

Apollo Operating, LLC.

Well Name: **Green Grass 11-561-6**

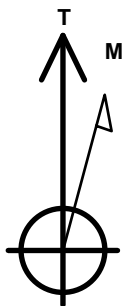
Surface Location: Green Grass Pad Sec.11-T5N-R61W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone

Ground Elevation: 4700.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1394984.69 3366952.49 40.410150 -104.182200
Original Well Elev WELL @ 4723.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 600'FSL & 830'FWL, Sec.11	1.0	0.0	0.0	Point
BHL 600'FNL & 2290'FWL, Sec.2	6150.0	9439.4	1511.6	Point
LPL 736'FSL & 2280'FWL, Sec.11	6150.0	147.0	1450.9	Point



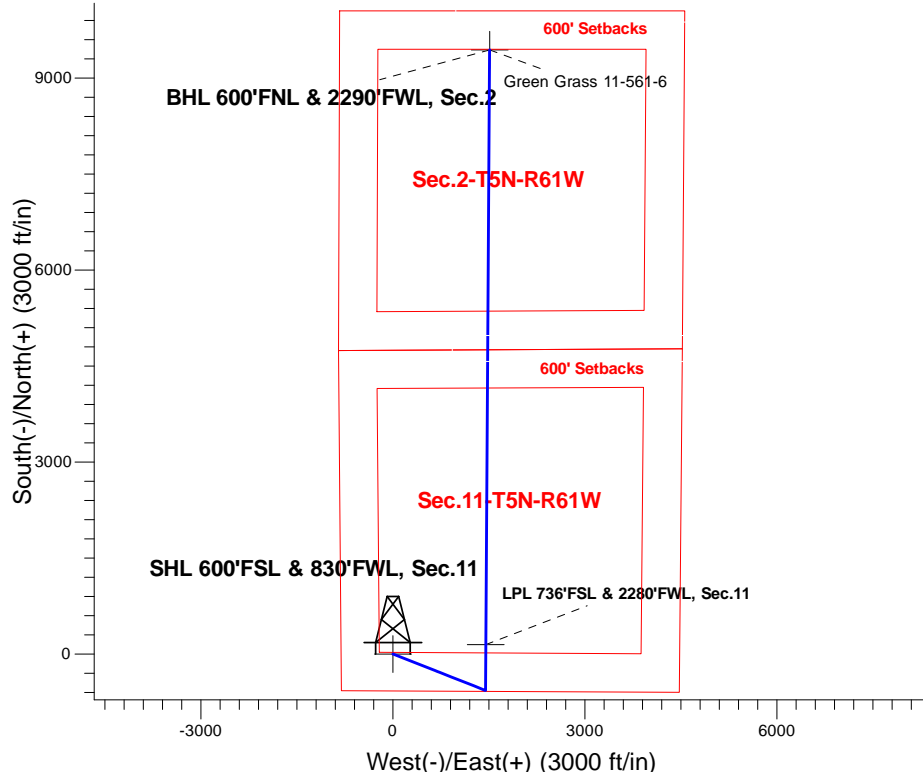
Azimuths to True North
Magnetic North: 8.22°

Magnetic Field
Strength: 52319.4snT
Dip Angle: 67.05°
Date: 8/22/2017
Model: HDGM

Green Grass Pad Sec.11-T15N-R61W
Green Grass 11-561-6
Plan #1 (8-22-17)
15:44, August 23 2017

