0.00	0.00	0.00
11,100.00	90.00	90.08	7,500.96	-893.05	2,294.42	2,373.75	0.00	0.00	0.00
11,200.00	90.00	90.08	7,500.96	-893.19	2,394.42	2,473.24	0.00	0.00	0.00
11,300.00	90.00	90.08	7,500.96	-893.32	2,494.42	2,572.72	0.00	0.00	0.00
11,400.00	90.00	90.08	7,500.96	-893.46	2,594.42	2,672.21	0.00	0.00	0.00
11,500.00	90.00	90.08	7,500.96	-893.60	2,694.42	2,771.70	0.00	0.00	0.00
11,600.00	90.00	90.08	7,500.96	-893.73	2,794.42	2,871.19	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-18NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5091.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5091.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-18NH	<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	90.08	7,500.96	-893.87	2,894.42	2,970.68	0.00	0.00	0.00
11,800.00	90.00	90.08	7,500.96	-894.01	2,994.42	3,070.17	0.00	0.00	0.00
11,900.00	90.00	90.08	7,500.96	-894.14	3,094.42	3,169.66	0.00	0.00	0.00
12,000.00	90.00	90.08	7,500.95	-894.28	3,194.42	3,269.15	0.00	0.00	0.00
12,100.00	90.00	90.08	7,500.95	-894.42	3,294.42	3,368.64	0.00	0.00	0.00
12,200.00	90.00	90.08	7,500.95	-894.55	3,394.42	3,468.13	0.00	0.00	0.00
12,300.00	90.00	90.08	7,500.95	-894.69	3,494.42	3,567.62	0.00	0.00	0.00
12,400.00	90.00	90.08	7,500.95	-894.82	3,594.42	3,667.11	0.00	0.00	0.00
12,500.00	90.00	90.08	7,500.95	-894.96	3,694.42	3,766.59	0.00	0.00	0.00
12,600.00	90.00	90.08	7,500.95	-895.10	3,794.42	3,866.08	0.00	0.00	0.00
12,700.00	90.00	90.08	7,500.95	-895.23	3,894.42	3,965.57	0.00	0.00	0.00
12,800.00	90.00	90.08	7,500.95	-895.37	3,994.42	4,065.06	0.00	0.00	0.00
12,900.00	90.00	90.08	7,500.94	-895.51	4,094.42	4,164.55	0.00	0.00	0.00
13,000.00	90.00	90.08	7,500.94	-895.64	4,194.42	4,264.04	0.00	0.00	0.00
13,100.00	90.00	90.08	7,500.94	-895.78	4,294.42	4,363.53	0.00	0.00	0.00
13,200.00	90.00	90.08	7,500.94	-895.91	4,394.42	4,463.02	0.00	0.00	0.00
13,300.00	90.00	90.08	7,500.94	-896.05	4,494.42	4,562.51	0.00	0.00	0.00
13,400.00	90.00	90.08	7,500.94	-896.19	4,594.42	4,662.00	0.00	0.00	0.00
13,500.00	90.00	90.08	7,500.94	-896.32	4,694.42	4,761.49	0.00	0.00	0.00
13,600.00	90.00	90.08	7,500.94	-896.46	4,794.42	4,860.98	0.00	0.00	0.00
13,700.00	90.00	90.08	7,500.94	-896.60	4,894.42	4,960.47	0.00	0.00	0.00
13,800.00	90.00	90.08	7,500.93	-896.73	4,994.42	5,059.95	0.00	0.00	0.00
13,900.00	90.00	90.08	7,500.93	-896.87	5,094.42	5,159.44	0.00	0.00	0.00
14,000.00	90.00	90.08	7,500.93	-897.00	5,194.42	5,258.93	0.00	0.00	0.00
14,100.00	90.00	90.08	7,500.93	-897.14	5,294.42	5,358.42	0.00	0.00	0.00
14,200.00	90.00	90.08	7,500.93	-897.28	5,394.42	5,457.91	0.00	0.00	0.00
14,300.00	90.00	90.08	7,500.93	-897.41	5,494.42	5,557.40	0.00	0.00	0.00
14,400.00	90.00	90.08	7,500.93	-897.55	5,594.42	5,656.89	0.00	0.00	0.00
14,500.00	90.00	90.08	7,500.93	-897.69	5,694.42	5,756.38	0.00	0.00	0.00
14,600.00	90.00	90.08	7,500.92	-897.82	5,794.42	5,855.87	0.00	0.00	0.00
14,700.00	90.00	90.08	7,500.92	-897.96	5,894.42	5,955.36	0.00	0.00	0.00
14,800.00	90.00	90.08	7,500.92	-898.10	5,994.42	6,054.85	0.00	0.00	0.00
14,900.00	90.00	90.08	7,500.92	-898.23	6,094.42	6,154.34	0.00	0.00	0.00
15,000.00	90.00	90.08	7,500.92	-898.37	6,194.42	6,253.82	0.00	0.00	0.00
