

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

NE SE SEC. 19 T8N R59W 6th P.M.

CASTOR FED 8-59 19-24-1

ORIGINAL WELLBORE

10 July, 2017

Plan: PROPOSAL #1



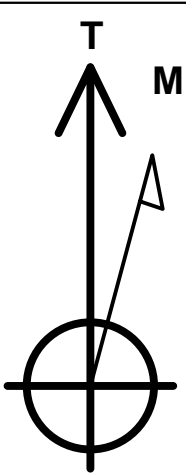
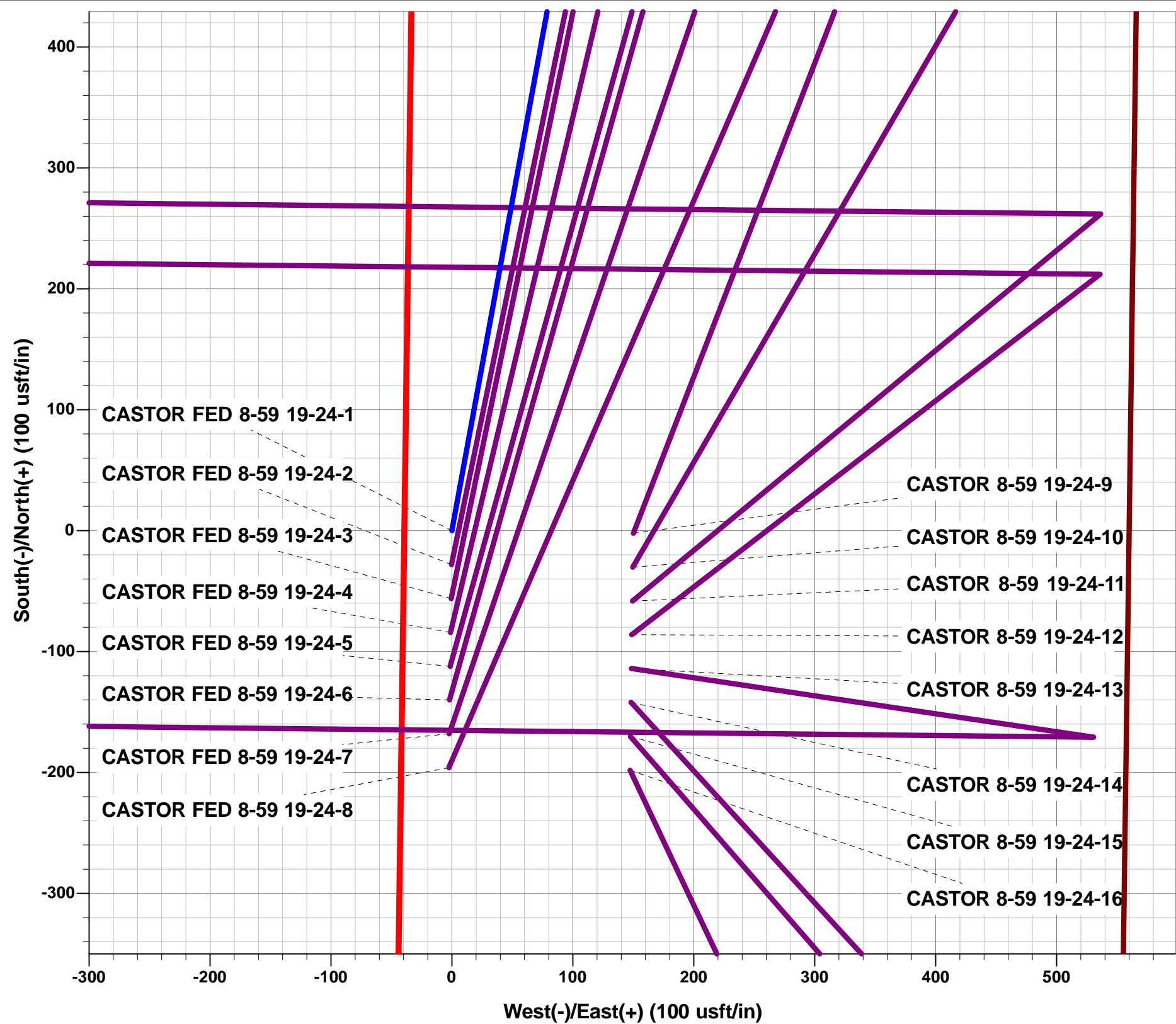
Project: WELD COUNTY, COLORADO (NAD 83)
Site: NE SE SEC. 19 T8N R59W 6th P.M.
Well: CASTOR FED 8-59 19-24-1
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

