

EXTRACTION OIL & GAS

Adams County

Sec 29-T1-R66W

PC 1S-66-2928-3NH

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

12 September, 2017



Project: Adams County
Site: Sec 29-T1-R66W
Well: PC 1S-66-2928-3NH
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-66-2928-3NH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1219445.32	3194969.87	39° 56' 1.176 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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1669.28	29.39	337.64	1605.71	340.88	-140.23	2.00	337.64	-34.86	
4	6239.37	29.39	337.64	5587.79	2414.72	-993.39	0.00	0.00	-246.92	
5	7708.65	0.00	0.00	6993.50	2755.60	-1133.62	2.00	180.00	-281.78	
6	7738.65	0.00	0.00	7023.50	2755.60	-1133.62	0.00	0.00	-281.78	
7	8488.70	90.00	90.20	7501.00	2753.91	-656.12	12.00	90.20	174.51	PC 3NH LP
8	18078.29	90.00	90.20	7501.00	2720.17	8933.40	0.00	0.00	9338.36	PC 3NH PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	BUILD 2°/100'
1669.28	29.39	337.64	1605.71	340.88	-140.23	-34.86	368.59	HOLD 29.39° INC
6239.37	29.39	337.64	5587.79	2414.72	-993.39	-246.92	2611.07	DROP 2°/100'
7708.65	0.00	0.00	6993.50	2755.60	-1133.62	-281.78	2979.67	HOLD VERTICAL
7738.65	0.00	0.00	7023.50	2755.60	-1133.62	-281.78	2979.67	KOP, BUILD 12°/100'
8488.70	90.00	90.20	7501.00	2753.91	-656.12	174.51	3457.17	LP @ 90° INC, 90.20° AZM HOLD
18078.29	90.00	90.20	7501.00	2720.17	8933.40	9338.36	13046.75	TD at 18078.29' MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PC 3NH LP	7501.00	2753.91	-656.12	1222194.00	3194292.17	39° 56' 28.392 N	104° 48' 25.452 W	Point
- plan hits target center								
PC 3NH PBHL	7501.00	2720.17	8933.40	1222235.45	3203881.66	39° 56' 28.043 N	104° 46' 22.332 W	Point
- plan hits target center								

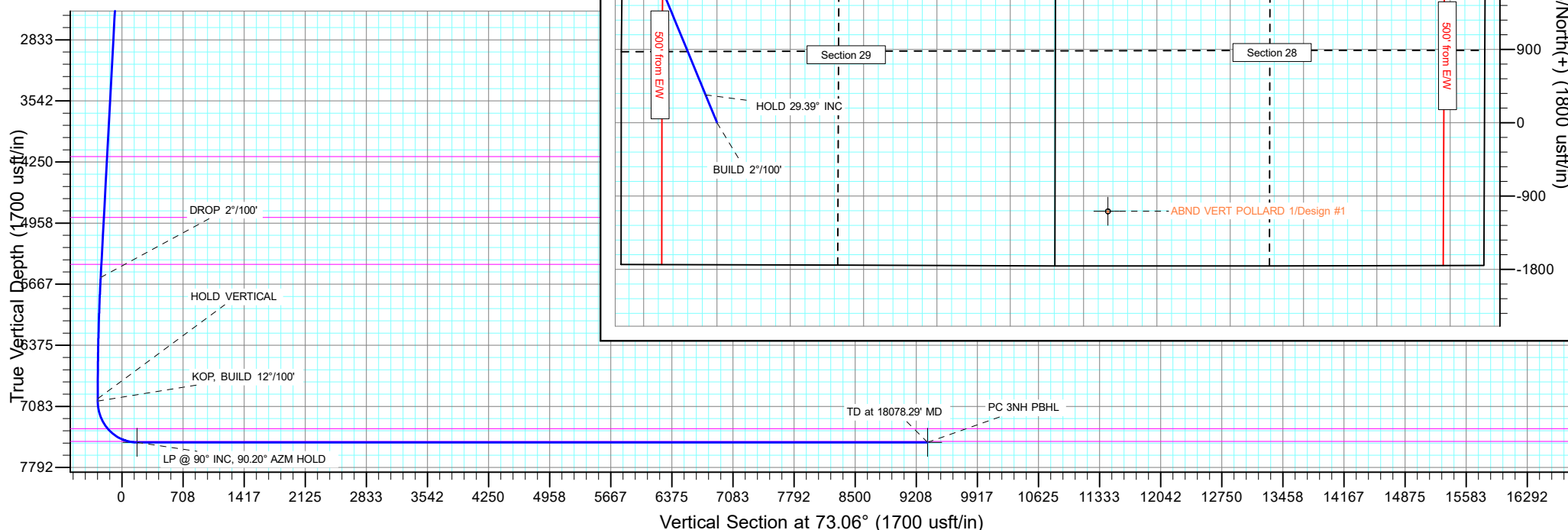
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4188.00	4632.88	PARKMAN
4892.00	5440.84	SUSSEX
5437.00	6066.31	SHANNON
7342.00	8087.32	NIOBRARA
7491.00	8390.81	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:
1747' FSL, 1175' FWL
Sec 29-T1S-R66W
LP:
770' FNL, 500' FWL
Sec 29-T1S-R66W
BHL:
770' FNL, 500' FEL
Sec 28-T1S-R66W



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-3NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5089.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5089.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-3NH	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-66-2928-3NH					
Well Position	+N/-S	1,741.24 usft	Northing:	1,219,445.32 usft	Latitude:	39° 56' 1.176 N
	+E/-W	1,177.79 usft	Easting:	3,194,969.87 usft	Longitude:	104° 48' 17.028 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,064.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/11/2017	8.17	66.47	52,115.82386017