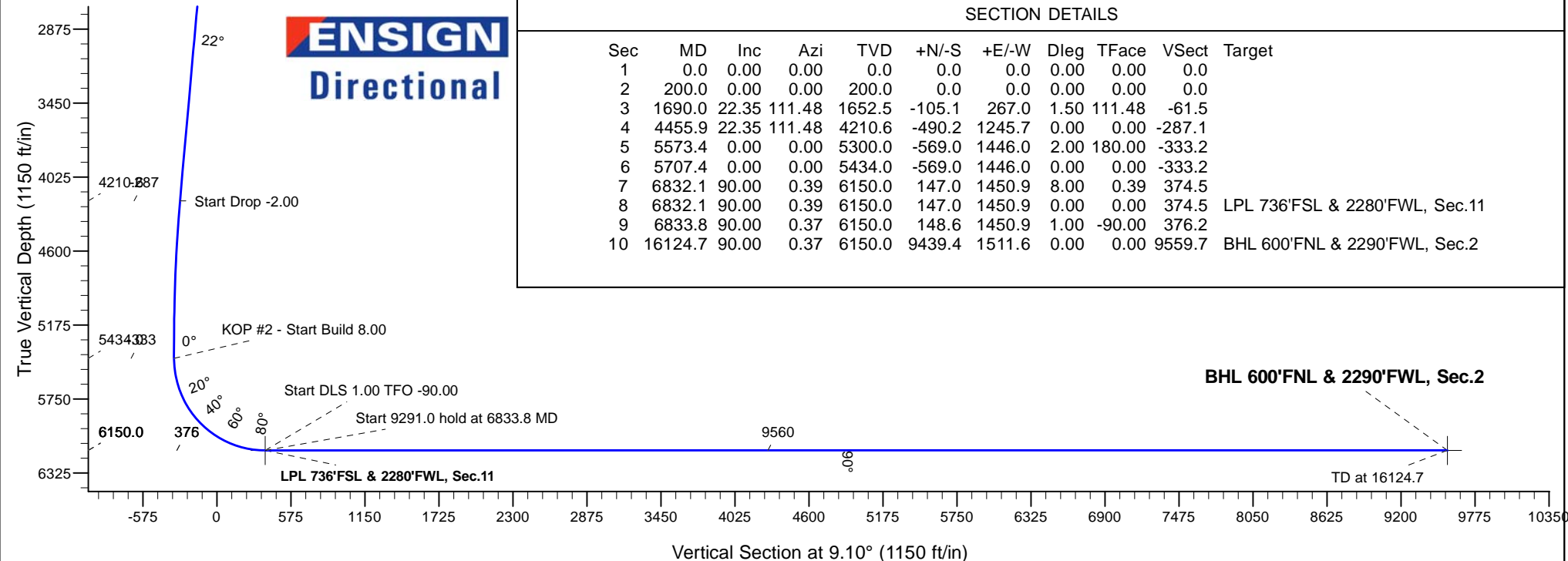
ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP - Start Build 1.50
4210.6	4455.9	Start Drop -2.00
5434.0	5707.4	KOP #2 - Start Build 8.00
6150.0	6832.1	Start DLS 1.00 TFO -90.00
6150.0	6833.8	Start 9291.0 hold at 6833.8 MD
6150.0	16124.7	TD at 16124.7



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1690.0	22.35	111.48	1652.5	-105.1	267.0	1.50	111.48	-61.5	
4	4455.9	22.35	111.48	4210.6	-490.2	1245.7	0.00	0.00	-287.1	
5	5573.4	0.00	0.00	5300.0	-569.0	1446.0	2.00	180.00	-333.2	
6	5707.4	0.00	0.00	5434.0	-569.0	1446.0	0.00	0.00	-333.2	
7	6832.1	90.00	0.39	6150.0	147.0	1450.9	8.00	0.39	374.5	
8	6832.1	90.00	0.39	6150.0	147.0	1450.9	0.00	0.00	374.5	LPL 736'FSL & 2280'FWL, Sec.11
9	6833.8	90.00	0.37	6150.0	148.6	1450.9	1.00	-90.00	376.2	
10	16124.7	90.00	0.37	6150.0	9439.4	1511.6	0.00	0.00	9559.7	BHL 600'FNL & 2290'FWL, Sec.2





Apollo Operating, LLC.

