

EXTRACTION OIL & GAS

Adams County

Sec 29-T1-R66W

PC 1S-66-2928-4NH

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

12 September, 2017



Project: Adams County
Site: Sec 29-T1-R66W
Well: PC 1S-66-2928-4NH
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-66-2928-4NH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1219419.82	3194970.07	39° 56' 0.924 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	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	1767.89	29.36	337.16	1704.50	339.07	-142.79	2.00	337.16	-38.83	
4	6224.77	29.36	337.16	5589.00	2352.83	-990.84	0.00	0.00	-269.44	
5	7692.66	0.00	0.00	6993.50	2691.90	-1133.63	2.00	180.00	-308.27	
6	7722.66	0.00	0.00	7023.50	2691.90	-1133.63	0.00	0.00	-308.27	
7	8472.72	90.00	89.99	7501.00	2691.98	-656.13	12.00	89.99	148.93	PC 4NH LP
8	18062.27	90.00	89.99	7501.00	2693.58	8933.42	0.00	0.00	9330.67	PC 4NH PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	BUILD 2°/100'
1767.89	29.36	337.16	1704.50	339.07	-142.79	-38.83	367.91	HOLD 29.36° INC
6224.77	29.36	337.16	5589.00	2352.83	-990.84	-269.44	2552.95	DROP 2°/100'
7692.66	0.00	0.00	6993.50	2691.90	-1133.63	-308.27	2920.86	HOLD VERTICAL
7722.66	0.00	0.00	7023.50	2691.90	-1133.63	-308.27	2920.86	KOP, BUILD 12°/100'
8472.72	90.00	89.99	7501.00	2691.98	-656.13	148.93	3398.37	LP @ 90° INC, 89.99° AZM HOLD
18062.27	90.00	89.99	7501.00	2693.58	8933.42	9330.67	12987.91	TD at 18062.27° MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PC 4NH LP	7501.00	2691.98	-656.13	1222106.58	3194292.85	39° 56' 27.528 N	104° 48' 25.452 W	Point
- plan hits target center								
PC 4NH PBHL	7501.00	2693.58	8933.42	1222183.36	3203882.09	39° 56' 27.528 N	104° 46' 22.332 W	Point
- plan hits target center								

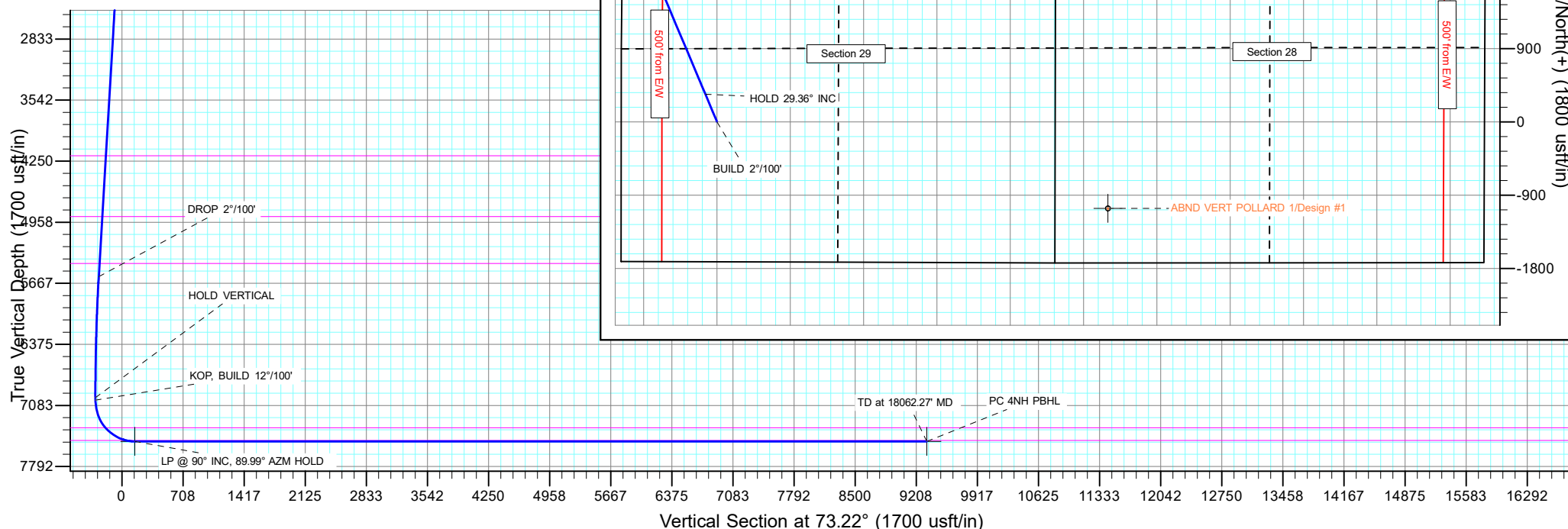
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4188.00	4617.33	PARKMAN
4892.00	5425.07	SUSSEX
5437.00	6050.37	SHANNON
7342.00	8071.33	NIOBRARA
7491.00	8374.82	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:
1719' FSL, 1175' FWL
Sec 29-T1S-R66W
LP:
860' FNL, 500' FWL
Sec 29-T1S-R66W
BHL:
860' FNL, 500' FEL
Sec 28-T1S-R66W



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-4NH
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-66-2928-4NH	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-66-2928-4NH					
Well Position	+N/-S	1,715.74 usft	Northing:	1,219,419.82 usft	Latitude:	39° 56' 0.924 N
	+E/-W	1,177.79 usft	Easting:	3,194,970.07 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	52,115.78711149

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	73.22

