

# **EXTRACTION OIL & GAS**

**Adams County**

**Sec 12-T1S-R66W**

**DUCK CLUB 12W-20-10N**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**26 March, 2018**



Project: Adams County  
Site: Sec 12-T1S-R66W  
Well: DUCK CLUB 12W-20-10N  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1



Azimuths to True North  
Magnetic North: 8.12°  
Magnetic Field  
Strength: 52138.5nT  
Dip Angle: 66.51°  
Date: 10/10/2017  
Model: IGRF2015

#### WELL DETAILS: DUCK CLUB 12W-20-10N

+N/-S	+E/-W	Northing	Easting	5037.00	Latitude	Longitude	Slot
0.00	0.00	1236044.17	3215510.92	39° 58' 43.536 N	104° 43' 51.492 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	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1642.21	24.84	117.63	1603.65	-122.98	234.88	2.00	117.63	-216.96	
4	5917.59	24.84	117.63	5483.35	-956.17	1826.28	0.00	0.00	-1686.89	
5	7159.80	0.00	0.00	6687.00	-1079.15	2061.16	2.00	180.00	-1903.85	
6	7189.80	0.00	0.00	6717.00	-1079.15	2061.16	0.00	0.00	-1903.85	
7	8089.88	90.00	270.10	7290.00	-1078.20	1488.14	10.00	270.10	-1335.79	DC 10N - LP
8	17702.57	90.00	270.10	7290.00	-1062.34	-8124.53	0.00	0.00	8193.69	DC 10N - PBHL

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	Start Build 2.00
1642.21	24.84	117.63	1603.65	-122.98	234.88	-216.96	265.13	Start 4275.37 hold at 1642.21 MD
5917.59	24.84	117.63	5483.35	-956.17	1826.28	-1686.89	2061.45	Start Drop -2.00
7159.80	0.00	0.00	6687.00	-1079.15	2061.16	-1903.85	2326.57	Start 30.00 hold at 7159.80 MD
7189.80	0.00	0.00	6717.00	-1079.15	2061.16	-1903.85	2326.57	Start DLS 10.00 TFO 270.10
8089.88	90.00	270.10	7290.00	-1078.20	1488.14	-1335.79	2899.59	Start 9612.69 hold at 8089.88 MD
17702.57	90.00	270.10	7290.00	-1062.34	-8124.53	8193.69	12512.28	TD at 17702.57

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	39° 58'	Latitude	Longitude	Shape
DC 10N - LP	7290.00	-1078.20	1488.14	1234978.92	3217008.35	39° 58'	32.880 N	104° 43'	Point
- plan hits target center									
DC 10N - PBHL	7290.00	-1062.34	-8124.53	1234911.41	3207395.90	39° 58'	33.024 N	104° 45'	Point
- plan hits target center									

