

# **EXTRACTION OIL & GAS**

**Weld County**

**Sec 21-T5N-R65W**

**AD-DOUBLE CLUTCH C5-20-24**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL #1**

## **Standard Planning Report**

**09 February, 2017**



Project: Weld County  
Site: Sec 21-T5N-R65W  
Well: AD-DOUBLE CLUTCH C5-20-24  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1



Azimuths to True North  
Magnetic North: 8.28°

Magnetic Field  
Strength: 52516.4nT  
Dip Angle: 66.88°  
Date: 5/22/2016  
Model: IGRF2015

#### WELL DETAILS: AD-DOUBLE CLUTCH C5-20-24

+N/-S	+E/-W	Northing	Ground Level:	4638.0	Easting	Latitude	104° 22' 58.980 N	Longitude	104° 40' 35.328 W	Slot
0.0	0.0	1383450.84	3229412.90							

#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3920.0	0.00	0.00	3920.0	0.0	0.0	0.00	0.00	0.0	
3	4350.8	8.62	317.99	4349.2	24.0	-21.6	2.00	317.99	22.5	
4	6737.0	8.62	317.99	6708.4	289.7	-260.9	0.00	0.00	271.7	
5	7578.7	90.00	270.68	7220.0	353.4	-830.2	10.00	-47.64	843.0	HZ LANDING PNT -
6	19906.4	90.00	270.68	7220.0	499.0	-13157.1	0.00	0.00	13166.5	BHL - AD-DOUBLE

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
3920.0	0.00	0.00	3920.0	0.0	0.0	0.0	0.0	Build 2°/100'
4350.8	8.62	317.99	4349.2	24.0	-21.6	24.0	32.3	Hold 8.62° Inc
6737.0	8.62	317.99	6708.4	289.7	-260.9	289.7	389.8	KOP, Build 10°/100'
7578.7	90.00	270.68	7220.0	353.4	-830.2	353.4	966.5	LP @ 90° Inc, 270.68° Azm Hold
19906.4	90.00	270.68	7220.0	499.0	-13157.1	499.0	13294.3	TD at 19906.4' MD

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BHL - AD-DOUBLE CLUTCH C5-20-24	7220.0	499.0	-13157.1	1383827.59	3216251.76	40° 23' 3.876 N	104° 43' 25.356 W	Point
HZ LANDING PNT - AD-DOUBLE CLUTCH C5-20-24	7220.0	499.0	-830.2	1383796.51	3228579.49	40° 23' 2.472 N	104° 40' 46.056 W	Point

