

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

SW NW SEC. 22 T8N R60W 6th P.M.

HALE 8-60 22-23-5

ORIGINAL WELLBORE

11 July, 2017

Plan: PROPOSAL #1



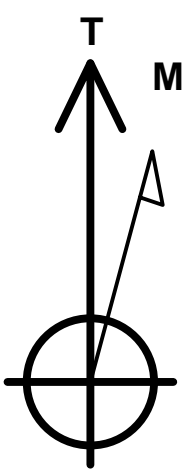
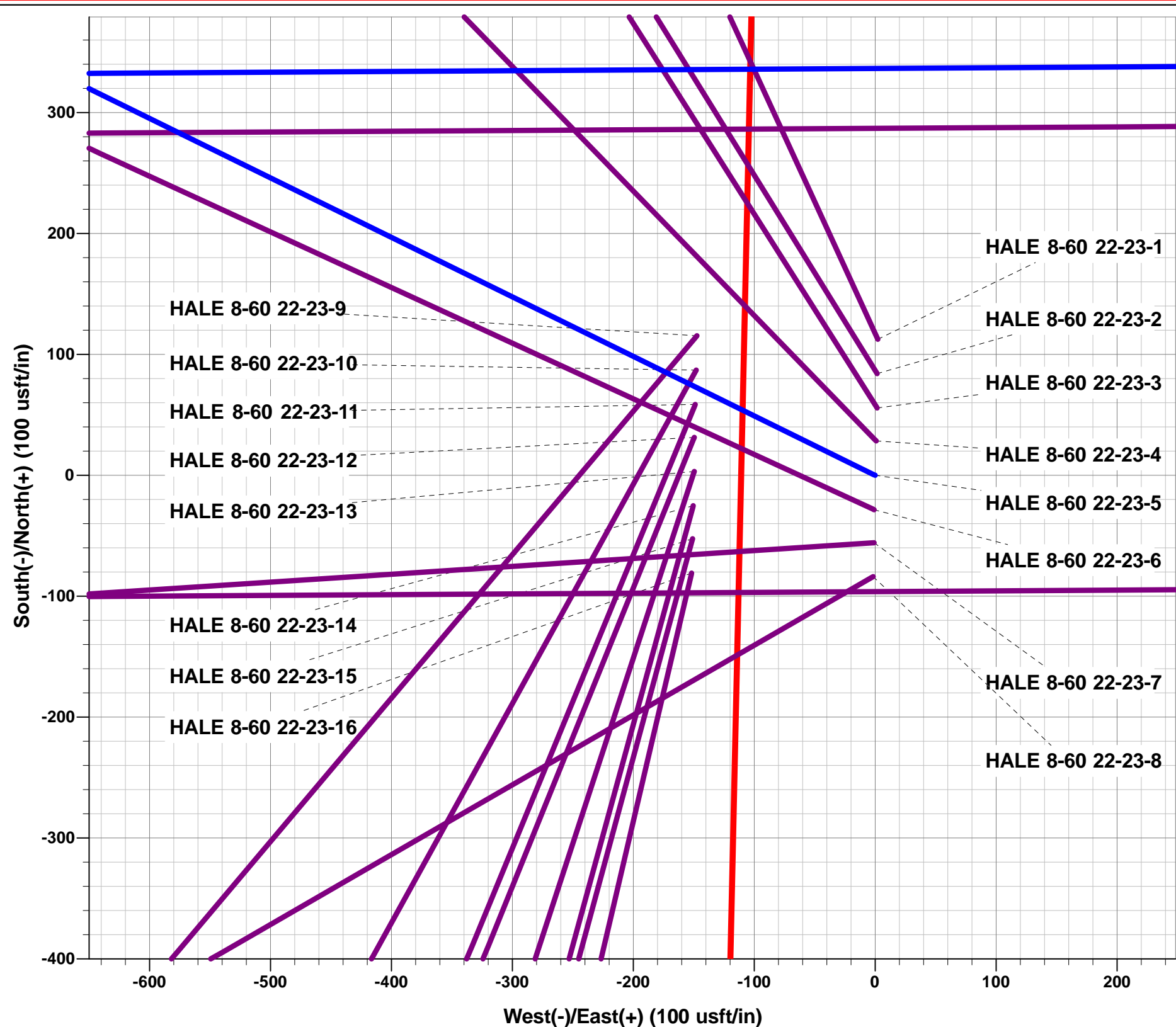
Project: WELD COUNTY, COLORADO (NAD 83)
Site: SW NW SEC. 22 T8N R60W 6th P.M.
Well: HALE 8-60 22-23-5
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 2136ft FNL & 710ft FWL of Sec 22
700.0	700.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1295.6	1300.0	12.00	296.20	27.6	-56.2	-54.6	62.6	EOB TO 12° INC
4247.6	4317.9	12.00	296.20	304.7	-619.1	-601.6	690.0	END OF TANGENT
4843.2	4917.9	0.00	0.00	332.3	-675.3	-656.1	752.6	EOD TO VERTICAL
5633.2	5707.9	0.00	0.00	332.3	-675.3	-656.1	752.6	KOP (10°/100ft BUR)
6206.1	6607.8	90.00	89.64	335.9	-102.4	-83.9	1325.5	BPI: 1799ft FNL & 600ft FWL of Sec 22
6206.1	13329.3	90.00	89.65	377.6	6618.9	6629.7	8047.0	EPI: 1799ft FNL & 2020ft FWL of Sec 23
6206.1	13649.2	90.00	89.67	379.5	6938.8	6949.2	8366.9	BHL: 1799ft FNL & 2340ft FWL of Sec 23