SEC.11-T5N-R61W

Green Grass Pad Sec.11-T5N-R61W

Green Grass 11-561-6

Wellbore #1

Plan: Plan #1 (8-22-17)

Standard Planning Report

23 August, 2017

Database:	US_EDM	Local Co-ordinate Reference:	Well Green Grass 11-561-6
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 4723.0ft (Original Well Elev)
Project:	SEC.11-T5N-R61W	MD Reference:	WELL @ 4723.0ft (Original Well Elev)
Site:	Green Grass Pad Sec.11-T5N-R61W	North Reference:	True
Well:	Green Grass 11-561-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-17)		

Project	SEC.11-T5N-R61W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Green Grass Pad Sec.11-T5N-R61W				
Site Position:		Northing:	1,394,984.29 usft	Latitude:	40.410150
From:	Lat/Long	Easting:	3,366,924.64 usft	Longitude:	-104.182300
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.85

Well	Green Grass 11-561-6					
Well Position	+N/-S	0.0 ft	Northing:	1,394,984.70 usft	Latitude:	40.410150
	+E/-W	27.8 ft	Easting:	3,366,952.49 usft	Longitude:	-104.182200
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,700.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/22/2017	8.22	67.05	52,319

Design	Plan #1 (8-22-17)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	9.10

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,690.0	22.35	111.48	1,652.5	-105.1	267.0	1.50	1.50	0.00	111.48	
4,455.9	22.35	111.48	4,210.6	-490.2	1,245.7	0.00	0.00	0.00	0.00	
5,573.4	0.00	0.00	5,300.0	-569.0	1,446.0	2.00	-2.00	0.00	180.00	
5,707.4	0.00	0.00	5,434.0	-569.0	1,446.0	0.00	0.00	0.00	0.00	
6,832.1	90.00	0.39	6,150.0	147.0	1,450.9	8.00	8.00	0.00	0.39	
6,832.1	90.00	0.39	6,150.0	147.0	1,450.9	0.00	0.00	0.00	0.00	LPL 736'FSL & 2280'f
6,833.8	90.00	0.37	6,150.0	148.6	1,450.9	1.00	0.00	-1.00	-90.00	
16,124.7	90.00	0.37	6,150.0	9,439.4	1,511.6	0.00	0.00	0.00	0.00	BHL 600'FNL & 2290'