#### FORMATION TOP DETAILS

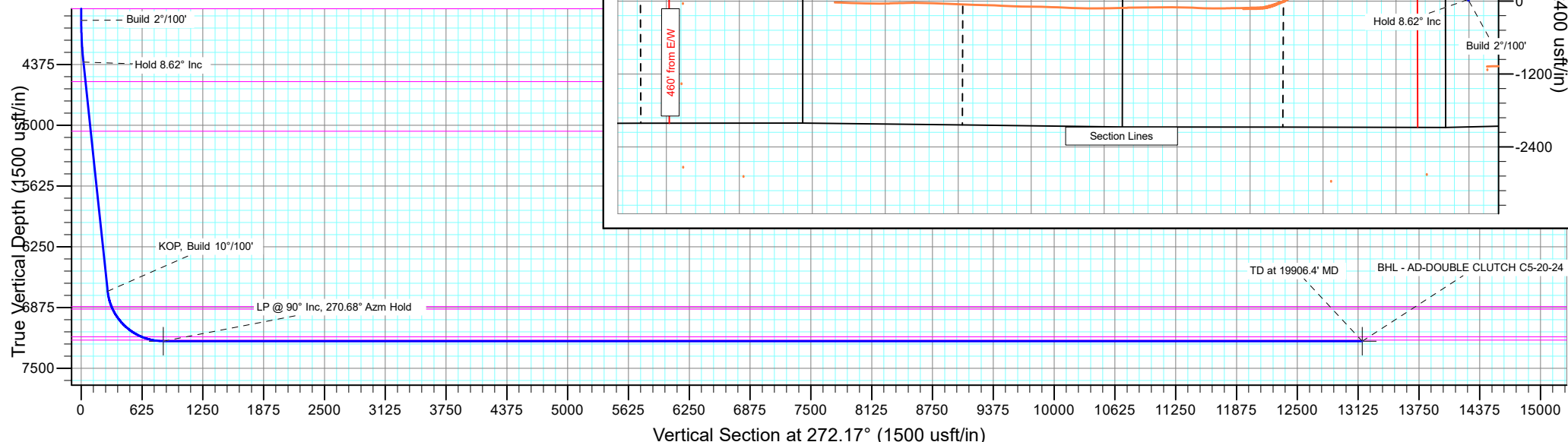
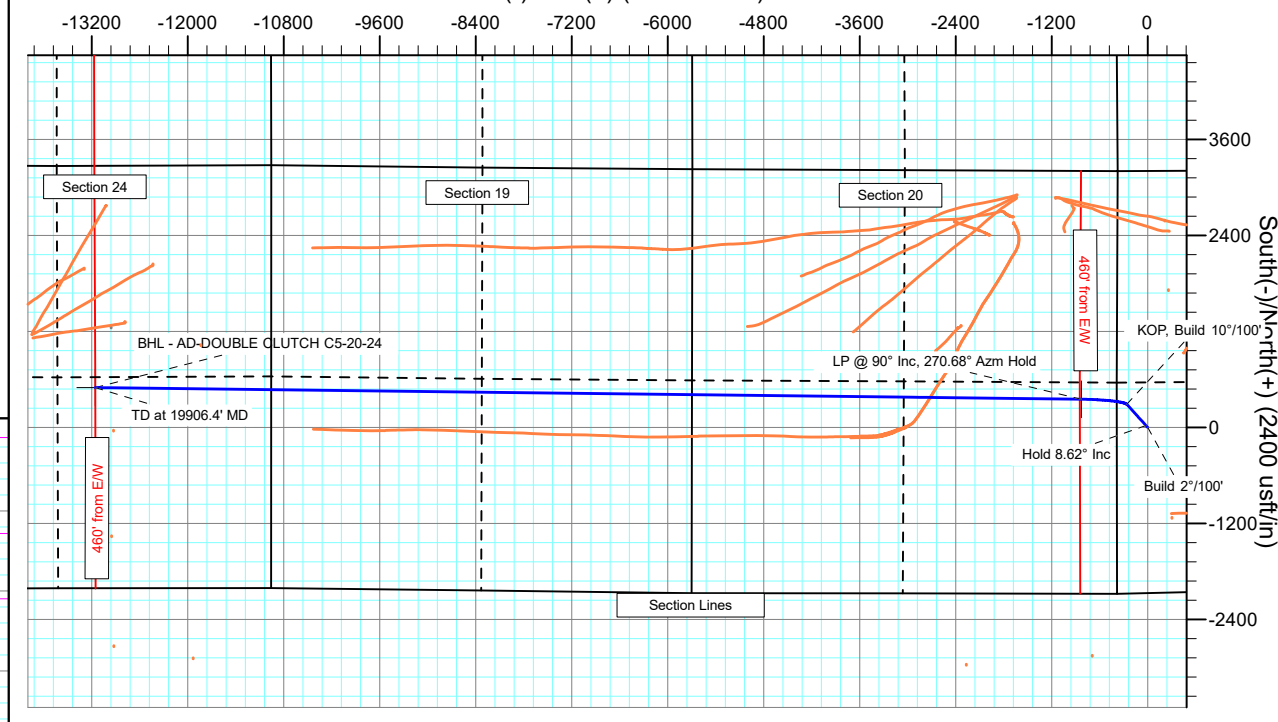
TVDPath	MDPath	Formation
3800.0	3800.0	PARKMAN
4550.0	4553.9	SUSSEX
5060.0	5069.7	SHANNON
6865.0	6899.9	SHARON SPRINGS
6890.0	6927.3	NIOBRARA
7175.0	7349.3	FORT HAYS
7210.0	7471.1	CODELL

#### PROJECT DETAILS: Weld 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:  
369' FWL, 2068' FSL  
Sec 21-T5N-R65W  
LP:  
2428' FSL, 460' FEL  
Sec 20-T5N-R65W  
BHL:  
2508' FSL, 2215' FEL  
Sec 24-T5N-R66W

