

EXTRACTION OIL & GAS

**Adams County
Sec 29-T1-R66W
PC 1S-66-2928-7CDH**

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

12 September, 2017



Project: Adams County
Site: Sec 29-T1-R66W
Well: PC 1S-66-2928-7CDH
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-66-2928-7CDH

+N/-S	+E/-W	Northing	Easting	5064.00	Latitude	Longitude	Slot
0.00	0.00	1219361.54	3194970.52	39° 56' 0.348 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	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	1449.37	18.99	324.88	1432.09	127.50	-89.66	2.00	324.88	-65.25	
4	6608.40	18.99	324.88	6310.41	1500.55	-1055.21	0.00	0.00	-767.91	
5	7557.77	0.00	0.00	7242.50	1628.05	-1144.87	2.00	180.00	-833.16	
6	7587.77	0.00	0.00	7272.50	1628.05	-1144.87	0.00	0.00	-833.16	
7	8337.82	90.00	89.97	7750.00	1628.31	-667.37	12.00	89.97	-363.42	PC 7CDH LP
8	17933.41	90.00	89.97	7750.00	1633.54	8928.21	0.00	0.00	9076.42	PC 7CDH PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	BUILD 2°/100'
1449.37	18.99	324.88	1432.09	127.50	-89.66	-65.25	155.87	HOLD 18.99° INC
6608.40	18.99	324.88	6310.41	1500.55	-1055.21	-767.91	1834.42	DROP 2°/100'
7557.77	0.00	0.00	7242.50	1628.05	-1144.87	-833.16	1990.29	HOLD VERTICAL
7587.77	0.00	0.00	7272.50	1628.05	-1144.87	-833.16	1990.29	KOP, BUILD 12°/100'
8337.82	90.00	89.97	7750.00	1628.31	-667.37	-363.42	2467.79	LP @ 90° INC, 89.97° AZM HOLD
17933.41	90.00	89.97	7750.00	1633.54	8928.21	9076.42	12063.38	TD at 17933.41' MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	39° 56'	Latitude	Longitude	Shape
PC 7CDH LP	7750.00	1628.31	-667.37	1220984.57	3194290.40	39° 56'	16.440 N	104° 48' 25.596 W	Point
- plan hits target center									
PC 7CDH PBHL	7750.00	1633.54	8928.21	1221065.04	3203885.65	39° 56'	16.476 N	104° 46' 22.404 W	Point
- plan hits target center									

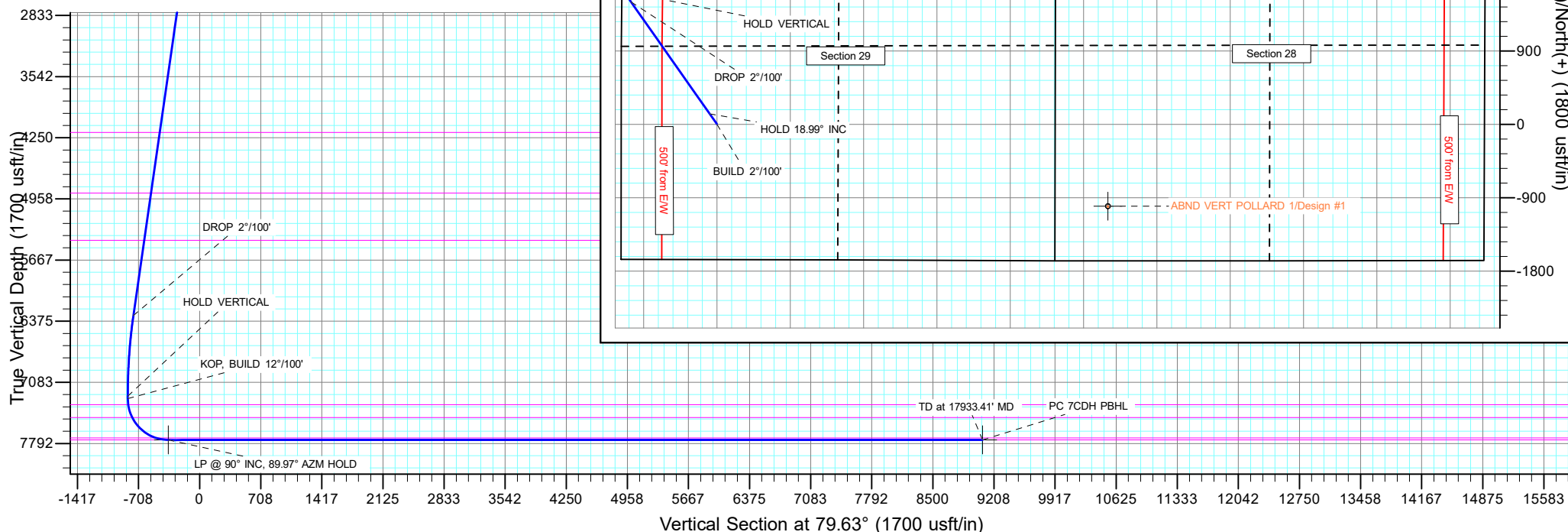
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4188.00	4363.86	PARKMAN
4892.00	5108.37	SUSSEX
5437.00	5684.73	SHANNON
7342.00	7657.52	NIOBRARA
7491.00	7814.72	NIO B TARGET
7727.00	8189.02	FORT HAYS
7750.00	8337.82	CODELL

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, 1175' FWL
Sec 29-T1S-R66W
LP:
1980' FNL, 500' FWL
Sec 29-T1S-R66W
BHL:
1980' FNL, 500' FEL
Sec 28-T1S-R66W



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-7CDH
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-66-2928-7CDH	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-66-2928-7CDH					
Well Position	+N/-S	1,657.46 usft	Northing:	1,219,361.54 usft	Latitude:	39° 56' 0.348 N