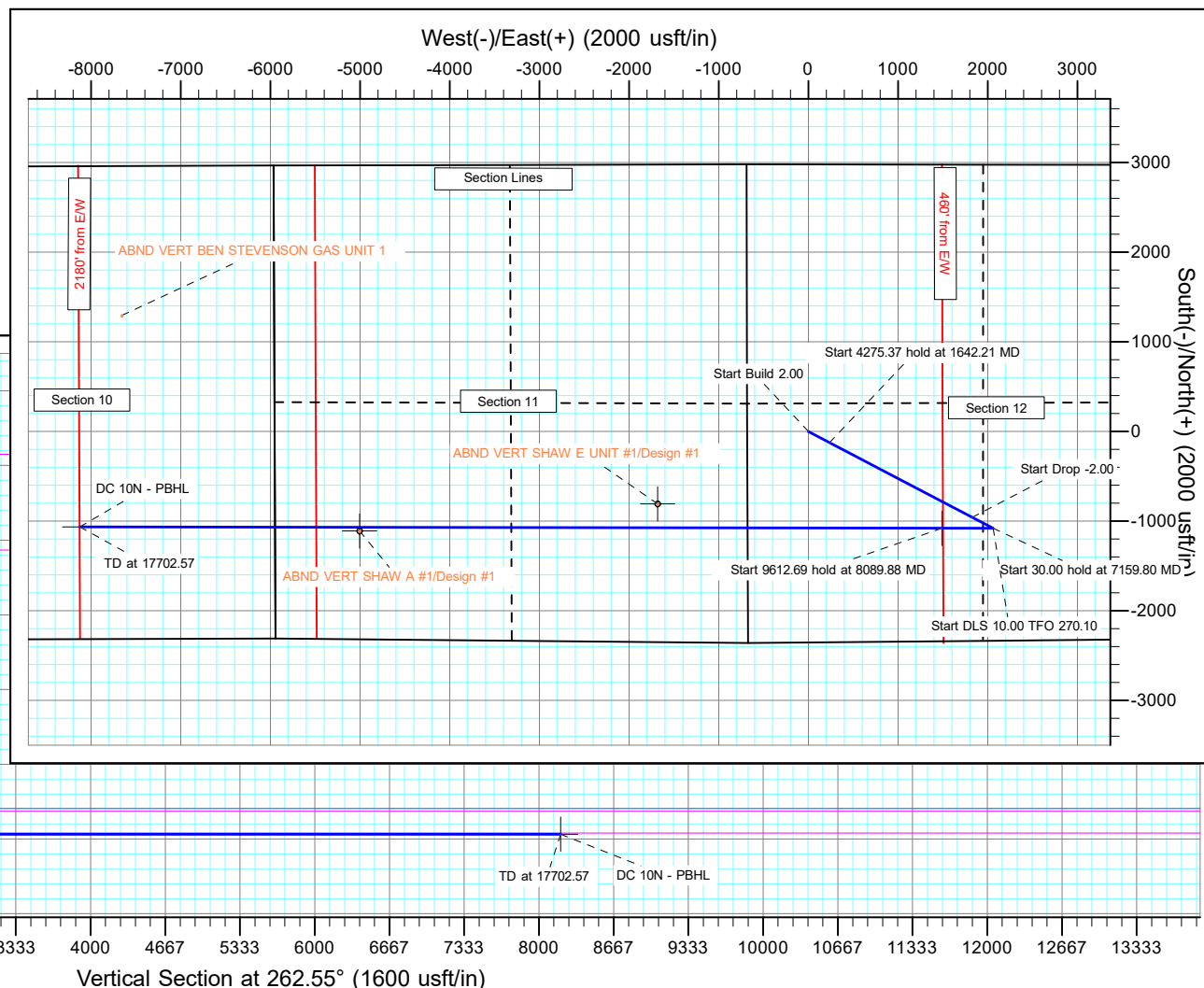
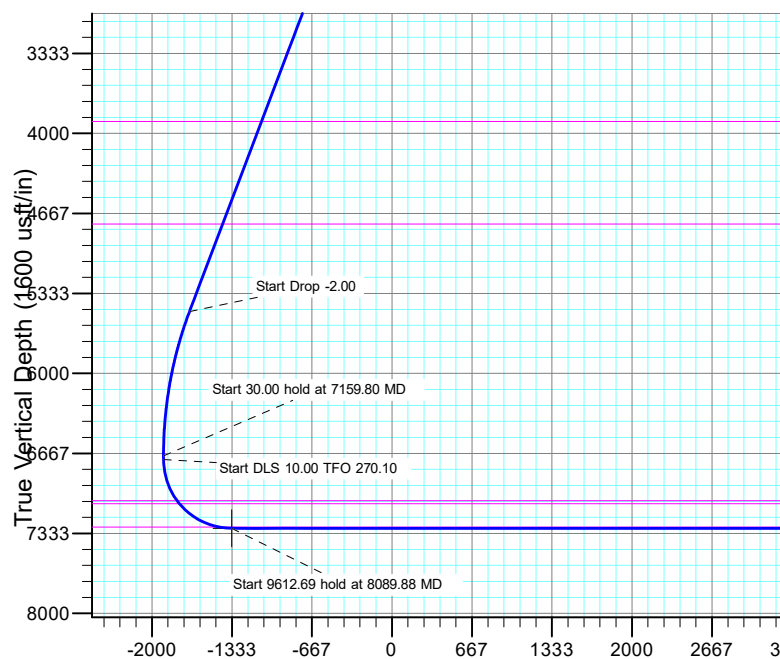
#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3900.00	4172.76	PARKMAN
4755.00	5114.96	SUSSEX
7080.00	7557.53	SHARON SPRINGS
7086.00	7590.72	NIOBRARA
7280.00	7982.66	NIO B

#### 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:  
2352' FSL, 683' FWL  
Sec 12-T1S-R66W  
LP:  
1260' FSL, 2165' FWL  
Sec 12-T1S-R66W  
BHL:  
1252' FSL, 2177' FEL  
Sec 10-T1S-R66W



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well DUCK CLUB 12W-20-10N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5062.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-10N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	Adams County		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Sec 12-T1S-R66W			
Site Position:		Northing:	1,239,018.46 usft	Latitude:	39° 59' 12.990 N
From:	Lat/Long	Easting:	3,214,796.41 usft	Longitude:	104° 44' 0.340 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.50 °