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - HALE 8-60 22-23-5	5633.2	332.3	-675.3	40.650159	-104.086884
BPI - HALE 8-60 22-23-5	6206.1	335.9	-102.4	40.650169	-104.084819
EPI - HALE 8-60 22-23-5	6206.1	377.6	6618.9	40.650281	-104.060597
BHL - HALE 8-60 22-23-5	6206.1	379.5	6938.8	40.650286	-104.059444



Azimuths to True North
Magnetic North: 7.86°

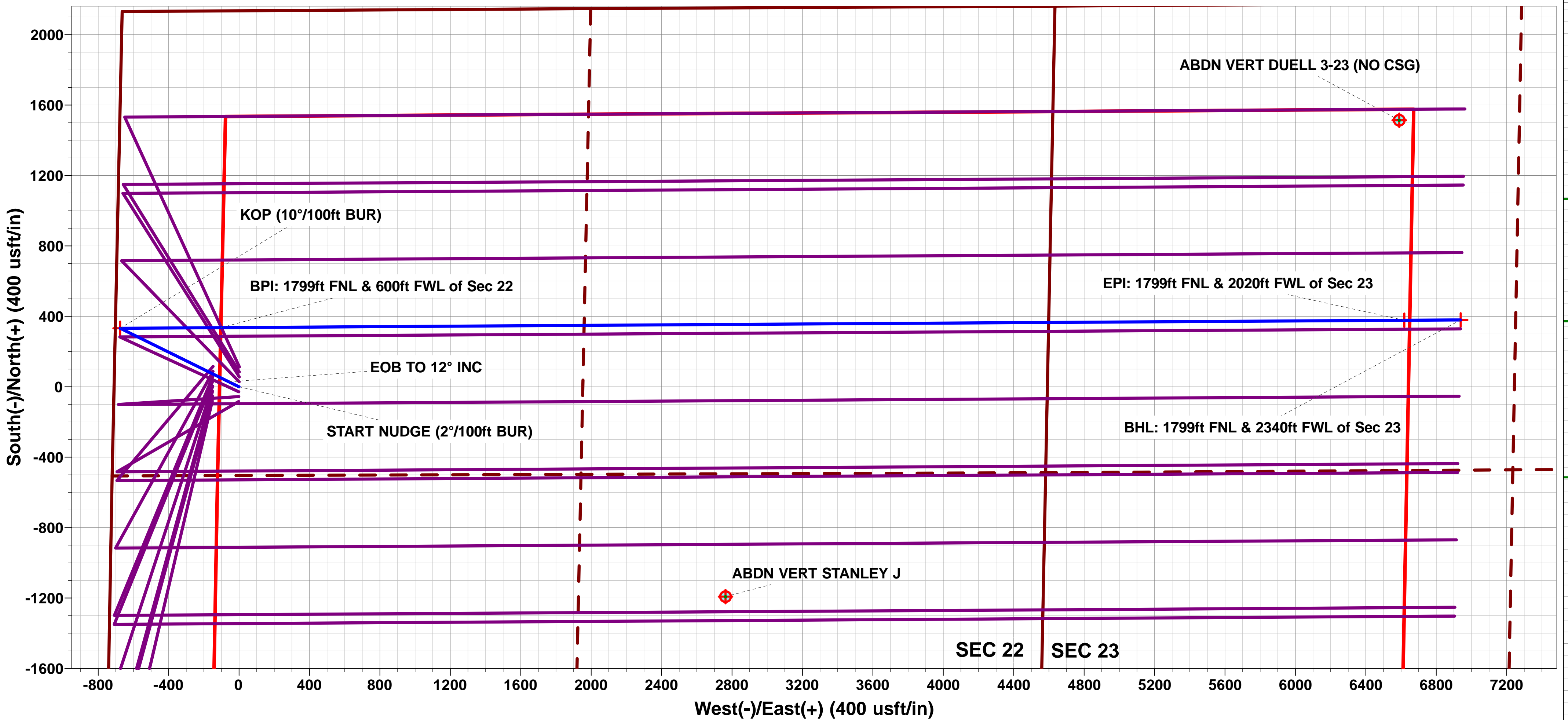
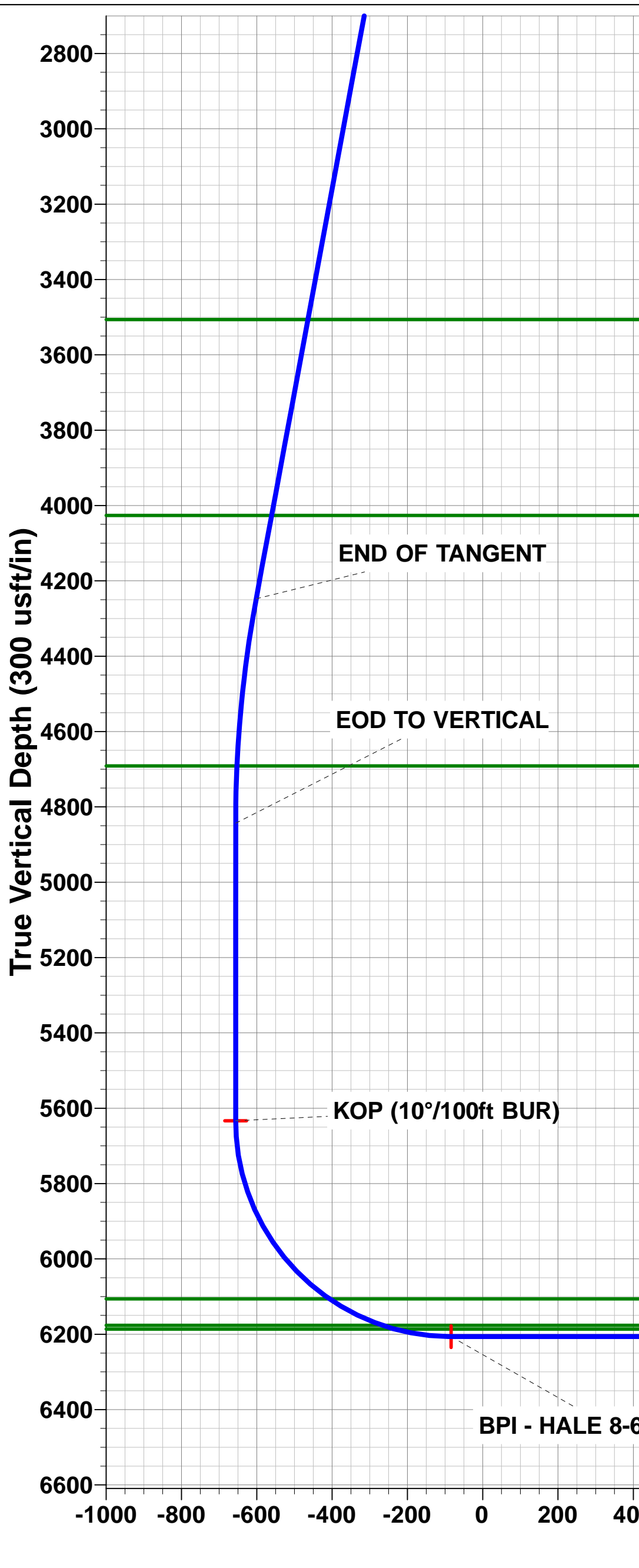
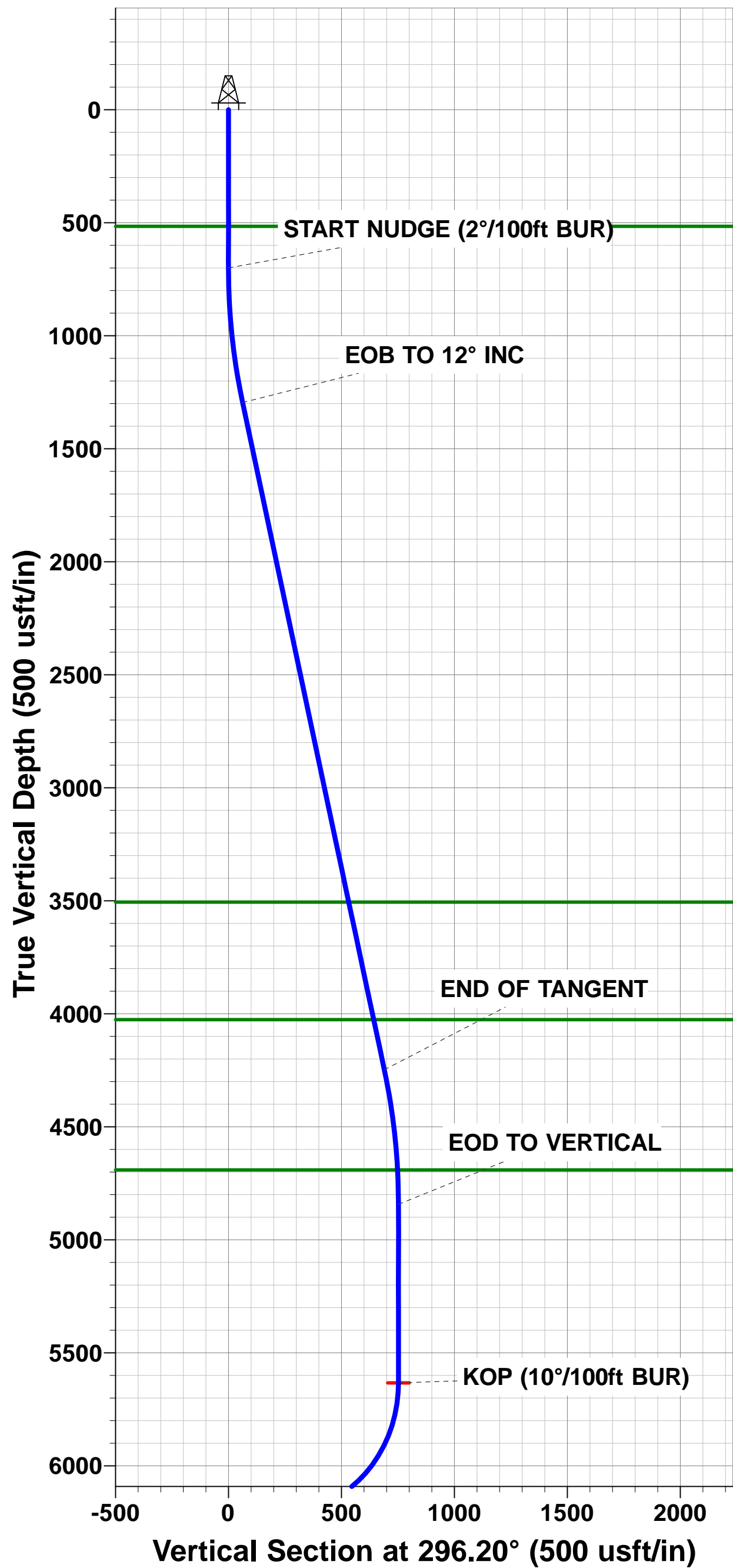
Magnetic Field
Strength: 52582.3nT
Dip Angle: 67.15°
Date: 11/07/2017
Model: IGRF2015