	+E/-W	1,177.79 usft	Easting:	3,194,970.52 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	52,115.70311426

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	79.63

Plan Survey Tool Program	Date	9/12/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,933.37	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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,449.37	18.99	324.88	1,432.09	127.50	-89.66	2.00	2.00	0.00	324.88	
6,608.40	18.99	324.88	6,310.41	1,500.55	-1,055.21	0.00	0.00	0.00	0.00	
7,557.77	0.00	0.00	7,242.50	1,628.05	-1,144.87	2.00	-2.00	0.00	180.00	
7,587.77	0.00	0.00	7,272.50	1,628.05	-1,144.87	0.00	0.00	0.00	0.00	
8,337.82	90.00	89.97	7,750.00	1,628.31	-667.37	12.00	12.00	12.00	89.97	PC 7CDH LP
17,933.41	90.00	89.97	7,750.00	1,633.54	8,928.21	0.00	0.00	0.00	0.00	PC 7CDH 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-66-2928-7CDH	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
BUILD 2°/100'									
600.00	2.00	324.88	599.98	1.43	-1.00	-0.73	2.00	2.00	0.00
700.00	4.00	324.88	699.84	5.71	-4.01	-2.92	2.00	2.00	0.00
800.00	6.00	324.88	799.45	12.84	-9.03	-6.57	2.00	2.00	0.00
900.00	8.00	324.88	898.70	22.81	-16.04	-11.67	2.00	2.00	0.00
1,000.00	10.00	324.88	997.47	35.60	-25.04	-18.22	2.00	2.00	0.00
1,100.00	12.00	324.88	1,095.62	51.21	-36.01	-26.21	2.00	2.00	0.00
1,200.00	14.00	324.88	1,193.06	69.61	-48.95	-35.62	2.00	2.00	0.00
1,300.00	16.00	324.88	1,289.64	90.78	-63.84	-46.46	2.00	2.00	0.00
1,400.00	18.00	324.88	1,385.27	114.69	-80.65	-58.70	2.00	2.00	0.00
1,449.37	18.99	324.88	1,432.09	127.50	-89.66	-65.25	2.00	2.00	0.00
HOLD 18.99° INC									
1,500.00	18.99	324.88	1,479.96	140.98	-99.14	-72.15	0.00	0.00	0.00
1,600.00	18.99	324.88	1,574.52	167.59	-117.85	-85.77	0.00	0.00	0.00
1,700.00	18.99	324.88	1,669.08	194.21	-136.57	-99.39	0.00	0.00	0.00
1,800.00	18.99	324.88	1,763.64	220.82	-155.28	-113.01	0.00	0.00	0.00
1,900.00	18.99	324.88	1,858.20	247.44	-174.00	-126.63	0.00	0.00	0.00
2,000.00	18.99	324.88	1,952.76	274.05	-192.72	-140.25	0.00	0.00	0.00
2,100.00	18.99	324.88	2,047.32	300.66	-211.43	-153.87	0.00	0.00	0.00
2,200.00	18.99	324.88	2,141.88	327.28	-230.15	-167.49	0.00	0.00	0.00
2,300.00	18.99	324.88	2,236.44	353.89	-248.86	-181.11	0.00	0.00	0.00
2,400.00	18.99	324.88	2,330.99	380.51	-267.58	-194.73	0.00	0.00	0.00
2,500.00	18.99	324.88	2,425.55	407.12	-286.29	-208.35	0.00	0.00	0.00
2,600.00	18.99	324.88	2,520.11	433.74	-305.01	-221.97	0.00	0.00	0.00
2,700.00	18.99	324.88	2,614.67	460.35	-323.73	-235.59	0.00	0.00	0.00
2,800.00	18.99	324.88	2,709.23	486.97	-342.44	-249.21	0.00	0.00	0.00
