

EXTRACTION OIL & GAS

Weld County

Sec 32-T6N-R65W

WS-SUNRISE 4-5-5

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

18 September, 2017



Project: Weld County
Site: Sec 32-T6N-R65W
Well: WS-SUNRISE 4-5-5
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL 1

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



Azimuths to True North
Magnetic North: 8.15°

Magnetic Field
Strength: 52394.6snT
Dip Angle: 66.89°
Date: 9/11/2017
Model: IGRF2015

WELL DETAILS: WS-SUNRISE 4-5-5

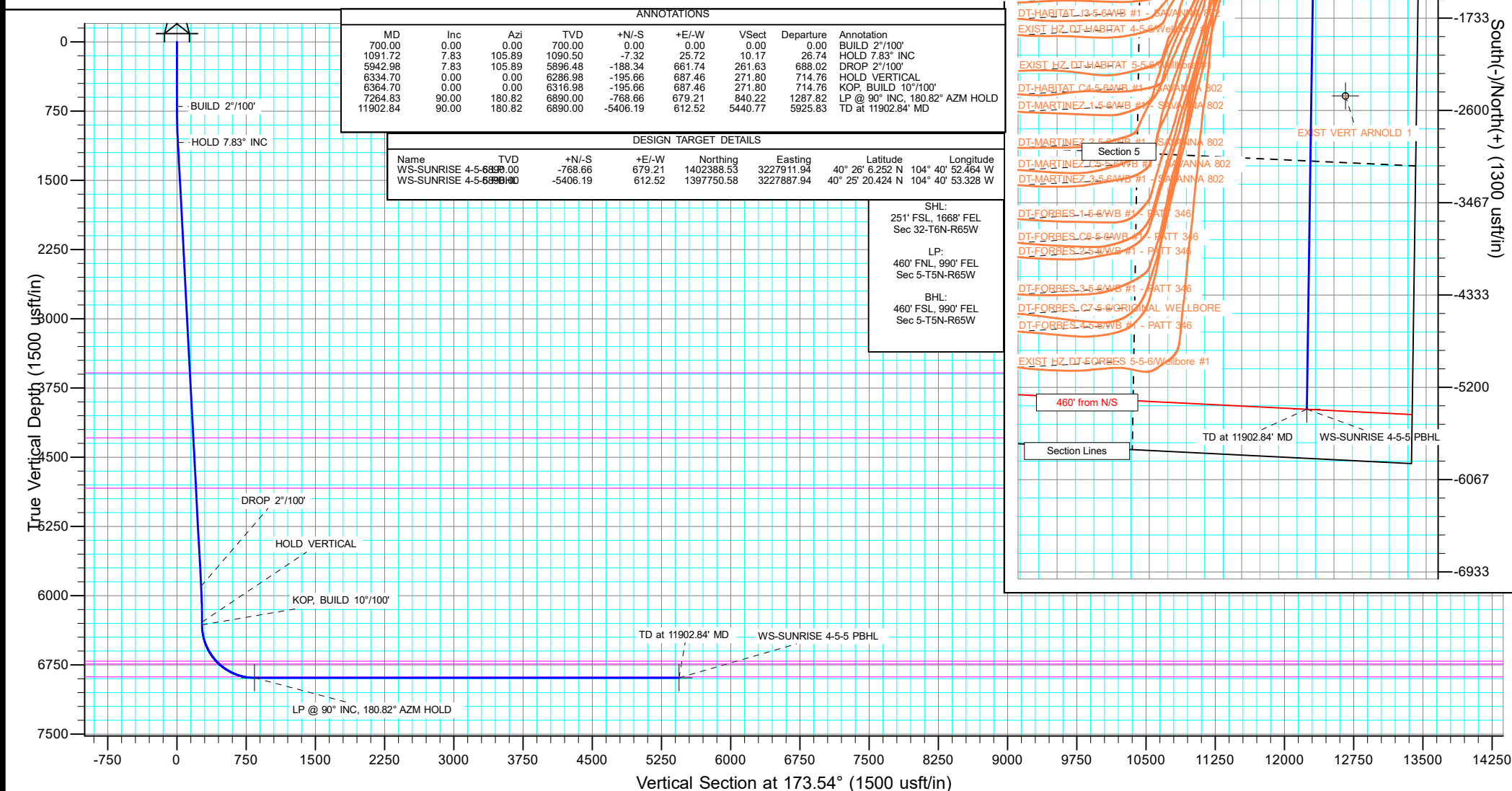
+N/-S	+E/-W	Northing	Easting	4642.00	Latitude	Longitude	Slot
0.00	0.00	1403150.90	3227225.68		40° 26' 13.848 N	104° 41' 1.248 W	