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Project:	SEC.11-T5N-R61W	MD Reference:	WELL @ 4723.0ft (Original Well Elev)
Site:	Green Grass Pad Sec.11-T5N-R61W	North Reference:	True
Well:	Green Grass 11-561-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-17)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 600'FSL & 830'FWL, Sec.11									
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
KOP - Start Build 1.50									
300.0	1.50	111.48	300.0	-0.5	1.2	-0.3	1.50	1.50	0.00
400.0	3.00	111.48	399.9	-1.9	4.9	-1.1	1.50	1.50	0.00
500.0	4.50	111.48	499.7	-4.3	11.0	-2.5	1.50	1.50	0.00
600.0	6.00	111.48	599.3	-7.7	19.5	-4.5	1.50	1.50	0.00
700.0	7.50	111.48	698.6	-12.0	30.4	-7.0	1.50	1.50	0.00
800.0	9.00	111.48	797.5	-17.2	43.8	-10.1	1.50	1.50	0.00
900.0	10.50	111.48	896.1	-23.4	59.5	-13.7	1.50	1.50	0.00
1,000.0	12.00	111.48	994.2	-30.6	77.7	-17.9	1.50	1.50	0.00
1,100.0	13.50	111.48	1,091.7	-38.6	98.2	-22.6	1.50	1.50	0.00
1,200.0	15.00	111.48	1,188.6	-47.7	121.1	-27.9	1.50	1.50	0.00
1,300.0	16.50	111.48	1,284.9	-57.6	146.4	-33.7	1.50	1.50	0.00
1,400.0	18.00	111.48	1,380.4	-68.5	174.0	-40.1	1.50	1.50	0.00
1,500.0	19.50	111.48	1,475.0	-80.2	203.9	-47.0	1.50	1.50	0.00
1,600.0	21.00	111.48	1,568.9	-92.9	236.1	-54.4	1.50	1.50	0.00
1,690.0	22.35	111.48	1,652.5	-105.1	267.0	-61.5	1.50	1.50	0.00
1,700.0	22.35	111.48	1,661.7	-106.5	270.6	-62.3	0.00	0.00	0.00
1,800.0	22.35	111.48	1,754.2	-120.4	305.9	-70.5	0.00	0.00	0.00
1,900.0	22.35	111.48	1,846.7	-134.3	341.3	-78.7	0.00	0.00	0.00
2,000.0	22.35	111.48	1,939.2	-148.2	376.7	-86.8	0.00	0.00	0.00
2,100.0	22.35	111.48	2,031.7	-162.2	412.1	-95.0	0.00	0.00	0.00
2,200.0	22.35	111.48	2,124.2	-176.1	447.5	-103.1	0.00	0.00	0.00
2,300.0	22.35	111.48	2,216.7	-190.0	482.9	-111.3	0.00	0.00	0.00
2,400.0	22.35	111.48	2,309.2	-203.9	518.3	-119.4	0.00	0.00	0.00
2,500.0	22.35	111.48	2,401.7	-217.9	553.6	-127.6	0.00	0.00	0.00
2,600.0	22.35	111.48	2,494.1	-231.8	589.0	-135.7	0.00	0.00	0.00
2,700.0	22.35	111.48	2,586.6	-245.7	624.4	-143.9	0.00	0.00	0.00
2,800.0	22.35	111.48	2,679.1	-259.6	659.8	-152.0	0.00	0.00	0.00
2,900.0	22.35	111.48	2,771.6	-273.6	695.2	-160.2	0.00	0.00	0.00
3,000.0	22.35	111.48	2,864.1	-287.5	730.6	-168.4	0.00	0.00	0.00
3,100.0	22.35	111.48	2,956.6	-301.4	765.9	-176.5	0.00	0.00	0.00
3,200.0	22.35	111.48	3,049.1	-315.3	801.3	-184.7	0.00	0.00	0.00
3,300.0	22.35	111.48	3,141.6	-329.2	836.7	-192.8	0.00	0.00	0.00
3,400.0	22.35	111.48	3,234.0	-343.2	872.1	-201.0	0.00	0.00	0.00
3,500.0	22.35	111.48	3,326.5	-357.1	907.5	-209.1	0.00	0.00	0.00
3,600.0	22.35	111.48	3,419.0	-371.0	942.9	-217.3	0.00	0.00	0.00
3,700.0	22.35	111.48	3,511.5	-384.9	978.3	-225.4	0.00	0.00	0.00
3,800.0	22.35	111.48	3,604.0	-398.9	1,013.6	-233.6	0.00	0.00	0.00
3,900.0	22.35	111.48	3,696.5	-412.8	1,049.0	-241.7	0.00	0.00	0.00
4,000.0	22.35	111.48	3,789.0	-426.7	1,084.4	-249.9	0.00	0.00	0.00
4,100.0	22.35	111.48	3,881.5	-440.6	1,119.8	-258.0	0.00	0.00	0.00
4,200.0	22.35	111.48	3,973.9	-454.6	1,155.2	-266.2	0.00	0.00	0.00
4,300.0	22.35	111.48	4,066.4	-468.5	1,190.6	-274.4	0.00	0.00	0.00
4,400.0	22.35	111.48	4,158.9	-482.4	1,226.0	-282.5	0.00	0.00	0.00
4,455.9	22.35	111.48	4,210.6	-490.2	1,245.7	-287.1	0.00	0.00	0.00
Start Drop -2.00									
4,500.0	21.47	111.48	4,251.5	-496.2	1,261.0	-290.6	2.00	-2.00	0.00
4,600.0	19.47	111.48	4,345.2	-509.0	1,293.6	-298.1	2.00	-2.00	0.00