2,900.00	18.99	324.88	2,803.79	513.58	-361.16	-262.83	0.00	0.00	0.00
3,000.00	18.99	324.88	2,898.35	540.19	-379.87	-276.45	0.00	0.00	0.00
3,100.00	18.99	324.88	2,992.91	566.81	-398.59	-290.07	0.00	0.00	0.00
3,200.00	18.99	324.88	3,087.47	593.42	-417.30	-303.69	0.00	0.00	0.00
3,300.00	18.99	324.88	3,182.03	620.04	-436.02	-317.31	0.00	0.00	0.00
3,400.00	18.99	324.88	3,276.58	646.65	-454.74	-330.93	0.00	0.00	0.00
3,500.00	18.99	324.88	3,371.14	673.27	-473.45	-344.55	0.00	0.00	0.00
3,600.00	18.99	324.88	3,465.70	699.88	-492.17	-358.17	0.00	0.00	0.00
3,700.00	18.99	324.88	3,560.26	726.49	-510.88	-371.79	0.00	0.00	0.00
3,800.00	18.99	324.88	3,654.82	753.11	-529.60	-385.41	0.00	0.00	0.00
3,900.00	18.99	324.88	3,749.38	779.72	-548.31	-399.03	0.00	0.00	0.00
4,000.00	18.99	324.88	3,843.94	806.34	-567.03	-412.65	0.00	0.00	0.00
4,100.00	18.99	324.88	3,938.50	832.95	-585.74	-426.27	0.00	0.00	0.00
4,200.00	18.99	324.88	4,033.06	859.57	-604.46	-439.89	0.00	0.00	0.00
4,300.00	18.99	324.88	4,127.61	886.18	-623.18	-453.51	0.00	0.00	0.00
4,363.86	18.99	324.88	4,188.00	903.18	-635.13	-462.21	0.00	0.00	0.00
PARKMAN									
4,400.00	18.99	324.88	4,222.17	912.80	-641.89	-467.13	0.00	0.00	0.00
4,500.00	18.99	324.88	4,316.73	939.41	-660.61	-480.75	0.00	0.00	0.00
4,600.00	18.99	324.88	4,411.29	966.02	-679.32	-494.37	0.00	0.00	0.00
4,700.00	18.99	324.88	4,505.85	992.64	-698.04	-507.99	0.00	0.00	0.00

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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-66-2928-7CDH	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	18.99	324.88	4,600.41	1,019.25	-716.75	-521.61	0.00	0.00	0.00
4,900.00	18.99	324.88	4,694.97	1,045.87	-735.47	-535.23	0.00	0.00	0.00
5,000.00	18.99	324.88	4,789.53	1,072.48	-754.19	-548.85	0.00	0.00	0.00
5,100.00	18.99	324.88	4,884.09	1,099.10	-772.90	-562.47	0.00	0.00	0.00
5,108.37	18.99	324.88	4,892.00	1,101.32	-774.47	-563.61	0.00	0.00	0.00
SUSSEX									
5,200.00	18.99	324.88	4,978.65	1,125.71	-791.62	-576.09	0.00	0.00	0.00
5,300.00	18.99	324.88	5,073.20	1,152.32	-810.33	-589.71	0.00	0.00	0.00
5,400.00	18.99	324.88	5,167.76	1,178.94	-829.05	-603.33	0.00	0.00	0.00
5,500.00	18.99	324.88	5,262.32	1,205.55	-847.76	-616.95	0.00	0.00	0.00
5,600.00	18.99	324.88	5,356.88	1,232.17	-866.48	-630.57	0.00	0.00	0.00
5,684.73	18.99	324.88	5,437.00	1,254.72	-882.34	-642.11	0.00	0.00	0.00
SHANNON									
5,700.00	18.99	324.88	5,451.44	1,258.78	-885.20	-644.19	0.00	0.00	0.00
5,800.00	18.99	324.88	5,546.00	1,285.40	-903.91	-657.81	0.00	0.00	0.00