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	73.06

Plan Survey Tool Program	Date	9/12/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,078.29	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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,669.28	29.39	337.64	1,605.71	340.88	-140.23	2.00	2.00	0.00	337.64	
6,239.37	29.39	337.64	5,587.79	2,414.72	-993.39	0.00	0.00	0.00	0.00	
7,708.65	0.00	0.00	6,993.50	2,755.60	-1,133.62	2.00	-2.00	0.00	180.00	
7,738.65	0.00	0.00	7,023.50	2,755.60	-1,133.62	0.00	0.00	0.00	0.00	
8,488.70	90.00	90.20	7,501.00	2,753.91	-656.12	12.00	12.00	12.03	90.20	PC 3NH LP
18,078.29	90.00	90.20	7,501.00	2,720.17	8,933.40	0.00	0.00	0.00	0.00	PC 3NH PBHL

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5089.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5089.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-3NH	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
BUILD 2°/100'									
300.00	2.00	337.64	299.98	1.61	-0.66	-0.17	2.00	2.00	0.00
400.00	4.00	337.64	399.84	6.45	-2.65	-0.66	2.00	2.00	0.00
500.00	6.00	337.64	499.45	14.51	-5.97	-1.48	2.00	2.00	0.00
600.00	8.00	337.64	598.70	25.78	-10.61	-2.64	2.00	2.00	0.00
700.00	10.00	337.64	697.47	40.25	-16.56	-4.12	2.00	2.00	0.00
800.00	12.00	337.64	795.62	57.89	-23.82	-5.92	2.00	2.00	0.00
900.00	14.00	337.64	893.06	78.70	-32.38	-8.05	2.00	2.00	0.00
1,000.00	16.00	337.64	989.64	102.63	-42.22	-10.49	2.00	2.00	0.00
1,100.00	18.00	337.64	1,085.27	129.67	-53.34	-13.26	2.00	2.00	0.00
1,200.00	20.00	337.64	1,179.82	159.78	-65.73	-16.34	2.00	2.00	0.00
1,300.00	22.00	337.64	1,273.17	192.92	-79.36	-19.73	2.00	2.00	0.00
1,400.00	24.00	337.64	1,365.21	229.05	-94.23	-23.42	2.00	2.00	0.00
1,500.00	26.00	337.64	1,455.84	268.13	-110.31	-27.42	2.00	2.00	0.00
1,600.00	28.00	337.64	1,544.94	310.11	-127.58	-31.71	2.00	2.00	0.00
1,669.28	29.39	337.64	1,605.71	340.88	-140.23	-34.86	2.00	2.00	0.00
HOLD 29.39° INC									
1,700.00	29.39	337.64	1,632.48	354.82	-145.97	-36.28	0.00	0.00	0.00
1,800.00	29.39	337.64	1,719.61	400.19	-164.63	-40.92	0.00	0.00	0.00
1,900.00	29.39	337.64	1,806.74	445.57	-183.30	-45.56	0.00	0.00	0.00
2,000.00	29.39	337.64	1,893.88	490.95	-201.97	-50.20	0.00	0.00	0.00
2,100.00	29.39	337.64	1,981.01	536.33	-220.64	-54.84	0.00	0.00	0.00
2,200.00	29.39	337.64	2,068.14	581.71	-239.31	-59.48	0.00	0.00	0.00
2,300.00	29.39	337.64	2,155.28	627.09	-257.98	-64.12	0.00	0.00	0.00
2,400.00	29.39	337.64	2,242.41	672.47	-276.64	-68.76	0.00	0.00	0.00
2,500.00	29.39	337.64	2,329.54	717.85	-295.31	-73.41	0.00	0.00	0.00
