

EXTRACTION OIL & GAS

Adams County

Sec 12-T1S-R66W

DUCK CLUB 12W-20-11N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

26 March, 2018



Project: Adams County
Site: Sec 12-T1S-R66W
Well: DUCK CLUB 12W-20-11N
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-20-11N

+N/-S	+E/-W	Northing	Easting	5037.00	Latitude	Longitude	Slot
0.00	0.00	1236015.02	3215511.17	39° 58' 43.248 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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1564.14	26.28	125.18	1518.53	-170.63	242.07	2.00	125.18	-192.16	
4	5913.74	26.28	125.18	5418.47	-1280.30	1816.29	0.00	0.00	-1441.83	
5	7227.88	0.00	0.00	6687.00	-1450.93	2058.36	2.00	180.00	-1633.99	
6	7257.88	0.00	0.00	6717.00	-1450.93	2058.36	0.00	0.00	-1633.99	
7	8157.94	90.00	270.12	7290.00	-1449.75	1485.36	10.00	270.12	-1079.21	DC 11N - LP
8	17767.98	90.00	270.12	7290.00	-1430.26	-8124.66	0.00	0.00	8225.47	DC 11N - PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	Start Build 2.00
1564.14	26.28	125.18	1518.53	-170.63	242.07	-192.16	296.16	Start 4349.60 hold at 1564.14 MD
5913.74	26.28	125.18	5418.47	-1280.30	1816.29	-1441.83	2222.18	Start Drop -2.00
7227.88	0.00	0.00	6687.00	-1450.93	2058.36	-1633.99	2518.34	Start 30.00 hold at 7227.88 MD
7257.88	0.00	0.00	6717.00	-1450.93	2058.36	-1633.99	2518.34	Start DLS 10.00 TFO 270.12
8157.94	90.00	270.12	7290.00	-1449.75	1485.36	-1079.21	3091.34	Start 9610.04 hold at 8157.94 MD
17767.98	90.00	270.12	7290.00	-1430.26	-8124.66	8225.47	12701.38	TD at 17767.98

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	39° 58'	Latitude	Longitude	Shape
DC 11N - LP	7290.00	-1449.75	1485.36	1234578.21	3217009.05	39° 58'	28.920 N	104° 43' 32.412 W	Point
- plan hits target center									
DC 11N - PBHL	7290.00	-1430.26	-8124.66	1234514.36	3207399.22	39° 58'	29.100 N	104° 45' 35.856 W	Point
- plan hits target center									

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3900.00	4220.19	PARKMAN
4755.00	5173.77	SUSSEX
7080.00	7625.60	SHARON SPRINGS
7086.00	7658.80	NIOBRARA
7280.00	8050.74	NIO B