5,900.00	18.99	324.88	5,640.56	1,312.01	-922.63	-671.43	0.00	0.00	0.00
6,000.00	18.99	324.88	5,735.12	1,338.63	-941.34	-685.05	0.00	0.00	0.00
6,100.00	18.99	324.88	5,829.68	1,365.24	-960.06	-698.67	0.00	0.00	0.00
6,200.00	18.99	324.88	5,924.24	1,391.85	-978.77	-712.29	0.00	0.00	0.00
6,300.00	18.99	324.88	6,018.79	1,418.47	-997.49	-725.91	0.00	0.00	0.00
6,400.00	18.99	324.88	6,113.35	1,445.08	-1,016.20	-739.53	0.00	0.00	0.00
6,500.00	18.99	324.88	6,207.91	1,471.70	-1,034.92	-753.15	0.00	0.00	0.00
6,608.40	18.99	324.88	6,310.41	1,500.55	-1,055.21	-767.91	0.00	0.00	0.00
DROP 2°/100'									
6,700.00	17.16	324.88	6,397.49	1,523.79	-1,071.55	-779.81	2.00	-2.00	0.00
6,800.00	15.16	324.88	6,493.54	1,546.55	-1,087.56	-791.46	2.00	-2.00	0.00
6,900.00	13.16	324.88	6,590.50	1,566.55	-1,101.62	-801.69	2.00	-2.00	0.00
7,000.00	11.16	324.88	6,688.25	1,583.77	-1,113.73	-810.51	2.00	-2.00	0.00
7,100.00	9.16	324.88	6,786.68	1,598.20	-1,123.88	-817.89	2.00	-2.00	0.00
7,200.00	7.16	324.88	6,885.66	1,609.80	-1,132.04	-823.82	2.00	-2.00	0.00
7,300.00	5.16	324.88	6,985.08	1,618.57	-1,138.20	-828.31	2.00	-2.00	0.00
7,400.00	3.16	324.88	7,084.81	1,624.50	-1,142.37	-831.35	2.00	-2.00	0.00
7,500.00	1.16	324.88	7,184.74	1,627.57	-1,144.54	-832.92	2.00	-2.00	0.00
7,557.77	0.00	0.00	7,242.50	1,628.05	-1,144.87	-833.16	2.00	-2.00	0.00
HOLD VERTICAL									
7,587.77	0.00	0.00	7,272.50	1,628.05	-1,144.87	-833.16	0.00	0.00	0.00
KOP, BUILD 12°/100'									
7,600.00	1.47	89.97	7,284.73	1,628.05	-1,144.71	-833.01	12.00	12.00	0.00
7,625.00	4.47	89.97	7,309.69	1,628.05	-1,143.42	-831.74	12.00	12.00	0.00
7,650.00	7.47	89.97	7,334.56	1,628.05	-1,140.82	-829.18	12.00	12.00	0.00
7,657.52	8.37	89.97	7,342.00	1,628.05	-1,139.79	-828.16	12.00	12.00	0.00
NIOBRARA									
7,675.00	10.47	89.97	7,359.25	1,628.05	-1,136.92	-825.35	12.00	12.00	0.00
7,700.00	13.47	89.97	7,383.70	1,628.06	-1,131.74	-820.25	12.00	12.00	0.00
7,725.00	16.47	89.97	7,407.85	1,628.06	-1,125.29	-813.90	12.00	12.00	0.00
7,750.00	19.47	89.97	7,431.63	1,628.06	-1,117.57	-806.31	12.00	12.00	0.00
7,775.00	22.47	89.97	7,454.97	1,628.07	-1,108.63	-797.51	12.00	12.00	0.00
7,800.00	25.47	89.97	7,477.81	1,628.08	-1,098.48	-787.52	12.00	12.00	0.00
7,814.72	27.23	89.97	7,491.00	1,628.08	-1,091.95	-781.10	12.00	12.00	0.00
NIO B TARGET									
7,825.00	28.47	89.97	7,500.09	1,628.08	-1,087.14	-776.37	12.00	12.00	0.00
7,850.00	31.47	89.97	7,521.75	1,628.09	-1,074.66	-764.09	12.00	12.00	0.00
7,875.00	34.47	89.97	7,542.72	1,628.10	-1,061.05	-750.71	12.00	12.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-7CDH