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Site:	Green Grass Pad Sec.11-T5N-R61W	North Reference:	True
Well:	Green Grass 11-561-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-17)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.0	17.47	111.48	4,440.1	-520.6	1,323.1	-304.9	2.00	-2.00	0.00
4,800.0	15.47	111.48	4,536.0	-531.0	1,349.4	-311.0	2.00	-2.00	0.00
4,900.0	13.47	111.48	4,632.8	-540.2	1,372.7	-316.3	2.00	-2.00	0.00
5,000.0	11.47	111.48	4,730.4	-548.1	1,392.8	-321.0	2.00	-2.00	0.00
5,100.0	9.47	111.48	4,828.7	-554.7	1,409.7	-324.8	2.00	-2.00	0.00
5,200.0	7.47	111.48	4,927.7	-560.1	1,423.4	-328.0	2.00	-2.00	0.00
5,300.0	5.47	111.48	5,027.0	-564.2	1,433.9	-330.4	2.00	-2.00	0.00
5,400.0	3.47	111.48	5,126.7	-567.1	1,441.1	-332.1	2.00	-2.00	0.00
5,500.0	1.47	111.48	5,226.6	-568.7	1,445.1	-333.0	2.00	-2.00	0.00
5,573.4	0.00	0.00	5,300.0	-569.0	1,446.0	-333.2	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,326.6	-569.0	1,446.0	-333.2	0.00	0.00	0.00
5,700.0	0.00	0.00	5,426.6	-569.0	1,446.0	-333.2	0.00	0.00	0.00
5,707.4	0.00	0.00	5,434.0	-569.0	1,446.0	-333.2	0.00	0.00	0.00
KOP #2 - Start Build 8.00									
5,800.0	7.41	0.39	5,526.3	-563.0	1,446.0	-327.3	8.00	8.00	0.00
5,900.0	15.41	0.39	5,624.3	-543.3	1,446.2	-307.8	8.00	8.00	0.00
6,000.0	23.41	0.39	5,718.5	-510.0	1,446.4	-274.9	8.00	8.00	0.00
6,100.0	31.42	0.39	5,807.2	-464.0	1,446.7	-229.5	8.00	8.00	0.00
6,200.0	39.42	0.39	5,888.6	-406.1	1,447.1	-172.2	8.00	8.00	0.00
6,300.0	47.42	0.39	5,961.2	-337.5	1,447.6	-104.3	8.00	8.00	0.00
6,400.0	55.42	0.39	6,023.5	-259.3	1,448.1	-27.1	8.00	8.00	0.00
6,500.0	63.43	0.39	6,074.4	-173.3	1,448.7	57.9	8.00	8.00	0.00
6,600.0	71.43	0.39	6,112.7	-81.1	1,449.3	149.1	8.00	8.00	0.00
6,700.0	79.43	0.39	6,137.8	15.6	1,450.0	244.7	8.00	8.00	0.00
6,800.0	87.43	0.39	6,149.3	114.9	1,450.7	342.8	8.00	8.00	0.00