#### West(-)/East(+) (2400 usft/in)



## Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well AD-DOUBLE CLUTCH C5-20-24
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4654.0usft (Original Well Elev)
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB-EST @ 4654.0usft (Original Well Elev)
<b>Site:</b>	Sec 21-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	AD-DOUBLE CLUTCH C5-20-24	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

<b>Project</b>	Weld 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		

<b>Site</b>	Sec 21-T5N-R65W			
<b>Site Position:</b>		<b>Northing:</b>	1,383,619.20 usft	<b>Latitude:</b> 40° 23' 0.636 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,229,494.91 usft	<b>Longitude:</b> 104° 40' 34.248 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> 0.53 °

<b>Well</b>	AD-DOUBLE CLUTCH C5-20-24			
<b>Well Position</b>	<b>+N/-S</b>	-167.6 usft	<b>Northing:</b>	1,383,450.85 usft
	<b>+E/-W</b>	-83.6 usft	<b>Easting:</b>	3,229,412.90 usft
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 4,638.0 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	5/22/2016	8.28	66.88	52,516.38415826

<b>Design</b>	PROPOSAL #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	0.00

<b>Plan Survey Tool Program</b>	<b>Date</b>	2/9/2017		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.0	19,906.4	PROPOSAL #1 (ORIGINAL WEL	MWD OWSG Rev 2
				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>
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,920.0	0.00	0.00	3,920.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,350.8	8.62	317.99	4,349.2	24.0	-21.6	2.00	2.00	0.00	317.99	
6,737.0	8.62	317.99	6,708.4	289.7	-260.9	0.00	0.00	0.00	0.00	
7,578.7	90.00	270.68	7,220.0	353.4	-830.2	10.00	9.67	-5.62	-47.64	HZ LANDING PNT - /
19,906.4	90.00	270.68	7,220.0	499.0	-13,157.1	0.00	0.00	0.00	0.00	BHL - AD-DOUBLE C

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well AD-DOUBLE CLUTCH C5-20-24
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4654.0usft (Original Well Elev)
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB-EST @ 4654.0usft (Original Well Elev)
<b>Site:</b>	Sec 21-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	AD-DOUBLE CLUTCH C5-20-24	<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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>PARKMAN</b>									
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,920.0	0.00	0.00	3,920.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Build 2°/100'</b>									
4,000.0	1.60	317.99	4,000.0	0.8	-0.7	0.8	2.00	2.00	0.00
4,100.0	3.60	317.99	4,099.9	4.2	-3.8	4.2	2.00	2.00	0.00
4,200.0	5.60	317.99	4,199.6	10.2	-9.1	10.2	2.00	2.00	0.00
4,300.0	7.60	317.99	4,298.9	18.7	-16.8	18.7	2.00	2.00	0.00
4,350.8	8.62	317.99	4,349.2	24.0	-21.6	24.0	2.00	2.00	0.00
<b>Hold 8.62° Inc</b>									
4,400.0	8.62	317.99	4,397.8	29.5	-26.6	29.5	0.00	0.00	0.00
4,500.0	8.62	317.99	4,496.7	40.6	-36.6	40.6	0.00	0.00	0.00
4,553.9	8.62	317.99	4,550.0	46.6	-42.0	46.6	0.00	0.00	0.00
<b>SUSSEX</b>									