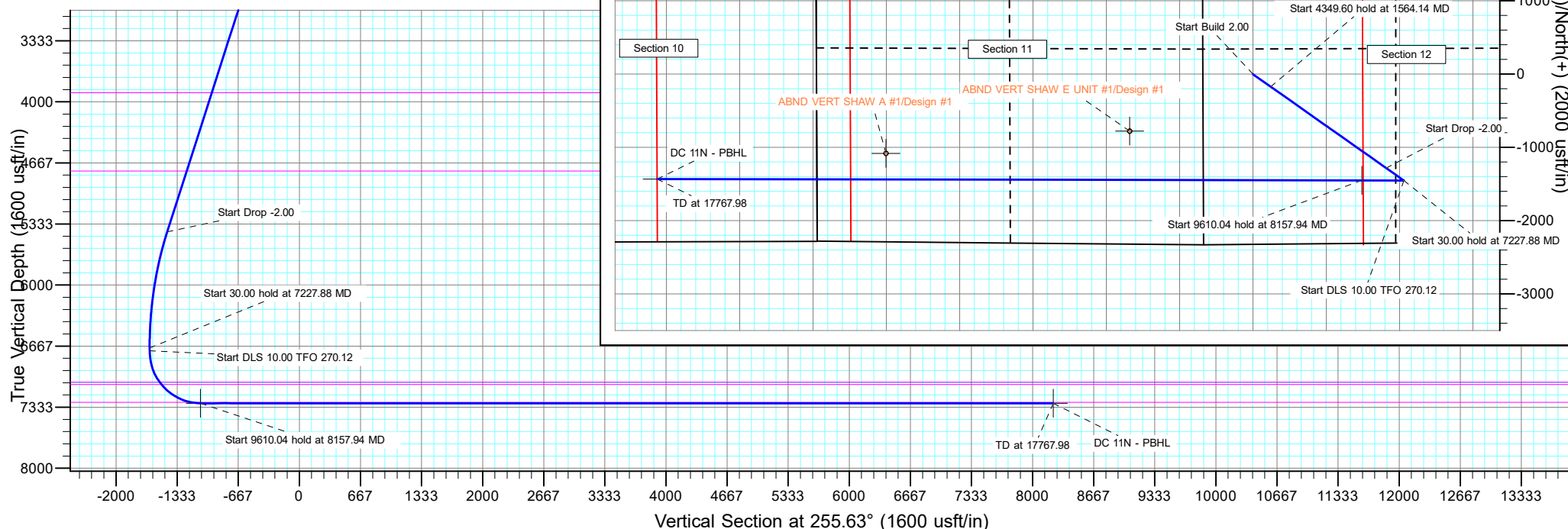
PROJECT DETAILS: Adams County

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SHL:
2324' FSL, 682' FWL
Sec 12-T1S-R66W

LP:
860' FSL, 2163' FWL
Sec 12-T1S-R66W

BHL:
856' FSL, 2177' FEL
Sec 10-T1S-R66W



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well DUCK CLUB 12W-20-11N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB.25' @ 5062.00usft
Project:	Adams County	MD Reference:	KB.25' @ 5062.00usft
Site:	Sec 12-T1S-R66W	North Reference:	True
Well:	DUCK CLUB 12W-20-11N	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 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-20-11N					
Well Position	+N/-S	-3,009.50 usft	Northing:	1,236,015.02 usft	Latitude:	39° 58' 43.248 N
	+E/-W	688.77 usft	Easting:	3,215,511.17 usft	Longitude:	104° 43' 51.492 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	5,037.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/10/2017	8.12	66.51	52,138.45482505

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	255.63

Plan Survey Tool Program	Date	3/26/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,767.98	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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,564.14	26.28	125.18	1,518.53	-170.63	242.07	2.00	2.00	0.00	125.18	
5,913.74	26.28	125.18	5,418.47	-1,280.30	1,816.29	0.00	0.00	0.00	0.00	
7,227.88	0.00	0.00	6,687.00	-1,450.93	2,058.36	2.00	-2.00	0.00	180.00	
7,257.88	0.00	0.00	6,717.00	-1,450.93	2,058.36	0.00	0.00	0.00	0.00	
8,157.94	90.00	270.12	7,290.00	-1,449.75	1,485.36	10.00	10.00	-9.99	270.12	DC 11N - LP
17,767.98	90.00	270.12	7,290.00	-1,430.26	-8,124.66	0.00	0.00	0.00	0.00	DC 11N - PBHL