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
516.1	516.1	PIERRE SH (BASE FOX HILLS)
3506.1	3559.9	PARKMAN
4026.1	4091.5	SUSSEX
4691.1	4765.7	SHANNON
6106.1	6264.2	SHARON SPRINGS SHALE
6176.1	6421.6	NOBRARA FORMATION
6186.1	6456.0	NOBRARA A CHALK

PROPOSED LOCAL COORDINATES:

SHL: 2136ft FNL & 710ft FWL of Sec 22
BEGIN PROD INT: 1799ft FNL & 600ft FWL of Sec 22
END PROD INTERVAL: 1799ft FNL & 2020ft FWL of Sec 23
BHL: 1799ft FNL & 2340ft FWL of Sec 23



EPI - HALE 8-60 22-23-5

BHL - HALE 8-60 22-23-5

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HALE 8-60 22-23-5
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4956.1usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4956.1usft (Original Well Elev)
Site:	SW NW SEC. 22 T8N R60W 6th P.M.	North Reference:	True
Well:	HALE 8-60 22-23-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Project	WELD COUNTY, COLORADO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	SW NW SEC. 22 T8N R60W 6th P.M.		
Site Position:		Northing:	1,482,610.76usft
From:	Lat/Long	Easting:	3,392,779.56usft
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft
		Latitude:	40.649556
		Longitude:	-104.084442
		Grid Convergence:	0.91 °

Well	HALE 8-60 22-23-5		
Well Position	+N/-S	-112.6 usft	Northing:
	+E/-W	-2.2 usft	Easting:
Position Uncertainty		0.0 usft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/07/2017	7.86	67.15	52,582

Design	PROPOSAL #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	6,206.1	0.0	0.0	86.87

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100usf)	Turn Rate (°/100usf)	TFO (°)	Target
0.0	0.00	0.00	0.0	-4,956.1	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	-4,256.1	0.0	0.0	0.00	0.00	0.00	0.00	
1,300.0	12.00	296.20	1,295.6	-3,660.5	27.6	-56.2	2.00	2.00	0.00	296.20	
4,317.9	12.00	296.20	4,247.6	-708.5	304.7	-619.1	0.00	0.00	0.00	0.00	
4,917.9	0.00	0.00	4,843.2	-112.9	332.3	-675.3	2.00	-2.00	0.00	180.00	
5,707.9	0.00	0.00	5,633.2	677.1	332.3	-675.3	0.00	0.00	0.00	0.00	KOP - HALE 8-60 2
6,607.8	90.00	89.64	6,206.1	1,250.0	335.9	-102.4	10.00	10.00	9.96	89.64	BPI - HALE 8-60 22
13,329.3	90.00	89.65	6,206.1	1,250.0	377.6	6,618.9	0.00	0.00	0.00	106.06	EPI - HALE 8-60 22
13,649.2	90.00	89.67	6,206.1	1,250.0	379.5	6,938.8	0.00	0.00	0.00	75.32	BHL - HALE 8-60 2