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well AD-DOUBLE CLUTCH C5-20-24
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4654.0usft (Original Well Elev)
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB-EST @ 4654.0usft (Original Well Elev)
<b>Site:</b>	Sec 21-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	AD-DOUBLE CLUTCH C5-20-24	<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)
4,600.0	8.62	317.99	4,595.6	51.8	-46.6	51.8	0.00	0.00	0.00
4,700.0	8.62	317.99	4,694.4	62.9	-56.6	62.9	0.00	0.00	0.00
4,800.0	8.62	317.99	4,793.3	74.0	-66.7	74.0	0.00	0.00	0.00
4,900.0	8.62	317.99	4,892.2	85.2	-76.7	85.2	0.00	0.00	0.00
5,000.0	8.62	317.99	4,991.1	96.3	-86.7	96.3	0.00	0.00	0.00
5,069.7	8.62	317.99	5,060.0	104.1	-93.7	104.1	0.00	0.00	0.00
SHANNON									
5,100.0	8.62	317.99	5,089.9	107.4	-96.8	107.4	0.00	0.00	0.00
5,200.0	8.62	317.99	5,188.8	118.6	-106.8	118.6	0.00	0.00	0.00
5,300.0	8.62	317.99	5,287.7	129.7	-116.8	129.7	0.00	0.00	0.00
5,400.0	8.62	317.99	5,386.5	140.8	-126.8	140.8	0.00	0.00	0.00
5,500.0	8.62	317.99	5,485.4	152.0	-136.9	152.0	0.00	0.00	0.00
5,600.0	8.62	317.99	5,584.3	163.1	-146.9	163.1	0.00	0.00	0.00
5,700.0	8.62	317.99	5,683.1	174.2	-156.9	174.2	0.00	0.00	0.00
5,800.0	8.62	317.99	5,782.0	185.4	-166.9	185.4	0.00	0.00	0.00
5,900.0	8.62	317.99	5,880.9	196.5	-177.0	196.5	0.00	0.00	0.00
6,000.0	8.62	317.99	5,979.8	207.6	-187.0	207.6	0.00	0.00	0.00
6,100.0	8.62	317.99	6,078.6	218.8	-197.0	218.8	0.00	0.00	0.00
6,200.0	8.62	317.99	6,177.5	229.9	-207.0	229.9	0.00	0.00	0.00
6,300.0	8.62	317.99	6,276.4	241.0	-217.1	241.0	0.00	0.00	0.00
6,400.0	8.62	317.99	6,375.2	252.2	-227.1	252.2	0.00	0.00	0.00
6,500.0	8.62	317.99	6,474.1	263.3	-237.1	263.3	0.00	0.00	0.00
6,600.0	8.62	317.99	6,573.0	274.4	-247.1	274.4	0.00	0.00	0.00
6,700.0	8.62	317.99	6,671.9	285.6	-257.2	285.6	0.00	0.00	0.00
6,737.0	8.62	317.99	6,708.4	289.7	-260.9	289.7	0.00	0.00	0.00
KOP, Build 10°/100'									
6,750.0	9.54	312.17	6,721.3	291.1	-262.3	291.1	10.00	7.11	-44.64
6,800.0	13.68	297.92	6,770.3	296.7	-270.6	296.7	10.00	8.26	-28.50
6,850.0	18.24	290.43	6,818.3	302.2	-283.2	302.2	10.00	9.13	-14.98
6,899.9	22.97	285.91	6,865.0	307.6	-299.9	307.6	10.00	9.48	-9.06
SHARON SPRINGS									
6,900.0	22.98	285.90	6,865.1	307.6	-299.9	307.6	10.00	9.59	-7.26
6,927.3	25.61	284.11	6,890.0	310.5	-310.8	310.5	10.00	9.63	-6.56
NIOBRARA									
6,950.0	27.81	282.87	6,910.3	312.9	-320.7	312.9	10.00	9.69	-5.49
7,000.0	32.69	280.67	6,953.4	318.0	-345.4	318.0	10.00	9.75	-4.39
7,050.0	37.60	278.99	6,994.3	322.9	-373.7	322.9	10.00	9.81	-3.36
7,100.0	42.52	277.65	7,032.6	327.5	-405.5	327.5	10.00	9.85	-2.68
7,150.0	47.46	276.54	7,067.9	331.8	-440.6	331.8	10.00	9.88	-2.22
7,200.0	52.41	275.60	7,100.1	335.9	-478.6	335.9	10.00	9.89	-1.89
7,250.0	57.36	274.77	7,128.9	339.6	-519.4	339.6	10.00	9.91	-1.66
7,300.0	62.32	274.03	7,154.0	342.9	-562.5	342.9	10.00	9.92	-1.48
7,349.3	67.22	273.36	7,175.0	345.7	-607.0	345.7	10.00	9.92	-1.35
FORT HAYS									
7,350.0	67.28	273.35	7,175.3	345.8	-607.6	345.8	10.00	9.93	-1.30
7,400.0	72.25	272.72	7,192.5	348.3	-654.4	348.3	10.00	9.93	-1.26
7,450.0	77.21	272.13	7,205.7	350.3	-702.6	350.3	10.00	9.93	-1.19
7,471.1	79.31	271.88	7,210.0	351.0	-723.3	351.0	10.00	9.94	-1.16
CODELL									
7,500.0	82.18	271.55	7,214.6	351.9	-751.8	351.9	10.00	9.94	-1.14
7,550.0	87.15	270.99	7,219.3	353.0	-801.5	353.0	10.00	9.94	-1.12
7,578.7	90.00	270.68	7,220.0	353.4	-830.2	353.4	10.00	9.94	-1.11
LP @ 90° Inc, 270.68° Azm Hold									