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-66-2928-7CDH	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)	
7,900.00	37.47	89.97	7,562.95	1,628.10	-1,046.37	-736.27	12.00	12.00	0.00	
7,925.00	40.46	89.97	7,582.39	1,628.11	-1,030.65	-720.80	12.00	12.00	0.00	
7,950.00	43.46	89.97	7,600.98	1,628.12	-1,013.94	-704.36	12.00	12.00	0.00	
7,975.00	46.46	89.97	7,618.66	1,628.13	-996.27	-686.98	12.00	12.00	0.00	
8,000.00	49.46	89.97	7,635.40	1,628.14	-977.71	-668.72	12.00	12.00	0.00	
8,025.00	52.46	89.97	7,651.14	1,628.15	-958.29	-649.61	12.00	12.00	0.00	
8,050.00	55.46	89.97	7,665.85	1,628.16	-938.08	-629.73	12.00	12.00	0.00	
8,075.00	58.46	89.97	7,679.48	1,628.17	-917.12	-609.11	12.00	12.00	0.00	
8,100.00	61.46	89.97	7,691.99	1,628.18	-895.48	-587.82	12.00	12.00	0.00	
8,125.00	64.46	89.97	7,703.35	1,628.20	-873.22	-565.92	12.00	12.00	0.00	
8,150.00	67.46	89.97	7,713.53	1,628.21	-850.39	-543.46	12.00	12.00	0.00	
8,175.00	70.46	89.97	7,722.51	1,628.22	-827.06	-520.51	12.00	12.00	0.00	
8,189.02	72.14	89.97	7,727.00	1,628.23	-813.78	-507.45	12.00	12.00	0.00	
FORT HAYS										
8,200.00	73.46	89.97	7,730.25	1,628.23	-803.29	-497.13	12.00	12.00	0.00	
8,225.00	76.46	89.97	7,736.73	1,628.25	-779.15	-473.38	12.00	12.00	0.00	
8,250.00	79.46	89.97	7,741.95	1,628.26	-754.70	-449.33	12.00	12.00	0.00	
8,275.00	82.46	89.97	7,745.87	1,628.27	-730.01	-425.04	12.00	12.00	0.00	
8,300.00	85.46	89.97	7,748.50	1,628.29	-705.15	-400.58	12.00	12.00	0.00	
8,325.00	88.46	89.97	7,749.83	1,628.30	-680.19	-376.03	12.00	12.00	0.00	
8,337.82	90.00	89.97	7,750.00	1,628.31	-667.37	-363.42	12.00	12.00	0.00	
LP @ 90° INC, 89.97° AZM HOLD - CODELL										
8,400.00	90.00	89.97	7,750.00	1,628.34	-605.19	-302.25	0.00	0.00	0.00	
8,500.00	90.00	89.97	7,750.00	1,628.40	-505.19	-203.87	0.00	0.00	0.00	
8,600.00	90.00	89.97	7,750.00	1,628.45	-405.19	-105.49	0.00	0.00	0.00	
8,700.00	90.00	89.97	7,750.00	1,628.50	-305.19	-7.12	0.00	0.00	0.00	
8,800.00	90.00	89.97	7,750.00	1,628.56	-205.19	91.26	0.00	0.00	0.00	
8,900.00	90.00	89.97	7,750.00	1,628.61	-105.19	189.64	0.00	0.00	0.00	
9,000.00	90.00	89.97	7,750.00	1,628.67	-5.19	288.01	0.00	0.00	0.00	
9,100.00	90.00	89.97	7,750.00	1,628.72	94.81	386.39	0.00	0.00	0.00	
9,200.00	90.00	89.97	7,750.00	1,628.77	194.81	484.77	0.00	0.00	0.00	
9,300.00	90.00	89.97	7,750.01	1,628.83	294.81	583.14	0.00	0.00	0.00	
9,400.00	90.00	89.97	7,750.01	1,628.88	394.81	681.52	0.00	0.00	0.00	
9,500.00	90.00	89.97	7,750.01	1,628.94	494.81	779.90	0.00	0.00	0.00	
9,600.00	90.00	89.97	7,750.01	1,628.99	594.81	878.27	0.00	0.00	0.00	