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: 1616ft FSL & 560ft FEL of Sec 19
100.0	100.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (3°/100ft BUR)
1254.8	1340.1	37.20	10.39	382.3	70.1	92.4	388.7	EOB TO 37.2° INC
4372.2	5254.0	37.20	10.39	2710.0	497.0	655.3	2755.2	END OF TANGENT
5527.0	6494.2	0.00	0.00	3092.3	567.1	747.8	3143.9	EOD TO VERTICAL
5557.0	6524.2	0.00	0.00	3092.3	567.1	747.8	3143.9	KOP (10°/100ft BUR)
6130.0	7424.2	90.00	270.63	3098.6	-5.8	1273.1	3716.8	BPI: 600ft FNL & 600ft FEL of Sec 19
6130.0	14201.9	90.00	270.63	3172.9	-6783.1	7487.6	10494.6	EPI: 603.2ft FNL & 2040ft FEL of Sec 24
6130.0	14501.8	90.00	270.62	3176.1	-7083.1	7762.6	10794.5	BHL: 600ft FNL & 2340ft FEL of Sec 24

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - CASTOR FED 8-59 19-24-1	5557.0	3092.3	567.1	40.653440	-104.010480
BPI - CASTOR FED 8-59 19-24-1	6130.0	3098.6	-5.8	40.653457	-104.012545
BHL - CASTOR FED 8-59 19-24-1	6130.0	3176.1	-7083.1	40.653667	-104.038051
EPI - CASTOR FED 8-59 19-24-1	6130.0	3172.9	-6783.1	40.653658	-104.036970