15,100.00	90.00	90.08	7,500.92	-898.50	6,294.42	6,353.31	0.00	0.00	0.00
15,200.00	90.00	90.08	7,500.92	-898.64	6,394.42	6,452.80	0.00	0.00	0.00
15,300.00	90.00	90.08	7,500.92	-898.78	6,494.42	6,552.29	0.00	0.00	0.00
15,400.00	90.00	90.08	7,500.92	-898.91	6,594.42	6,651.78	0.00	0.00	0.00
15,500.00	90.00	90.08	7,500.91	-899.05	6,694.42	6,751.27	0.00	0.00	0.00
15,600.00	90.00	90.08	7,500.91	-899.19	6,794.42	6,850.76	0.00	0.00	0.00
15,700.00	90.00	90.08	7,500.91	-899.32	6,894.42	6,950.25	0.00	0.00	0.00
15,800.00	90.00	90.08	7,500.91	-899.46	6,994.42	7,049.74	0.00	0.00	0.00
15,900.00	90.00	90.08	7,500.91	-899.59	7,094.42	7,149.23	0.00	0.00	0.00
16,000.00	90.00	90.08	7,500.91	-899.73	7,194.42	7,248.72	0.00	0.00	0.00
16,100.00	90.00	90.08	7,500.91	-899.87	7,294.42	7,348.21	0.00	0.00	0.00
16,200.00	90.00	90.08	7,500.91	-900.00	7,394.42	7,447.70	0.00	0.00	0.00
16,300.00	90.00	90.08	7,500.91	-900.14	7,494.42	7,547.18	0.00	0.00	0.00
16,400.00	90.00	90.08	7,500.90	-900.28	7,594.42	7,646.67	0.00	0.00	0.00
16,500.00	90.00	90.08	7,500.90	-900.41	7,694.42	7,746.16	0.00	0.00	0.00
16,600.00	90.00	90.08	7,500.90	-900.55	7,794.42	7,845.65	0.00	0.00	0.00
16,700.00	90.00	90.08	7,500.90	-900.69	7,894.42	7,945.14	0.00	0.00	0.00
16,800.00	90.00	90.08	7,500.90	-900.82	7,994.42	8,044.63	0.00	0.00	0.00
16,900.00	90.00	90.08	7,500.90	-900.96	8,094.42	8,144.12	0.00	0.00	0.00
17,000.00	90.00	90.08	7,500.90	-901.09	8,194.42	8,243.61	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well PC 1S-66-2928-18NH
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5091.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5091.00usft
<b>Site:</b>	Sec 29-T1-R66W	<b>North Reference:</b>	True
<b>Well:</b>	PC 1S-66-2928-18NH	<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	90.08	7,500.90	-901.23	8,294.42	8,343.10	0.00	0.00	0.00
17,200.00	90.00	90.08	7,500.90	-901.37	8,394.42	8,442.59	0.00	0.00	0.00
17,300.00	90.00	90.08	7,500.89	-901.50	8,494.42	8,542.08	0.00	0.00	0.00
17,400.00	90.00	90.08	7,500.89	-901.64	8,594.42	8,641.57	0.00	0.00	0.00
17,500.00	90.00	90.08	7,500.89	-901.78	8,694.42	8,741.05	0.00	0.00	0.00
17,574.86	90.00	90.08	7,501.00	-901.84	8,769.27	8,815.52	0.00	0.00	0.00
TD at 17574.85' 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 18NH PBHL - plan hits target center - Point	0.00	0.00	7,501.00	-901.84	8,769.27	1,218,529.70	3,203,895.23	39° 55' 51.420 N	104° 46' 22.548 W
PC 18NH LP - plan hits target center - Point	0.00	0.00	7,501.00	-888.80	-824.49	1,218,467.46	3,194,301.66	39° 55' 51.564 N	104° 48' 25.704 W

### Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,306.95	4,188.00	PARKMAN			
5,038.27	4,892.00	SUSSEX			
5,604.42	5,437.00	SHANNON			
7,579.70	7,342.00	NIOBRARA			
7,883.19	7,491.00	NIO B TARGET			

### Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
600.00	600.00	0.00	0.00	BUILD 2°/100'
1,385.54	1,375.73	-60.31	-88.41	HOLD 15.71° INC
6,415.49	6,217.77	-827.84	-1,213.58	DROP 2°/100'
7,201.03	6,993.50	-888.15	-1,301.99	HOLD VERTICAL
7,231.03	7,023.50	-888.15	-1,301.99	KOP, BUILD 12°/100'
7,981.09	7,501.00	-888.80	-824.49	LP @ 90° INC, 90.08° AZM HOLD
17,574.86	7,501.00	-901.84	8,769.27	TD at 17574.85' MD