2,600.00	29.39	337.64	2,416.68	763.22	-313.98	-78.05	0.00	0.00	0.00
2,700.00	29.39	337.64	2,503.81	808.60	-332.65	-82.69	0.00	0.00	0.00
2,800.00	29.39	337.64	2,590.95	853.98	-351.32	-87.33	0.00	0.00	0.00
2,900.00	29.39	337.64	2,678.08	899.36	-369.99	-91.97	0.00	0.00	0.00
3,000.00	29.39	337.64	2,765.21	944.74	-388.65	-96.61	0.00	0.00	0.00
3,100.00	29.39	337.64	2,852.35	990.12	-407.32	-101.25	0.00	0.00	0.00
3,200.00	29.39	337.64	2,939.48	1,035.50	-425.99	-105.89	0.00	0.00	0.00
3,300.00	29.39	337.64	3,026.61	1,080.88	-444.66	-110.53	0.00	0.00	0.00
3,400.00	29.39	337.64	3,113.75	1,126.25	-463.33	-115.17	0.00	0.00	0.00
3,500.00	29.39	337.64	3,200.88	1,171.63	-482.00	-119.81	0.00	0.00	0.00
3,600.00	29.39	337.64	3,288.01	1,217.01	-500.66	-124.45	0.00	0.00	0.00
3,700.00	29.39	337.64	3,375.15	1,262.39	-519.33	-129.09	0.00	0.00	0.00
3,800.00	29.39	337.64	3,462.28	1,307.77	-538.00	-133.73	0.00	0.00	0.00
3,900.00	29.39	337.64	3,549.41	1,353.15	-556.67	-138.37	0.00	0.00	0.00
4,000.00	29.39	337.64	3,636.55	1,398.53	-575.34	-143.01	0.00	0.00	0.00
4,100.00	29.39	337.64	3,723.68	1,443.91	-594.00	-147.65	0.00	0.00	0.00
4,200.00	29.39	337.64	3,810.82	1,489.28	-612.67	-152.29	0.00	0.00	0.00
4,300.00	29.39	337.64	3,897.95	1,534.66	-631.34	-156.93	0.00	0.00	0.00
4,400.00	29.39	337.64	3,985.08	1,580.04	-650.01	-161.57	0.00	0.00	0.00
4,500.00	29.39	337.64	4,072.22	1,625.42	-668.68	-166.21	0.00	0.00	0.00
4,600.00	29.39	337.64	4,159.35	1,670.80	-687.35	-170.85	0.00	0.00	0.00
4,632.88	29.39	337.64	4,188.00	1,685.72	-693.48	-172.38	0.00	0.00	0.00
PARKMAN									
4,700.00	29.39	337.64	4,246.48	1,716.18	-706.01	-175.49	0.00	0.00	0.00

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Well:	PC 1S-66-2928-3NH	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	29.39	337.64	4,333.62	1,761.56	-724.68	-180.13	0.00	0.00	0.00	
4,900.00	29.39	337.64	4,420.75	1,806.94	-743.35	-184.77	0.00	0.00	0.00	
5,000.00	29.39	337.64	4,507.88	1,852.31	-762.02	-189.41	0.00	0.00	0.00	
5,100.00	29.39	337.64	4,595.02	1,897.69	-780.69	-194.05	0.00	0.00	0.00	
5,200.00	29.39	337.64	4,682.15	1,943.07	-799.36	-198.69	0.00	0.00	0.00	
5,300.00	29.39	337.64	4,769.29	1,988.45	-818.02	-203.33	0.00	0.00	0.00	
5,400.00	29.39	337.64	4,856.42	2,033.83	-836.69	-207.98	0.00	0.00	0.00	
5,440.84	29.39	337.64	4,892.00	2,052.36	-844.32	-209.87	0.00	0.00	0.00	
SUSSEX										
5,500.00	29.39	337.64	4,943.55	2,079.21	-855.36	-212.62	0.00	0.00	0.00	
5,600.00	29.39	337.64	5,030.69	2,124.59	-874.03	-217.26	0.00	0.00	0.00	
5,700.00	29.39	337.64	5,117.82	2,169.97	-892.70	-221.90	0.00	0.00	0.00	
5,800.00	29.39	337.64	5,204.95	2,215.34	-911.37	-226.54	0.00	0.00	0.00	