SECTION DETAILS

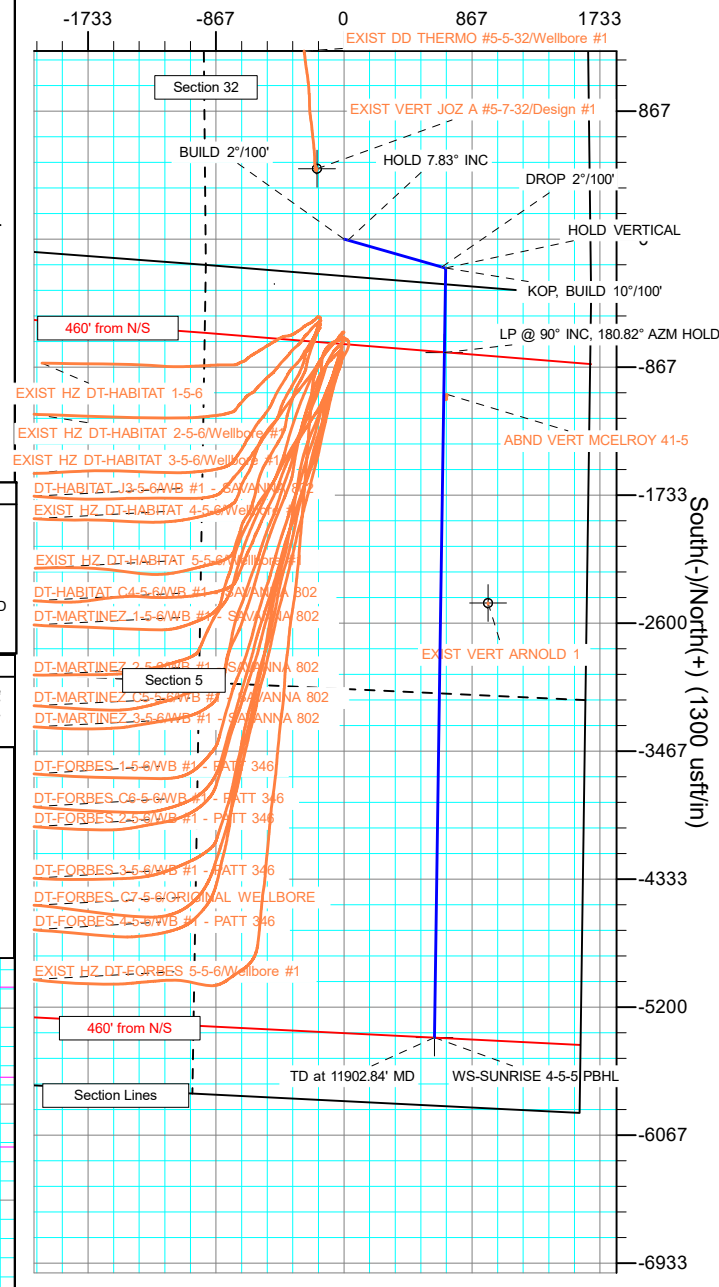
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	
3	1091.72	7.83	105.89	1090.50	-7.32	25.72	2.00	105.89	10.17	
4	5942.98	7.83	105.89	5896.48	-188.34	661.74	0.00	0.00	261.63	
5	6334.70	0.00	0.00	6286.98	-195.66	687.46	2.00	180.00	271.80	
6	6364.70	0.00	0.00	6316.98	-195.66	687.46	0.00	0.00	271.80	
7	7264.83	90.00	180.82	6890.00	-768.66	679.21	10.00	180.82	840.22	WS-SUNRISE 4-5-5 LP
8	11902.84	90.00	180.82	6890.00	-5406.19	612.52	0.00	-170.19	5440.77	WS-SUNRISE 4-5-5 PBHL

