

EXTRACTION OIL & GAS

Adams County

Sec 29-T1-R66W

PC 1S-66-2928-17NH

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

12 September, 2017



Project: Adams County
Site: Sec 29-T1-R66W
Well: PC 1S-66-2928-17NH
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL 1



Azimuths to True North
Magnetic North: 8.17°
Magnetic Field
Strength: 52115.8nT
Dip Angle: 66.47°
Date: 9/11/2017
Model: IGRF2015

WELL DETAILS: PC 1S-66-2928-17NH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1219391.85	3195118.92	39° 56' 0.636 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	800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	
3	1598.26	15.97	237.60	1587.97	-59.21	-93.30	2.00	237.60	-87.23	
4	6401.07	15.97	237.60	6205.53	-767.04	-1208.68	0.00	0.00	-1130.04	
5	7199.33	0.00	0.00	6993.50	-826.25	-1301.98	2.00	180.00	-1217.27	
6	7229.33	0.00	0.00	7023.50	-826.25	-1301.98	0.00	0.00	-1217.27	
7	7979.38	90.00	90.08	7501.00	-826.88	-824.48	12.00	90.08	-741.89	PC 17NH LP
8	17573.11	90.00	90.08	7501.00	-839.92	8769.24	0.00	0.00	8809.37	PC 17NH PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	BUILD 2°/100'
1598.26	15.97	237.60	1587.97	-59.21	-93.30	-87.23	110.50	HOLD 15.97° INC
6401.07	15.97	237.60	6205.53	-767.04	-1208.68	-1130.04	1431.53	DROP 2°/100'
7199.33	0.00	0.00	6993.50	-826.25	-1301.98	-1217.27	1542.02	HOLD VERTICAL
7229.33	0.00	0.00	7023.50	-826.25	-1301.98	-1217.27	1542.02	KOP, BUILD 12°/100'
7979.38	90.00	90.08	7501.00	-826.88	-824.48	-741.89	2019.52	LP @ 90° INC, 90.08° AZM HOLD
17573.11	90.00	90.08	7501.00	-839.92	8769.24	8809.37	11613.25	TD at 17573.11' MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PC 17NH LP	7501.00	-826.88	-824.48	1218558.53	3194300.95	39° 55' 52.464 N	104° 48' 25.704 W	Point
PC 17NH PBHL	7501.00	-839.92	8769.24	1218620.77	3203894.48	39° 55' 52.320 N	104° 46' 22.548 W	Point
- plan hits target center								