5,900.00	29.39	337.64	5,292.09	2,260.72	-930.03	-231.18	0.00	0.00	0.00	
6,000.00	29.39	337.64	5,379.22	2,306.10	-948.70	-235.82	0.00	0.00	0.00	
6,066.31	29.39	337.64	5,437.00	2,336.19	-961.08	-238.89	0.00	0.00	0.00	
SHANNON										
6,100.00	29.39	337.64	5,466.35	2,351.48	-967.37	-240.46	0.00	0.00	0.00	
6,200.00	29.39	337.64	5,553.49	2,396.86	-986.04	-245.10	0.00	0.00	0.00	
6,239.37	29.39	337.64	5,587.79	2,414.72	-993.39	-246.92	0.00	0.00	0.00	
DROP 2°/100'										
6,300.00	28.17	337.64	5,640.93	2,441.72	-1,004.49	-249.68	2.00	-2.00	0.00	
6,400.00	26.17	337.64	5,729.89	2,483.95	-1,021.87	-254.00	2.00	-2.00	0.00	
6,500.00	24.17	337.64	5,820.39	2,523.29	-1,038.05	-258.03	2.00	-2.00	0.00	
6,600.00	22.17	337.64	5,912.32	2,559.68	-1,053.02	-261.75	2.00	-2.00	0.00	
6,700.00	20.17	337.64	6,005.56	2,593.08	-1,066.76	-265.16	2.00	-2.00	0.00	
6,800.00	18.17	337.64	6,100.01	2,623.45	-1,079.25	-268.27	2.00	-2.00	0.00	
6,900.00	16.17	337.64	6,195.55	2,650.75	-1,090.49	-271.06	2.00	-2.00	0.00	
7,000.00	14.17	337.64	6,292.05	2,674.96	-1,100.44	-273.54	2.00	-2.00	0.00	
7,100.00	12.17	337.64	6,389.42	2,696.03	-1,109.11	-275.69	2.00	-2.00	0.00	
7,200.00	10.17	337.64	6,487.52	2,713.95	-1,116.49	-277.52	2.00	-2.00	0.00	
7,300.00	8.17	337.64	6,586.23	2,728.69	-1,122.55	-279.03	2.00	-2.00	0.00	
7,400.00	6.17	337.64	6,685.45	2,740.24	-1,127.30	-280.21	2.00	-2.00	0.00	
7,500.00	4.17	337.64	6,785.03	2,748.58	-1,130.73	-281.06	2.00	-2.00	0.00	
7,600.00	2.17	337.64	6,884.88	2,753.69	-1,132.84	-281.59	2.00	-2.00	0.00	
7,708.65	0.00	0.00	6,993.50	2,755.60	-1,133.62	-281.78	2.00	-2.00	0.00	
HOLD VERTICAL										
7,738.65	0.00	0.00	7,023.50	2,755.60	-1,133.62	-281.78	0.00	0.00	0.00	
KOP, BUILD 12°/100'										
7,750.00	1.36	90.20	7,034.85	2,755.60	-1,133.49	-281.65	12.00	12.00	0.00	
7,775.00	4.36	90.20	7,059.81	2,755.60	-1,132.24	-280.46	12.00	12.00	0.00	
7,800.00	7.36	90.20	7,084.68	2,755.59	-1,129.68	-278.02	12.00	12.00	0.00	
7,825.00	10.36	90.20	7,109.38	2,755.57	-1,125.83	-274.34	12.00	12.00	0.00	
7,850.00	13.36	90.20	7,133.84	2,755.55	-1,120.70	-269.43	12.00	12.00	0.00	
7,875.00	16.36	90.20	7,158.00	2,755.53	-1,114.28	-263.30	12.00	12.00	0.00	
7,900.00	19.36	90.20	7,181.80	2,755.50	-1,106.62	-255.98	12.00	12.00	0.00	
7,925.00	22.36	90.20	7,205.16	2,755.47	-1,097.72	-247.47	12.00	12.00	0.00	
7,950.00	25.36	90.20	7,228.02	2,755.44	-1,087.61	-237.81	12.00	12.00	0.00	
7,975.00	28.36	90.20	7,250.32	2,755.40	-1,076.31	-227.02	12.00	12.00	0.00	
8,000.00	31.36	90.20	7,272.00	2,755.35	-1,063.87	-215.12	12.00	12.00	0.00	
8,025.00	34.36	90.20	7,292.99	2,755.30	-1,050.30	-202.16	12.00	12.00	0.00	
8,050.00	37.36	90.20	7,313.25	2,755.25	-1,035.66	-188.17	12.00	12.00	0.00	