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Project:	Adams County	MD Reference:	KB.25' @ 5062.00usft
Site:	Sec 12-T1S-R66W	North Reference:	True
Well:	DUCK CLUB 12W-20-11N	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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
300.00	1.00	125.18	300.00	-0.25	0.36	-0.28	2.00	2.00	0.00
400.00	3.00	125.18	399.93	-2.26	3.21	-2.55	2.00	2.00	0.00
500.00	5.00	125.18	499.68	-6.28	8.91	-7.07	2.00	2.00	0.00
600.00	7.00	125.18	599.13	-12.30	17.45	-13.86	2.00	2.00	0.00
700.00	9.00	125.18	698.15	-20.32	28.83	-22.88	2.00	2.00	0.00
800.00	11.00	125.18	796.63	-30.33	43.02	-34.15	2.00	2.00	0.00
900.00	13.00	125.18	894.44	-42.30	60.01	-47.64	2.00	2.00	0.00
1,000.00	15.00	125.18	991.46	-56.24	79.79	-63.34	2.00	2.00	0.00
1,100.00	17.00	125.18	1,087.58	-72.12	102.31	-81.22	2.00	2.00	0.00
1,200.00	19.00	125.18	1,182.68	-89.92	127.57	-101.27	2.00	2.00	0.00
1,300.00	21.00	125.18	1,276.65	-109.63	155.52	-123.46	2.00	2.00	0.00
1,400.00	23.00	125.18	1,369.36	-131.21	186.14	-147.76	2.00	2.00	0.00
1,500.00	25.00	125.18	1,460.71	-154.64	219.38	-174.15	2.00	2.00	0.00
1,564.14	26.28	125.18	1,518.53	-170.63	242.07	-192.16	2.00	2.00	0.00
Start 4349.60 hold at 1564.14 MD									
1,600.00	26.28	125.18	1,550.69	-179.78	255.05	-202.46	0.00	0.00	0.00
1,700.00	26.28	125.18	1,640.35	-205.29	291.24	-231.20	0.00	0.00	0.00
1,800.00	26.28	125.18	1,730.01	-230.81	327.43	-259.93	0.00	0.00	0.00
1,900.00	26.28	125.18	1,819.67	-256.32	363.62	-288.66	0.00	0.00	0.00
2,000.00	26.28	125.18	1,909.33	-281.83	399.82	-317.39	0.00	0.00	0.00
2,100.00	26.28	125.18	1,999.00	-307.34	436.01	-346.12	0.00	0.00	0.00
2,200.00	26.28	125.18	2,088.66	-332.85	472.20	-374.85	0.00	0.00	0.00
2,300.00	26.28	125.18	2,178.32	-358.37	508.39	-403.58	0.00	0.00	0.00
2,400.00	26.28	125.18	2,267.98	-383.88	544.59	-432.31	0.00	0.00	0.00
2,500.00	26.28	125.18	2,357.64	-409.39	580.78	-461.04	0.00	0.00	0.00
2,600.00	26.28	125.18	2,447.31	-434.90	616.97	-489.77	0.00	0.00	0.00
2,700.00	26.28	125.18	2,536.97	-460.41	653.16	-518.50	0.00	0.00	0.00
2,800.00	26.28	125.18	2,626.63	-485.92	689.36	-547.23	0.00	0.00	0.00
2,900.00	26.28	125.18	2,716.29	-511.44	725.55	-575.96	0.00	0.00	0.00
3,000.00	26.28	125.18	2,805.95	-536.95	761.74	-604.69	0.00	0.00	0.00
3,100.00	26.28	125.18	2,895.62	-562.46	797.93	-633.42	0.00	0.00	0.00
3,200.00	26.28	125.18	2,985.28	-587.97	834.13	-662.16	0.00	0.00	0.00
3,300.00	26.28	125.18	3,074.94	-613.48	870.32	-690.89	0.00	0.00	0.00
3,400.00	26.28	125.18	3,164.60	-639.00	906.51	-719.62	0.00	0.00	0.00
3,500.00	26.28	125.18	3,254.26	-664.51	942.70	-748.35	0.00	0.00	0.00
3,600.00	26.28	125.18	3,343.93	-690.02	978.89	-777.08	0.00	0.00	0.00
3,700.00	26.28	125.18	3,433.59	-715.53	1,015.09	-805.81	0.00	0.00	0.00
3,800.00	26.28	125.18	3,523.25	-741.04	1,051.28	-834.54	0.00	0.00	0.00
3,900.00	26.28	125.18	3,612.91	-766.55	1,087.47	-863.27	0.00	0.00	0.00
4,000.00	26.28	125.18	3,702.57	-792.07	1,123.66	-892.00	0.00	0.00	0.00
4,100.00	26.28	125.18	3,792.23	-817.58	1,159.86	-920.73	0.00	0.00	0.00
4,200.00	26.28	125.18	3,881.90	-843.09	1,196.05	-949.46	0.00	0.00	0.00
4,220.19	26.28	125.18	3,900.00	-848.24	1,203.36	-955.26	0.00	0.00	0.00
PARKMAN									
4,300.00	26.28	125.18	3,971.56	-868.60	1,232.24	-978.19	0.00	0.00	0.00
4,400.00	26.28	125.18	4,061.22	-894.11	1,268.43	-1,006.92	0.00	0.00	0.00
4,500.00	26.28	125.18	4,150.88	-919.63	1,304.63	-1,035.65	0.00	0.00	0.00
4,600.00	26.28	125.18	4,240.54	-945.14	1,340.82	-1,064.38	0.00	0.00	0.00