Well		DUCK CLUB 12W-20-10N				
Well Position	+N/-S	-2,980.36 usft	Northing:	1,236,044.16 usft	Latitude:	39° 58' 43.536 N
	+E/-W	688.77 usft	Easting:	3,215,510.92 usft	Longitude:	104° 43' 51.492 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	5,037.00 usft

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	10/10/2017	8.12	66.51	52,138.49675564

<b>Design</b>	PROPOSAL 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	262.55

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/26/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	17,702.54	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,642.22	24.84	117.63	1,603.65	-122.98	234.88	2.00	2.00	0.00	117.63	
5,917.59	24.84	117.63	5,483.35	-956.17	1,826.28	0.00	0.00	0.00	0.00	
7,159.80	0.00	0.00	6,687.00	-1,079.15	2,061.16	2.00	-2.00	0.00	180.00	
7,189.80	0.00	0.00	6,717.00	-1,079.15	2,061.16	0.00	0.00	0.00	0.00	
8,089.88	90.00	270.10	7,290.00	-1,078.20	1,488.14	10.00	10.00	-9.99	270.10	DC 10N - LP
17,702.57	90.00	270.10	7,290.00	-1,062.34	-8,124.53	0.00	0.00	0.00	0.00	DC 10N - PBHL

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well DUCK CLUB 12W-20-10N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5062.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-10N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
500.00	2.00	117.63	499.98	-0.81	1.55	-1.43	2.00	2.00	0.00
600.00	4.00	117.63	599.84	-3.24	6.18	-5.71	2.00	2.00	0.00
700.00	6.00	117.63	699.45	-7.28	13.90	-12.84	2.00	2.00	0.00
800.00	8.00	117.63	798.70	-12.93	24.70	-22.81	2.00	2.00	0.00
900.00	10.00	117.63	897.47	-20.19	38.56	-35.61	2.00	2.00	0.00
1,000.00	12.00	117.63	995.62	-29.04	55.46	-51.23	2.00	2.00	0.00
1,100.00	14.00	117.63	1,093.06	-39.47	75.39	-69.64	2.00	2.00	0.00
1,200.00	16.00	117.63	1,189.64	-51.48	98.32	-90.81	2.00	2.00	0.00
1,300.00	18.00	117.63	1,285.27	-65.04	124.22	-114.74	2.00	2.00	0.00
1,400.00	20.00	117.63	1,379.82	-80.14	153.06	-141.38	2.00	2.00	0.00
1,500.00	22.00	117.63	1,473.17	-96.76	184.81	-170.70	2.00	2.00	0.00
1,600.00	24.00	117.63	1,565.21	-114.88	219.42	-202.67	2.00	2.00	0.00
1,642.22	24.84	117.63	1,603.65	-122.98	234.88	-216.96	2.00	2.00	0.00
Start 4275.37 hold at 1642.21 MD									
1,700.00	24.84	117.63	1,656.09	-134.24	256.39	-236.82	0.00	0.00	0.00
1,800.00	24.84	117.63	1,746.83	-153.73	293.61	-271.20	0.00	0.00	0.00
1,900.00	24.84	117.63	1,837.58	-173.21	330.84	-305.59	0.00	0.00	0.00
2,000.00	24.84	117.63	1,928.32	-192.70	368.06	-339.97	0.00	0.00	0.00
2,100.00	24.84	117.63	2,019.07	-212.19	405.28	-374.35	0.00	0.00	0.00
2,200.00	24.84	117.63	2,109.82	-231.68	442.50	-408.73	0.00	0.00	0.00
2,300.00	24.84	117.63	2,200.56	-251.17	479.73	-443.11	0.00	0.00	0.00
2,400.00	24.84	117.63	2,291.31	-270.66	516.95	-477.49	0.00	0.00	0.00
2,500.00	24.84	117.63	2,382.05	-290.14	554.17	-511.87	0.00	0.00	0.00
2,600.00	24.84	117.63	2,472.80	-309.63	591.39	-546.26	0.00	0.00	0.00
2,700.00	24.84	117.63	2,563.54	-329.12	628.62	-580.64	0.00	0.00	0.00
2,800.00	24.84	117.63	2,654.29	-348.61	665.84	-615.02	0.00	0.00	0.00
2,900.00	24.84	117.63	2,745.03	-368.10	703.06	-649.40	0.00	0.00	0.00
3,000.00	24.84	117.63	2,835.78	-387.59	740.28	-683.78	0.00	0.00	0.00
3,100.00	24.84	117.63	2,926.52	-407.07	777.50	-718.16	0.00	0.00	0.00
3,200.00	24.84	117.63	3,017.27	-426.56	814.73	-752.55	0.00	0.00	0.00
3,300.00	24.84	117.63	3,108.01	-446.05	851.95	-786.93	0.00	0.00	0.00
3,400.00	24.84	117.63	3,198.76	-465.54	889.17	-821.31	0.00	0.00	0.00
3,500.00	24.84	117.63	3,289.50	-485.03	926.39	-855.69	0.00	0.00	0.00
3,600.00	24.84	117.63	3,380.25	-504.52	963.62	-890.07	0.00	0.00	0.00
3,700.00	24.84	117.63	3,470.99	-524.00	1,000.84	-924.45	0.00	0.00	0.00
3,800.00	24.84	117.63	3,561.74	-543.49	1,038.06	-958.83	0.00	0.00	0.00
3,900.00	24.84	117.63	3,652.48	-562.98	1,075.28	-993.22	0.00	0.00	0.00
4,000.00	24.84	117.63	3,743.23	-582.47	1,112.51	-1,027.60	0.00	0.00	0.00
4,100.00	24.84	117.63	3,833.98	-601.96	1,149.73	-1,061.98	0.00	0.00	0.00
4,172.76	24.84	117.63	3,900.00	-616.14	1,176.81	-1,086.99	0.00	0.00	0.00
PARKMAN									
4,200.00	24.84	117.63	3,924.72	-621.45	1,186.95	-1,096.36	0.00	0.00	0.00
4,300.00	24.84	117.63	4,015.47	-640.93	1,224.17	-1,130.74	0.00	0.00	0.00
4,400.00	24.84	117.63	4,106.21	-660.42	1,261.40	-1,165.12	0.00	0.00	0.00
4,500.00	24.84	117.63	4,196.96	-679.91	1,298.62	-1,199.50	0.00	0.00	0.00
4,600.00	24.84	117.63	4,287.70	-699.40	1,335.84	-1,233.89	0.00	0.00	0.00
4,700.00	24.84	117.63	4,378.45	-718.89	1,373.06	-1,268.27	0.00	0.00	0.00