# Planning Report

<b>Database:</b>	EDT_32Bit_ODBC	<b>Local Co-ordinate Reference:</b>	Well AD-DOUBLE CLUTCH C5-20-24
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4654.0usft (Original Well Elev)
<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB-EST @ 4654.0usft (Original Well Elev)
<b>Site:</b>	Sec 21-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	AD-DOUBLE CLUTCH C5-20-24	<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)
7,600.0	90.00	270.68	7,220.0	353.6	-851.5	353.6	0.00	0.00	0.00
7,700.0	90.00	270.68	7,220.0	354.8	-951.5	354.8	0.00	0.00	0.00
7,800.0	90.00	270.68	7,220.0	356.0	-1,051.5	356.0	0.00	0.00	0.00
7,900.0	90.00	270.68	7,220.0	357.2	-1,151.5	357.2	0.00	0.00	0.00
8,000.0	90.00	270.68	7,220.0	358.4	-1,251.5	358.4	0.00	0.00	0.00
8,100.0	90.00	270.68	7,220.0	359.5	-1,351.5	359.5	0.00	0.00	0.00
8,200.0	90.00	270.68	7,220.0	360.7	-1,451.5	360.7	0.00	0.00	0.00
8,300.0	90.00	270.68	7,220.0	361.9	-1,551.4	361.9	0.00	0.00	0.00
8,400.0	90.00	270.68	7,220.0	363.1	-1,651.4	363.1	0.00	0.00	0.00
8,500.0	90.00	270.68	7,220.0	364.3	-1,751.4	364.3	0.00	0.00	0.00
8,600.0	90.00	270.68	7,220.0	365.5	-1,851.4	365.5	0.00	0.00	0.00
8,700.0	90.00	270.68	7,220.0	366.6	-1,951.4	366.6	0.00	0.00	0.00
8,800.0	90.00	270.68	7,220.0	367.8	-2,051.4	367.8	0.00	0.00	0.00
8,900.0	90.00	270.68	7,220.0	369.0	-2,151.4	369.0	0.00	0.00	0.00
9,000.0	90.00	270.68	7,220.0	370.2	-2,251.4	370.2	0.00	0.00	0.00
9,100.0	90.00	270.68	7,220.0	371.4	-2,351.4	371.4	0.00	0.00	0.00
9,200.0	90.00	270.68	7,220.0	372.5	-2,451.4	372.5	0.00	0.00	0.00
9,300.0	90.00	270.68	7,220.0	373.7	-2,551.4	373.7	0.00	0.00	0.00
9,400.0	90.00	270.68	7,220.0	374.9	-2,651.4	374.9	0.00	0.00	0.00
9,500.0	90.00	270.68	7,220.0	376.1	-2,751.4	376.1	0.00	0.00	0.00
9,600.0	90.00	270.68	7,220.0	377.3	-2,851.4	377.3	0.00	0.00	0.00
9,700.0	90.00	270.68	7,220.0	378.4	-2,951.3	378.4	0.00	0.00	0.00
9,800.0	90.00	270.68	7,220.0	379.6	-3,051.3	379.6	0.00	0.00	0.00
9,900.0	90.00	270.68	7,220.0	380.8	-3,151.3	380.8	0.00	0.00	0.00
10,000.0	90.00	270.68	7,220.0	382.0	-3,251.3	382.0	0.00	0.00	0.00
10,100.0	90.00	270.68	7,220.0	383.2	-3,351.3	383.2	0.00	0.00	0.00
10,200.0	90.00	270.68	7,220.0	384.3	-3,451.3	384.3	0.00	0.00	0.00
10,300.0	90.00	270.68	7,220.0	385.5	-3,551.3	385.5	0.00	0.00	0.00
10,400.0	90.00	270.68	7,220.0	386.7	-3,651.3	386.7	0.00	0.00	0.00
10,500.0	90.00	270.68	7,220.0	387.9	-3,751.3	387.9	0.00	0.00	0.00