9,700.00	90.00	89.97	7,750.01	1,629.05	694.81	976.65	0.00	0.00	0.00	
9,800.00	90.00	89.97	7,750.01	1,629.10	794.81	1,075.03	0.00	0.00	0.00	
9,900.00	90.00	89.97	7,750.01	1,629.15	894.81	1,173.41	0.00	0.00	0.00	
10,000.00	90.00	89.97	7,750.01	1,629.21	994.81	1,271.78	0.00	0.00	0.00	
10,100.00	90.00	89.97	7,750.01	1,629.26	1,094.81	1,370.16	0.00	0.00	0.00	
10,200.00	90.00	89.97	7,750.01	1,629.32	1,194.81	1,468.54	0.00	0.00	0.00	
10,300.00	90.00	89.97	7,750.01	1,629.37	1,294.81	1,566.91	0.00	0.00	0.00	
10,400.00	90.00	89.97	7,750.01	1,629.42	1,394.81	1,665.29	0.00	0.00	0.00	
10,500.00	90.00	89.97	7,750.01	1,629.48	1,494.81	1,763.67	0.00	0.00	0.00	
10,600.00	90.00	89.97	7,750.01	1,629.53	1,594.81	1,862.04	0.00	0.00	0.00	
10,700.00	90.00	89.97	7,750.01	1,629.59	1,694.81	1,960.42	0.00	0.00	0.00	
10,800.00	90.00	89.97	7,750.01	1,629.64	1,794.81	2,058.80	0.00	0.00	0.00	
10,900.00	90.00	89.97	7,750.01	1,629.69	1,894.81	2,157.17	0.00	0.00	0.00	
11,000.00	90.00	89.97	7,750.01	1,629.75	1,994.81	2,255.55	0.00	0.00	0.00	
11,100.00	90.00	89.97	7,750.02	1,629.80	2,094.81	2,353.93	0.00	0.00	0.00	
11,200.00	90.00	89.97	7,750.02	1,629.86	2,194.81	2,452.30	0.00	0.00	0.00	
11,300.00	90.00	89.97	7,750.02	1,629.91	2,294.81	2,550.68	0.00	0.00	0.00	
11,400.00	90.00	89.97	7,750.02	1,629.96	2,394.81	2,649.06	0.00	0.00	0.00	
11,500.00	90.00	89.97	7,750.02	1,630.02	2,494.81	2,747.43	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-7CDH
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-66-2928-7CDH	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	89.97	7,750.02	1,630.07	2,594.81	2,845.81	0.00	0.00	0.00	
11,700.00	90.00	89.97	7,750.02	1,630.13	2,694.81	2,944.19	0.00	0.00	0.00	
11,800.00	90.00	89.97	7,750.02	1,630.18	2,794.81	3,042.56	0.00	0.00	0.00	
11,900.00	90.00	89.97	7,750.02	1,630.23	2,894.81	3,140.94	0.00	0.00	0.00	
12,000.00	90.00	89.97	7,750.02	1,630.29	2,994.81	3,239.32	0.00	0.00	0.00	
12,100.00	90.00	89.97	7,750.02	1,630.34	3,094.81	3,337.69	0.00	0.00	0.00	
12,200.00	90.00	89.97	7,750.02	1,630.40	3,194.81	3,436.07	0.00	0.00	0.00	
12,300.00	90.00	89.97	7,750.02	1,630.45	3,294.81	3,534.45	0.00	0.00	0.00	
12,400.00	90.00	89.97	7,750.02	1,630.51	3,394.81	3,632.83	0.00	0.00	0.00	
12,500.00	90.00	89.97	7,750.02	1,630.56	3,494.81	3,731.20	0.00	0.00	0.00	
12,600.00	90.00	89.97	7,750.02	1,630.61	3,594.81	3,829.58	0.00	0.00	0.00	
12,700.00	90.00	89.97	7,750.02	1,630.67	3,694.81	3,927.96	0.00	0.00	0.00	
12,800.00	90.00	89.97	7,750.02	1,630.72	3,794.81	4,026.33	0.00	0.00	0.00	