FORMATION TOP DETAILS

TVDPth	MDPath	Formation
3586.00	3610.73	PARKMAN
4290.00	4321.36	SUSSEX
4835.00	4871.50	SHANNON
6710.00	6797.79	SHARON SPRINGS
6740.00	6840.56	NIOBRARA
6880.00	7157.59	NIO B TARGET



West(-)/East(+) (1300 usft/in)



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well WS-SUNRISE 4-5-5
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4667.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4667.00usft
Site:	Sec 32-T6N-R65W	North Reference:	True
Well:	WS-SUNRISE 4-5-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Project	Weld 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 32-T6N-R65W			
Site Position:		Northing:	1,405,488.40 usft	Latitude:	40° 26' 36.996 N
From:	Lat/Long	Easting:	3,226,675.31 usft	Longitude:	104° 41' 8.088 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.53 °

Well	WS-SUNRISE 4-5-5					
Well Position	+N/-S	-2,342.45 usft	Northing:	1,403,150.90 usft	Latitude:	40° 26' 13.848 N
	+E/-W	528.88 usft	Easting:	3,227,225.68 usft	Longitude:	104° 41' 1.248 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	4,642.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/11/2017	8.15	66.89	52,394.59088138

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	173.54

Plan Survey Tool Program	Date	9/18/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	11,902.84	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	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,091.72	7.83	105.89	1,090.50	-7.32	25.72	2.00	2.00	0.00	105.89	
5,942.98	7.83	105.89	5,896.48	-188.34	661.74	0.00	0.00	0.00	0.00	
6,334.70	0.00	0.00	6,286.98	-195.66	687.46	2.00	-2.00	0.00	180.00	
6,364.70	0.00	0.00	6,316.98	-195.66	687.46	0.00	0.00	0.00	0.00	
7,264.83	90.00	180.82	6,890.00	-768.66	679.21	10.00	10.00	-19.91	180.82	WS-SUNRISE 4-5-5 L
11,902.84	90.00	180.82	6,890.00	-5,406.19	612.52	0.00	0.00	0.00	-170.19	WS-SUNRISE 4-5-5 F