# Planning Report

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<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-10N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,800.00	24.84	117.63	4,469.19	-738.38	1,410.29	-1,302.65	0.00	0.00	0.00
4,900.00	24.84	117.63	4,559.94	-757.86	1,447.51	-1,337.03	0.00	0.00	0.00
5,000.00	24.84	117.63	4,650.68	-777.35	1,484.73	-1,371.41	0.00	0.00	0.00
5,100.00	24.84	117.63	4,741.43	-796.84	1,521.95	-1,405.79	0.00	0.00	0.00
5,114.96	24.84	117.63	4,755.00	-799.75	1,527.52	-1,410.94	0.00	0.00	0.00
<b>SUSSEX</b>									
5,200.00	24.84	117.63	4,832.17	-816.33	1,559.17	-1,440.17	0.00	0.00	0.00
5,300.00	24.84	117.63	4,922.92	-835.82	1,596.40	-1,474.56	0.00	0.00	0.00
5,400.00	24.84	117.63	5,013.66	-855.31	1,633.62	-1,508.94	0.00	0.00	0.00
5,500.00	24.84	117.63	5,104.41	-874.79	1,670.84	-1,543.32	0.00	0.00	0.00
5,600.00	24.84	117.63	5,195.15	-894.28	1,708.06	-1,577.70	0.00	0.00	0.00
5,700.00	24.84	117.63	5,285.90	-913.77	1,745.29	-1,612.08	0.00	0.00	0.00
5,800.00	24.84	117.63	5,376.64	-933.26	1,782.51	-1,646.46	0.00	0.00	0.00
5,900.00	24.84	117.63	5,467.39	-952.75	1,819.73	-1,680.84	0.00	0.00	0.00
5,917.59	24.84	117.63	5,483.35	-956.17	1,826.28	-1,686.89	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
6,000.00	23.20	117.63	5,558.62	-971.73	1,856.00	-1,714.34	2.00	-2.00	0.00
6,100.00	21.20	117.63	5,651.21	-989.26	1,889.46	-1,745.25	2.00	-2.00	0.00
6,200.00	19.20	117.63	5,745.05	-1,005.27	1,920.05	-1,773.50	2.00	-2.00	0.00
6,300.00	17.20	117.63	5,840.05	-1,019.75	1,947.71	-1,799.06	2.00	-2.00	0.00
6,400.00	15.20	117.63	5,936.08	-1,032.69	1,972.42	-1,821.88	2.00	-2.00	0.00
6,500.00	13.20	117.63	6,033.02	-1,044.06	1,994.14	-1,841.95	2.00	-2.00	0.00
6,600.00	11.20	117.63	6,130.76	-1,053.86	2,012.86	-1,859.23	2.00	-2.00	0.00
6,700.00	9.20	117.63	6,229.17	-1,062.07	2,028.54	-1,873.72	2.00	-2.00	0.00
6,800.00	7.20	117.63	6,328.14	-1,068.68	2,041.17	-1,885.38	2.00	-2.00	0.00
6,900.00	5.20	117.63	6,427.56	-1,073.69	2,050.73	-1,894.21	2.00	-2.00	0.00
7,000.00	3.20	117.63	6,527.28	-1,077.08	2,057.21	-1,900.20	2.00	-2.00	0.00
7,100.00	1.20	117.63	6,627.20	-1,078.86	2,060.61	-1,903.34	2.00	-2.00	0.00
7,159.80	0.00	0.00	6,687.00	-1,079.15	2,061.16	-1,903.85	2.00	-2.00	0.00
<b>Start 30.00 hold at 7159.80 MD</b>									
7,189.80	0.00	0.00	6,717.00	-1,079.15	2,061.16	-1,903.85	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 270.10</b>									
7,200.00	1.02	270.10	6,727.20	-1,079.15	2,061.07	-1,903.76	10.00	10.00	0.00
7,250.00	6.02	270.10	6,777.09	-1,079.14	2,058.00	-1,900.71	10.00	10.00	0.00
7,300.00	11.02	270.10	6,826.52	-1,079.13	2,050.60	-1,893.37	10.00	10.00	0.00
7,350.00	16.02	270.10	6,875.12	-1,079.11	2,038.91	-1,881.79	10.00	10.00	0.00
7,400.00	21.02	270.10	6,922.52	-1,079.09	2,023.04	-1,866.05	10.00	10.00	0.00
7,450.00	26.02	270.10	6,968.35	-1,079.05	2,003.09	-1,846.28	10.00	10.00	0.00
7,500.00	31.02	270.10	7,012.27	-1,079.01	1,979.23	-1,822.62	10.00	10.00	0.00
7,550.00	36.02	270.10	7,053.94	-1,078.97	1,951.63	-1,795.26	10.00	10.00	0.00