Planning Report



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Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4956.1usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4956.1usft (Original Well Elev)
Site:	SW NW SEC. 22 T8N R60W 6th P.M.	North Reference:	True
Well:	HALE 8-60 22-23-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
SHL: 2136ft FNL & 710ft FWL of Sec 22										
0.0	0.00	0.00	0.0	4,956.10	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,856.10	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,756.10	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,656.10	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,556.10	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,456.10	0.0	0.0	0.0	0.00	0.00	0.00
PIERRE SHALE (BASE FOX HILLS)										
516.1	0.00	0.00	516.1	4,440.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,356.10	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
700.0	0.00	0.00	700.0	4,256.10	0.0	0.0	0.0	0.00	0.00	0.00
800.0	2.00	296.20	800.0	4,156.12	0.8	-1.6	-1.5	2.00	2.00	0.00
900.0	4.00	296.20	899.8	4,056.26	3.1	-6.3	-6.1	2.00	2.00	0.00
1,000.0	6.00	296.20	999.5	3,956.65	6.9	-14.1	-13.7	2.00	2.00	0.00
1,100.0	8.00	296.20	1,098.7	3,857.40	12.3	-25.0	-24.3	2.00	2.00	0.00
1,200.0	10.00	296.20	1,197.5	3,758.63	19.2	-39.1	-37.9	2.00	2.00	0.00
EOB TO 12° INC										
1,300.0	12.00	296.20	1,295.6	3,660.51	27.6	-56.2	-54.6	2.00	2.00	0.00
1,400.0	12.00	296.20	1,393.4	3,562.66	36.8	-74.8	-72.7	0.00	0.00	0.00
1,500.0	12.00	296.20	1,491.3	3,464.85	46.0	-93.5	-90.8	0.00	0.00	0.00
1,600.0	12.00	296.20	1,589.1	3,367.03	55.2	-112.1	-109.0	0.00	0.00	0.00
1,700.0	12.00	296.20	1,686.9	3,269.22	64.4	-130.8	-127.1	0.00	0.00	0.00
1,800.0	12.00	296.20	1,784.7	3,171.40	73.5	-149.4	-145.2	0.00	0.00	0.00
1,900.0	12.00	296.20	1,882.5	3,073.59	82.7	-168.1	-163.3	0.00	0.00	0.00
2,000.0	12.00	296.20	1,980.3	2,975.77	91.9	-186.7	-181.5	0.00	0.00	0.00
2,100.0	12.00	296.20	2,078.1	2,877.96	101.1	-205.4	-199.6	0.00	0.00	0.00
2,200.0	12.00	296.20	2,176.0	2,780.14	110.3	-224.1	-217.7	0.00	0.00	0.00
2,300.0	12.00	296.20	2,273.8	2,682.33	119.4	-242.7	-235.8	0.00	0.00	0.00
2,400.0	12.00	296.20	2,371.6	2,584.51	128.6	-261.4	-254.0	0.00	0.00	0.00
2,500.0	12.00	296.20	2,469.4	2,486.70	137.8	-280.0	-272.1	0.00	0.00	0.00
2,600.0	12.00	296.20	2,567.2	2,388.88	147.0	-298.7	-290.2	0.00	0.00	0.00
2,700.0	12.00	296.20	2,665.0	2,291.07	156.1	-317.3	-308.3	0.00	0.00	0.00
2,800.0	12.00	296.20	2,762.8	2,193.25	165.3	-336.0	-326.5	0.00	0.00	0.00
2,900.0	12.00	296.20	2,860.7	2,095.44	174.5	-354.6	-344.6	0.00	0.00	0.00
3,000.0	12.00	296.20	2,958.5	1,997.62	183.7	-373.3	-362.7	0.00	0.00	0.00
3,100.0	12.00	296.20	3,056.3	1,899.81	192.9	-391.9	-380.8	0.00	0.00	0.00
3,200.0	12.00	296.20	3,154.1	1,801.99	202.0	-410.6	-398.9	0.00	0.00	0.00
3,300.0	12.00	296.20	3,251.9	1,704.18	211.2	-429.3	-417.1	0.00	0.00	0.00
3,400.0	12.00	296.20	3,349.7	1,606.36	220.4	-447.9	-435.2	0.00	0.00	0.00
3,500.0	12.00	296.20	3,447.6	1,508.55	229.6	-466.6	-453.3	0.00	0.00	0.00
PARKMAN										
3,559.9	12.00	296.20	3,506.1	1,450.00	235.1	-477.7	-464.2	0.00	0.00	0.00
3,600.0	12.00	296.20	3,545.4	1,410.73	238.8	-485.2	-471.4	0.00	0.00	0.00
3,700.0	12.00	296.20	3,643.2	1,312.92	247.9	-503.9	-489.6	0.00	0.00	0.00
3,800.0	12.00	296.20	3,741.0	1,215.10	257.1	-522.5	-507.7	0.00	0.00	0.00
3,900.0	12.00	296.20	3,838.8	1,117.29	266.3	-541.2	-525.8	0.00	0.00	0.00
4,000.0	12.00	296.20	3,936.6	1,019.47	275.5	-559.8	-543.9	0.00	0.00	0.00
SUSSEX										
4,091.5	12.00	296.20	4,026.1	930.00	283.9	-576.9	-560.5	0.00	0.00	0.00
4,100.0	12.00	296.20	4,034.4	921.66	284.7	-578.5	-562.1	0.00	0.00	0.00
4,200.0	12.00	296.20	4,132.3	823.84	293.8	-597.1	-580.2	0.00	0.00	0.00
4,300.0	12.00	296.20	4,230.1	726.03	303.0	-615.8	-598.3	0.00	0.00	0.00