Planning Report

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4667.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4667.00usft
Site:	Sec 32-T6N-R65W	North Reference:	True
Well:	WS-SUNRISE 4-5-5	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
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
BUILD 2°/100'									
800.00	2.00	105.89	799.98	-0.48	1.68	0.66	2.00	2.00	0.00
900.00	4.00	105.89	899.84	-1.91	6.71	2.65	2.00	2.00	0.00
1,000.00	6.00	105.89	999.45	-4.30	15.09	5.97	2.00	2.00	0.00
1,091.72	7.83	105.89	1,090.50	-7.32	25.72	10.17	2.00	2.00	0.00
HOLD 7.83° INC									
1,100.00	7.83	105.89	1,098.70	-7.63	26.80	10.60	0.00	0.00	0.00
1,200.00	7.83	105.89	1,197.77	-11.36	39.91	15.78	0.00	0.00	0.00
1,300.00	7.83	105.89	1,296.84	-15.09	53.02	20.96	0.00	0.00	0.00
1,400.00	7.83	105.89	1,395.90	-18.82	66.14	26.15	0.00	0.00	0.00
1,500.00	7.83	105.89	1,494.97	-22.55	79.25	31.33	0.00	0.00	0.00
1,600.00	7.83	105.89	1,594.04	-26.29	92.36	36.51	0.00	0.00	0.00
1,700.00	7.83	105.89	1,693.10	-30.02	105.47	41.70	0.00	0.00	0.00
1,800.00	7.83	105.89	1,792.17	-33.75	118.58	46.88	0.00	0.00	0.00
1,900.00	7.83	105.89	1,891.24	-37.48	131.69	52.06	0.00	0.00	0.00
2,000.00	7.83	105.89	1,990.30	-41.21	144.80	57.25	0.00	0.00	0.00
2,100.00	7.83	105.89	2,089.37	-44.94	157.91	62.43	0.00	0.00	0.00
2,200.00	7.83	105.89	2,188.44	-48.67	171.02	67.61	0.00	0.00	0.00
2,300.00	7.83	105.89	2,287.50	-52.41	184.13	72.80	0.00	0.00	0.00
2,400.00	7.83	105.89	2,386.57	-56.14	197.24	77.98	0.00	0.00	0.00
2,500.00	7.83	105.89	2,485.64	-59.87	210.35	83.16	0.00	0.00	0.00
2,600.00	7.83	105.89	2,584.70	-63.60	223.46	88.35	0.00	0.00	0.00
2,700.00	7.83	105.89	2,683.77	-67.33	236.57	93.53	0.00	0.00	0.00
2,800.00	7.83	105.89	2,782.84	-71.06	249.68	98.71	0.00	0.00	0.00
2,900.00	7.83	105.89	2,881.90	-74.79	262.79	103.90	0.00	0.00	0.00
3,000.00	7.83	105.89	2,980.97	-78.53	275.90	109.08	0.00	0.00	0.00
3,100.00	7.83	105.89	3,080.04	-82.26	289.01	114.26	0.00	0.00	0.00
3,200.00	7.83	105.89	3,179.10	-85.99	302.12	119.45	0.00	0.00	0.00
3,300.00	7.83	105.89	3,278.17	-89.72	315.23	124.63	0.00	0.00	0.00
3,400.00	7.83	105.89	3,377.24	-93.45	328.34	129.82	0.00	0.00	0.00
3,500.00	7.83	105.89	3,476.30	-97.18	341.46	135.00	0.00	0.00	0.00
3,600.00	7.83	105.89	3,575.37	-100.91	354.57	140.18	0.00	0.00	0.00
3,610.73	7.83	105.89	3,586.00	-101.31	355.97	140.74	0.00	0.00	0.00
PARKMAN									
3,700.00	7.83	105.89	3,674.43	-104.65	367.68	145.37	0.00	0.00	0.00
3,800.00	7.83	105.89	3,773.50	-108.38	380.79	150.55	0.00	0.00	0.00
3,900.00	7.83	105.89	3,872.57	-112.11	393.90	155.73	0.00	0.00	0.00
4,000.00	7.83	105.89	3,971.63	-115.84	407.01	160.92	0.00	0.00	0.00
4,100.00	7.83	105.89	4,070.70	-119.57	420.12	166.10	0.00	0.00	0.00
4,200.00	7.83	105.89	4,169.77	-123.30	433.23	171.28	0.00	0.00	0.00
4,300.00	7.83	105.89	4,268.83	-127.03	446.34	176.47	0.00	0.00	0.00
4,321.37	7.83	105.89	4,290.00	-127.83	449.14	177.57	0.00	0.00	0.00
SUSSEX									
4,400.00	7.83	105.89	4,367.90	-130.77	459.45	181.65	0.00	0.00	0.00
4,500.00	7.83	105.89	4,466.97	-134.50	472.56	186.83	0.00	0.00	0.00