8,075.00	40.36	90.20	7,332.72	2,755.20	-1,019.98	-173.18	12.00	12.00	0.00	
8,087.32	41.84	90.20	7,342.00	2,755.17	-1,011.88	-165.45	12.00	12.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-3NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5089.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5089.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-3NH	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)	
NIOBARRA										
8,100.00	43.36	90.20	7,351.33	2,755.14	-1,003.30	-157.24	12.00	12.00	0.00	
8,125.00	46.36	90.20	7,369.05	2,755.08	-985.66	-140.39	12.00	12.00	0.00	
8,150.00	49.36	90.20	7,385.83	2,755.01	-967.13	-122.68	12.00	12.00	0.00	
8,175.00	52.36	90.20	7,401.61	2,754.94	-947.74	-104.16	12.00	12.00	0.00	
8,200.00	55.36	90.20	7,416.35	2,754.87	-927.56	-84.87	12.00	12.00	0.00	
8,225.00	58.36	90.20	7,430.01	2,754.80	-906.63	-64.86	12.00	12.00	0.00	
8,250.00	61.36	90.20	7,442.57	2,754.72	-885.01	-44.21	12.00	12.00	0.00	
8,275.00	64.36	90.20	7,453.97	2,754.64	-862.76	-22.95	12.00	12.00	0.00	
8,300.00	67.36	90.20	7,464.20	2,754.56	-839.95	-1.15	12.00	12.00	0.00	
8,325.00	70.36	90.20	7,473.21	2,754.48	-816.64	21.13	12.00	12.00	0.00	
8,350.00	73.36	90.20	7,481.00	2,754.39	-792.89	43.83	12.00	12.00	0.00	
8,375.00	76.36	90.20	7,487.53	2,754.31	-768.76	66.88	12.00	12.00	0.00	
8,390.81	78.25	90.20	7,491.00	2,754.25	-753.33	81.62	12.00	12.00	0.00	
NIO B TARGET										
8,400.00	79.36	90.20	7,492.78	2,754.22	-744.32	90.24	12.00	12.00	0.00	
8,425.00	82.36	90.20	7,496.76	2,754.13	-719.64	113.82	12.00	12.00	0.00	
8,450.00	85.36	90.20	7,499.43	2,754.05	-694.79	137.57	12.00	12.00	0.00	
8,475.00	88.36	90.20	7,500.80	2,753.96	-669.83	161.42	12.00	12.00	0.00	
8,488.70	90.00	90.20	7,501.00	2,753.91	-656.12	174.51	12.00	12.00	0.00	
LP @ 90° INC, 90.20° AZM HOLD										
8,500.00	90.00	90.20	7,501.00	2,753.87	-644.83	185.31	0.00	0.00	0.00	
8,600.00	90.00	90.20	7,501.00	2,753.51	-544.83	280.87	0.00	0.00	0.00	
8,700.00	90.00	90.20	7,501.00	2,753.16	-444.83	376.43	0.00	0.00	0.00	
8,800.00	90.00	90.20	7,501.00	2,752.81	-344.83	471.99	0.00	0.00	0.00	
8,900.00	90.00	90.20	7,501.00	2,752.45	-244.83	567.55	0.00	0.00	0.00	
9,000.00	90.00	90.20	7,501.00	2,752.10	-144.83	663.11	0.00	0.00	0.00	
9,100.00	90.00	90.20	7,501.00	2,751.74	-44.83	758.67	0.00	0.00	0.00	
9,200.00	90.00	90.20	7,501.00	2,751.39	55.17	854.23	0.00	0.00	0.00	
9,300.00	90.00	90.20	7,501.00	2,751.03	155.17	949.79	0.00	0.00	0.00	
9,400.00	90.00	90.20	7,501.00	2,750.68	255.17	1,045.35	0.00	0.00	0.00	
9,500.00	90.00	90.20	7,501.00	2,750.33	355.17	1,140.91	0.00	0.00	0.00	