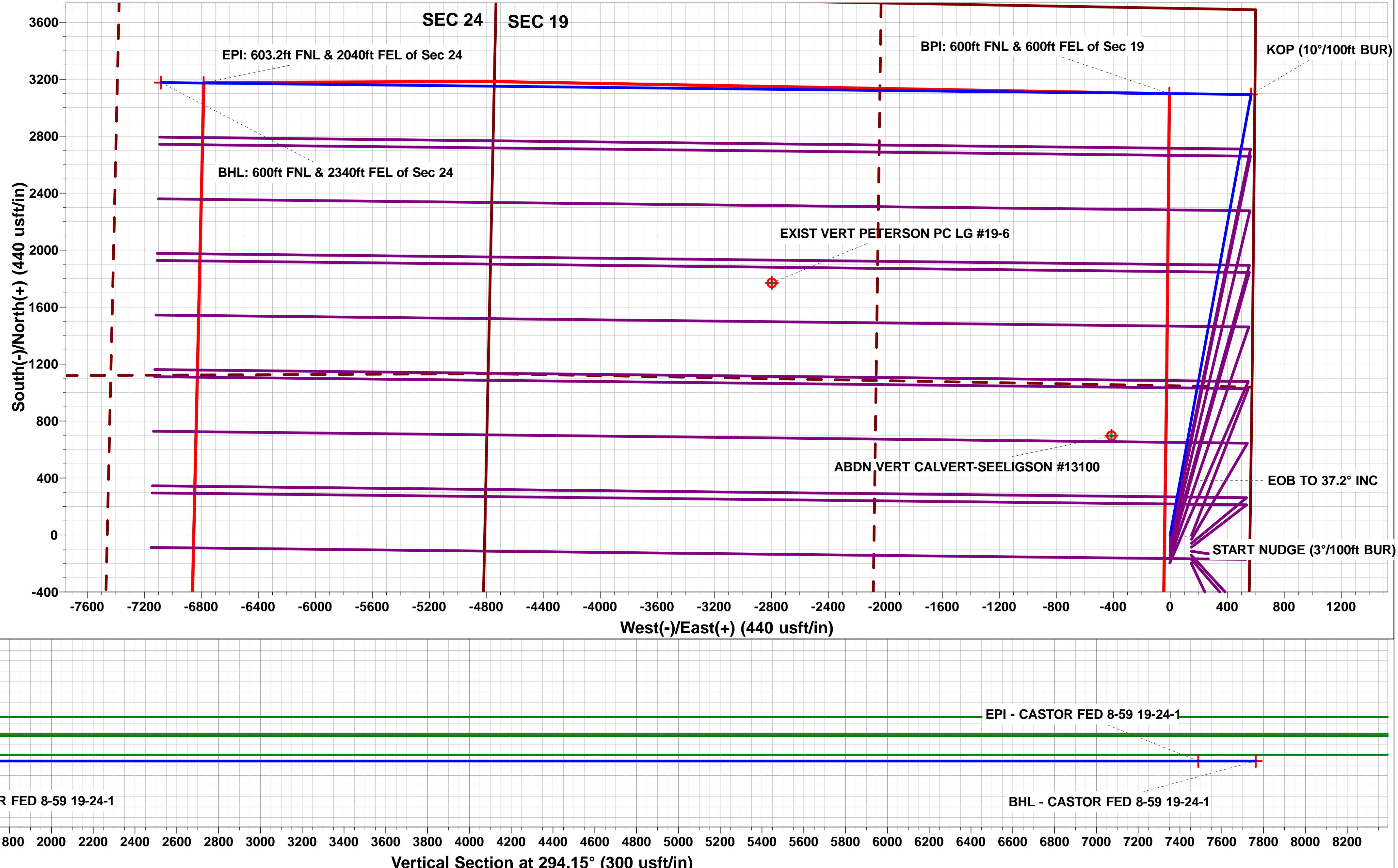
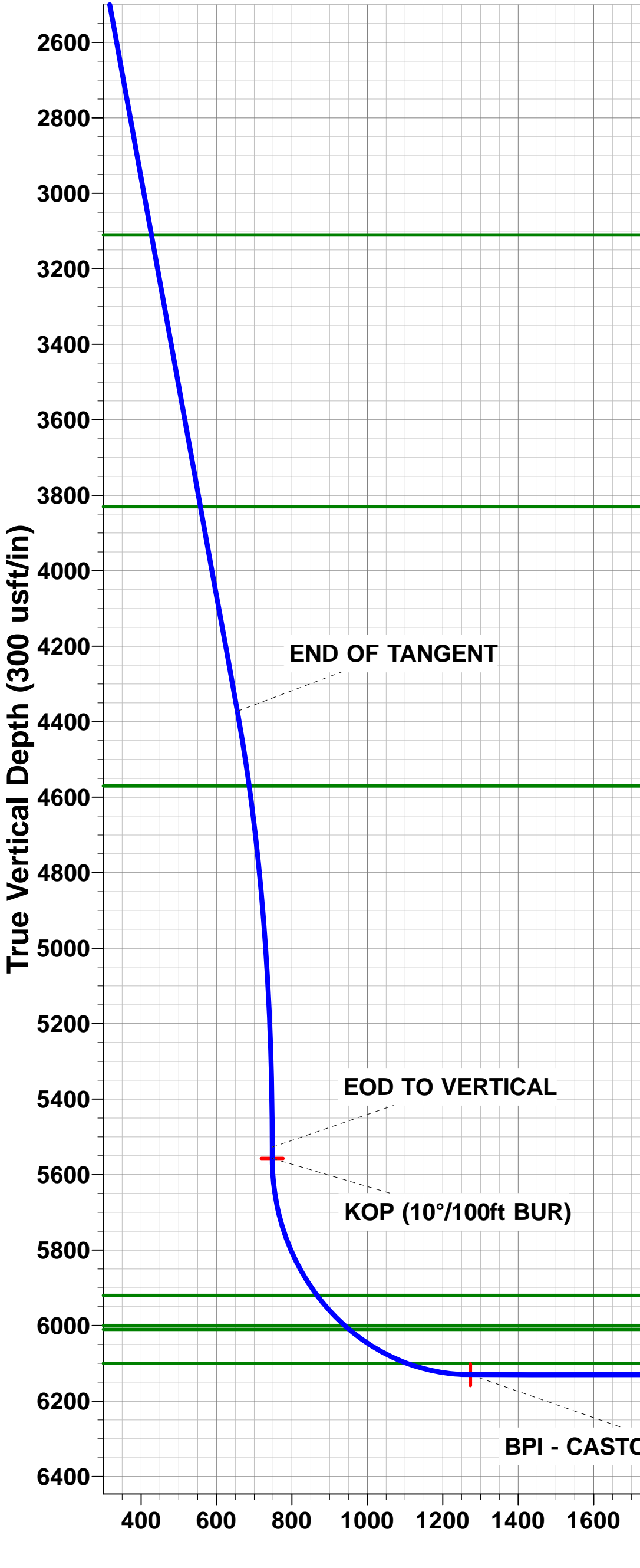