12,900.00	90.00	89.97	7,750.03	1,630.78	3,894.81	4,124.71	0.00	0.00	0.00	
13,000.00	90.00	89.97	7,750.03	1,630.83	3,994.81	4,223.09	0.00	0.00	0.00	
13,100.00	90.00	89.97	7,750.03	1,630.88	4,094.81	4,321.46	0.00	0.00	0.00	
13,200.00	90.00	89.97	7,750.03	1,630.94	4,194.81	4,419.84	0.00	0.00	0.00	
13,300.00	90.00	89.97	7,750.03	1,630.99	4,294.81	4,518.22	0.00	0.00	0.00	
13,400.00	90.00	89.97	7,750.03	1,631.05	4,394.81	4,616.59	0.00	0.00	0.00	
13,500.00	90.00	89.97	7,750.03	1,631.10	4,494.81	4,714.97	0.00	0.00	0.00	
13,600.00	90.00	89.97	7,750.03	1,631.15	4,594.81	4,813.35	0.00	0.00	0.00	
13,700.00	90.00	89.97	7,750.03	1,631.21	4,694.81	4,911.72	0.00	0.00	0.00	
13,800.00	90.00	89.97	7,750.03	1,631.26	4,794.81	5,010.10	0.00	0.00	0.00	
13,900.00	90.00	89.97	7,750.03	1,631.32	4,894.81	5,108.48	0.00	0.00	0.00	
14,000.00	90.00	89.97	7,750.03	1,631.37	4,994.81	5,206.85	0.00	0.00	0.00	
14,100.00	90.00	89.97	7,750.03	1,631.42	5,094.81	5,305.23	0.00	0.00	0.00	
14,200.00	90.00	89.97	7,750.03	1,631.48	5,194.81	5,403.61	0.00	0.00	0.00	
14,300.00	90.00	89.97	7,750.03	1,631.53	5,294.81	5,501.98	0.00	0.00	0.00	
14,400.00	90.00	89.97	7,750.03	1,631.59	5,394.81	5,600.36	0.00	0.00	0.00	
14,500.00	90.00	89.97	7,750.03	1,631.64	5,494.81	5,698.74	0.00	0.00	0.00	
14,600.00	90.00	89.97	7,750.03	1,631.70	5,594.81	5,797.12	0.00	0.00	0.00	
14,700.00	90.00	89.97	7,750.04	1,631.75	5,694.81	5,895.49	0.00	0.00	0.00	
14,800.00	90.00	89.97	7,750.04	1,631.80	5,794.81	5,993.87	0.00	0.00	0.00	
14,900.00	90.00	89.97	7,750.04	1,631.86	5,894.81	6,092.25	0.00	0.00	0.00	
15,000.00	90.00	89.97	7,750.04	1,631.91	5,994.81	6,190.62	0.00	0.00	0.00	
15,100.00	90.00	89.97	7,750.04	1,631.97	6,094.81	6,289.00	0.00	0.00	0.00	
15,200.00	90.00	89.97	7,750.04	1,632.02	6,194.81	6,387.38	0.00	0.00	0.00	
15,300.00	90.00	89.97	7,750.04	1,632.07	6,294.81	6,485.75	0.00	0.00	0.00	
15,400.00	90.00	89.97	7,750.04	1,632.13	6,394.81	6,584.13	0.00	0.00	0.00	
15,500.00	90.00	89.97	7,750.04	1,632.18	6,494.81	6,682.51	0.00	0.00	0.00	
15,600.00	90.00	89.97	7,750.04	1,632.24	6,594.81	6,780.88	0.00	0.00	0.00	
15,700.00	90.00	89.97	7,750.04	1,632.29	6,694.81	6,879.26	0.00	0.00	0.00	
15,800.00	90.00	89.97	7,750.04	1,632.34	6,794.81	6,977.64	0.00	0.00	0.00	
15,900.00	90.00	89.97	7,750.04	1,632.40	6,894.81	7,076.01	0.00	0.00	0.00	
16,000.00	90.00	89.97	7,750.04	1,632.45	6,994.81	7,174.39	0.00	0.00	0.00	
16,100.00	90.00	89.97	7,750.04	1,632.51	7,094.81	7,272.77	0.00	0.00	0.00	
16,200.00	90.00	89.97	7,750.04	1,632.56	7,194.81	7,371.14	0.00	0.00	0.00	
16,300.00	90.00	89.97	7,750.04	1,632.61	7,294.81	7,469.52	0.00	0.00	0.00	