Plan Survey Tool Program	Date	9/12/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,062.27	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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,767.89	29.36	337.16	1,704.50	339.07	-142.79	2.00	2.00	0.00	337.16	
6,224.77	29.36	337.16	5,589.00	2,352.83	-990.84	0.00	0.00	0.00	0.00	
7,692.66	0.00	0.00	6,993.50	2,691.90	-1,133.63	2.00	-2.00	0.00	180.00	
7,722.66	0.00	0.00	7,023.50	2,691.90	-1,133.63	0.00	0.00	0.00	0.00	
8,472.72	90.00	89.99	7,501.00	2,691.98	-656.13	12.00	12.00	12.00	89.99	PC 4NH LP
18,062.27	90.00	89.99	7,501.00	2,693.58	8,933.42	0.00	0.00	0.00	0.00	PC 4NH 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-66-2928-4NH	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
BUILD 2°/100'									
400.00	2.00	337.16	399.98	1.61	-0.68	-0.18	2.00	2.00	0.00
500.00	4.00	337.16	499.84	6.43	-2.71	-0.74	2.00	2.00	0.00
600.00	6.00	337.16	599.45	14.46	-6.09	-1.66	2.00	2.00	0.00
700.00	8.00	337.16	698.70	25.69	-10.82	-2.94	2.00	2.00	0.00
800.00	10.00	337.16	797.47	40.11	-16.89	-4.59	2.00	2.00	0.00
900.00	12.00	337.16	895.62	57.70	-24.30	-6.61	2.00	2.00	0.00
1,000.00	14.00	337.16	993.06	78.43	-33.03	-8.98	2.00	2.00	0.00
1,100.00	16.00	337.16	1,089.64	102.28	-43.07	-11.71	2.00	2.00	0.00
1,200.00	18.00	337.16	1,185.27	129.22	-54.42	-14.80	2.00	2.00	0.00
1,300.00	20.00	337.16	1,279.82	159.23	-67.05	-18.23	2.00	2.00	0.00
1,400.00	22.00	337.16	1,373.17	192.25	-80.96	-22.02	2.00	2.00	0.00
1,500.00	24.00	337.16	1,465.21	228.26	-96.13	-26.14	2.00	2.00	0.00
1,600.00	26.00	337.16	1,555.84	267.21	-112.53	-30.60	2.00	2.00	0.00
1,700.00	28.00	337.16	1,644.94	309.04	-130.15	-35.39	2.00	2.00	0.00
1,767.89	29.36	337.16	1,704.50	339.07	-142.79	-38.83	2.00	2.00	0.00
HOLD 29.36° INC									
1,800.00	29.36	337.16	1,732.48	353.58	-148.90	-40.49	0.00	0.00	0.00
1,900.00	29.36	337.16	1,819.64	398.76	-167.93	-45.67	0.00	0.00	0.00
2,000.00	29.36	337.16	1,906.80	443.95	-186.96	-50.84	0.00	0.00	0.00
2,100.00	29.36	337.16	1,993.96	489.13	-205.98	-56.01	0.00	0.00	0.00
2,200.00	29.36	337.16	2,081.11	534.31	-225.01	-61.19	0.00	0.00	0.00
2,300.00	29.36	337.16	2,168.27	579.49	-244.04	-66.36	0.00	0.00	0.00
2,400.00	29.36	337.16	2,255.43	624.68	-263.07	-71.54	0.00	0.00	0.00
2,500.00	29.36	337.16	2,342.59	669.86	-282.10	-76.71	0.00	0.00	0.00
2,600.00	29.36	337.16	2,429.74	715.04	-301.12	-81.88	0.00	0.00	0.00
2,700.00	29.36	337.16	2,516.90	760.23	-320.15	-87.06	0.00	0.00	0.00
2,800.00	29.36	337.16	2,604.06	805.41	-339.18	-92.23	0.00	0.00	0.00