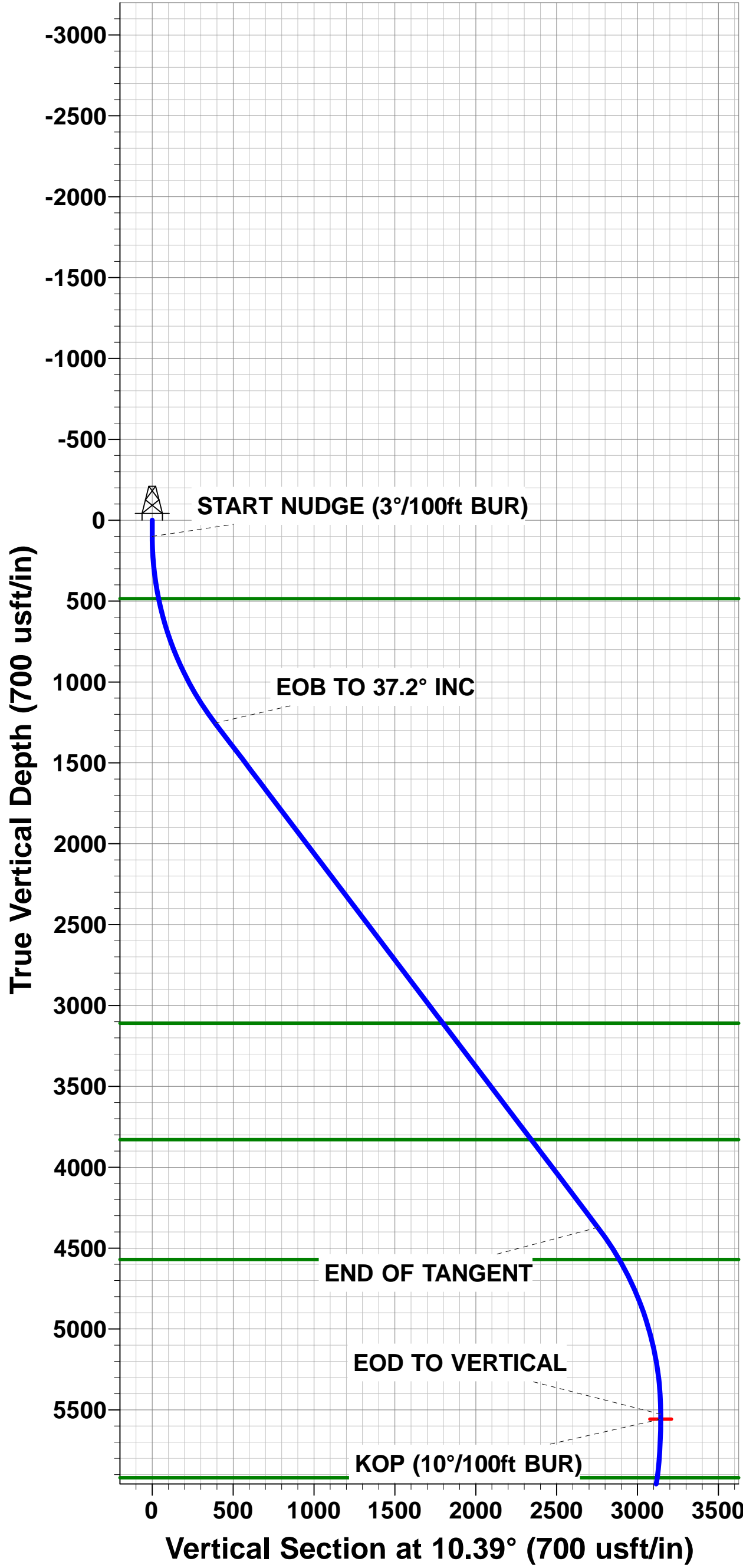
Azimuths to True North
Magnetic North: 7.82°
Magnetic Field
Strength: 52588.2snT
Dip Angle: 67.16°
Date: 10/07/2017
Model: IGRF2015