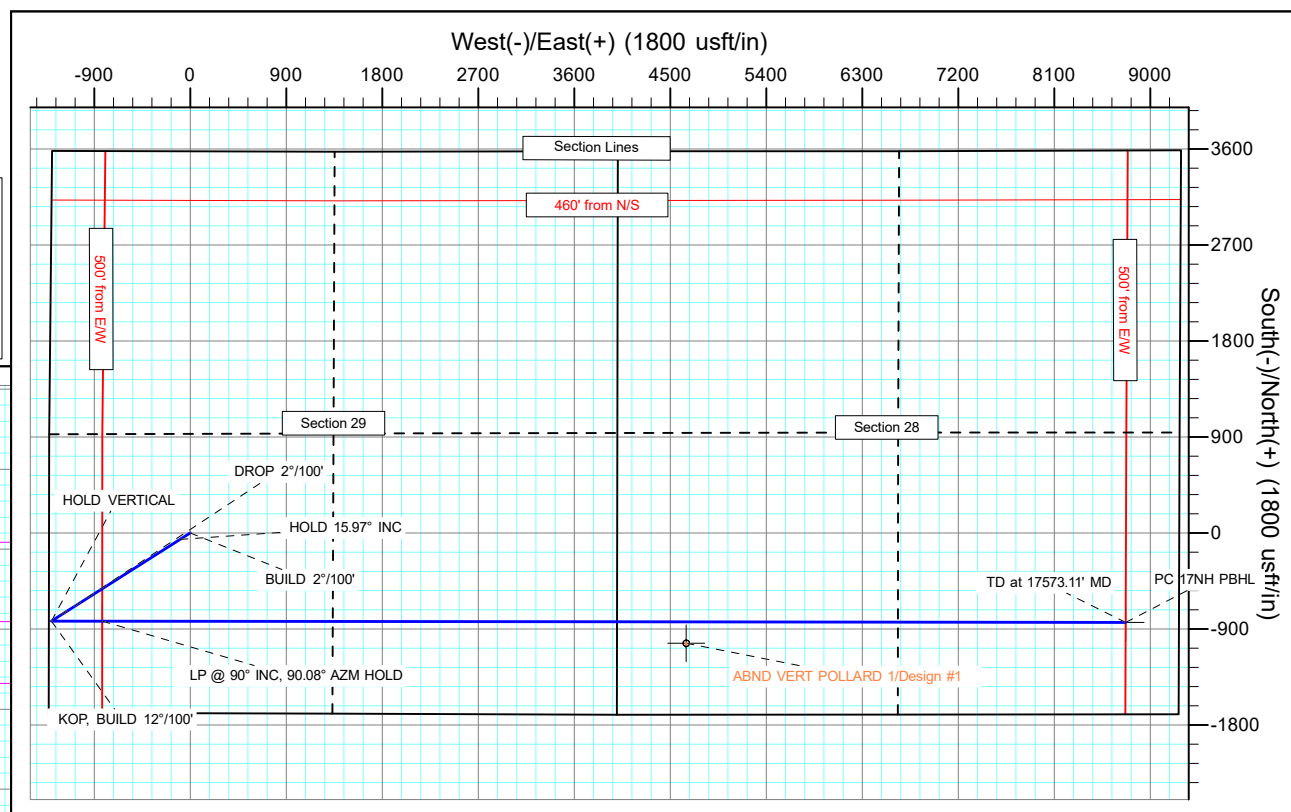
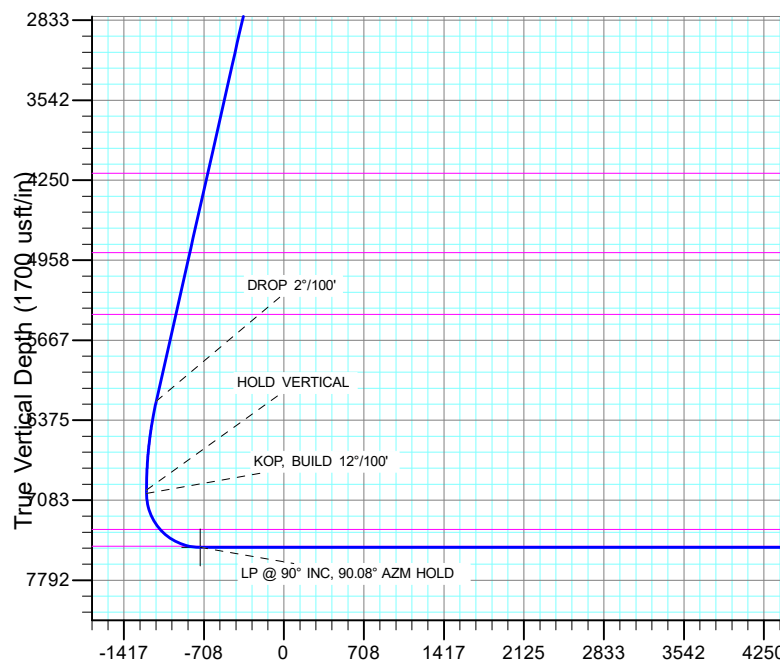
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4188.00	4302.60	PARKMAN
4892.00	5034.84	SUSSEX
5437.00	5601.71	SHANNON
7342.00	7578.00	NIOBRARA
7491.00	7881.49	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:
1691' FSL, 1325' FWL
Sec 29-T1S-R66W
LP:
860' FSL, 500' FWL
Sec 29-T1S-R66W
BHL:
860' FSL, 500' FEL
Sec 28-T1S-R66W



Vertical Section at 95.47° (1700 usft/in)

TD at 17573.11' MD PC 17NH PBHL

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-17NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-17NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Project	Adams County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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-66-2928-17NH					
Well Position	+N/-S	1,686.61 usft	Northing:	1,219,391.85 usft	Latitude:	39° 56' 0.636 N
	+E/-W	1,326.42 usft	Easting:	3,195,118.92 usft	Longitude:	104° 48' 15.120 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,066.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/11/2017	8.17	66.47	52,115.78544188