2,900.00	29.36	337.16	2,691.22	850.59	-358.21	-97.41	0.00	0.00	0.00
3,000.00	29.36	337.16	2,778.37	895.78	-377.24	-102.58	0.00	0.00	0.00
3,100.00	29.36	337.16	2,865.53	940.96	-396.26	-107.76	0.00	0.00	0.00
3,200.00	29.36	337.16	2,952.69	986.14	-415.29	-112.93	0.00	0.00	0.00
3,300.00	29.36	337.16	3,039.85	1,031.33	-434.32	-118.10	0.00	0.00	0.00
3,400.00	29.36	337.16	3,127.00	1,076.51	-453.35	-123.28	0.00	0.00	0.00
3,500.00	29.36	337.16	3,214.16	1,121.69	-472.37	-128.45	0.00	0.00	0.00
3,600.00	29.36	337.16	3,301.32	1,166.88	-491.40	-133.63	0.00	0.00	0.00
3,700.00	29.36	337.16	3,388.48	1,212.06	-510.43	-138.80	0.00	0.00	0.00
3,800.00	29.36	337.16	3,475.63	1,257.24	-529.46	-143.98	0.00	0.00	0.00
3,900.00	29.36	337.16	3,562.79	1,302.42	-548.49	-149.15	0.00	0.00	0.00
4,000.00	29.36	337.16	3,649.95	1,347.61	-567.51	-154.32	0.00	0.00	0.00
4,100.00	29.36	337.16	3,737.11	1,392.79	-586.54	-159.50	0.00	0.00	0.00
4,200.00	29.36	337.16	3,824.26	1,437.97	-605.57	-164.67	0.00	0.00	0.00
4,300.00	29.36	337.16	3,911.42	1,483.16	-624.60	-169.85	0.00	0.00	0.00
4,400.00	29.36	337.16	3,998.58	1,528.34	-643.62	-175.02	0.00	0.00	0.00
4,500.00	29.36	337.16	4,085.74	1,573.52	-662.65	-180.20	0.00	0.00	0.00
4,600.00	29.36	337.16	4,172.89	1,618.71	-681.68	-185.37	0.00	0.00	0.00
4,617.33	29.36	337.16	4,188.00	1,626.54	-684.98	-186.27	0.00	0.00	0.00
PARKMAN									
4,700.00	29.36	337.16	4,260.05	1,663.89	-700.71	-190.54	0.00	0.00	0.00

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Project:	Adams County	MD Reference:	KB 25' @ 5089.00usft
Site:	Sec 29-T1-R66W	North Reference:	True
Well:	PC 1S-66-2928-4NH	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	29.36	337.16	4,347.21	1,709.07	-719.74	-195.72	0.00	0.00	0.00	
4,900.00	29.36	337.16	4,434.37	1,754.26	-738.76	-200.89	0.00	0.00	0.00	
5,000.00	29.36	337.16	4,521.52	1,799.44	-757.79	-206.07	0.00	0.00	0.00	
5,100.00	29.36	337.16	4,608.68	1,844.62	-776.82	-211.24	0.00	0.00	0.00	
5,200.00	29.36	337.16	4,695.84	1,889.81	-795.85	-216.41	0.00	0.00	0.00	
5,300.00	29.36	337.16	4,783.00	1,934.99	-814.87	-221.59	0.00	0.00	0.00	
5,400.00	29.36	337.16	4,870.15	1,980.17	-833.90	-226.76	0.00	0.00	0.00	
5,425.07	29.36	337.16	4,892.00	1,991.50	-838.67	-228.06	0.00	0.00	0.00	
SUSSEX										
5,500.00	29.36	337.16	4,957.31	2,025.35	-852.93	-231.94	0.00	0.00	0.00	
5,600.00	29.36	337.16	5,044.47	2,070.54	-871.96	-237.11	0.00	0.00	0.00	
5,700.00	29.36	337.16	5,131.63	2,115.72	-890.99	-242.29	0.00	0.00	0.00	
5,800.00	29.36	337.16	5,218.78	2,160.90	-910.01	-247.46	0.00	0.00	0.00	
5,900.00	29.36	337.16	5,305.94	2,206.09	-929.04	-252.63	0.00	0.00	0.00	