Planning Report



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Well:	HALE 8-60 22-23-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
END OF TANGENT										
4,317.9	12.00	296.20	4,247.6	708.49	304.7	-619.1	-601.6	0.00	0.00	0.00
4,400.0	10.36	296.20	4,328.1	627.98	311.7	-633.4	-615.4	2.00	-2.00	0.00
4,500.0	8.36	296.20	4,426.8	529.32	318.9	-648.0	-629.6	2.00	-2.00	0.00
4,600.0	6.36	296.20	4,526.0	430.14	324.5	-659.5	-640.8	2.00	-2.00	0.00
4,700.0	4.36	296.20	4,625.5	330.59	328.6	-667.9	-648.9	2.00	-2.00	0.00
SHANNON										
4,765.7	3.04	296.20	4,691.1	265.00	330.5	-671.7	-652.6	2.00	-2.00	0.00
4,800.0	2.36	296.20	4,725.3	230.76	331.2	-673.1	-654.0	2.00	-2.00	0.00
4,900.0	0.36	296.20	4,825.3	130.80	332.3	-675.2	-656.1	2.00	-2.00	0.00
EOD TO VERTICAL										
4,917.9	0.00	0.00	4,843.2	112.90	332.3	-675.3	-656.1	2.00	-2.00	0.00
5,000.0	0.00	0.00	4,925.3	30.80	332.3	-675.3	-656.1	0.00	0.00	0.00
5,100.0	0.00	0.00	5,025.3	-69.20	332.3	-675.3	-656.1	0.00	0.00	0.00
5,200.0	0.00	0.00	5,125.3	-169.20	332.3	-675.3	-656.1	0.00	0.00	0.00
5,300.0	0.00	0.00	5,225.3	-269.20	332.3	-675.3	-656.1	0.00	0.00	0.00
5,400.0	0.00	0.00	5,325.3	-369.20	332.3	-675.3	-656.1	0.00	0.00	0.00
5,500.0	0.00	0.00	5,425.3	-469.20	332.3	-675.3	-656.1	0.00	0.00	0.00
5,600.0	0.00	0.00	5,525.3	-569.20	332.3	-675.3	-656.1	0.00	0.00	0.00
5,700.0	0.00	0.00	5,625.3	-669.20	332.3	-675.3	-656.1	0.00	0.00	0.00
KOP (10°/100ft BUR)										
5,707.9	0.00	0.00	5,633.2	-677.10	332.3	-675.3	-656.1	0.00	0.00	0.00
5,800.0	9.21	89.64	5,724.9	-768.81	332.3	-667.9	-648.8	10.00	10.00	0.00
5,900.0	19.21	89.64	5,821.7	-865.62	332.5	-643.4	-624.3	10.00	10.00	0.00
6,000.0	29.21	89.64	5,912.8	-956.71	332.8	-602.4	-583.4	10.00	10.00	0.00
6,100.0	39.21	89.64	5,995.4	-1,039.30	333.1	-546.3	-527.3	10.00	10.00	0.00
6,200.0	49.22	89.64	6,067.0	-1,110.88	333.6	-476.6	-457.7	10.00	10.00	0.00
SHARON SPRINGS SHALE										
6,264.2	55.63	89.64	6,106.1	-1,150.00	333.9	-425.8	-406.9	10.00	10.00	0.00
6,300.0	59.22	89.64	6,125.4	-1,169.28	334.1	-395.6	-376.8	10.00	10.00	0.00
6,400.0	69.22	89.64	6,168.8	-1,212.72	334.6	-305.7	-287.0	10.00	10.00	0.00
NIORARA FORMATION										
6,421.6	71.38	89.64	6,176.1	-1,220.00	334.8	-285.4	-266.7	10.00	10.00	0.00
NIORARA A CHALK										
6,456.0	74.82	89.64	6,186.1	-1,230.00	335.0	-252.5	-233.8	10.00	10.00	0.00
6,500.0	79.22	89.64	6,196.0	-1,239.89	335.2	-209.6	-191.0	10.00	10.00	0.00
6,600.0	89.22	89.64	6,206.0	-1,249.95	335.9	-110.2	-91.7	10.00	10.00	0.00
BPI: 1799ft FNL & 600ft FWL of Sec 22										
6,607.8	90.00	89.64	6,206.1	-1,250.00	335.9	-102.4	-83.9	10.00	10.00	0.00
6,700.0	90.00	89.64	6,206.1	-1,250.00	336.5	-10.2	8.2	0.00	0.00	0.00
6,800.0	90.00	89.64	6,206.1	-1,249.99	337.1	89.8	108.1	0.00	0.00	0.00
6,900.0	90.00	89.64	6,206.1	-1,249.99	337.8	189.8	207.9	0.00	0.00	0.00
7,000.0	90.00	89.64	6,206.1	-1,249.99	338.4	289.8	307.8	0.00	0.00	0.00
7,100.0	90.00	89.64	6,206.1	-1,249.99	339.0	389.8	407.7	0.00	0.00	0.00
7,200.0	90.00	89.64	6,206.1	-1,249.98	339.7	489.8	507.6	0.00	0.00	0.00
7,300.0	90.00	89.64	6,206.1	-1,249.98	340.3	589.8	607.5	0.00	0.00	0.00
7,400.0	90.00	89.64	6,206.1	-1,249.98	340.9	689.8	707.4	0.00	0.00	0.00