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Well:	DUCK CLUB 12W-20-11N	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)	
4,700.00	26.28	125.18	4,330.21	-970.65	1,377.01	-1,093.11	0.00	0.00	0.00	
4,800.00	26.28	125.18	4,419.87	-996.16	1,413.20	-1,121.85	0.00	0.00	0.00	
4,900.00	26.28	125.18	4,509.53	-1,021.67	1,449.40	-1,150.58	0.00	0.00	0.00	
5,000.00	26.28	125.18	4,599.19	-1,047.19	1,485.59	-1,179.31	0.00	0.00	0.00	
5,100.00	26.28	125.18	4,688.85	-1,072.70	1,521.78	-1,208.04	0.00	0.00	0.00	
5,173.77	26.28	125.18	4,755.00	-1,091.52	1,548.48	-1,229.23	0.00	0.00	0.00	
SUSSEX										
5,200.00	26.28	125.18	4,778.52	-1,098.21	1,557.97	-1,236.77	0.00	0.00	0.00	
5,300.00	26.28	125.18	4,868.18	-1,123.72	1,594.17	-1,265.50	0.00	0.00	0.00	
5,400.00	26.28	125.18	4,957.84	-1,149.23	1,630.36	-1,294.23	0.00	0.00	0.00	
5,500.00	26.28	125.18	5,047.50	-1,174.74	1,666.55	-1,322.96	0.00	0.00	0.00	
5,600.00	26.28	125.18	5,137.16	-1,200.26	1,702.74	-1,351.69	0.00	0.00	0.00	
5,700.00	26.28	125.18	5,226.83	-1,225.77	1,738.93	-1,380.42	0.00	0.00	0.00	
5,800.00	26.28	125.18	5,316.49	-1,251.28	1,775.13	-1,409.15	0.00	0.00	0.00	
5,900.00	26.28	125.18	5,406.15	-1,276.79	1,811.32	-1,437.88	0.00	0.00	0.00	
5,913.74	26.28	125.18	5,418.47	-1,280.30	1,816.29	-1,441.83	0.00	0.00	0.00	
Start Drop -2.00										
6,000.00	24.56	125.18	5,496.37	-1,301.63	1,846.56	-1,465.85	2.00	-2.00	0.00	
6,100.00	22.56	125.18	5,588.04	-1,324.66	1,879.22	-1,491.78	2.00	-2.00	0.00	
6,200.00	20.56	125.18	5,681.04	-1,345.82	1,909.25	-1,515.62	2.00	-2.00	0.00	
6,300.00	18.56	125.18	5,775.26	-1,365.11	1,936.61	-1,537.34	2.00	-2.00	0.00	
6,400.00	16.56	125.18	5,870.60	-1,382.49	1,961.27	-1,556.92	2.00	-2.00	0.00	
6,500.00	14.56	125.18	5,966.93	-1,397.94	1,983.19	-1,574.32	2.00	-2.00	0.00	
6,600.00	12.56	125.18	6,064.14	-1,411.45	2,002.35	-1,589.53	2.00	-2.00	0.00	
6,700.00	10.56	125.18	6,162.11	-1,422.99	2,018.72	-1,602.52	2.00	-2.00	0.00	
6,800.00	8.56	125.18	6,260.71	-1,432.55	2,032.29	-1,613.30	2.00	-2.00	0.00	
6,900.00	6.56	125.18	6,359.84	-1,440.13	2,043.04	-1,621.83	2.00	-2.00	0.00	
7,000.00	4.56	125.18	6,459.36	-1,445.71	2,050.96	-1,628.11	2.00	-2.00	0.00	
7,100.00	2.56	125.18	6,559.17	-1,449.29	2,056.03	-1,632.14	2.00	-2.00	0.00	
7,200.00	0.56	125.18	6,659.12	-1,450.85	2,058.25	-1,633.90	2.00	-2.00	0.00	
7,227.88	0.00	0.00	6,687.00	-1,450.93	2,058.36	-1,633.99	2.00	-2.00	0.00	
Start 30.00 hold at 7227.88 MD										
7,257.88	0.00	0.00	6,717.00	-1,450.93	2,058.36	-1,633.99	0.00	0.00	0.00	
Start DLS 10.00 TFO 270.12										
7,300.00	4.21	270.12	6,759.09	-1,450.93	2,056.81	-1,632.49	10.00	10.00	0.00	
7,350.00	9.21	270.12	6,808.73	-1,450.91	2,050.97	-1,626.84	10.00	10.00	0.00	
7,400.00	14.21	270.12	6,857.67	-1,450.89	2,040.82	-1,617.01	10.00	10.00	0.00	
7,450.00	19.21	270.12	6,905.54	-1,450.86	2,026.45	-1,603.10	10.00	10.00	0.00	
7,500.00	24.21	270.12	6,951.98	-1,450.83	2,007.96	-1,585.19	10.00	10.00	0.00	
7,550.00	29.21	270.12	6,996.63	-1,450.78	1,985.49	-1,563.44	10.00	10.00	0.00	
7,600.00	34.21	270.12	7,039.15	-1,450.73	1,959.22	-1,538.00	10.00	10.00	0.00	