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	95.47

Plan Survey Tool Program	Date	9/12/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,573.09	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,598.26	15.97	237.60	1,587.97	-59.21	-93.30	2.00	2.00	0.00	237.60	
6,401.07	15.97	237.60	6,205.53	-767.04	-1,208.68	0.00	0.00	0.00	0.00	
7,199.33	0.00	0.00	6,993.50	-826.25	-1,301.98	2.00	-2.00	0.00	180.00	
7,229.33	0.00	0.00	7,023.50	-826.25	-1,301.98	0.00	0.00	0.00	0.00	
7,979.38	90.00	90.08	7,501.00	-826.88	-824.48	12.00	12.00	12.01	90.08	PC 17NH LP
17,573.11	90.00	90.08	7,501.00	-839.92	8,769.24	0.00	0.00	0.00	0.00	PC 17NH PBHL

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-17NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
BUILD 2°/100'									
900.00	2.00	237.60	899.98	-0.94	-1.47	-1.38	2.00	2.00	0.00
1,000.00	4.00	237.60	999.84	-3.74	-5.89	-5.51	2.00	2.00	0.00
1,100.00	6.00	237.60	1,099.45	-8.41	-13.25	-12.39	2.00	2.00	0.00
1,200.00	8.00	237.60	1,198.70	-14.94	-23.54	-22.01	2.00	2.00	0.00
1,300.00	10.00	237.60	1,297.47	-23.32	-36.75	-34.36	2.00	2.00	0.00
1,400.00	12.00	237.60	1,395.62	-33.54	-52.86	-49.42	2.00	2.00	0.00
1,500.00	14.00	237.60	1,493.06	-45.60	-71.85	-67.18	2.00	2.00	0.00
1,598.26	15.97	237.60	1,587.97	-59.21	-93.30	-87.23	2.00	2.00	0.00
HOLD 15.97° INC									
1,600.00	15.97	237.60	1,589.64	-59.46	-93.70	-87.60	0.00	0.00	0.00
1,700.00	15.97	237.60	1,685.79	-74.20	-116.92	-109.32	0.00	0.00	0.00
1,800.00	15.97	237.60	1,781.93	-88.94	-140.15	-131.03	0.00	0.00	0.00
1,900.00	15.97	237.60	1,878.07	-103.68	-163.37	-152.74	0.00	0.00	0.00
2,000.00	15.97	237.60	1,974.21	-118.42	-186.60	-174.46	0.00	0.00	0.00
2,100.00	15.97	237.60	2,070.36	-133.15	-209.82	-196.17	0.00	0.00	0.00
2,200.00	15.97	237.60	2,166.50	-147.89	-233.04	-217.88	0.00	0.00	0.00
2,300.00	15.97	237.60	2,262.64	-162.63	-256.27	-239.59	0.00	0.00	0.00
2,400.00	15.97	237.60	2,358.79	-177.37	-279.49	-261.31	0.00	0.00	0.00
2,500.00	15.97	237.60	2,454.93	-192.11	-302.71	-283.02	0.00	0.00	0.00
2,600.00	15.97	237.60	2,551.07	-206.84	-325.94	-304.73	0.00	0.00	0.00
2,700.00	15.97	237.60	2,647.21	-221.58	-349.16	-326.44	0.00	0.00	0.00
2,800.00	15.97	237.60	2,743.36	-236.32	-372.38	-348.16	0.00	0.00	0.00
2,900.00	15.97	237.60	2,839.50	-251.06	-395.61	-369.87	0.00	0.00	0.00
3,000.00	15.97	237.60	2,935.64	-265.79	-418.83	-391.58	0.00	0.00	0.00
3,100.00	15.97	237.60	3,031.79	-280.53	-442.06	-413.29	0.00	0.00	0.00
3,200.00	15.97	237.60	3,127.93	-295.27	-465.28	-435.01	0.00	0.00	0.00
3,300.00	15.97	237.60	3,224.07	-310.01	-488.50	-456.72	0.00	0.00	0.00
3,400.00	15.97	237.60	3,320.22	-324.75	-511.73	-478.43	0.00	0.00	0.00
3,500.00	15.97	237.60	3,416.36	-339.48	-534.95	-500.15	0.00	0.00	0.00
3,600.00	15.97	237.60	3,512.50	-354.22	-558.17	-521.86	0.00	0.00	0.00
3,700.00	15.97	237.60	3,608.64	-368.96	-581.40	-543.57	0.00	0.00	0.00
3,800.00	15.97	237.60	3,704.79	-383.70	-604.62	-565.28	0.00	0.00	0.00
3,900.00	15.97	237.60	3,800.93	-398.44	-627.84	-587.00	0.00	0.00	0.00
4,000.00	15.97	237.60	3,897.07	-413.17	-651.07	-608.71	0.00	0.00	0.00
4,100.00	15.97	237.60	3,993.22	-427.91	-674.29	-630.42	0.00	0.00	0.00
4,200.00	15.97	237.60	4,089.36	-442.65	-697.52	-652.13	0.00	0.00	0.00
4,300.00	15.97	237.60	4,185.50	-457.39	-720.74	-673.85	0.00	0.00	0.00
4,302.60	15.97	237.60	4,188.00	-457.77	-721.34	-674.41	0.00	0.00	0.00
PARKMAN									
4,400.00	15.97	237.60	4,281.64	-472.13	-743.96	-695.56	0.00	0.00	0.00
4,500.00	15.97	237.60	4,377.79	-486.86	-767.19	-717.27	0.00	0.00	0.00
4,600.00	15.97	237.60	4,473.93	-501.60	-790.41	-738.98	0.00	0.00	0.00
4,700.00	15.97	237.60	4,570.07	-516.34	-813.63	-760.70	0.00	0.00	0.00