7,500.0	90.00	89.64	6,206.1	-1,249.98	341.5	789.8	807.2	0.00	0.00	0.00
7,600.0	90.00	89.64	6,206.1	-1,249.97	342.2	889.8	907.1	0.00	0.00	0.00
7,700.0	90.00	89.64	6,206.1	-1,249.97	342.8	989.8	1,007.0	0.00	0.00	0.00
7,800.0	90.00	89.64	6,206.1	-1,249.97	343.4	1,089.8	1,106.9	0.00	0.00	0.00
7,900.0	90.00	89.64	6,206.1	-1,249.97	344.1	1,189.8	1,206.8	0.00	0.00	0.00
8,000.0	90.00	89.64	6,206.1	-1,249.96	344.7	1,289.8	1,306.7	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HALE 8-60 22-23-5
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4956.1usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4956.1usft (Original Well Elev)
Site:	SW NW SEC. 22 T8N R60W 6th P.M.	North Reference:	True
Well:	HALE 8-60 22-23-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,100.0	90.00	89.64	6,206.1	-1,249.96	345.3	1,389.8	1,406.5	0.00	0.00	0.00
8,200.0	90.00	89.64	6,206.1	-1,249.96	345.9	1,489.8	1,506.4	0.00	0.00	0.00
8,300.0	90.00	89.64	6,206.1	-1,249.96	346.6	1,589.8	1,606.3	0.00	0.00	0.00
8,400.0	90.00	89.64	6,206.1	-1,249.96	347.2	1,689.7	1,706.2	0.00	0.00	0.00
8,500.0	90.00	89.64	6,206.1	-1,249.96	347.8	1,789.7	1,806.1	0.00	0.00	0.00
8,600.0	90.00	89.64	6,206.1	-1,249.95	348.4	1,889.7	1,906.0	0.00	0.00	0.00
8,700.0	90.00	89.64	6,206.1	-1,249.95	349.1	1,989.7	2,005.8	0.00	0.00	0.00
8,800.0	90.00	89.64	6,206.1	-1,249.95	349.7	2,089.7	2,105.7	0.00	0.00	0.00
8,900.0	90.00	89.64	6,206.1	-1,249.95	350.3	2,189.7	2,205.6	0.00	0.00	0.00
9,000.0	90.00	89.64	6,206.1	-1,249.95	350.9	2,289.7	2,305.5	0.00	0.00	0.00
9,100.0	90.00	89.64	6,206.0	-1,249.95	351.6	2,389.7	2,405.4	0.00	0.00	0.00
9,200.0	90.00	89.64	6,206.0	-1,249.95	352.2	2,489.7	2,505.3	0.00	0.00	0.00
9,300.0	90.00	89.64	6,206.0	-1,249.95	352.8	2,589.7	2,605.1	0.00	0.00	0.00
9,400.0	90.00	89.64	6,206.0	-1,249.95	353.4	2,689.7	2,705.0	0.00	0.00	0.00
9,500.0	90.00	89.64	6,206.0	-1,249.95	354.0	2,789.7	2,804.9	0.00	0.00	0.00
9,600.0	90.00	89.64	6,206.0	-1,249.95	354.7	2,889.7	2,904.8	0.00	0.00	0.00
9,700.0	90.00	89.64	6,206.0	-1,249.95	355.3	2,989.7	3,004.7	0.00	0.00	0.00
9,800.0	90.00	89.64	6,206.0	-1,249.95	355.9	3,089.7	3,104.5	0.00	0.00	0.00
9,900.0	90.00	89.64	6,206.0	-1,249.95	356.5	3,189.7	3,204.4	0.00	0.00	0.00
10,000.0	90.00	89.64	6,206.0	-1,249.95	357.1	3,289.7	3,304.3	0.00	0.00	0.00
10,100.0	90.00	89.64	6,206.0	-1,249.95	357.8	3,389.7	3,404.2	0.00	0.00	0.00
10,200.0	90.00	89.65	6,206.0	-1,249.95	358.4	3,489.7	3,504.1	0.00	0.00	0.00
10,300.0	90.00	89.65	6,206.0	-1,249.95	359.0	3,589.7	3,604.0	0.00	0.00	0.00
10,400.0	90.00	89.65	6,206.0	-1,249.95	359.6	3,689.7	3,703.8	0.00	0.00	0.00
10,500.0	90.00	89.65	6,206.0	-1,249.95	360.2	3,789.7	3,803.7	0.00	0.00	0.00
10,600.0	90.00	89.65	6,206.0	-1,249.95	360.9	3,889.7	3,903.6	0.00	0.00	0.00
10,700.0	90.00	89.65	6,206.0	-1,249.95	361.5	3,989.7	4,003.5	0.00	0.00	0.00
10,800.0	90.00	89.65	6,206.0	-1,249.95	362.1	4,089.7	4,103.4	0.00	0.00	0.00
10,900.0	90.00	89.65	6,206.1	-1,249.95	362.7	4,189.7	4,203.3	0.00	0.00	0.00
11,000.0	90.00	89.65	6,206.1	-1,249.95	363.3	4,289.7	4,303.1	0.00	0.00	0.00
11,100.0	90.00	89.65	6,206.1	-1,249.95	364.0	4,389.7	4,403.0	0.00	0.00	0.00
11,200.0	90.00	89.65	6,206.1	-1,249.95	364.6	4,489.7	4,502.9	0.00	0.00	0.00