10,600.0	90.00	270.68	7,220.0	389.1	-3,851.3	389.1	0.00	0.00	0.00
10,700.0	90.00	270.68	7,220.0	390.3	-3,951.3	390.3	0.00	0.00	0.00
10,800.0	90.00	270.68	7,220.0	391.4	-4,051.3	391.4	0.00	0.00	0.00
10,900.0	90.00	270.68	7,220.0	392.6	-4,151.3	392.6	0.00	0.00	0.00
11,000.0	90.00	270.68	7,220.0	393.8	-4,251.3	393.8	0.00	0.00	0.00
11,100.0	90.00	270.68	7,220.0	395.0	-4,351.3	395.0	0.00	0.00	0.00
11,200.0	90.00	270.68	7,220.0	396.2	-4,451.2	396.2	0.00	0.00	0.00
11,300.0	90.00	270.68	7,220.0	397.3	-4,551.2	397.3	0.00	0.00	0.00
11,400.0	90.00	270.68	7,220.0	398.5	-4,651.2	398.5	0.00	0.00	0.00
11,500.0	90.00	270.68	7,220.0	399.7	-4,751.2	399.7	0.00	0.00	0.00
11,600.0	90.00	270.68	7,220.0	400.9	-4,851.2	400.9	0.00	0.00	0.00
11,700.0	90.00	270.68	7,220.0	402.1	-4,951.2	402.1	0.00	0.00	0.00
11,800.0	90.00	270.68	7,220.0	403.2	-5,051.2	403.2	0.00	0.00	0.00
11,900.0	90.00	270.68	7,220.0	404.4	-5,151.2	404.4	0.00	0.00	0.00
12,000.0	90.00	270.68	7,220.0	405.6	-5,251.2	405.6	0.00	0.00	0.00
12,100.0	90.00	270.68	7,220.0	406.8	-5,351.2	406.8	0.00	0.00	0.00
12,200.0	90.00	270.68	7,220.0	408.0	-5,451.2	408.0	0.00	0.00	0.00
12,300.0	90.00	270.68	7,220.0	409.2	-5,551.2	409.2	0.00	0.00	0.00
12,400.0	90.00	270.68	7,220.0	410.3	-5,651.2	410.3	0.00	0.00	0.00
12,500.0	90.00	270.68	7,220.0	411.5	-5,751.2	411.5	0.00	0.00	0.00
12,600.0	90.00	270.68	7,220.0	412.7	-5,851.1	412.7	0.00	0.00	0.00
12,700.0	90.00	270.68	7,220.0	413.9	-5,951.1	413.9	0.00	0.00	0.00
19,906.4	90.00	270.68	7,220.0	499.0	-13,157.1	499.0	0.00	0.00	0.00

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<b>Project:</b>	Weld County	<b>MD Reference:</b>	KB-EST @ 4654.0usft (Original Well Elev)
<b>Site:</b>	Sec 21-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	AD-DOUBLE CLUTCH C5-20-24	<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)	
TD at 19906.4' MD										

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,800.0	3,800.0	PARKMAN				
4,553.9	4,550.0	SUSSEX				
5,069.7	5,060.0	SHANNON				
6,899.9	6,865.0	SHARON SPRINGS				
6,927.3	6,890.0	NIOBRARA				
7,349.3	7,175.0	FORT HAYS				
7,471.1	7,210.0	CODELL				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
3,920.0	3,920.0	0.0	0.0	Build 2°/100'	
4,350.8	4,349.2	24.0	-21.6	Hold 8.62° Inc	
6,737.0	6,708.4	289.7	-260.9	KOP, Build 10°/100'	
7,578.7	7,220.0	353.4	-830.2	LP @ 90° Inc, 270.68° Azm Hold	
19,906.4	7,220.0	499.0	-13,157.1	TD at 19906.4' MD	