7,625.60	36.77	270.12	7,060.00	-1,450.70	1,944.36	-1,523.61	10.00	10.00	0.00	
SHARON SPRINGS										
7,650.00	39.21	270.12	7,079.23	-1,450.67	1,929.34	-1,509.08	10.00	10.00	0.00	
7,658.80	40.09	270.12	7,086.00	-1,450.65	1,923.73	-1,503.64	10.00	10.00	0.00	
NIORARA										
7,700.00	44.21	270.12	7,116.54	-1,450.60	1,896.09	-1,476.88	10.00	10.00	0.00	
7,750.00	49.21	270.12	7,150.82	-1,450.52	1,859.70	-1,441.65	10.00	10.00	0.00	
7,800.00	54.21	270.12	7,181.79	-1,450.44	1,820.47	-1,403.66	10.00	10.00	0.00	
7,850.00	59.21	270.12	7,209.22	-1,450.36	1,778.69	-1,363.21	10.00	10.00	0.00	
7,900.00	64.21	270.12	7,232.92	-1,450.27	1,734.68	-1,320.60	10.00	10.00	0.00	
7,950.00	69.21	270.12	7,252.68	-1,450.17	1,688.77	-1,276.15	10.00	10.00	0.00	
8,000.00	74.21	270.12	7,268.37	-1,450.07	1,641.31	-1,230.20	10.00	10.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well DUCK CLUB 12W-20-11N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB.25' @ 5062.00usft
Project:	Adams County	MD Reference:	KB.25' @ 5062.00usft
Site:	Sec 12-T1S-R66W	North Reference:	True
Well:	DUCK CLUB 12W-20-11N	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)	
8,050.00	79.21	270.12	7,279.86	-1,449.97	1,592.67	-1,183.10	10.00	10.00	0.00	
8,050.74	79.28	270.12	7,280.00	-1,449.97	1,591.94	-1,182.40	10.00	10.00	0.00	
NIO B										
8,100.00	84.21	270.12	7,287.07	-1,449.87	1,543.21	-1,135.21	10.00	10.00	0.00	
8,150.00	89.21	270.12	7,289.95	-1,449.77	1,493.30	-1,086.89	10.00	10.00	0.00	
8,157.94	90.00	270.12	7,290.00	-1,449.75	1,485.36	-1,079.21	10.00	10.00	0.00	
Start 9610.04 hold at 8157.94 MD										
8,200.00	90.00	270.12	7,290.00	-1,449.67	1,443.30	-1,038.48	0.00	0.00	0.00	
8,300.00	90.00	270.12	7,290.00	-1,449.46	1,343.30	-941.66	0.00	0.00	0.00	
8,400.00	90.00	270.12	7,290.00	-1,449.26	1,243.30	-844.84	0.00	0.00	0.00	
8,500.00	90.00	270.12	7,290.00	-1,449.05	1,143.31	-748.02	0.00	0.00	0.00	
8,600.00	90.00	270.12	7,290.00	-1,448.85	1,043.31	-651.19	0.00	0.00	0.00	
8,700.00	90.00	270.12	7,290.00	-1,448.64	943.31	-554.37	0.00	0.00	0.00	
8,800.00	90.00	270.12	7,290.00	-1,448.44	843.31	-457.55	0.00	0.00	0.00	
8,900.00	90.00	270.12	7,290.00	-1,448.23	743.31	-360.73	0.00	0.00	0.00	
9,000.00	90.00	270.12	7,290.01	-1,448.03	643.31	-263.91	0.00	0.00	0.00	
9,100.00	90.00	270.12	7,290.01	-1,447.82	543.31	-167.09	0.00	0.00	0.00	
9,200.00	90.00	270.12	7,290.01	-1,447.62	443.31	-70.26	0.00	0.00	0.00	
9,300.00	90.00	270.12	7,290.01	-1,447.41	343.31	26.56	0.00	0.00	0.00	
9,400.00	90.00	270.12	7,290.01	-1,447.20	243.31	123.38	0.00	0.00	0.00	
9,500.00	90.00	270.12	7,290.01	-1,447.00	143.31	220.20	0.00	0.00	0.00	
9,600.00	90.00	270.12	7,290.01	-1,446.79	43.31	317.02	0.00	0.00	0.00	
9,700.00	90.00	270.12	7,290.01	-1,446.59	-56.69	413.85	0.00	0.00	0.00	
9,800.00	90.00	270.12	7,290.01	-1,446.38	-156.69	510.67	0.00	0.00	0.00	
9,900.00	90.00	270.12	7,290.01	-1,446.18	-256.69	607.49	0.00	0.00	0.00	
10,000.00	90.00	270.12	7,290.01	-1,445.97	-356.69	704.31	0.00	0.00	0.00	
10,100.00	90.00	270.12	7,290.01	-1,445.77	-456.69	801.13	0.00	0.00	0.00	
10,200.00	90.00	270.12	7,290.01	-1,445.56	-556.69	897.95	0.00	0.00	0.00	