7,557.53	36.77	270.10	7,060.00	-1,078.96	1,947.16	-1,790.83	10.00	10.00	0.00
<b>SHARON SPRINGS</b>									
7,590.72	40.09	270.10	7,086.00	-1,078.93	1,926.53	-1,770.38	10.00	10.00	0.00
<b>NIOBRARA</b>									
7,600.00	41.02	270.10	7,093.05	-1,078.92	1,920.50	-1,764.40	10.00	10.00	0.00
7,650.00	46.02	270.10	7,129.30	-1,078.86	1,886.08	-1,730.28	10.00	10.00	0.00
7,700.00	51.02	270.10	7,162.41	-1,078.80	1,848.64	-1,693.16	10.00	10.00	0.00
7,750.00	56.02	270.10	7,192.13	-1,078.73	1,808.45	-1,653.32	10.00	10.00	0.00
7,800.00	61.02	270.10	7,218.23	-1,078.66	1,765.82	-1,611.07	10.00	10.00	0.00
7,850.00	66.02	270.10	7,240.52	-1,078.58	1,721.08	-1,566.71	10.00	10.00	0.00
7,900.00	71.01	270.10	7,258.83	-1,078.51	1,674.57	-1,520.61	10.00	10.00	0.00
7,950.00	76.01	270.10	7,273.01	-1,078.43	1,626.64	-1,473.09	10.00	10.00	0.00
7,982.66	79.28	270.10	7,280.00	-1,078.37	1,594.74	-1,441.47	10.00	10.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well DUCK CLUB 12W-20-10N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5062.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-10N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>NIO B</b>									
8,000.00	81.01	270.10	7,282.97	-1,078.34	1,577.66	-1,424.53	10.00	10.00	0.00
8,050.00	86.01	270.10	7,288.61	-1,078.26	1,528.00	-1,375.30	10.00	10.00	0.00
8,089.88	90.00	270.10	7,290.00	-1,078.20	1,488.14	-1,335.79	10.00	10.00	0.00
<b>Start 9612.69 hold at 8089.88 MD</b>									
8,100.00	90.00	270.10	7,290.00	-1,078.18	1,478.03	-1,325.76	0.00	0.00	0.00
8,200.00	90.00	270.10	7,290.00	-1,078.01	1,378.03	-1,226.63	0.00	0.00	0.00
8,300.00	90.00	270.10	7,289.99	-1,077.85	1,278.03	-1,127.49	0.00	0.00	0.00
8,400.00	90.00	270.10	7,289.99	-1,077.68	1,178.03	-1,028.36	0.00	0.00	0.00
8,500.00	90.00	270.10	7,289.99	-1,077.51	1,078.03	-929.23	0.00	0.00	0.00
8,600.00	90.00	270.10	7,289.98	-1,077.35	978.03	-830.09	0.00	0.00	0.00
8,700.00	90.00	270.10	7,289.98	-1,077.18	878.03	-730.96	0.00	0.00	0.00
8,800.00	90.00	270.10	7,289.98	-1,077.01	778.03	-631.82	0.00	0.00	0.00
8,900.00	90.00	270.10	7,289.98	-1,076.85	678.03	-532.69	0.00	0.00	0.00
9,000.00	90.00	270.10	7,289.97	-1,076.68	578.03	-433.56	0.00	0.00	0.00
9,100.00	90.00	270.10	7,289.97	-1,076.51	478.03	-334.42	0.00	0.00	0.00
9,200.00	90.00	270.10	7,289.97	-1,076.35	378.03	-235.29	0.00	0.00	0.00
9,300.00	90.00	270.10	7,289.96	-1,076.18	278.03	-136.15	0.00	0.00	0.00
9,400.00	90.00	270.10	7,289.96	-1,076.01	178.03	-37.02	0.00	0.00	0.00
9,500.00	90.00	270.10	7,289.96	-1,075.85	78.03	62.12	0.00	0.00	0.00
9,600.00	90.00	270.10	7,289.95	-1,075.68	-21.97	161.25	0.00	0.00	0.00
9,700.00	90.00	270.10	7,289.95	-1,075.51	-121.97	260.38	0.00	0.00	0.00
9,800.00	90.00	270.10	7,289.95	-1,075.35	-221.97	359.52	0.00	0.00	0.00
9,900.00	90.00	270.10	7,289.95	-1,075.18	-321.97	458.65	0.00	0.00	0.00
10,000.00	90.00	270.10	7,289.94	-1,075.01	-421.97	557.79	0.00	0.00	0.00
10,100.00	90.00	270.10	7,289.94	-1,074.85	-521.97	656.92	0.00	0.00	0.00