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
485.0	487.7	PIERRE SH (BASE FOX HILLS)
3110.0	3669.3	PARKMAN
3830.0	4573.3	SUSSEX
4570.0	5491.8	SHANNON
5920.0	6917.3	SHARON SPRINGS SHALE
6000.0	7030.5	NIOBRARA FORMATION
6010.0	7046.6	NIOBRARA A CHALK
6100.0	7238.0	NIOBRARA B CHALK

PROPOSED LOCAL COORDINATES:

SHL: 1616ft FSL & 560ft FEL of Sec 19
BEGIN PROD INT: 600ft FNL & 600ft FEL of Sec 19
END PROD INTERVAL: 603.2ft FNL & 2040ft FEL of Sec 24
BHL: 600ft FNL & 2340ft FEL of Sec 24



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CASTOR FED 8-59 19-24-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4880.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4880.0usft (Original Well Elev)
Site:	NE SE SEC. 19 T8N R59W 6th P.M.	North Reference:	True
Well:	CASTOR FED 8-59 19-24-1	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	NE SE SEC. 19 T8N R59W 6th P.M.		
Site Position:		Northing:	1,481,260.32 usft
From:	Lat/Long	Easting:	3,412,761.19 usft
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft
		Latitude:	40.644952
		Longitude:	-104.012524
		Grid Convergence:	0.96 °

Well	CASTOR FED 8-59 19-24-1		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	40.644952
		Longitude:	-104.012524
		Ground Level:	4,855.0 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/07/2017	7.82	67.16	52,588

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 (°)	
	0.0	0.0	0.0	294.15	

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	-4,880.0	0.0	0.0	0.00	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	-4,780.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,340.1	37.20	10.39	1,254.8	-3,625.2	382.3	70.1	3.00	3.00	0.00	10.39	
5,254.0	37.20	10.39	4,372.2	-507.8	2,710.0	497.0	0.00	0.00	0.00	0.00	
6,494.2	0.00	0.00	5,527.0	647.0	3,092.3	567.1	3.00	-3.00	0.00	180.00	
6,524.2	0.00	0.00	5,557.0	677.0	3,092.3	567.1	0.00	0.00	0.00	0.00	KOP - CASTOR FE
7,424.2	90.00	270.63	6,130.0	1,250.0	3,098.6	-5.8	10.00	10.00	-9.93	270.63	BPI - CASTOR FEI
14,501.8	90.00	270.62	6,130.0	1,250.0	3,176.1	-7,083.1	0.00	0.00	0.00	-35.85	BHL - CASTOR FE