10,300.00	90.00	270.12	7,290.01	-1,445.36	-656.69	994.78	0.00	0.00	0.00	
10,400.00	90.00	270.12	7,290.01	-1,445.15	-756.69	1,091.60	0.00	0.00	0.00	
10,500.00	90.00	270.12	7,290.02	-1,444.95	-856.69	1,188.42	0.00	0.00	0.00	
10,600.00	90.00	270.12	7,290.02	-1,444.74	-956.69	1,285.24	0.00	0.00	0.00	
10,700.00	90.00	270.12	7,290.02	-1,444.54	-1,056.69	1,382.06	0.00	0.00	0.00	
10,800.00	90.00	270.12	7,290.02	-1,444.33	-1,156.69	1,478.89	0.00	0.00	0.00	
10,900.00	90.00	270.12	7,290.02	-1,444.13	-1,256.69	1,575.71	0.00	0.00	0.00	
11,000.00	90.00	270.12	7,290.02	-1,443.92	-1,356.69	1,672.53	0.00	0.00	0.00	
11,100.00	90.00	270.12	7,290.02	-1,443.72	-1,456.69	1,769.35	0.00	0.00	0.00	
11,200.00	90.00	270.12	7,290.02	-1,443.51	-1,556.69	1,866.17	0.00	0.00	0.00	
11,300.00	90.00	270.12	7,290.02	-1,443.31	-1,656.69	1,963.00	0.00	0.00	0.00	
11,400.00	90.00	270.12	7,290.02	-1,443.10	-1,756.69	2,059.82	0.00	0.00	0.00	
11,500.00	90.00	270.12	7,290.02	-1,442.89	-1,856.69	2,156.64	0.00	0.00	0.00	
11,600.00	90.00	270.12	7,290.02	-1,442.69	-1,956.69	2,253.46	0.00	0.00	0.00	
11,700.00	90.00	270.12	7,290.02	-1,442.48	-2,056.69	2,350.28	0.00	0.00	0.00	
11,800.00	90.00	270.12	7,290.02	-1,442.28	-2,156.69	2,447.10	0.00	0.00	0.00	
11,900.00	90.00	270.12	7,290.02	-1,442.07	-2,256.69	2,543.93	0.00	0.00	0.00	
12,000.00	90.00	270.12	7,290.02	-1,441.87	-2,356.69	2,640.75	0.00	0.00	0.00	
12,100.00	90.00	270.12	7,290.03	-1,441.66	-2,456.69	2,737.57	0.00	0.00	0.00	
12,200.00	90.00	270.12	7,290.03	-1,441.46	-2,556.69	2,834.39	0.00	0.00	0.00	
12,300.00	90.00	270.12	7,290.03	-1,441.25	-2,656.69	2,931.21	0.00	0.00	0.00	
12,400.00	90.00	270.12	7,290.03	-1,441.05	-2,756.69	3,028.04	0.00	0.00	0.00	
12,500.00	90.00	270.12	7,290.03	-1,440.84	-2,856.69	3,124.86	0.00	0.00	0.00	
12,600.00	90.00	270.12	7,290.03	-1,440.64	-2,956.69	3,221.68	0.00	0.00	0.00	
12,700.00	90.00	270.12	7,290.03	-1,440.43	-3,056.69	3,318.50	0.00	0.00	0.00	
12,800.00	90.00	270.12	7,290.03	-1,440.23	-3,156.69	3,415.32	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well DUCK CLUB 12W-20-11N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB.25' @ 5062.00usft
Project:	Adams County	MD Reference:	KB.25' @ 5062.00usft
Site:	Sec 12-T1S-R66W	North Reference:	True
Well:	DUCK CLUB 12W-20-11N	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)
12,900.00	90.00	270.12	7,290.03	-1,440.02	-3,256.69	3,512.14	0.00	0.00	0.00
13,000.00	90.00	270.12	7,290.03	-1,439.82	-3,356.69	3,608.97	0.00	0.00	0.00
13,100.00	90.00	270.12	7,290.03	-1,439.61	-3,456.69	3,705.79	0.00	0.00	0.00
13,200.00	90.00	270.12	7,290.03	-1,439.41	-3,556.69	3,802.61	0.00	0.00	0.00
13,300.00	90.00	270.12	7,290.03	-1,439.20	-3,656.68	3,899.43	0.00	0.00	0.00
13,400.00	90.00	270.12	7,290.03	-1,439.00	-3,756.68	3,996.25	0.00	0.00	0.00
13,500.00	90.00	270.12	7,290.03	-1,438.79	-3,856.68	4,093.08	0.00	0.00	0.00
13,600.00	90.00	270.12	7,290.03	-1,438.58	-3,956.68	4,189.90	0.00	0.00	0.00
13,700.00	90.00	270.12	7,290.04	-1,438.38	-4,056.68	4,286.72	0.00	0.00	0.00
13,800.00	90.00	270.12	7,290.04	-1,438.17	-4,156.68	4,383.54	0.00	0.00	0.00