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Well:	PC 1S-66-2928-17NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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	15.97	237.60	4,666.22	-531.08	-836.86	-782.41	0.00	0.00	0.00
4,900.00	15.97	237.60	4,762.36	-545.82	-860.08	-804.12	0.00	0.00	0.00
5,000.00	15.97	237.60	4,858.50	-560.55	-883.30	-825.83	0.00	0.00	0.00
5,034.84	15.97	237.60	4,892.00	-565.69	-891.40	-833.40	0.00	0.00	0.00
SUSSEX									
5,100.00	15.97	237.60	4,954.64	-575.29	-906.53	-847.55	0.00	0.00	0.00
5,200.00	15.97	237.60	5,050.79	-590.03	-929.75	-869.26	0.00	0.00	0.00
5,300.00	15.97	237.60	5,146.93	-604.77	-952.97	-890.97	0.00	0.00	0.00
5,400.00	15.97	237.60	5,243.07	-619.51	-976.20	-912.69	0.00	0.00	0.00
5,500.00	15.97	237.60	5,339.22	-634.24	-999.42	-934.40	0.00	0.00	0.00
5,600.00	15.97	237.60	5,435.36	-648.98	-1,022.65	-956.11	0.00	0.00	0.00
5,601.71	15.97	237.60	5,437.00	-649.23	-1,023.04	-956.48	0.00	0.00	0.00
SHANNON									
5,700.00	15.97	237.60	5,531.50	-663.72	-1,045.87	-977.82	0.00	0.00	0.00
5,800.00	15.97	237.60	5,627.64	-678.46	-1,069.09	-999.54	0.00	0.00	0.00
5,900.00	15.97	237.60	5,723.79	-693.20	-1,092.32	-1,021.25	0.00	0.00	0.00
6,000.00	15.97	237.60	5,819.93	-707.93	-1,115.54	-1,042.96	0.00	0.00	0.00
6,100.00	15.97	237.60	5,916.07	-722.67	-1,138.76	-1,064.67	0.00	0.00	0.00
6,200.00	15.97	237.60	6,012.22	-737.41	-1,161.99	-1,086.39	0.00	0.00	0.00
6,300.00	15.97	237.60	6,108.36	-752.15	-1,185.21	-1,108.10	0.00	0.00	0.00
6,401.07	15.97	237.60	6,205.53	-767.04	-1,208.68	-1,130.04	0.00	0.00	0.00
DROP 2°/100'									
6,500.00	13.99	237.60	6,301.10	-780.74	-1,230.27	-1,150.22	2.00	-2.00	0.00
6,600.00	11.99	237.60	6,398.53	-792.78	-1,249.24	-1,167.96	2.00	-2.00	0.00
6,700.00	9.99	237.60	6,496.70	-802.99	-1,265.33	-1,183.01	2.00	-2.00	0.00
6,800.00	7.99	237.60	6,595.46	-811.36	-1,278.52	-1,195.34	2.00	-2.00	0.00
6,900.00	5.99	237.60	6,694.72	-817.88	-1,288.79	-1,204.94	2.00	-2.00	0.00
7,000.00	3.99	237.60	6,794.33	-822.54	-1,296.13	-1,211.80	2.00	-2.00	0.00
7,100.00	1.99	237.60	6,894.19	-825.33	-1,300.53	-1,215.91	2.00	-2.00	0.00
7,199.33	0.00	0.00	6,993.50	-826.25	-1,301.98	-1,217.27	2.00	-2.00	0.00
HOLD VERTICAL									
7,229.33	0.00	0.00	7,023.50	-826.25	-1,301.98	-1,217.27	0.00	0.00	0.00
KOP, BUILD 12°/100'									
7,250.00	2.48	90.08	7,044.16	-826.25	-1,301.53	-1,216.83	12.00	12.00	0.00
7,275.00	5.48	90.08	7,069.10	-826.25	-1,299.80	-1,215.10	12.00	12.00	0.00
7,300.00	8.48	90.08	7,093.91	-826.26	-1,296.76	-1,212.07	12.00	12.00	0.00
7,325.00	11.48	90.08	7,118.53	-826.26	-1,292.43	-1,207.76	12.00	12.00	0.00
7,350.00	14.48	90.08	7,142.89	-826.27	-1,286.81	-1,202.17	12.00	12.00	0.00