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Project:	Weld County	MD Reference:	KB 25' @ 4667.00usft
Site:	Sec 32-T6N-R65W	North Reference:	True
Well:	WS-SUNRISE 4-5-5	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)
4,600.00	7.83	105.89	4,566.03	-138.23	485.67	192.02	0.00	0.00	0.00
4,700.00	7.83	105.89	4,665.10	-141.96	498.78	197.20	0.00	0.00	0.00
4,800.00	7.83	105.89	4,764.17	-145.69	511.89	202.38	0.00	0.00	0.00
4,871.50	7.83	105.89	4,835.00	-148.36	521.27	206.09	0.00	0.00	0.00
SHANNON									
4,900.00	7.83	105.89	4,863.23	-149.42	525.00	207.57	0.00	0.00	0.00
5,000.00	7.83	105.89	4,962.30	-153.15	538.11	212.75	0.00	0.00	0.00
5,100.00	7.83	105.89	5,061.37	-156.89	551.22	217.93	0.00	0.00	0.00
5,200.00	7.83	105.89	5,160.43	-160.62	564.33	223.12	0.00	0.00	0.00
5,300.00	7.83	105.89	5,259.50	-164.35	577.44	228.30	0.00	0.00	0.00
5,400.00	7.83	105.89	5,358.57	-168.08	590.55	233.48	0.00	0.00	0.00
5,500.00	7.83	105.89	5,457.63	-171.81	603.66	238.67	0.00	0.00	0.00
5,600.00	7.83	105.89	5,556.70	-175.54	616.78	243.85	0.00	0.00	0.00
5,700.00	7.83	105.89	5,655.77	-179.27	629.89	249.03	0.00	0.00	0.00
5,800.00	7.83	105.89	5,754.83	-183.01	643.00	254.22	0.00	0.00	0.00
5,900.00	7.83	105.89	5,853.90	-186.74	656.11	259.40	0.00	0.00	0.00
5,942.98	7.83	105.89	5,896.48	-188.34	661.74	261.63	0.00	0.00	0.00
DROP 2°/100'									
6,000.00	6.69	105.89	5,953.04	-190.31	668.68	264.37	2.00	-2.00	0.00
6,100.00	4.69	105.89	6,052.54	-193.03	678.22	268.14	2.00	-2.00	0.00
6,200.00	2.69	105.89	6,152.33	-194.79	684.41	270.59	2.00	-2.00	0.00
6,300.00	0.69	105.89	6,252.28	-195.60	687.26	271.72	2.00	-2.00	0.00
6,334.70	0.00	0.00	6,286.98	-195.66	687.46	271.80	2.00	-2.00	0.00
HOLD VERTICAL									
6,364.70	0.00	0.00	6,316.98	-195.66	687.46	271.80	0.00	0.00	0.00
KOP, BUILD 10°/100'									
6,400.00	3.53	180.82	6,352.26	-196.75	687.44	272.87	10.00	10.00	0.00
6,450.00	8.53	180.82	6,401.96	-202.00	687.37	278.08	10.00	10.00	0.00
6,500.00	13.53	180.82	6,451.03	-211.56	687.23	287.57	10.00	10.00	0.00
6,550.00	18.53	180.82	6,499.07	-225.36	687.03	301.26	10.00	10.00	0.00
6,600.00	23.53	180.82	6,545.72	-243.29	686.77	319.05	10.00	10.00	0.00
6,650.00	28.53	180.82	6,590.64	-265.22	686.46	340.80	10.00	10.00	0.00
6,700.00	33.53	180.82	6,633.47	-290.98	686.09	366.36	10.00	10.00	0.00
6,750.00	38.53	180.82	6,673.90	-320.38	685.67	395.52	10.00	10.00	0.00
6,797.79	43.30	180.82	6,710.00	-351.67	685.21	426.56	10.00	10.00	0.00
SHARON SPRINGS									
6,800.00	43.53	180.82	6,711.60	-353.18	685.19	428.06	10.00	10.00	0.00
6,840.56	47.58	180.82	6,740.00	-382.13	684.78	456.78	10.00	10.00	0.00
NIOBRARA									
6,850.00	48.52	180.82	6,746.31	-389.15	684.68	463.74	10.00	10.00	0.00
6,900.00	53.52	180.82	6,777.75	-428.00	684.12	502.29	10.00	10.00	0.00
6,950.00	58.52	180.82	6,805.68	-469.45	683.52	543.40	10.00	10.00	0.00
7,000.00	63.52	180.82	6,829.90	-513.17	682.89	586.78	10.00	10.00	0.00
7,050.00	68.52	180.82	6,850.21	-558.84	682.23	632.08	10.00	10.00	0.00
7,100.00	73.52	180.82	6,866.47	-606.10	681.55	678.96	10.00	10.00	0.00
7,150.00	78.52	180.82	6,878.54	-654.60	680.86	727.08	10.00	10.00	0.00
7,157.59	79.28	180.82	6,880.00	-662.05	680.75	734.46	10.00	10.00	0.00
NIO B TARGET									
7,200.00	83.52	180.82	6,886.34	-703.97	680.14	776.05	10.00	10.00	0.00
7,250.00	88.52	180.82	6,889.81	-753.83	679.43	825.51	10.00	10.00	0.00
7,264.83	90.00	180.82	6,890.00	-768.66	679.21	840.22	10.00	10.00	0.00
LP @ 90° INC, 180.82° AZM HOLD									
7,300.00	90.00	180.82	6,890.00	-803.82	678.71	875.10	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well WS-SUNRISE 4-5-5