13,900.00	90.00	270.12	7,290.04	-1,437.97	-4,256.68	4,480.36	0.00	0.00	0.00
14,000.00	90.00	270.12	7,290.04	-1,437.76	-4,356.68	4,577.18	0.00	0.00	0.00
14,100.00	90.00	270.12	7,290.04	-1,437.56	-4,456.68	4,674.01	0.00	0.00	0.00
14,200.00	90.00	270.12	7,290.04	-1,437.35	-4,556.68	4,770.83	0.00	0.00	0.00
14,300.00	90.00	270.12	7,290.04	-1,437.15	-4,656.68	4,867.65	0.00	0.00	0.00
14,400.00	90.00	270.12	7,290.04	-1,436.94	-4,756.68	4,964.47	0.00	0.00	0.00
14,500.00	90.00	270.12	7,290.04	-1,436.74	-4,856.68	5,061.29	0.00	0.00	0.00
14,600.00	90.00	270.12	7,290.04	-1,436.53	-4,956.68	5,158.12	0.00	0.00	0.00
14,700.00	90.00	270.12	7,290.04	-1,436.33	-5,056.68	5,254.94	0.00	0.00	0.00
14,800.00	90.00	270.12	7,290.04	-1,436.12	-5,156.68	5,351.76	0.00	0.00	0.00
14,900.00	90.00	270.12	7,290.04	-1,435.92	-5,256.68	5,448.58	0.00	0.00	0.00
15,000.00	90.00	270.12	7,290.04	-1,435.71	-5,356.68	5,545.40	0.00	0.00	0.00
15,100.00	90.00	270.12	7,290.04	-1,435.51	-5,456.68	5,642.22	0.00	0.00	0.00
15,200.00	90.00	270.12	7,290.05	-1,435.30	-5,556.68	5,739.05	0.00	0.00	0.00
15,300.00	90.00	270.12	7,290.05	-1,435.10	-5,656.68	5,835.87	0.00	0.00	0.00
15,400.00	90.00	270.12	7,290.05	-1,434.89	-5,756.68	5,932.69	0.00	0.00	0.00
15,500.00	90.00	270.12	7,290.05	-1,434.69	-5,856.68	6,029.51	0.00	0.00	0.00
15,600.00	90.00	270.12	7,290.05	-1,434.48	-5,956.68	6,126.33	0.00	0.00	0.00
15,700.00	90.00	270.12	7,290.05	-1,434.27	-6,056.68	6,223.16	0.00	0.00	0.00
15,800.00	90.00	270.12	7,290.05	-1,434.07	-6,156.68	6,319.98	0.00	0.00	0.00
15,900.00	90.00	270.12	7,290.05	-1,433.86	-6,256.68	6,416.80	0.00	0.00	0.00
16,000.00	90.00	270.12	7,290.05	-1,433.66	-6,356.68	6,513.62	0.00	0.00	0.00
16,100.00	90.00	270.12	7,290.05	-1,433.45	-6,456.68	6,610.44	0.00	0.00	0.00
16,200.00	90.00	270.12	7,290.05	-1,433.25	-6,556.68	6,707.26	0.00	0.00	0.00
16,300.00	90.00	270.12	7,290.05	-1,433.04	-6,656.68	6,804.09	0.00	0.00	0.00
16,400.00	90.00	270.12	7,290.05	-1,432.84	-6,756.68	6,900.91	0.00	0.00	0.00
16,500.00	90.00	270.12	7,290.05	-1,432.63	-6,856.68	6,997.73	0.00	0.00	0.00
16,600.00	90.00	270.12	7,290.05	-1,432.43	-6,956.68	7,094.55	0.00	0.00	0.00
16,700.00	90.00	270.12	7,290.05	-1,432.22	-7,056.68	7,191.37	0.00	0.00	0.00
16,800.00	90.00	270.12	7,290.06	-1,432.02	-7,156.68	7,288.20	0.00	0.00	0.00
16,900.00	90.00	270.12	7,290.06	-1,431.81	-7,256.68	7,385.02	0.00	0.00	0.00
17,000.00	90.00	270.12	7,290.06	-1,431.61	-7,356.68	7,481.84	0.00	0.00	0.00
17,100.00	90.00	270.12	7,290.06	-1,431.40	-7,456.68	7,578.66	0.00	0.00	0.00
17,200.00	90.00	270.12	7,290.06	-1,431.20	-7,556.68	7,675.48	0.00	0.00	0.00
17,300.00	90.00	270.12	7,290.06	-1,430.99	-7,656.68	7,772.31	0.00	0.00	0.00
17,400.00	90.00	270.12	7,290.06	-1,430.79	-7,756.68	7,869.13	0.00	0.00	0.00
17,500.00	90.00	270.12	7,290.06	-1,430.58	-7,856.68	7,965.95	0.00	0.00	0.00
17,600.00	90.00	270.12	7,290.06	-1,430.38	-7,956.68	8,062.77	0.00	0.00	0.00
17,700.00	90.00	270.12	7,290.06	-1,430.17	-8,056.68	8,159.59	0.00	0.00	0.00
17,767.98	90.00	270.12	7,290.00	-1,430.26	-8,124.66	8,225.47	0.00	0.00	0.00
TD at 17767.98									