7,375.00	17.48	90.08	7,166.92	-826.28	-1,279.93	-1,195.32	12.00	12.00	0.00
7,400.00	20.48	90.08	7,190.56	-826.29	-1,271.80	-1,187.23	12.00	12.00	0.00
7,425.00	23.48	90.08	7,213.74	-826.30	-1,262.45	-1,177.91	12.00	12.00	0.00
7,450.00	26.48	90.08	7,236.40	-826.32	-1,251.89	-1,167.40	12.00	12.00	0.00
7,475.00	29.48	90.08	7,258.48	-826.33	-1,240.16	-1,155.73	12.00	12.00	0.00
7,500.00	32.48	90.08	7,279.91	-826.35	-1,227.30	-1,142.92	12.00	12.00	0.00
7,525.00	35.48	90.08	7,300.64	-826.37	-1,213.33	-1,129.01	12.00	12.00	0.00
7,550.00	38.48	90.08	7,320.61	-826.39	-1,198.29	-1,114.04	12.00	12.00	0.00
7,575.00	41.48	90.08	7,339.76	-826.41	-1,182.23	-1,098.05	12.00	12.00	0.00
7,578.00	41.84	90.08	7,342.00	-826.41	-1,180.24	-1,096.07	12.00	12.00	0.00
NIOBRARA									
7,600.00	44.48	90.08	7,358.05	-826.43	-1,165.19	-1,081.09	12.00	12.00	0.00
7,625.00	47.48	90.08	7,375.42	-826.45	-1,147.22	-1,063.19	12.00	12.00	0.00
7,650.00	50.48	90.08	7,391.83	-826.48	-1,128.36	-1,044.42	12.00	12.00	0.00
7,675.00	53.48	90.08	7,407.23	-826.50	-1,108.67	-1,024.81	12.00	12.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-17NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-17NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
7,700.00	56.48	90.08	7,421.57	-826.53	-1,088.19	-1,004.43	12.00	12.00	0.00
7,725.00	59.48	90.08	7,434.83	-826.56	-1,067.00	-983.33	12.00	12.00	0.00
7,750.00	62.48	90.08	7,446.96	-826.59	-1,045.14	-961.57	12.00	12.00	0.00
7,775.00	65.48	90.08	7,457.92	-826.62	-1,022.68	-939.21	12.00	12.00	0.00
7,800.00	68.48	90.08	7,467.70	-826.65	-999.67	-916.31	12.00	12.00	0.00
7,825.00	71.48	90.08	7,476.26	-826.68	-976.19	-892.92	12.00	12.00	0.00
7,850.00	74.48	90.08	7,483.58	-826.71	-952.29	-869.13	12.00	12.00	0.00
7,875.00	77.47	90.08	7,489.64	-826.74	-928.04	-844.98	12.00	12.00	0.00
7,881.49	78.25	90.08	7,491.00	-826.75	-921.69	-838.67	12.00	12.00	0.00
NIO B TARGET									
7,900.00	80.47	90.08	7,494.42	-826.77	-903.50	-820.56	12.00	12.00	0.00
7,925.00	83.47	90.08	7,497.91	-826.81	-878.75	-795.91	12.00	12.00	0.00
7,950.00	86.47	90.08	7,500.10	-826.84	-853.85	-771.12	12.00	12.00	0.00
7,975.00	89.47	90.08	7,500.98	-826.87	-828.86	-746.25	12.00	12.00	0.00
7,979.38	90.00	90.08	7,501.00	-826.88	-824.48	-741.89	12.00	12.00	0.00
LP @ 90° INC, 90.08° AZM HOLD									
8,000.00	90.00	90.08	7,501.00	-826.91	-803.86	-721.36	0.00	0.00	0.00
8,100.00	90.00	90.08	7,501.00	-827.04	-703.86	-621.81	0.00	0.00	0.00
8,200.00	90.00	90.08	7,501.00	-827.17	-603.86	-522.25	0.00	0.00	0.00
8,300.00	90.00	90.08	7,501.00	-827.30	-503.87	-422.69	0.00	0.00	0.00
8,400.00	90.00	90.08	7,501.00	-827.43	-403.87	-323.13	0.00	0.00	0.00