Planning Report



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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4880.0usft (Original Well Elev)
Site:	NE SE SEC. 19 T8N R59W 6th P.M.	North Reference:	True
Well:	CASTOR FED 8-59 19-24-1	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: 1616ft FSL & 560ft FEL of Sec 19										
0.0	0.00	0.00	0.0	4,880.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (3°/100ft BUR)										
100.0	0.00	0.00	100.0	4,780.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	3.00	10.39	200.0	4,680.05	2.6	0.5	0.6	3.00	3.00	0.00
300.0	6.00	10.39	299.6	4,580.37	10.3	1.9	2.5	3.00	3.00	0.00
400.0	9.00	10.39	398.8	4,481.23	23.1	4.2	5.6	3.00	3.00	0.00
PIERRE SHALE (BASE FOX HILLS)										
487.7	11.63	10.39	485.0	4,395.00	38.6	7.1	9.3	3.00	3.00	0.00
500.0	12.00	10.39	497.1	4,382.92	41.1	7.5	9.9	3.00	3.00	0.00
600.0	15.00	10.39	594.3	4,285.69	64.0	11.7	15.5	3.00	3.00	0.00
700.0	18.00	10.39	690.2	4,189.82	91.9	16.9	22.2	3.00	3.00	0.00
800.0	21.00	10.39	784.4	4,095.57	124.8	22.9	30.2	3.00	3.00	0.00
900.0	24.00	10.39	876.8	4,003.19	162.4	29.8	39.3	3.00	3.00	0.00
1,000.0	27.00	10.39	967.1	3,912.94	204.7	37.5	49.5	3.00	3.00	0.00
1,100.0	30.00	10.39	1,054.9	3,825.07	251.7	46.2	60.9	3.00	3.00	0.00
1,200.0	33.00	10.39	1,140.2	3,739.82	303.1	55.6	73.3	3.00	3.00	0.00
1,300.0	36.00	10.39	1,222.6	3,657.41	358.8	65.8	86.8	3.00	3.00	0.00
EOB TO 37.2° INC										
1,340.1	37.20	10.39	1,254.8	3,625.21	382.3	70.1	92.4	3.00	3.00	0.00
1,400.0	37.20	10.39	1,302.5	3,577.51	417.9	76.6	101.1	0.00	0.00	0.00
1,500.0	37.20	10.39	1,382.1	3,497.86	477.4	87.5	115.4	0.00	0.00	0.00
1,600.0	37.20	10.39	1,461.8	3,418.21	536.9	98.5	129.8	0.00	0.00	0.00
1,700.0	37.20	10.39	1,541.4	3,338.56	596.3	109.4	144.2	0.00	0.00	0.00
1,800.0	37.20	10.39	1,621.1	3,258.91	655.8	120.3	158.6	0.00	0.00	0.00
1,900.0	37.20	10.39	1,700.7	3,179.26	715.3	131.2	173.0	0.00	0.00	0.00
2,000.0	37.20	10.39	1,780.4	3,099.61	774.7	142.1	187.4	0.00	0.00	0.00
2,100.0	37.20	10.39	1,860.0	3,019.96	834.2	153.0	201.7	0.00	0.00	0.00
2,200.0	37.20	10.39	1,939.7	2,940.32	893.7	163.9	216.1	0.00	0.00	0.00
2,300.0	37.20	10.39	2,019.3	2,860.67	953.2	174.8	230.5	0.00	0.00	0.00
2,400.0	37.20	10.39	2,099.0	2,781.02	1,012.6	185.7	244.9	0.00	0.00	0.00
2,500.0	37.20	10.39	2,178.6	2,701.37	1,072.1	196.6	259.3	0.00	0.00	0.00
2,600.0	37.20	10.39	2,258.3	2,621.72	1,131.6	207.5	273.6	0.00	0.00	0.00
2,700.0	37.20	10.39	2,337.9	2,542.07	1,191.1	218.4	288.0	0.00	0.00	0.00
2,800.0	37.20	10.39	2,417.6	2,462.42	1,250.5	229.3	302.4	0.00	0.00	0.00
2,900.0	37.20	10.39	2,497.2	2,382.77	1,310.0	240.2	316.8	0.00	0.00	0.00
3,000.0	37.20	10.39	2,576.9	2,303.12	1,369.5	251.1	331.2	0.00	0.00	0.00
3,100.0	37.20	10.39	2,656.5	2,223.47	1,428.9	262.1	345.5	0.00	0.00	0.00
3,200.0	37.20	10.39	2,736.2	2,143.82	1,488.4	273.0	359.9	0.00	0.00	0.00
3,300.0	37.20	10.39	2,815.8	2,064.17	1,547.9	283.9	374.3	0.00	0.00	0.00
3,400.0	37.20	10.39	2,895.5	1,984.52	1,607.4	294.8	388.7	0.00	0.00	0.00
3,500.0	37.20	10.39	2,975.1	1,904.87	1,666.8	305.7	403.1	0.00	0.00	0.00
3,600.0	37.20	10.39	3,054.8	1,825.22	1,726.3	316.6	417.5	0.00	0.00	0.00
PARKMAN										
3,669.3	37.20	10.39	3,110.0	1,770.00	1,767.5	324.2	427.4	0.00	0.00	0.00
3,700.0	37.20	10.39	3,134.4	1,745.57	1,785.8	327.5	431.8	0.00	0.00	0.00
3,800.0	37.20	10.39	3,214.1	1,665.92	1,845.3	338.4	446.2	0.00	0.00	0.00
3,900.0	37.20	10.39	3,293.7	1,586.27	1,904.7	349.3	460.6	0.00	0.00	0.00
4,000.0	37.20	10.39	3,373.4	1,506.62	1,964.2	360.2	475.0	0.00	0.00	0.00
4,100.0	37.20	10.39	3,453.0	1,426.97	2,023.7	371.1	489.4	0.00	0.00	0.00
4,200.0	37.20	10.39	3,532.7	1,347.33	2,083.1	382.0	503.7	0.00	0.00	0.00
4,300.0	37.20	10.39	3,612.3	1,267.68	2,142.6	392.9	518.1	0.00	0.00	0.00
4,400.0	37.20	10.39	3,692.0	1,188.03	2,202.1	403.8	532.5	0.00	0.00	0.00
4,500.0	37.20	10.39	3,771.6	1,108.38	2,261.6	414.8	546.9	0.00	0.00	0.00