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well DUCK CLUB 12W-20-11N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB.25' @ 5062.00usft
Project:	Adams County	MD Reference:	KB.25' @ 5062.00usft
Site:	Sec 12-T1S-R66W	North Reference:	True
Well:	DUCK CLUB 12W-20-11N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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 11N - LP	0.00	0.00	7,290.00	-1,449.75	1,485.36	1,234,578.20	3,217,009.05	39° 58' 28.920 N	104° 43' 32.412 W
- plan hits target center									
- Point									
DC 11N - PBHL	0.00	0.00	7,290.00	-1,430.26	-8,124.66	1,234,514.36	3,207,399.22	39° 58' 29.100 N	104° 45' 35.856 W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
4,220.19	3,900.00	PARKMAN				
5,173.77	4,755.00	SUSSEX				
7,625.60	7,060.00	SHARON SPRINGS				
7,658.80	7,086.00	NIOBRARA				
8,050.74	7,280.00	NIO B				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(usft)	(usft)	+N/-S	+E/-W	Comment	
(usft)	(usft)	(usft)	(usft)		
250.00	250.00	0.00	0.00	Start Build 2.00	
1,564.14	1,518.53	-170.63	242.07	Start 4349.60 hold at 1564.14 MD	
5,913.74	5,418.47	-1,280.30	1,816.29	Start Drop -2.00	
7,227.88	6,687.00	-1,450.93	2,058.36	Start 30.00 hold at 7227.88 MD	
7,257.88	6,717.00	-1,450.93	2,058.36	Start DLS 10.00 TFO 270.12	
8,157.94	7,290.00	-1,449.75	1,485.36	Start 9610.04 hold at 8157.94 MD	
17,767.98	7,290.00	-1,430.26	-8,124.66	TD at 17767.98	