8,500.00	90.00	90.08	7,501.00	-827.56	-303.87	-223.58	0.00	0.00	0.00
8,600.00	90.00	90.08	7,501.00	-827.70	-203.87	-124.02	0.00	0.00	0.00
8,700.00	90.00	90.08	7,501.00	-827.83	-103.87	-24.46	0.00	0.00	0.00
8,800.00	90.00	90.08	7,501.00	-827.96	-3.87	75.09	0.00	0.00	0.00
8,900.00	90.00	90.08	7,501.00	-828.09	96.13	174.65	0.00	0.00	0.00
9,000.00	90.00	90.08	7,501.00	-828.22	196.13	274.21	0.00	0.00	0.00
9,100.00	90.00	90.08	7,501.00	-828.35	296.13	373.76	0.00	0.00	0.00
9,200.00	90.00	90.08	7,501.00	-828.49	396.13	473.32	0.00	0.00	0.00
9,300.00	90.00	90.08	7,501.00	-828.62	496.13	572.88	0.00	0.00	0.00
9,400.00	90.00	90.08	7,501.00	-828.75	596.13	672.43	0.00	0.00	0.00
9,500.00	90.00	90.08	7,501.01	-828.88	696.13	771.99	0.00	0.00	0.00
9,600.00	90.00	90.08	7,501.01	-829.01	796.13	871.55	0.00	0.00	0.00
9,700.00	90.00	90.08	7,501.01	-829.15	896.13	971.11	0.00	0.00	0.00
9,800.00	90.00	90.08	7,501.01	-829.28	996.13	1,070.66	0.00	0.00	0.00
9,900.00	90.00	90.08	7,501.01	-829.41	1,096.13	1,170.22	0.00	0.00	0.00
10,000.00	90.00	90.08	7,501.01	-829.54	1,196.13	1,269.78	0.00	0.00	0.00
10,100.00	90.00	90.08	7,501.01	-829.67	1,296.13	1,369.33	0.00	0.00	0.00
10,200.00	90.00	90.08	7,501.01	-829.80	1,396.13	1,468.89	0.00	0.00	0.00
10,300.00	90.00	90.08	7,501.01	-829.94	1,496.13	1,568.45	0.00	0.00	0.00
10,400.00	90.00	90.08	7,501.01	-830.07	1,596.13	1,668.00	0.00	0.00	0.00
10,500.00	90.00	90.08	7,501.01	-830.20	1,696.13	1,767.56	0.00	0.00	0.00
10,600.00	90.00	90.08	7,501.01	-830.33	1,796.13	1,867.12	0.00	0.00	0.00
10,700.00	90.00	90.08	7,501.01	-830.46	1,896.13	1,966.67	0.00	0.00	0.00
10,800.00	90.00	90.08	7,501.01	-830.59	1,996.13	2,066.23	0.00	0.00	0.00
10,900.00	90.00	90.08	7,501.01	-830.73	2,096.13	2,165.79	0.00	0.00	0.00
11,000.00	90.00	90.08	7,501.01	-830.86	2,196.13	2,265.34	0.00	0.00	0.00
11,100.00	90.00	90.08	7,501.01	-830.99	2,296.13	2,364.90	0.00	0.00	0.00
11,200.00	90.00	90.08	7,501.01	-831.12	2,396.13	2,464.46	0.00	0.00	0.00
11,300.00	90.00	90.08	7,501.01	-831.25	2,496.13	2,564.02	0.00	0.00	0.00
11,400.00	90.00	90.08	7,501.01	-831.38	2,596.13	2,663.57	0.00	0.00	0.00
11,500.00	90.00	90.08	7,501.01	-831.52	2,696.13	2,763.13	0.00	0.00	0.00
11,600.00	90.00	90.08	7,501.01	-831.65	2,796.13	2,862.69	0.00	0.00	0.00
11,700.00	90.00	90.08	7,501.01	-831.78	2,896.13	2,962.24	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-17NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-17NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
11,800.00	90.00	90.08	7,501.01	-831.91	2,996.13	3,061.80	0.00	0.00	0.00
11,900.00	90.00	90.08	7,501.01	-832.04	3,096.13	3,161.36	0.00	0.00	0.00
12,000.00	90.00	90.08	7,501.01	-832.17	3,196.13	3,260.91	0.00	0.00	0.00