6,000.00	29.36	337.16	5,393.10	2,251.27	-948.07	-257.81	0.00	0.00	0.00	
6,050.37	29.36	337.16	5,437.00	2,274.03	-957.65	-260.41	0.00	0.00	0.00	
SHANNON										
6,100.00	29.36	337.16	5,480.26	2,296.45	-967.10	-262.98	0.00	0.00	0.00	
6,200.00	29.36	337.16	5,567.41	2,341.64	-986.12	-268.16	0.00	0.00	0.00	
6,224.77	29.36	337.16	5,589.00	2,352.83	-990.84	-269.44	0.00	0.00	0.00	
DROP 2°/100'										
6,300.00	27.85	337.16	5,655.05	2,386.02	-1,004.82	-273.24	2.00	-2.00	0.00	
6,400.00	25.85	337.16	5,744.26	2,427.65	-1,022.35	-278.01	2.00	-2.00	0.00	
6,500.00	23.85	337.16	5,834.99	2,466.38	-1,038.66	-282.44	2.00	-2.00	0.00	
6,600.00	21.85	337.16	5,927.14	2,502.17	-1,053.73	-286.54	2.00	-2.00	0.00	
6,700.00	19.85	337.16	6,020.58	2,534.98	-1,067.55	-290.30	2.00	-2.00	0.00	
6,800.00	17.85	337.16	6,115.21	2,564.76	-1,080.09	-293.71	2.00	-2.00	0.00	
6,900.00	15.85	337.16	6,210.91	2,591.48	-1,091.34	-296.77	2.00	-2.00	0.00	
7,000.00	13.85	337.16	6,307.57	2,615.10	-1,101.29	-299.47	2.00	-2.00	0.00	
7,100.00	11.85	337.16	6,405.06	2,635.60	-1,109.92	-301.82	2.00	-2.00	0.00	
7,200.00	9.85	337.16	6,503.26	2,652.95	-1,117.23	-303.81	2.00	-2.00	0.00	
7,300.00	7.85	337.16	6,602.07	2,667.14	-1,123.20	-305.43	2.00	-2.00	0.00	
7,400.00	5.85	337.16	6,701.35	2,678.13	-1,127.83	-306.69	2.00	-2.00	0.00	
7,500.00	3.85	337.16	6,800.98	2,685.93	-1,131.12	-307.58	2.00	-2.00	0.00	
7,600.00	1.85	337.16	6,900.85	2,690.52	-1,133.05	-308.11	2.00	-2.00	0.00	
7,692.66	0.00	0.00	6,993.50	2,691.90	-1,133.63	-308.27	2.00	-2.00	0.00	
HOLD VERTICAL										
7,700.00	0.00	0.00	7,000.84	2,691.90	-1,133.63	-308.27	0.00	0.00	0.00	
7,722.66	0.00	0.00	7,023.50	2,691.90	-1,133.63	-308.27	0.00	0.00	0.00	
KOP, BUILD 12°/100'										
7,725.00	0.28	89.99	7,025.84	2,691.90	-1,133.62	-308.26	12.00	12.00	0.00	
7,750.00	3.28	89.99	7,050.82	2,691.90	-1,132.85	-307.52	12.00	12.00	0.00	
7,775.00	6.28	89.99	7,075.73	2,691.90	-1,130.76	-305.52	12.00	12.00	0.00	
7,800.00	9.28	89.99	7,100.50	2,691.90	-1,127.38	-302.28	12.00	12.00	0.00	
7,825.00	12.28	89.99	7,125.06	2,691.90	-1,122.71	-297.81	12.00	12.00	0.00	
7,850.00	15.28	89.99	7,149.33	2,691.90	-1,116.75	-292.11	12.00	12.00	0.00	
7,875.00	18.28	89.99	7,173.27	2,691.90	-1,109.54	-285.20	12.00	12.00	0.00	
7,900.00	21.28	89.99	7,196.79	2,691.91	-1,101.08	-277.10	12.00	12.00	0.00	
7,925.00	24.28	89.99	7,219.84	2,691.91	-1,091.40	-267.83	12.00	12.00	0.00	
7,950.00	27.28	89.99	7,242.35	2,691.91	-1,080.53	-257.42	12.00	12.00	0.00	
7,975.00	30.28	89.99	7,264.26	2,691.91	-1,068.49	-245.90	12.00	12.00	0.00	