10,200.00	90.00	270.10	7,289.94	-1,074.68	-621.97	756.06	0.00	0.00	0.00
10,300.00	90.00	270.10	7,289.93	-1,074.51	-721.97	855.19	0.00	0.00	0.00
10,400.00	90.00	270.10	7,289.93	-1,074.35	-821.97	954.32	0.00	0.00	0.00
10,500.00	90.00	270.10	7,289.93	-1,074.18	-921.97	1,053.46	0.00	0.00	0.00
10,600.00	90.00	270.10	7,289.92	-1,074.01	-1,021.97	1,152.59	0.00	0.00	0.00
10,700.00	90.00	270.10	7,289.92	-1,073.85	-1,121.97	1,251.73	0.00	0.00	0.00
10,800.00	90.00	270.10	7,289.92	-1,073.68	-1,221.97	1,350.86	0.00	0.00	0.00
10,900.00	90.00	270.10	7,289.92	-1,073.51	-1,321.97	1,449.99	0.00	0.00	0.00
11,000.00	90.00	270.10	7,289.91	-1,073.35	-1,421.97	1,549.13	0.00	0.00	0.00
11,100.00	90.00	270.10	7,289.91	-1,073.18	-1,521.97	1,648.26	0.00	0.00	0.00
11,200.00	90.00	270.10	7,289.91	-1,073.01	-1,621.97	1,747.40	0.00	0.00	0.00
11,300.00	90.00	270.10	7,289.90	-1,072.85	-1,721.97	1,846.53	0.00	0.00	0.00
11,400.00	90.00	270.10	7,289.90	-1,072.68	-1,821.97	1,945.67	0.00	0.00	0.00
11,500.00	90.00	270.10	7,289.90	-1,072.51	-1,921.97	2,044.80	0.00	0.00	0.00
11,600.00	90.00	270.10	7,289.89	-1,072.35	-2,021.97	2,143.93	0.00	0.00	0.00
11,700.00	90.00	270.10	7,289.89	-1,072.18	-2,121.97	2,243.07	0.00	0.00	0.00
11,800.00	90.00	270.10	7,289.89	-1,072.01	-2,221.97	2,342.20	0.00	0.00	0.00
11,900.00	90.00	270.10	7,289.88	-1,071.85	-2,321.97	2,441.34	0.00	0.00	0.00
12,000.00	90.00	270.10	7,289.88	-1,071.68	-2,421.97	2,540.47	0.00	0.00	0.00
12,100.00	90.00	270.10	7,289.88	-1,071.51	-2,521.97	2,639.61	0.00	0.00	0.00
12,200.00	90.00	270.10	7,289.88	-1,071.35	-2,621.97	2,738.74	0.00	0.00	0.00
12,300.00	90.00	270.10	7,289.87	-1,071.18	-2,721.97	2,837.87	0.00	0.00	0.00
12,400.00	90.00	270.10	7,289.87	-1,071.01	-2,821.97	2,937.01	0.00	0.00	0.00
12,500.00	90.00	270.10	7,289.87	-1,070.85	-2,921.97	3,036.14	0.00	0.00	0.00
12,600.00	90.00	270.10	7,289.86	-1,070.68	-3,021.97	3,135.28	0.00	0.00	0.00
12,700.00	90.00	270.10	7,289.86	-1,070.51	-3,121.97	3,234.41	0.00	0.00	0.00
12,800.00	90.00	270.10	7,289.86	-1,070.35	-3,221.97	3,333.54	0.00	0.00	0.00
12,900.00	90.00	270.10	7,289.85	-1,070.18	-3,321.97	3,432.68	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well DUCK CLUB 12W-20-10N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5062.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-10N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,000.00	90.00	270.10	7,289.85	-1,070.02	-3,421.97	3,531.81	0.00	0.00	0.00
13,100.00	90.00	270.10	7,289.85	-1,069.85	-3,521.97	3,630.95	0.00	0.00	0.00
13,200.00	90.00	270.10	7,289.85	-1,069.68	-3,621.96	3,730.08	0.00	0.00	0.00
13,300.00	90.00	270.10	7,289.84	-1,069.52	-3,721.96	3,829.22	0.00	0.00	0.00
13,400.00	90.00	270.10	7,289.84	-1,069.35	-3,821.96	3,928.35	0.00	0.00	0.00
13,500.00	90.00	270.10	7,289.84	-1,069.18	-3,921.96	4,027.48	0.00	0.00	0.00
13,600.00	90.00	270.10	7,289.83	-1,069.02	-4,021.96	4,126.62	0.00	0.00	0.00
13,700.00	90.00	270.10	7,289.83	-1,068.85	-4,121.96	4,225.75	0.00	0.00	0.00
13,800.00	90.00	270.10	7,289.83	-1,068.68	-4,221.96	4,324.89	0.00	0.00	0.00