12,100.00	90.00	90.08	7,501.01	-832.31	3,296.13	3,360.47	0.00	0.00	0.00
12,200.00	90.00	90.08	7,501.01	-832.44	3,396.13	3,460.03	0.00	0.00	0.00
12,300.00	90.00	90.08	7,501.01	-832.57	3,496.13	3,559.58	0.00	0.00	0.00
12,400.00	90.00	90.08	7,501.01	-832.70	3,596.13	3,659.14	0.00	0.00	0.00
12,500.00	90.00	90.08	7,501.02	-832.83	3,696.13	3,758.70	0.00	0.00	0.00
12,600.00	90.00	90.08	7,501.02	-832.96	3,796.13	3,858.26	0.00	0.00	0.00
12,700.00	90.00	90.08	7,501.02	-833.10	3,896.13	3,957.81	0.00	0.00	0.00
12,800.00	90.00	90.08	7,501.02	-833.23	3,996.13	4,057.37	0.00	0.00	0.00
12,900.00	90.00	90.08	7,501.02	-833.36	4,096.13	4,156.93	0.00	0.00	0.00
13,000.00	90.00	90.08	7,501.02	-833.49	4,196.13	4,256.48	0.00	0.00	0.00
13,100.00	90.00	90.08	7,501.02	-833.62	4,296.13	4,356.04	0.00	0.00	0.00
13,200.00	90.00	90.08	7,501.02	-833.76	4,396.13	4,455.60	0.00	0.00	0.00
13,300.00	90.00	90.08	7,501.02	-833.89	4,496.13	4,555.15	0.00	0.00	0.00
13,400.00	90.00	90.08	7,501.02	-834.02	4,596.13	4,654.71	0.00	0.00	0.00
13,500.00	90.00	90.08	7,501.02	-834.15	4,696.13	4,754.27	0.00	0.00	0.00
13,600.00	90.00	90.08	7,501.02	-834.28	4,796.13	4,853.82	0.00	0.00	0.00
13,700.00	90.00	90.08	7,501.02	-834.41	4,896.13	4,953.38	0.00	0.00	0.00
13,800.00	90.00	90.08	7,501.02	-834.55	4,996.13	5,052.94	0.00	0.00	0.00
13,900.00	90.00	90.08	7,501.02	-834.68	5,096.13	5,152.50	0.00	0.00	0.00
14,000.00	90.00	90.08	7,501.02	-834.81	5,196.13	5,252.05	0.00	0.00	0.00
14,100.00	90.00	90.08	7,501.02	-834.94	5,296.13	5,351.61	0.00	0.00	0.00
14,200.00	90.00	90.08	7,501.02	-835.07	5,396.13	5,451.17	0.00	0.00	0.00
14,300.00	90.00	90.08	7,501.02	-835.20	5,496.13	5,550.72	0.00	0.00	0.00
14,400.00	90.00	90.08	7,501.02	-835.34	5,596.13	5,650.28	0.00	0.00	0.00
14,500.00	90.00	90.08	7,501.02	-835.47	5,696.13	5,749.84	0.00	0.00	0.00
14,600.00	90.00	90.08	7,501.02	-835.60	5,796.13	5,849.39	0.00	0.00	0.00
14,700.00	90.00	90.08	7,501.02	-835.73	5,896.13	5,948.95	0.00	0.00	0.00
14,800.00	90.00	90.08	7,501.02	-835.86	5,996.13	6,048.51	0.00	0.00	0.00
14,900.00	90.00	90.08	7,501.02	-835.99	6,096.13	6,148.06	0.00	0.00	0.00
15,000.00	90.00	90.08	7,501.02	-836.13	6,196.13	6,247.62	0.00	0.00	0.00
15,100.00	90.00	90.08	7,501.02	-836.26	6,296.13	6,347.18	0.00	0.00	0.00
15,200.00	90.00	90.08	7,501.02	-836.39	6,396.13	6,446.74	0.00	0.00	0.00
15,300.00	90.00	90.08	7,501.02	-836.52	6,496.13	6,546.29	0.00	0.00	0.00
15,400.00	90.00	90.08	7,501.02	-836.65	6,596.13	6,645.85	0.00	0.00	0.00
15,500.00	90.00	90.08	7,501.03	-836.78	6,696.13	6,745.41	0.00	0.00	0.00
15,600.00	90.00	90.08	7,501.03	-836.92	6,796.13	6,844.96	0.00	0.00	0.00
15,700.00	90.00	90.08	7,501.03	-837.05	6,896.13	6,944.52	0.00	0.00	0.00