8,000.00	33.28	89.99	7,285.51	2,691.91	-1,055.33	-233.30	12.00	12.00	0.00	
8,025.00	36.28	89.99	7,306.04	2,691.92	-1,041.07	-219.64	12.00	12.00	0.00	
8,050.00	39.28	89.99	7,325.80	2,691.92	-1,025.76	-204.98	12.00	12.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-4NH
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-66-2928-4NH	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)	
8,071.33	41.84	89.99	7,342.00	2,691.92	-1,011.89	-191.70	12.00	12.00	0.00	
NIOBRARA										
8,075.00	42.28	89.99	7,344.72	2,691.92	-1,009.43	-189.35	12.00	12.00	0.00	
8,100.00	45.28	89.99	7,362.77	2,691.92	-992.14	-172.79	12.00	12.00	0.00	
8,125.00	48.28	89.99	7,379.89	2,691.93	-973.92	-155.35	12.00	12.00	0.00	
8,150.00	51.28	89.99	7,396.03	2,691.93	-954.83	-137.08	12.00	12.00	0.00	
8,175.00	54.28	89.99	7,411.16	2,691.93	-934.93	-118.02	12.00	12.00	0.00	
8,200.00	57.28	89.99	7,425.21	2,691.94	-914.26	-98.23	12.00	12.00	0.00	
8,225.00	60.28	89.99	7,438.17	2,691.94	-892.88	-77.76	12.00	12.00	0.00	
8,250.00	63.28	89.99	7,449.99	2,691.95	-870.86	-56.67	12.00	12.00	0.00	
8,275.00	66.28	89.99	7,460.65	2,691.95	-848.25	-35.02	12.00	12.00	0.00	
8,300.00	69.28	89.99	7,470.10	2,691.95	-825.11	-12.86	12.00	12.00	0.00	
8,325.00	72.28	89.99	7,478.33	2,691.96	-801.50	9.74	12.00	12.00	0.00	
8,350.00	75.28	89.99	7,485.32	2,691.96	-777.50	32.72	12.00	12.00	0.00	
8,374.82	78.25	89.99	7,491.00	2,691.97	-753.34	55.85	12.00	12.00	0.00	
NIO B TARGET										
8,375.00	78.27	89.99	7,491.04	2,691.97	-753.17	56.02	12.00	12.00	0.00	
8,400.00	81.27	89.99	7,495.47	2,691.97	-728.57	79.57	12.00	12.00	0.00	
8,425.00	84.27	89.99	7,498.62	2,691.97	-703.77	103.31	12.00	12.00	0.00	
8,450.00	87.27	89.99	7,500.46	2,691.98	-678.84	127.18	12.00	12.00	0.00	
8,472.72	90.00	89.99	7,501.00	2,691.98	-656.13	148.93	12.00	12.00	0.00	
LP @ 90° INC, 89.99° AZM HOLD										
8,500.00	90.00	89.99	7,501.00	2,691.99	-628.85	175.05	0.00	0.00	0.00	
8,600.00	90.00	89.99	7,501.00	2,692.00	-528.85	270.80	0.00	0.00	0.00	
8,700.00	90.00	89.99	7,501.00	2,692.02	-428.85	366.54	0.00	0.00	0.00	
8,800.00	90.00	89.99	7,501.00	2,692.04	-328.85	462.29	0.00	0.00	0.00	
8,900.00	90.00	89.99	7,501.00	2,692.06	-228.85	558.04	0.00	0.00	0.00	
9,000.00	90.00	89.99	7,501.00	2,692.07	-128.85	653.79	0.00	0.00	0.00	
9,100.00	90.00	89.99	7,501.00	2,692.09	-28.85	749.53	0.00	0.00	0.00	
9,200.00	90.00	89.99	7,501.00	2,692.11	71.15	845.28	0.00	0.00	0.00	
9,300.00	90.00	89.99	7,500.99	2,692.12	171.15	941.03	0.00	0.00	0.00	
9,400.00	90.00	89.99	7,500.99	2,692.14	271.15	1,036.78	0.00	0.00	0.00	