16,400.00	90.00	89.97	7,750.04	1,632.67	7,394.81	7,567.90	0.00	0.00	0.00	
16,500.00	90.00	89.97	7,750.05	1,632.72	7,494.81	7,666.27	0.00	0.00	0.00	
16,600.00	90.00	89.97	7,750.05	1,632.78	7,594.81	7,764.65	0.00	0.00	0.00	
16,700.00	90.00	89.97	7,750.05	1,632.83	7,694.81	7,863.03	0.00	0.00	0.00	
16,800.00	90.00	89.97	7,750.05	1,632.89	7,794.81	7,961.40	0.00	0.00	0.00	
16,900.00	90.00	89.97	7,750.05	1,632.94	7,894.81	8,059.78	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well PC 1S-66-2928-7CDH
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-66-2928-7CDH	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	89.97	7,750.05	1,632.99	7,994.81	8,158.16	0.00	0.00	0.00	
17,100.00	90.00	89.97	7,750.05	1,633.05	8,094.81	8,256.54	0.00	0.00	0.00	
17,200.00	90.00	89.97	7,750.05	1,633.10	8,194.81	8,354.91	0.00	0.00	0.00	
17,300.00	90.00	89.97	7,750.05	1,633.16	8,294.81	8,453.29	0.00	0.00	0.00	
17,400.00	90.00	89.97	7,750.05	1,633.21	8,394.81	8,551.67	0.00	0.00	0.00	
17,500.00	90.00	89.97	7,750.05	1,633.26	8,494.81	8,650.04	0.00	0.00	0.00	
17,600.00	90.00	89.97	7,750.05	1,633.32	8,594.81	8,748.42	0.00	0.00	0.00	
17,700.00	90.00	89.97	7,750.05	1,633.37	8,694.81	8,846.80	0.00	0.00	0.00	
17,800.00	90.00	89.97	7,750.05	1,633.43	8,794.81	8,945.17	0.00	0.00	0.00	
17,900.00	90.00	89.97	7,750.05	1,633.48	8,894.81	9,043.55	0.00	0.00	0.00	
17,933.41	90.00	89.97	7,750.00	1,633.54	8,928.21	9,076.42	0.00	0.00	0.00	
TD at 17933.41' 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 7CDH PBHL	0.00	0.00	7,750.00	1,633.54	8,928.21	1,221,065.04	3,203,885.65	39° 56' 16.476 N	104° 46' 22.404 W	
- plan hits target center										
- Point										
PC 7CDH LP	0.00	0.00	7,750.00	1,628.31	-667.37	1,220,984.56	3,194,290.41	39° 56' 16.440 N	104° 48' 25.596 W	
- plan hits target center										
- Point										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,363.86	4,188.00	PARKMAN				
5,108.37	4,892.00	SUSSEX				
5,684.73	5,437.00	SHANNON				
7,657.52	7,342.00	NIOBRARA				
7,814.72	7,491.00	NIO B TARGET				
8,189.02	7,727.00	FORT HAYS				
8,337.82	7,750.00	CODELL				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
500.00	500.00	0.00	0.00	BUILD 2°/100'	
1,449.37	1,432.09	127.50	-89.66	HOLD 18.99° INC	
6,608.40	6,310.41	1,500.55	-1,055.21	DROP 2°/100'	
7,557.77	7,242.50	1,628.05	-1,144.87	HOLD VERTICAL	
7,587.77	7,272.50	1,628.05	-1,144.87	KOP, BUILD 12°/100'	
8,337.82	7,750.00	1,628.31	-667.37	LP @ 90° INC, 89.97° AZM HOLD	
17,933.41	7,750.00	1,633.54	8,928.21	TD at 17933.41' MD	