15,800.00	90.00	90.08	7,501.03	-837.18	6,996.13	7,044.08	0.00	0.00	0.00
15,900.00	90.00	90.08	7,501.03	-837.31	7,096.13	7,143.63	0.00	0.00	0.00
16,000.00	90.00	90.08	7,501.03	-837.44	7,196.13	7,243.19	0.00	0.00	0.00
16,100.00	90.00	90.08	7,501.03	-837.57	7,296.13	7,342.75	0.00	0.00	0.00
16,200.00	90.00	90.08	7,501.03	-837.71	7,396.13	7,442.30	0.00	0.00	0.00
16,300.00	90.00	90.08	7,501.03	-837.84	7,496.13	7,541.86	0.00	0.00	0.00
16,400.00	90.00	90.08	7,501.03	-837.97	7,596.13	7,641.42	0.00	0.00	0.00
16,500.00	90.00	90.08	7,501.03	-838.10	7,696.13	7,740.98	0.00	0.00	0.00
16,600.00	90.00	90.08	7,501.03	-838.23	7,796.13	7,840.53	0.00	0.00	0.00
16,700.00	90.00	90.08	7,501.03	-838.36	7,896.13	7,940.09	0.00	0.00	0.00
16,800.00	90.00	90.08	7,501.03	-838.50	7,996.13	8,039.65	0.00	0.00	0.00
16,900.00	90.00	90.08	7,501.03	-838.63	8,096.13	8,139.20	0.00	0.00	0.00
17,000.00	90.00	90.08	7,501.03	-838.76	8,196.13	8,238.76	0.00	0.00	0.00
17,100.00	90.00	90.08	7,501.03	-838.89	8,296.13	8,338.32	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-17NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5091.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5091.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-17NH	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)	
17,200.00	90.00	90.08	7,501.03	-839.02	8,396.13	8,437.87	0.00	0.00	0.00	
17,300.00	90.00	90.08	7,501.03	-839.16	8,496.13	8,537.43	0.00	0.00	0.00	
17,400.00	90.00	90.08	7,501.03	-839.29	8,596.13	8,636.99	0.00	0.00	0.00	
17,500.00	90.00	90.08	7,501.03	-839.42	8,696.13	8,736.54	0.00	0.00	0.00	
17,573.11	90.00	90.08	7,501.00	-839.92	8,769.24	8,809.37	0.00	0.00	0.00	
TD at 17573.11' MD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PC 17NH LP	0.00	0.00	7,501.00	-826.88	-824.48	1,218,558.52	3,194,300.95	39° 55' 52.464 N	104° 48' 25.704 W	
- hit/miss target										
- Shape										
- Point										
PC 17NH PBHL	0.00	0.00	7,501.00	-839.92	8,769.24	1,218,620.76	3,203,894.48	39° 55' 52.320 N	104° 46' 22.548 W	
- plan hits target center										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,302.60	4,188.00	PARKMAN				
5,034.84	4,892.00	SUSSEX				
5,601.71	5,437.00	SHANNON				
7,578.00	7,342.00	NIOBRARA				
7,881.49	7,491.00	NIO B TARGET				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
800.00	800.00	0.00	0.00	BUILD 2°/100'	
1,598.26	1,587.97	-59.21	-93.30	HOLD 15.97° INC	
6,401.07	6,205.53	-767.04	-1,208.68	DROP 2°/100'	
7,199.33	6,993.50	-826.25	-1,301.98	HOLD VERTICAL	
7,229.33	7,023.50	-826.25	-1,301.98	KOP, BUILD 12°/100'	
7,979.38	7,501.00	-826.88	-824.48	LP @ 90° INC, 90.08° AZM HOLD	
17,573.11	7,501.00	-839.92	8,769.24	TD at 17573.11' MD	