9,500.00	90.00	89.99	7,500.99	2,692.16	371.15	1,132.52	0.00	0.00	0.00	
9,600.00	90.00	89.99	7,500.99	2,692.18	471.15	1,228.27	0.00	0.00	0.00	
9,700.00	90.00	89.99	7,500.99	2,692.19	571.15	1,324.02	0.00	0.00	0.00	
9,800.00	90.00	89.99	7,500.99	2,692.21	671.15	1,419.77	0.00	0.00	0.00	
9,900.00	90.00	89.99	7,500.99	2,692.23	771.15	1,515.51	0.00	0.00	0.00	
10,000.00	90.00	89.99	7,500.99	2,692.24	871.15	1,611.26	0.00	0.00	0.00	
10,100.00	90.00	89.99	7,500.99	2,692.26	971.15	1,707.01	0.00	0.00	0.00	
10,200.00	90.00	89.99	7,500.99	2,692.28	1,071.15	1,802.76	0.00	0.00	0.00	
10,300.00	90.00	89.99	7,500.99	2,692.30	1,171.15	1,898.50	0.00	0.00	0.00	
10,400.00	90.00	89.99	7,500.99	2,692.31	1,271.15	1,994.25	0.00	0.00	0.00	
10,500.00	90.00	89.99	7,500.99	2,692.33	1,371.15	2,090.00	0.00	0.00	0.00	
10,600.00	90.00	89.99	7,500.99	2,692.35	1,471.15	2,185.75	0.00	0.00	0.00	
10,700.00	90.00	89.99	7,500.98	2,692.36	1,571.15	2,281.49	0.00	0.00	0.00	
10,800.00	90.00	89.99	7,500.98	2,692.38	1,671.15	2,377.24	0.00	0.00	0.00	
10,900.00	90.00	89.99	7,500.98	2,692.40	1,771.15	2,472.99	0.00	0.00	0.00	
11,000.00	90.00	89.99	7,500.98	2,692.42	1,871.15	2,568.74	0.00	0.00	0.00	
11,100.00	90.00	89.99	7,500.98	2,692.43	1,971.15	2,664.48	0.00	0.00	0.00	
11,200.00	90.00	89.99	7,500.98	2,692.45	2,071.15	2,760.23	0.00	0.00	0.00	
11,300.00	90.00	89.99	7,500.98	2,692.47	2,171.15	2,855.98	0.00	0.00	0.00	
11,400.00	90.00	89.99	7,500.98	2,692.48	2,271.15	2,951.73	0.00	0.00	0.00	
11,500.00	90.00	89.99	7,500.98	2,692.50	2,371.15	3,047.47	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-4NH
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-66-2928-4NH	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)
11,600.00	90.00	89.99	7,500.98	2,692.52	2,471.15	3,143.22	0.00	0.00	0.00
11,700.00	90.00	89.99	7,500.98	2,692.54	2,571.15	3,238.97	0.00	0.00	0.00
11,800.00	90.00	89.99	7,500.98	2,692.55	2,671.15	3,334.72	0.00	0.00	0.00
11,900.00	90.00	89.99	7,500.98	2,692.57	2,771.15	3,430.46	0.00	0.00	0.00
12,000.00	90.00	89.99	7,500.98	2,692.59	2,871.15	3,526.21	0.00	0.00	0.00
12,100.00	90.00	89.99	7,500.98	2,692.61	2,971.15	3,621.96	0.00	0.00	0.00
12,200.00	90.00	89.99	7,500.97	2,692.62	3,071.15	3,717.71	0.00	0.00	0.00
12,300.00	90.00	89.99	7,500.97	2,692.64	3,171.15	3,813.45	0.00	0.00	0.00
12,400.00	90.00	89.99	7,500.97	2,692.66	3,271.15	3,909.20	0.00	0.00	0.00
12,500.00	90.00	89.99	7,500.97	2,692.67	3,371.15	4,004.95	0.00	0.00	0.00
12,600.00	90.00	89.99	7,500.97	2,692.69	3,471.15	4,100.70	0.00	0.00	0.00
12,700.00	90.00	89.99	7,500.97	2,692.71	3,571.15	4,196.44	0.00	0.00	0.00