13,900.00	90.00	270.10	7,289.82	-1,068.52	-4,321.96	4,424.02	0.00	0.00	0.00
14,000.00	90.00	270.10	7,289.82	-1,068.35	-4,421.96	4,523.15	0.00	0.00	0.00
14,100.00	90.00	270.10	7,289.82	-1,068.18	-4,521.96	4,622.29	0.00	0.00	0.00
14,200.00	90.00	270.10	7,289.82	-1,068.02	-4,621.96	4,721.42	0.00	0.00	0.00
14,300.00	90.00	270.10	7,289.81	-1,067.85	-4,721.96	4,820.56	0.00	0.00	0.00
14,400.00	90.00	270.10	7,289.81	-1,067.68	-4,821.96	4,919.69	0.00	0.00	0.00
14,500.00	90.00	270.10	7,289.81	-1,067.52	-4,921.96	5,018.83	0.00	0.00	0.00
14,600.00	90.00	270.10	7,289.80	-1,067.35	-5,021.96	5,117.96	0.00	0.00	0.00
14,700.00	90.00	270.10	7,289.80	-1,067.18	-5,121.96	5,217.09	0.00	0.00	0.00
14,800.00	90.00	270.10	7,289.80	-1,067.02	-5,221.96	5,316.23	0.00	0.00	0.00
14,900.00	90.00	270.10	7,289.79	-1,066.85	-5,321.96	5,415.36	0.00	0.00	0.00
15,000.00	90.00	270.10	7,289.79	-1,066.68	-5,421.96	5,514.50	0.00	0.00	0.00
15,100.00	90.00	270.10	7,289.79	-1,066.52	-5,521.96	5,613.63	0.00	0.00	0.00
15,200.00	90.00	270.10	7,289.78	-1,066.35	-5,621.96	5,712.77	0.00	0.00	0.00
15,300.00	90.00	270.10	7,289.78	-1,066.18	-5,721.96	5,811.90	0.00	0.00	0.00
15,400.00	90.00	270.10	7,289.78	-1,066.02	-5,821.96	5,911.03	0.00	0.00	0.00
15,500.00	90.00	270.10	7,289.78	-1,065.85	-5,921.96	6,010.17	0.00	0.00	0.00
15,600.00	90.00	270.10	7,289.77	-1,065.68	-6,021.96	6,109.30	0.00	0.00	0.00
15,700.00	90.00	270.10	7,289.77	-1,065.52	-6,121.96	6,208.44	0.00	0.00	0.00
15,800.00	90.00	270.10	7,289.77	-1,065.35	-6,221.96	6,307.57	0.00	0.00	0.00
15,900.00	90.00	270.10	7,289.76	-1,065.18	-6,321.96	6,406.70	0.00	0.00	0.00
16,000.00	90.00	270.10	7,289.76	-1,065.02	-6,421.96	6,505.84	0.00	0.00	0.00
16,100.00	90.00	270.10	7,289.76	-1,064.85	-6,521.96	6,604.97	0.00	0.00	0.00
16,200.00	90.00	270.10	7,289.75	-1,064.68	-6,621.96	6,704.11	0.00	0.00	0.00
16,300.00	90.00	270.10	7,289.75	-1,064.52	-6,721.96	6,803.24	0.00	0.00	0.00
16,400.00	90.00	270.10	7,289.75	-1,064.35	-6,821.96	6,902.38	0.00	0.00	0.00
16,500.00	90.00	270.10	7,289.75	-1,064.18	-6,921.96	7,001.51	0.00	0.00	0.00
16,600.00	90.00	270.10	7,289.74	-1,064.02	-7,021.96	7,100.64	0.00	0.00	0.00
16,700.00	90.00	270.10	7,289.74	-1,063.85	-7,121.96	7,199.78	0.00	0.00	0.00
16,800.00	90.00	270.10	7,289.74	-1,063.68	-7,221.96	7,298.91	0.00	0.00	0.00
16,900.00	90.00	270.10	7,289.73	-1,063.52	-7,321.96	7,398.05	0.00	0.00	0.00
17,000.00	90.00	270.10	7,289.73	-1,063.35	-7,421.96	7,497.18	0.00	0.00	0.00
17,100.00	90.00	270.10	7,289.73	-1,063.18	-7,521.96	7,596.32	0.00	0.00	0.00
17,200.00	90.00	270.10	7,289.72	-1,063.02	-7,621.96	7,695.45	0.00	0.00	0.00
17,300.00	90.00	270.10	7,289.72	-1,062.85	-7,721.96	7,794.58	0.00	0.00	0.00
17,400.00	90.00	270.10	7,289.72	-1,062.68	-7,821.96	7,893.72	0.00	0.00	0.00
17,500.00	90.00	270.10	7,289.72	-1,062.52	-7,921.96	7,992.85	0.00	0.00	0.00
17,600.00	90.00	270.10	7,289.71	-1,062.35	-8,021.96	8,091.99	0.00	0.00	0.00
17,702.57	90.00	270.10	7,290.00	-1,062.34	-8,124.53	8,193.69	0.00	0.00	0.00
TD at 17702.57									

## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well DUCK CLUB 12W-20-10N
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB 25' @ 5062.00usft
<b>Project:</b>	Adams County	<b>MD Reference:</b>	KB 25' @ 5062.00usft
<b>Site:</b>	Sec 12-T1S-R66W	<b>North Reference:</b>	True
<b>Well:</b>	DUCK CLUB 12W-20-10N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
DC 10N - PBHL	0.00	0.00	7,290.00	-1,062.34	-8,124.53	1,234,911.40	3,207,395.91	39° 58' 33.024 N	104° 45' 35.856 W
- plan hits target center									
- Point									
DC 10N - LP	0.00	0.00	7,290.00	-1,078.20	1,488.14	1,234,978.91	3,217,008.36	39° 58' 32.880 N	104° 43' 32.376 W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
4,172.76	3,900.00	PARKMAN				
5,114.96	4,755.00	SUSSEX				
7,557.53	7,060.00	SHARON SPRINGS				
7,590.72	7,086.00	NIOBRARA				
7,982.66	7,280.00	NIO B				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
400.00	400.00	0.00	0.00	Start Build 2.00	
1,642.22	1,603.65	-122.98	234.88	Start 4275.37 hold at 1642.21 MD	
5,917.59	5,483.35	-956.17	1,826.28	Start Drop -2.00	
7,159.80	6,687.00	-1,079.15	2,061.16	Start 30.00 hold at 7159.80 MD	
7,189.80	6,717.00	-1,079.15	2,061.16	Start DLS 10.00 TFO 270.10	
8,089.88	7,290.00	-1,078.20	1,488.14	Start 9612.69 hold at 8089.88 MD	
17,702.57	7,290.00	-1,062.34	-8,124.53	TD at 17702.57	