6,832.1	90.00	0.39	6,150.0	147.0	1,450.9	374.5	8.00	8.00	0.00
Start DLS 1.00 TFO -90.00 - LPL 736'FSL & 2280'FWL, Sec.11									
6,833.8	90.00	0.37	6,150.0	148.7	1,450.9	376.2	0.97	0.00	-0.97
Start 9291.0 hold at 6833.8 MD									
6,900.0	90.00	0.37	6,150.0	214.9	1,451.3	441.6	0.00	0.00	0.00
7,000.0	90.00	0.37	6,150.0	314.9	1,452.0	540.5	0.00	0.00	0.00
7,100.0	90.00	0.37	6,150.0	414.9	1,452.6	639.3	0.00	0.00	0.00
7,200.0	90.00	0.37	6,150.0	514.9	1,453.3	738.2	0.00	0.00	0.00
7,300.0	90.00	0.37	6,150.0	614.9	1,453.9	837.0	0.00	0.00	0.00
7,400.0	90.00	0.37	6,150.0	714.9	1,454.6	935.9	0.00	0.00	0.00
7,500.0	90.00	0.37	6,150.0	814.9	1,455.2	1,034.7	0.00	0.00	0.00
7,600.0	90.00	0.37	6,150.0	914.9	1,455.9	1,133.6	0.00	0.00	0.00
7,700.0	90.00	0.37	6,150.0	1,014.9	1,456.5	1,232.4	0.00	0.00	0.00
7,800.0	90.00	0.37	6,150.0	1,114.9	1,457.2	1,331.2	0.00	0.00	0.00
7,900.0	90.00	0.37	6,150.0	1,214.9	1,457.9	1,430.1	0.00	0.00	0.00
8,000.0	90.00	0.37	6,150.0	1,314.9	1,458.5	1,528.9	0.00	0.00	0.00
8,100.0	90.00	0.37	6,150.0	1,414.9	1,459.2	1,627.8	0.00	0.00	0.00
8,200.0	90.00	0.37	6,150.0	1,514.9	1,459.8	1,726.6	0.00	0.00	0.00
8,300.0	90.00	0.37	6,150.0	1,614.9	1,460.5	1,825.5	0.00	0.00	0.00
8,400.0	90.00	0.37	6,150.0	1,714.9	1,461.1	1,924.3	0.00	0.00	0.00
8,500.0	90.00	0.37	6,150.0	1,814.9	1,461.8	2,023.1	0.00	0.00	0.00
8,600.0	90.00	0.37	6,150.0	1,914.8	1,462.4	2,122.0	0.00	0.00	0.00
8,700.0	90.00	0.37	6,150.0	2,014.8	1,463.1	2,220.8	0.00	0.00	0.00
8,800.0	90.00	0.37	6,150.0	2,114.8	1,463.7	2,319.7	0.00	0.00	0.00
8,900.0	90.00	0.37	6,150.0	2,214.8	1,464.4	2,418.5	0.00	0.00	0.00
9,000.0	90.00	0.37	6,150.0	2,314.8	1,465.0	2,517.4	0.00	0.00	0.00
9,100.0	90.00	0.37	6,150.0	2,414.8	1,465.7	2,616.2	0.00	0.00	0.00
9,200.0	90.00	0.37	6,150.0	2,514.8	1,466.3	2,715.0	0.00	0.00	0.00