12,800.00	90.00	89.99	7,500.97	2,692.73	3,671.15	4,292.19	0.00	0.00	0.00
12,900.00	90.00	89.99	7,500.97	2,692.74	3,771.15	4,387.94	0.00	0.00	0.00
13,000.00	90.00	89.99	7,500.97	2,692.76	3,871.15	4,483.69	0.00	0.00	0.00
13,100.00	90.00	89.99	7,500.97	2,692.78	3,971.15	4,579.43	0.00	0.00	0.00
13,200.00	90.00	89.99	7,500.97	2,692.79	4,071.15	4,675.18	0.00	0.00	0.00
13,300.00	90.00	89.99	7,500.97	2,692.81	4,171.15	4,770.93	0.00	0.00	0.00
13,400.00	90.00	89.99	7,500.97	2,692.83	4,271.15	4,866.68	0.00	0.00	0.00
13,500.00	90.00	89.99	7,500.97	2,692.85	4,371.15	4,962.42	0.00	0.00	0.00
13,600.00	90.00	89.99	7,500.97	2,692.86	4,471.15	5,058.17	0.00	0.00	0.00
13,700.00	90.00	89.99	7,500.96	2,692.88	4,571.15	5,153.92	0.00	0.00	0.00
13,800.00	90.00	89.99	7,500.96	2,692.90	4,671.15	5,249.67	0.00	0.00	0.00
13,900.00	90.00	89.99	7,500.96	2,692.91	4,771.15	5,345.41	0.00	0.00	0.00
14,000.00	90.00	89.99	7,500.96	2,692.93	4,871.15	5,441.16	0.00	0.00	0.00
14,100.00	90.00	89.99	7,500.96	2,692.95	4,971.15	5,536.91	0.00	0.00	0.00
14,200.00	90.00	89.99	7,500.96	2,692.97	5,071.15	5,632.66	0.00	0.00	0.00
14,300.00	90.00	89.99	7,500.96	2,692.98	5,171.15	5,728.40	0.00	0.00	0.00
14,400.00	90.00	89.99	7,500.96	2,693.00	5,271.15	5,824.15	0.00	0.00	0.00
14,500.00	90.00	89.99	7,500.96	2,693.02	5,371.15	5,919.90	0.00	0.00	0.00
14,600.00	90.00	89.99	7,500.96	2,693.03	5,471.15	6,015.65	0.00	0.00	0.00
14,700.00	90.00	89.99	7,500.96	2,693.05	5,571.15	6,111.39	0.00	0.00	0.00
14,800.00	90.00	89.99	7,500.96	2,693.07	5,671.15	6,207.14	0.00	0.00	0.00
14,900.00	90.00	89.99	7,500.96	2,693.09	5,771.15	6,302.89	0.00	0.00	0.00
15,000.00	90.00	89.99	7,500.96	2,693.10	5,871.15	6,398.64	0.00	0.00	0.00
15,100.00	90.00	89.99	7,500.95	2,693.12	5,971.15	6,494.38	0.00	0.00	0.00
15,200.00	90.00	89.99	7,500.95	2,693.14	6,071.15	6,590.13	0.00	0.00	0.00
15,300.00	90.00	89.99	7,500.95	2,693.15	6,171.15	6,685.88	0.00	0.00	0.00
15,400.00	90.00	89.99	7,500.95	2,693.17	6,271.15	6,781.63	0.00	0.00	0.00
15,500.00	90.00	89.99	7,500.95	2,693.19	6,371.15	6,877.38	0.00	0.00	0.00
15,600.00	90.00	89.99	7,500.95	2,693.21	6,471.15	6,973.12	0.00	0.00	0.00
15,700.00	90.00	89.99	7,500.95	2,693.22	6,571.15	7,068.87	0.00	0.00	0.00
15,800.00	90.00	89.99	7,500.95	2,693.24	6,671.15	7,164.62	0.00	0.00	0.00
15,900.00	90.00	89.99	7,500.95	2,693.26	6,771.15	7,260.37	0.00	0.00	0.00
16,000.00	90.00	89.99	7,500.95	2,693.28	6,871.15	7,356.11	0.00	0.00	0.00
16,100.00	90.00	89.99	7,500.95	2,693.29	6,971.15	7,451.86	0.00	0.00	0.00
16,200.00	90.00	89.99	7,500.95	2,693.31	7,071.15	7,547.61	0.00	0.00	0.00