9,600.00	90.00	90.20	7,501.00	2,749.97	455.16	1,236.47	0.00	0.00	0.00	
9,700.00	90.00	90.20	7,501.00	2,749.62	555.16	1,332.02	0.00	0.00	0.00	
9,800.00	90.00	90.20	7,501.00	2,749.26	655.16	1,427.58	0.00	0.00	0.00	
9,900.00	90.00	90.20	7,501.00	2,748.91	755.16	1,523.14	0.00	0.00	0.00	
10,000.00	90.00	90.20	7,501.00	2,748.55	855.16	1,618.70	0.00	0.00	0.00	
10,100.00	90.00	90.20	7,501.01	2,748.20	955.16	1,714.26	0.00	0.00	0.00	
10,200.00	90.00	90.20	7,501.01	2,747.85	1,055.16	1,809.82	0.00	0.00	0.00	
10,300.00	90.00	90.20	7,501.01	2,747.49	1,155.16	1,905.38	0.00	0.00	0.00	
10,400.00	90.00	90.20	7,501.01	2,747.14	1,255.16	2,000.94	0.00	0.00	0.00	
10,500.00	90.00	90.20	7,501.01	2,746.78	1,355.16	2,096.50	0.00	0.00	0.00	
10,600.00	90.00	90.20	7,501.01	2,746.43	1,455.16	2,192.06	0.00	0.00	0.00	
10,700.00	90.00	90.20	7,501.01	2,746.07	1,555.16	2,287.62	0.00	0.00	0.00	
10,800.00	90.00	90.20	7,501.01	2,745.72	1,655.16	2,383.18	0.00	0.00	0.00	
10,900.00	90.00	90.20	7,501.01	2,745.37	1,755.16	2,478.74	0.00	0.00	0.00	
11,000.00	90.00	90.20	7,501.01	2,745.01	1,855.16	2,574.30	0.00	0.00	0.00	
11,100.00	90.00	90.20	7,501.01	2,744.66	1,955.16	2,669.86	0.00	0.00	0.00	
11,200.00	90.00	90.20	7,501.01	2,744.30	2,055.15	2,765.42	0.00	0.00	0.00	
11,300.00	90.00	90.20	7,501.01	2,743.95	2,155.15	2,860.98	0.00	0.00	0.00	
11,400.00	90.00	90.20	7,501.01	2,743.59	2,255.15	2,956.54	0.00	0.00	0.00	
11,500.00	90.00	90.20	7,501.01	2,743.24	2,355.15	3,052.10	0.00	0.00	0.00	
11,600.00	90.00	90.20	7,501.01	2,742.89	2,455.15	3,147.66	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-3NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5089.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5089.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-3NH	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)	
11,700.00	90.00	90.20	7,501.01	2,742.53	2,555.15	3,243.22	0.00	0.00	0.00	
11,800.00	90.00	90.20	7,501.01	2,742.18	2,655.15	3,338.78	0.00	0.00	0.00	
11,900.00	90.00	90.20	7,501.01	2,741.82	2,755.15	3,434.34	0.00	0.00	0.00	
12,000.00	90.00	90.20	7,501.01	2,741.47	2,855.15	3,529.90	0.00	0.00	0.00	
12,100.00	90.00	90.20	7,501.01	2,741.11	2,955.15	3,625.46	0.00	0.00	0.00	
12,200.00	90.00	90.20	7,501.01	2,740.76	3,055.15	3,721.02	0.00	0.00	0.00	
12,300.00	90.00	90.20	7,501.01	2,740.41	3,155.15	3,816.58	0.00	0.00	0.00	
12,400.00	90.00	90.20	7,501.01	2,740.05	3,255.15	3,912.14	0.00	0.00	0.00	
12,500.00	90.00	90.20	7,501.01	2,739.70	3,355.15	4,007.70	0.00	0.00	0.00	
12,600.00	90.00	90.20	7,501.01	2,739.34	3,455.15	4,103.26	0.00	0.00	0.00	
12,700.00	90.00	90.20	7,501.01	2,738.99	3,555.15	4,198.82	0.00	0.00	0.00	
12,800.00	90.00	90.20	7,501.01	2,738.63	3,655.14	4,294.38	0.00	0.00	0.00	