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Site:	Green Grass Pad Sec.11-T5N-R61W	North Reference:	True
Well:	Green Grass 11-561-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-17)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,300.0	90.00	0.37	6,150.0	2,614.8	1,467.0	2,813.9	0.00	0.00	0.00
9,400.0	90.00	0.37	6,150.0	2,714.8	1,467.7	2,912.7	0.00	0.00	0.00
9,500.0	90.00	0.37	6,150.0	2,814.8	1,468.3	3,011.6	0.00	0.00	0.00
9,600.0	90.00	0.37	6,150.0	2,914.8	1,469.0	3,110.4	0.00	0.00	0.00
9,700.0	90.00	0.37	6,150.0	3,014.8	1,469.6	3,209.3	0.00	0.00	0.00
9,800.0	90.00	0.37	6,150.0	3,114.8	1,470.3	3,308.1	0.00	0.00	0.00
9,900.0	90.00	0.37	6,150.0	3,214.8	1,470.9	3,406.9	0.00	0.00	0.00
10,000.0	90.00	0.37	6,150.0	3,314.8	1,471.6	3,505.8	0.00	0.00	0.00
10,100.0	90.00	0.37	6,150.0	3,414.8	1,472.2	3,604.6	0.00	0.00	0.00
10,200.0	90.00	0.37	6,150.0	3,514.8	1,472.9	3,703.5	0.00	0.00	0.00
10,300.0	90.00	0.37	6,150.0	3,614.8	1,473.5	3,802.3	0.00	0.00	0.00
10,400.0	90.00	0.37	6,150.0	3,714.8	1,474.2	3,901.2	0.00	0.00	0.00
10,500.0	90.00	0.37	6,150.0	3,814.8	1,474.8	4,000.0	0.00	0.00	0.00
10,600.0	90.00	0.37	6,150.0	3,914.8	1,475.5	4,098.9	0.00	0.00	0.00
10,700.0	90.00	0.37	6,150.0	4,014.8	1,476.1	4,197.7	0.00	0.00	0.00
10,800.0	90.00	0.37	6,150.0	4,114.8	1,476.8	4,296.5	0.00	0.00	0.00
10,900.0	90.00	0.37	6,150.0	4,214.8	1,477.4	4,395.4	0.00	0.00	0.00
11,000.0	90.00	0.37	6,150.0	4,314.8	1,478.1	4,494.2	0.00	0.00	0.00
11,100.0	90.00	0.37	6,150.0	4,414.8	1,478.8	4,593.1	0.00	0.00	0.00
11,200.0	90.00	0.37	6,150.0	4,514.8	1,479.4	4,691.9	0.00	0.00	0.00
11,300.0	90.00	0.37	6,150.0	4,614.8	1,480.1	4,790.8	0.00	0.00	0.00
11,400.0	90.00	0.37	6,150.0	4,714.8	1,480.7	4,889.6	0.00	0.00	0.00
11,500.0	90.00	0.37	6,150.0	4,814.8	1,481.4	4,988.4	0.00	0.00	0.00
11,600.0	90.00	0.37	6,150.0	4,914.8	1,482.0	5,087.3	0.00	0.00	0.00
11,700.0	90.00	0.37	6,150.0	5,014.8	1,482.7	5,186.1	0.00	0.00	0.00
11,800.0	90.00	0.37	6,150.0	5,114.8	1,483.3	5,285.0	0.00	0.00	0.00
11,900.0	90.00	0.37	6,150.0	5,214.8	1,484.0	5,383.8	0.00	0.00	0.00
12,000.0	90.00	0.37	6,150.0	5,314.8	1,484.6	5,482.7	0.00	0.00	0.00
12,100.0	90.00	0.37	6,150.0	5,414.8	1,485.3	5,581.5	0.00	0.00	0.00
12,200.0	90.00	0.37	6,150.0	5,514.8	1,485.9	5,680.3	0.00	0.00	0.00
12,300.0	90.00	0.37	6,150.0	5,614.8	1,486.6	5,779.2	0.00	0.00	0.00
12,400.0	90.00	0.37	6,150.0	5,714.8	1,487.2	5,878.0	0.00	0.00	0.00
12,500.0	90.00	0.37	6,150.0	5,814.8	1,487.9	5,976.9	0.00	0.00	0.00
12,600.0	90.00	0.37	6,150.0	5,914.8	1,488.5	6,075.7	0.00	0.00	0.00
12,700.0	90.00	0.37	6,150.0	6,014.8	1,489.2	6,174.6	0.00	0.00	0.00
12,800.0	90.00	0.37	6,150.0	6,114.8	1,489.9	6,273.4	0.00	0.00	0.00
12,900.0	90.00	0.37	6,150.0	6,214.8	1,490.5	6,372.2	0.00	0.00	0.00
13,000.0	90.00	0.37	6,150.0	6,314.8	1,491.2	6,471.1	0.00	0.00	0.00
13,100.0	90.00	0.37	6,150.0	6,414.8	1,491.8	6,569.9	0.00	0.00	0.00
13,200.0	90.00	0.37	6,150.0	6,514.8	1,492.5	6,668.8	0.00	0.00	0.00
13,300.0	90.00	0.37	6,150.0	6,614.7	1,493.1	6,767.6	0.00	0.00	0.00
13,400.0	90.00	0.37	6,150.0	6,714.7	1,493.8	6,866.5	0.00	0.00	0.00
13,500.0	90.00	0.37	6,150.0	6,814.7	1,494.4	6,965.3	0.00	0.00	0.00