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4667.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4667.00usft
Site:	Sec 32-T6N-R65W	North Reference:	True
Well:	WS-SUNRISE 4-5-5	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)
7,400.00	90.00	180.82	6,889.99	-903.81	677.27	974.30	0.00	0.00	0.00
7,500.00	90.00	180.82	6,889.99	-1,003.80	675.83	1,073.49	0.00	0.00	0.00
7,600.00	90.00	180.82	6,889.98	-1,103.79	674.39	1,172.68	0.00	0.00	0.00
7,700.00	90.00	180.82	6,889.98	-1,203.78	672.95	1,271.87	0.00	0.00	0.00
7,800.00	90.00	180.82	6,889.97	-1,303.77	671.51	1,371.07	0.00	0.00	0.00
7,900.00	90.00	180.82	6,889.97	-1,403.76	670.07	1,470.26	0.00	0.00	0.00
8,000.00	90.00	180.82	6,889.96	-1,503.75	668.64	1,569.45	0.00	0.00	0.00
8,100.00	90.00	180.82	6,889.96	-1,603.74	667.20	1,668.64	0.00	0.00	0.00
8,200.00	90.00	180.82	6,889.96	-1,703.73	665.76	1,767.84	0.00	0.00	0.00
8,300.00	90.00	180.82	6,889.95	-1,803.72	664.32	1,867.03	0.00	0.00	0.00
8,400.00	90.00	180.82	6,889.95	-1,903.70	662.88	1,966.22	0.00	0.00	0.00
8,500.00	90.00	180.82	6,889.95	-2,003.69	661.44	2,065.41	0.00	0.00	0.00
8,600.00	90.00	180.82	6,889.94	-2,103.68	660.00	2,164.60	0.00	0.00	0.00
8,700.00	90.00	180.82	6,889.94	-2,203.67	658.57	2,263.80	0.00	0.00	0.00
8,800.00	90.00	180.82	6,889.94	-2,303.66	657.13	2,362.99	0.00	0.00	0.00
8,900.00	90.00	180.82	6,889.94	-2,403.65	655.69	2,462.18	0.00	0.00	0.00
9,000.00	90.00	180.82	6,889.93	-2,503.64	654.25	2,561.37	0.00	0.00	0.00
9,100.00	90.00	180.82	6,889.93	-2,603.63	652.81	2,660.57	0.00	0.00	0.00
9,200.00	90.00	180.82	6,889.93	-2,703.62	651.38	2,759.76	0.00	0.00	0.00
9,300.00	90.00	180.82	6,889.93	-2,803.61	649.94	2,858.95	0.00	0.00	0.00
9,400.00	90.00	180.82	6,889.93	-2,903.60	648.50	2,958.14	0.00	0.00	0.00
9,500.00	90.00	180.82	6,889.93	-3,003.59	647.06	3,057.34	0.00	0.00	0.00
9,600.00	90.00	180.82	6,889.93	-3,103.58	645.62	3,156.53	0.00	0.00	0.00
9,700.00	90.00	180.82	6,889.93	-3,203.57	644.18	3,255.72	0.00	0.00	0.00
9,800.00	90.00	180.82	6,889.93	-3,303.56	642.75	3,354.91	0.00	0.00	0.00
9,900.00	90.00	180.82	6,889.93	-3,403.55	641.31	3,454.11	0.00	0.00	0.00
10,000.00	90.00	180.82	6,889.93	-3,503.54	639.87	3,553.30	0.00	0.00	0.00
10,100.00	90.00	180.82	6,889.93	-3,603.53	638.43	3,652.49	0.00	0.00	0.00
10,200.00	90.00	180.82	6,889.94	-3,703.52	637.00	3,751.68	0.00	0.00	0.00
10,300.00	90.00	180.82	6,889.94	-3,803.51	635.56	3,850.87	0.00	0.00	0.00
10,400.00	90.00	180.82	6,889.94	-3,903.50	634.12	3,950.07	0.00	0.00	0.00
10,500.00	90.00	180.82	6,889.94	-4,003.49	632.68	4,049.26	0.00	0.00	0.00
10,600.00	90.00	180.82	6,889.94	-4,103.48	631.25	4,148.45	0.00	0.00	0.00
10,700.00	90.00	180.82	6,889.95	-4,203.47	629.81	4,247.64	0.00	0.00	0.00
10,800.00	90.00	180.82	6,889.95	-4,303.46	628.37	4,346.84	0.00	0.00	0.00
10,900.00	90.00	180.82	6,889.95	-4,403.45	626.93	4,446.03	0.00	0.00	0.00
11,000.00	90.00	180.82	6,889.96	-4,503.44	625.50	4,545.22	0.00	0.00	0.00
11,100.00	90.00	180.82	6,889.96	-4,603.43	624.06	4,644.41	0.00	0.00	0.00
11,200.00	90.00	180.82	6,889.96	-4,703.42	622.62	4,743.61	0.00	0.00	0.00
11,300.00	90.00	180.82	6,889.97	-4,803.41	621.18	4,842.80	0.00	0.00	0.00
11,400.00	90.00	180.82	6,889.97	-4,903.39	619.75	4,941.99	0.00	0.00	0.00
11,500.00	90.00	180.82	6,889.98	-5,003.38	618.31	5,041.18	0.00	0.00	0.00
11,600.00	90.00	180.82	6,889.98	-5,103.37	616.87	5,140.38	0.00	0.00	0.00
11,700.00	90.00	180.82	6,889.99	-5,203.36	615.44	5,239.57	0.00	0.00	0.00
11,800.00	90.00	180.82	6,889.99	-5,303.35	614.00	5,338.76	0.00	0.00	0.00
11,902.84	90.00	180.82	6,890.00	-5,406.19	612.52	5,440.77	0.00	0.00	0.00
TD at 11902.84' MD									