12,900.00	90.00	90.20	7,501.01	2,738.28	3,755.14	4,389.93	0.00	0.00	0.00	
13,000.00	90.00	90.20	7,501.01	2,737.93	3,855.14	4,485.49	0.00	0.00	0.00	
13,100.00	90.00	90.20	7,501.01	2,737.57	3,955.14	4,581.05	0.00	0.00	0.00	
13,200.00	90.00	90.20	7,501.01	2,737.22	4,055.14	4,676.61	0.00	0.00	0.00	
13,300.00	90.00	90.20	7,501.01	2,736.86	4,155.14	4,772.17	0.00	0.00	0.00	
13,400.00	90.00	90.20	7,501.01	2,736.51	4,255.14	4,867.73	0.00	0.00	0.00	
13,500.00	90.00	90.20	7,501.02	2,736.15	4,355.14	4,963.29	0.00	0.00	0.00	
13,600.00	90.00	90.20	7,501.02	2,735.80	4,455.14	5,058.85	0.00	0.00	0.00	
13,700.00	90.00	90.20	7,501.02	2,735.45	4,555.14	5,154.41	0.00	0.00	0.00	
13,800.00	90.00	90.20	7,501.02	2,735.09	4,655.14	5,249.97	0.00	0.00	0.00	
13,900.00	90.00	90.20	7,501.02	2,734.74	4,755.14	5,345.53	0.00	0.00	0.00	
14,000.00	90.00	90.20	7,501.02	2,734.38	4,855.14	5,441.09	0.00	0.00	0.00	
14,100.00	90.00	90.20	7,501.02	2,734.03	4,955.14	5,536.65	0.00	0.00	0.00	
14,200.00	90.00	90.20	7,501.02	2,733.67	5,055.14	5,632.21	0.00	0.00	0.00	
14,300.00	90.00	90.20	7,501.02	2,733.32	5,155.14	5,727.77	0.00	0.00	0.00	
14,400.00	90.00	90.20	7,501.02	2,732.97	5,255.13	5,823.33	0.00	0.00	0.00	
14,500.00	90.00	90.20	7,501.02	2,732.61	5,355.13	5,918.89	0.00	0.00	0.00	
14,600.00	90.00	90.20	7,501.02	2,732.26	5,455.13	6,014.45	0.00	0.00	0.00	
14,700.00	90.00	90.20	7,501.02	2,731.90	5,555.13	6,110.01	0.00	0.00	0.00	
14,800.00	90.00	90.20	7,501.02	2,731.55	5,655.13	6,205.57	0.00	0.00	0.00	
14,900.00	90.00	90.20	7,501.02	2,731.19	5,755.13	6,301.13	0.00	0.00	0.00	
15,000.00	90.00	90.20	7,501.02	2,730.84	5,855.13	6,396.69	0.00	0.00	0.00	
15,100.00	90.00	90.20	7,501.02	2,730.49	5,955.13	6,492.25	0.00	0.00	0.00	
15,200.00	90.00	90.20	7,501.02	2,730.13	6,055.13	6,587.81	0.00	0.00	0.00	
15,300.00	90.00	90.20	7,501.02	2,729.78	6,155.13	6,683.37	0.00	0.00	0.00	
15,400.00	90.00	90.20	7,501.02	2,729.42	6,255.13	6,778.93	0.00	0.00	0.00	
15,500.00	90.00	90.20	7,501.02	2,729.07	6,355.13	6,874.49	0.00	0.00	0.00	
15,600.00	90.00	90.20	7,501.02	2,728.71	6,455.13	6,970.05	0.00	0.00	0.00	
15,700.00	90.00	90.20	7,501.02	2,728.36	6,555.13	7,065.61	0.00	0.00	0.00	
15,800.00	90.00	90.20	7,501.02	2,728.01	6,655.13	7,161.17	0.00	0.00	0.00	
15,900.00	90.00	90.20	7,501.02	2,727.65	6,755.13	7,256.73	0.00	0.00	0.00	
16,000.00	90.00	90.20	7,501.02	2,727.30	6,855.12	7,352.28	0.00	0.00	0.00	
16,100.00	90.00	90.20	7,501.02	2,726.94	6,955.12	7,447.84	0.00	0.00	0.00	
16,200.00	90.00	90.20	7,501.02	2,726.59	7,055.12	7,543.40	0.00	0.00	0.00	
16,300.00	90.00	90.20	7,501.02	2,726.23	7,155.12	7,638.96	0.00	0.00	0.00	