13,600.0	90.00	0.37	6,150.0	6,914.7	1,495.1	7,064.2	0.00	0.00	0.00
13,700.0	90.00	0.37	6,150.0	7,014.7	1,495.7	7,163.0	0.00	0.00	0.00
13,800.0	90.00	0.37	6,150.0	7,114.7	1,496.4	7,261.8	0.00	0.00	0.00
13,900.0	90.00	0.37	6,150.0	7,214.7	1,497.0	7,360.7	0.00	0.00	0.00
14,000.0	90.00	0.37	6,150.0	7,314.7	1,497.7	7,459.5	0.00	0.00	0.00
14,100.0	90.00	0.37	6,150.0	7,414.7	1,498.3	7,558.4	0.00	0.00	0.00
14,200.0	90.00	0.37	6,150.0	7,514.7	1,499.0	7,657.2	0.00	0.00	0.00
14,300.0	90.00	0.37	6,150.0	7,614.7	1,499.7	7,756.1	0.00	0.00	0.00
14,400.0	90.00	0.37	6,150.0	7,714.7	1,500.3	7,854.9	0.00	0.00	0.00
14,500.0	90.00	0.37	6,150.0	7,814.7	1,501.0	7,953.7	0.00	0.00	0.00
14,600.0	90.00	0.37	6,150.0	7,914.7	1,501.6	8,052.6	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Green Grass 11-561-6
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 4723.0ft (Original Well Elev)
Project:	SEC.11-T5N-R61W	MD Reference:	WELL @ 4723.0ft (Original Well Elev)
Site:	Green Grass Pad Sec.11-T5N-R61W	North Reference:	True
Well:	Green Grass 11-561-6	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-17)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
14,700.0	90.00	0.37	6,150.0	8,014.7	1,502.3	8,151.4	0.00	0.00	0.00	
14,800.0	90.00	0.37	6,150.0	8,114.7	1,502.9	8,250.3	0.00	0.00	0.00	
14,900.0	90.00	0.37	6,150.0	8,214.7	1,503.6	8,349.1	0.00	0.00	0.00	
15,000.0	90.00	0.37	6,150.0	8,314.7	1,504.2	8,448.0	0.00	0.00	0.00	
15,100.0	90.00	0.37	6,150.0	8,414.7	1,504.9	8,546.8	0.00	0.00	0.00	
15,200.0	90.00	0.37	6,150.0	8,514.7	1,505.5	8,645.6	0.00	0.00	0.00	
15,300.0	90.00	0.37	6,150.0	8,614.7	1,506.2	8,744.5	0.00	0.00	0.00	
15,400.0	90.00	0.37	6,150.0	8,714.7	1,506.8	8,843.3	0.00	0.00	0.00	
15,500.0	90.00	0.37	6,150.0	8,814.7	1,507.5	8,942.2	0.00	0.00	0.00	
15,600.0	90.00	0.37	6,150.0	8,914.7	1,508.1	9,041.0	0.00	0.00	0.00	
15,700.0	90.00	0.37	6,150.0	9,014.7	1,508.8	9,139.9	0.00	0.00	0.00	
15,800.0	90.00	0.37	6,150.0	9,114.7	1,509.4	9,238.7	0.00	0.00	0.00	
15,900.0	90.00	0.37	6,150.0	9,214.7	1,510.1	9,337.5	0.00	0.00	0.00	
16,000.0	90.00	0.37	6,150.0	9,314.7	1,510.8	9,436.4	0.00	0.00	0.00	
16,100.0	90.00	0.37	6,150.0	9,414.7	1,511.4	9,535.2	0.00	0.00	0.00	
16,124.7	90.00	0.37	6,150.0	9,439.4	1,511.6	9,559.7	0.00	0.00	0.00	
TD at 16124.7 - BHL 600'FNL & 2290'FWL, Sec.2										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL 600'FSL & 830'FWL - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,394,984.71	3,366,952.49	40.410150	-104.182200	
BHL 600'FNL & 2290'FW - plan hits target center - Point	0.00	0.00	6,150.0	9,439.4	1,511.6	1,404,445.15	3,368,323.56	40.436060	-104.176770	
LPL 736'FSL & 2280'FW - plan hits target center - Point	0.00	0.00	6,150.0	147.0	1,450.9	1,395,153.23	3,368,400.96	40.410553	-104.176990	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP - Start Build 1.50	
4,455.9	4,210.6	-105.1	267.0	Start Drop -2.00	
5,707.4	5,434.0	-490.2	1,245.7	KOP #2 - Start Build 8.00	
6,832.1	6,150.0	-569.0	1,446.0	Start DLS 1.00 TFO -90.00	
6,833.8	6,150.0	-569.0	1,446.0	Start 9291.0 hold at 6833.8 MD	
16,124.7	6,150.0	147.0	1,450.9	TD at 16124.7	