16,300.00	90.00	89.99	7,500.95	2,693.33	7,171.15	7,643.36	0.00	0.00	0.00
16,400.00	90.00	89.99	7,500.95	2,693.34	7,271.15	7,739.10	0.00	0.00	0.00
16,500.00	90.00	89.99	7,500.95	2,693.36	7,371.15	7,834.85	0.00	0.00	0.00
16,600.00	90.00	89.99	7,500.94	2,693.38	7,471.15	7,930.60	0.00	0.00	0.00
16,700.00	90.00	89.99	7,500.94	2,693.40	7,571.15	8,026.35	0.00	0.00	0.00
16,800.00	90.00	89.99	7,500.94	2,693.41	7,671.15	8,122.09	0.00	0.00	0.00
16,900.00	90.00	89.99	7,500.94	2,693.43	7,771.15	8,217.84	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-4NH
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-66-2928-4NH	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)	
17,000.00	90.00	89.99	7,500.94	2,693.45	7,871.15	8,313.59	0.00	0.00	0.00	
17,100.00	90.00	89.99	7,500.94	2,693.46	7,971.15	8,409.34	0.00	0.00	0.00	
17,200.00	90.00	89.99	7,500.94	2,693.48	8,071.15	8,505.08	0.00	0.00	0.00	
17,300.00	90.00	89.99	7,500.94	2,693.50	8,171.15	8,600.83	0.00	0.00	0.00	
17,400.00	90.00	89.99	7,500.94	2,693.52	8,271.15	8,696.58	0.00	0.00	0.00	
17,500.00	90.00	89.99	7,500.94	2,693.53	8,371.15	8,792.33	0.00	0.00	0.00	
17,600.00	90.00	89.99	7,500.94	2,693.55	8,471.15	8,888.07	0.00	0.00	0.00	
17,700.00	90.00	89.99	7,500.94	2,693.57	8,571.15	8,983.82	0.00	0.00	0.00	
17,800.00	90.00	89.99	7,500.94	2,693.58	8,671.15	9,079.57	0.00	0.00	0.00	
17,900.00	90.00	89.99	7,500.94	2,693.60	8,771.15	9,175.32	0.00	0.00	0.00	
18,000.00	90.00	89.99	7,500.93	2,693.62	8,871.15	9,271.06	0.00	0.00	0.00	
18,062.27	90.00	89.99	7,501.00	2,693.58	8,933.42	9,330.67	0.00	0.00	0.00	
TD at 18062.27' MD										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PC 4NH LP	0.00	0.00	7,501.00	2,691.98	-656.13	1,222,106.58	3,194,292.85	39° 56' 27.528 N	104° 48' 25.452 W
- plan hits target center									
- Point									
PC 4NH PBHL	0.00	0.00	7,501.00	2,693.58	8,933.42	1,222,183.36	3,203,882.09	39° 56' 27.528 N	104° 46' 22.332 W
- plan hits target center									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,617.33	4,188.00	PARKMAN				
5,425.07	4,892.00	SUSSEX				
6,050.37	5,437.00	SHANNON				
8,071.33	7,342.00	NIOBRARA				
8,374.82	7,491.00	NIO B TARGET				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
300.00	300.00	0.00	0.00	BUILD 2°/100'	
1,767.89	1,704.50	339.07	-142.79	HOLD 29.36° INC	
6,224.77	5,589.00	2,352.83	-990.84	DROP 2°/100'	
7,692.66	6,993.50	2,691.90	-1,133.63	HOLD VERTICAL	
7,722.66	7,023.50	2,691.90	-1,133.63	KOP, BUILD 12°/100'	
8,472.72	7,501.00	2,691.98	-656.13	LP @ 90° INC, 89.99° AZM HOLD	
18,062.27	7,501.00	2,693.58	8,933.42	TD at 18062.27' MD	