16,400.00	90.00	90.20	7,501.02	2,725.88	7,255.12	7,734.52	0.00	0.00	0.00	
16,500.00	90.00	90.20	7,501.02	2,725.53	7,355.12	7,830.08	0.00	0.00	0.00	
16,600.00	90.00	90.20	7,501.02	2,725.17	7,455.12	7,925.64	0.00	0.00	0.00	
16,700.00	90.00	90.20	7,501.02	2,724.82	7,555.12	8,021.20	0.00	0.00	0.00	
16,800.00	90.00	90.20	7,501.03	2,724.46	7,655.12	8,116.76	0.00	0.00	0.00	
16,900.00	90.00	90.20	7,501.03	2,724.11	7,755.12	8,212.32	0.00	0.00	0.00	
17,000.00	90.00	90.20	7,501.03	2,723.75	7,855.12	8,307.88	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-3NH
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 5089.00usft
Project:	Adams County	MD Reference:	KB 25' @ 5089.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-3NH	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)	
17,100.00	90.00	90.20	7,501.03	2,723.40	7,955.12	8,403.44	0.00	0.00	0.00	
17,200.00	90.00	90.20	7,501.03	2,723.05	8,055.12	8,499.00	0.00	0.00	0.00	
17,300.00	90.00	90.20	7,501.03	2,722.69	8,155.12	8,594.56	0.00	0.00	0.00	
17,400.00	90.00	90.20	7,501.03	2,722.34	8,255.12	8,690.12	0.00	0.00	0.00	
17,500.00	90.00	90.20	7,501.03	2,721.98	8,355.12	8,785.68	0.00	0.00	0.00	
17,600.00	90.00	90.20	7,501.03	2,721.63	8,455.11	8,881.24	0.00	0.00	0.00	
17,700.00	90.00	90.20	7,501.03	2,721.27	8,555.11	8,976.80	0.00	0.00	0.00	
17,800.00	90.00	90.20	7,501.03	2,720.92	8,655.11	9,072.36	0.00	0.00	0.00	
17,900.00	90.00	90.20	7,501.03	2,720.57	8,755.11	9,167.92	0.00	0.00	0.00	
18,000.00	90.00	90.20	7,501.03	2,720.21	8,855.11	9,263.48	0.00	0.00	0.00	
18,078.29	90.00	90.20	7,501.00	2,720.17	8,933.40	9,338.36	0.00	0.00	0.00	
TD at 18078.29' MD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
PC 3NH LP	0.00	0.00	7,501.00	2,753.91	-656.12	1,222,194.00	3,194,292.17	39° 56' 28.392 N		104° 48' 25.452 W
- hit/miss target										
- plan hits target center										
- Point										
PC 3NH PBHL	0.00	0.00	7,501.00	2,720.17	8,933.40	1,222,235.45	3,203,881.66	39° 56' 28.043 N		104° 46' 22.332 W
- hit/miss target										
- plan hits target center										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,632.88	4,188.00	PARKMAN				
5,440.84	4,892.00	SUSSEX				
6,066.31	5,437.00	SHANNON				
8,087.32	7,342.00	NIOBRARA				
8,390.81	7,491.00	NIO B TARGET				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200.00	200.00	0.00	0.00	BUILD 2°/100'	
1,669.28	1,605.71	340.88	-140.23	HOLD 29.39° INC	
6,239.37	5,587.79	2,414.72	-993.39	DROP 2°/100'	
7,708.65	6,993.50	2,755.60	-1,133.62	HOLD VERTICAL	
7,738.65	7,023.50	2,755.60	-1,133.62	KOP, BUILD 12°/100'	
8,488.70	7,501.00	2,753.91	-656.12	LP @ 90° INC, 90.20° AZM HOLD	
18,078.29	7,501.00	2,720.17	8,933.40	TD at 18078.29' MD	