11,300.0	90.00	89.65	6,206.1	-1,249.95	365.2	4,589.7	4,602.8	0.00	0.00	0.00
11,400.0	90.00	89.65	6,206.1	-1,249.96	365.8	4,689.7	4,702.7	0.00	0.00	0.00
11,500.0	90.00	89.65	6,206.1	-1,249.96	366.4	4,789.7	4,802.6	0.00	0.00	0.00
11,600.0	90.00	89.65	6,206.1	-1,249.96	367.0	4,889.7	4,902.4	0.00	0.00	0.00
11,700.0	90.00	89.65	6,206.1	-1,249.96	367.6	4,989.7	5,002.3	0.00	0.00	0.00
11,800.0	90.00	89.65	6,206.1	-1,249.96	368.3	5,089.7	5,102.2	0.00	0.00	0.00
11,900.0	90.00	89.65	6,206.1	-1,249.96	368.9	5,189.7	5,202.1	0.00	0.00	0.00
12,000.0	90.00	89.65	6,206.1	-1,249.97	369.5	5,289.7	5,302.0	0.00	0.00	0.00
12,100.0	90.00	89.65	6,206.1	-1,249.97	370.1	5,389.7	5,401.8	0.00	0.00	0.00
12,200.0	90.00	89.65	6,206.1	-1,249.97	370.7	5,489.7	5,501.7	0.00	0.00	0.00
12,300.0	90.00	89.65	6,206.1	-1,249.97	371.3	5,589.7	5,601.6	0.00	0.00	0.00
12,400.0	90.00	89.65	6,206.1	-1,249.97	371.9	5,689.7	5,701.5	0.00	0.00	0.00
12,500.0	90.00	89.65	6,206.1	-1,249.98	372.5	5,789.7	5,801.4	0.00	0.00	0.00
12,600.0	90.00	89.65	6,206.1	-1,249.98	373.2	5,889.7	5,901.3	0.00	0.00	0.00
12,700.0	90.00	89.65	6,206.1	-1,249.98	373.8	5,989.7	6,001.1	0.00	0.00	0.00
12,800.0	90.00	89.65	6,206.1	-1,249.98	374.4	6,089.7	6,101.0	0.00	0.00	0.00
12,900.0	90.00	89.65	6,206.1	-1,249.99	375.0	6,189.7	6,200.9	0.00	0.00	0.00
13,000.0	90.00	89.65	6,206.1	-1,249.99	375.6	6,289.7	6,300.8	0.00	0.00	0.00
13,100.0	90.00	89.65	6,206.1	-1,249.99	376.2	6,389.7	6,400.7	0.00	0.00	0.00
13,200.0	90.00	89.65	6,206.1	-1,250.00	376.8	6,489.7	6,500.6	0.00	0.00	0.00
13,300.0	90.00	89.65	6,206.1	-1,250.00	377.4	6,589.7	6,600.4	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HALE 8-60 22-23-5
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4956.1usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4956.1usft (Original Well Elev)
Site:	SW NW SEC. 22 T8N R60W 6th P.M.	North Reference:	True
Well:	HALE 8-60 22-23-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
EPI: 1799ft FNL & 2020ft FWL of Sec 23										
13,329.3	90.00	89.65	6,206.1	-1,250.00	377.6	6,618.9	6,629.7	0.00	0.00	0.00
13,400.0	90.00	89.65	6,206.1	-1,250.00	378.0	6,689.7	6,700.3	0.00	0.00	0.00
13,500.0	90.00	89.66	6,206.1	-1,250.00	378.6	6,789.7	6,800.2	0.00	0.00	0.00
13,600.0	90.00	89.66	6,206.1	-1,250.00	379.2	6,889.6	6,900.1	0.00	0.00	0.00
BHL: 1799ft FNL & 2340ft FWL of Sec 23										
13,649.2	90.00	89.67	6,206.1	-1,250.00	379.5	6,938.8	6,949.2	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
516.1	516.1	PIERRE SHALE (BASE FOX HILLS			
3,559.9	3,506.1	PARKMAN			
4,091.5	4,026.1	SUSSEX			
4,765.7	4,691.1	SHANNON			
6,264.2	6,106.1	SHARON SPRINGS SHALE			
6,421.6	6,176.1	NIOBRARA FORMATION			
6,456.0	6,186.1	NIOBRARA A CHALK			

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 2136ft FNL & 710ft FWL of Sec 22
700.0	700.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,300.0	1,295.6	27.6	-56.2	EOB TO 12° INC
4,317.9	4,247.6	304.7	-619.1	END OF TANGENT
4,917.9	4,843.2	332.3	-675.3	EOD TO VERTICAL
5,707.9	5,633.2	332.3	-675.3	KOP (10°/100ft BUR)
6,607.8	6,206.1	335.9	-102.4	BPI: 1799ft FNL & 600ft FWL of Sec 22
13,329.3	6,206.1	377.6	6,618.9	EPI: 1799ft FNL & 2020ft FWL of Sec 23
13,649.2	6,206.1	379.5	6,938.8	BHL: 1799ft FNL & 2340ft FWL of Sec 23