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well WS-SUNRISE 4-5-5
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4667.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4667.00usft
Site:	Sec 32-T6N-R65W	North Reference:	True
Well:	WS-SUNRISE 4-5-5	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)		
WS-SUNRISE 4-5-5 LP	0.00	0.00	6,890.00	-768.66	679.21	1,402,388.53	3,227,911.94	40° 26' 6.252 N	104° 40' 52.464 W
- plan hits target center									
- Point									
WS-SUNRISE 4-5-5 PBI	0.00	0.00	6,890.00	-5,406.19	612.52	1,397,750.58	3,227,887.94	40° 25' 20.424 N	104° 40' 53.328 W
- plan hits target center									
- Point									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(usft)	(usft)			(°)	(°)	
3,610.73	3,586.00	PARKMAN				
4,321.37	4,290.00	SUSSEX				
4,871.50	4,835.00	SHANNON				
6,797.79	6,710.00	SHARON SPRINGS				
6,840.56	6,740.00	NIOBRARA				
7,157.59	6,880.00	NIO B TARGET				

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	Comment
700.00	700.00	0.00	0.00	BUILD 2°/100'
1,091.72	1,090.50	-7.32	25.72	HOLD 7.83° INC
5,942.98	5,896.48	-188.34	661.74	DROP 2°/100'
6,334.70	6,286.98	-195.66	687.46	HOLD VERTICAL
6,364.70	6,316.98	-195.66	687.46	KOP, BUILD 10°/100'
7,264.83	6,890.00	-768.66	679.21	LP @ 90° INC, 180.82° AZM HOLD
11,902.84	6,890.00	-5,406.19	612.52	TD at 11902.84' MD