Planning Report



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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)
SUSSEX										
4,573.3	37.20	10.39	3,830.0	1,050.00	2,305.2	422.7	557.4	0.00	0.00	0.00
4,600.0	37.20	10.39	3,851.3	1,028.73	2,321.0	425.7	561.3	0.00	0.00	0.00
4,700.0	37.20	10.39	3,930.9	949.08	2,380.5	436.6	575.7	0.00	0.00	0.00
4,800.0	37.20	10.39	4,010.6	869.43	2,440.0	447.5	590.0	0.00	0.00	0.00
4,900.0	37.20	10.39	4,090.2	789.78	2,499.5	458.4	604.4	0.00	0.00	0.00
5,000.0	37.20	10.39	4,169.9	710.13	2,558.9	469.3	618.8	0.00	0.00	0.00
5,100.0	37.20	10.39	4,249.5	630.48	2,618.4	480.2	633.2	0.00	0.00	0.00
5,200.0	37.20	10.39	4,329.2	550.83	2,677.9	491.1	647.6	0.00	0.00	0.00
END OF TANGENT										
5,254.0	37.20	10.39	4,372.2	507.79	2,710.0	497.0	655.3	0.00	0.00	0.00
5,300.0	35.82	10.39	4,409.2	470.85	2,736.9	501.9	661.8	3.00	-3.00	0.00
5,400.0	32.82	10.39	4,491.7	388.27	2,792.4	512.1	675.3	3.00	-3.00	0.00
SHANNON										
5,491.8	30.07	10.39	4,570.0	310.00	2,839.4	520.7	686.6	3.00	-3.00	0.00
5,500.0	29.82	10.39	4,577.1	302.86	2,843.5	521.5	687.6	3.00	-3.00	0.00
5,600.0	26.82	10.39	4,665.2	214.84	2,890.2	530.0	698.9	3.00	-3.00	0.00
5,700.0	23.82	10.39	4,755.5	124.46	2,932.2	537.7	709.1	3.00	-3.00	0.00
5,800.0	20.82	10.39	4,848.0	31.97	2,969.6	544.6	718.1	3.00	-3.00	0.00
5,900.0	17.82	10.39	4,942.4	-62.39	3,002.1	550.6	726.0	3.00	-3.00	0.00
6,000.0	14.82	10.39	5,038.3	-158.34	3,029.8	555.6	732.7	3.00	-3.00	0.00
6,100.0	11.82	10.39	5,135.6	-255.64	3,052.4	559.8	738.1	3.00	-3.00	0.00
6,200.0	8.82	10.39	5,234.0	-354.01	3,070.1	563.0	742.4	3.00	-3.00	0.00
6,300.0	5.82	10.39	5,333.2	-453.18	3,082.6	565.3	745.4	3.00	-3.00	0.00
6,400.0	2.82	10.39	5,432.9	-552.89	3,090.0	566.7	747.2	3.00	-3.00	0.00
EOD TO VERTICAL										
6,494.2	0.00	0.00	5,527.0	-647.00	3,092.3	567.1	747.8	3.00	-3.00	0.00
6,500.0	0.00	0.00	5,532.8	-652.85	3,092.3	567.1	747.8	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,524.2	0.00	0.00	5,557.0	-677.00	3,092.3	567.1	747.8	0.00	0.00	0.00
6,600.0	7.58	270.63	5,632.6	-752.63	3,092.4	562.1	752.4	10.00	10.00	0.00
6,700.0	17.58	270.63	5,730.1	-850.10	3,092.6	540.3	772.3	10.00	10.00	0.00
6,800.0	27.58	270.63	5,822.3	-942.32	3,093.0	502.0	807.5	10.00	10.00	0.00
6,900.0	37.58	270.63	5,906.5	-1,026.47	3,093.6	448.2	856.8	10.00	10.00	0.00
SHARON SPRINGS SHALE										
6,917.3	39.31	270.63	5,920.0	-1,040.00	3,093.7	437.5	866.7	10.00	10.00	0.00
7,000.0	47.58	270.63	5,980.0	-1,100.01	3,094.4	380.6	918.8	10.00	10.00	0.00
NIOBRARA FORMATION										
7,030.5	50.64	270.63	6,000.0	-1,120.00	3,094.6	357.5	939.9	10.00	10.00	0.00
NIOBRARA A CHALK										
7,046.6	52.24	270.63	6,010.0	-1,130.00	3,094.7	345.0	951.4	10.00	10.00	0.00
7,100.0	57.58	270.63	6,040.7	-1,160.70	3,095.2	301.3	991.5	10.00	10.00	0.00
7,200.0	67.58	270.63	6,086.7	-1,206.69	3,096.2	212.7	1,072.8	10.00	10.00	0.00
NIOBRARA B CHALK										
7,238.0	71.38	270.63	6,100.0	-1,220.00	3,096.6	177.1	1,105.4	10.00	10.00	0.00
7,300.0	77.58	270.63	6,116.6	-1,236.59	3,097.2	117.4	1,160.2	10.00	10.00	0.00
7,400.0	87.58	270.63	6,129.5	-1,249.49	3,098.3	18.3	1,251.0	10.00	10.00	0.00
BPI: 600ft FNL & 600ft FEL of Sec 19										
7,424.2	90.00	270.63	6,130.0	-1,250.00	3,098.6	-5.8	1,273.1	10.00	10.00	0.00
7,500.0	90.00	270.63	6,130.0	-1,250.01	3,099.4	-81.6	1,342.7	0.00	0.00	0.00
7,600.0	90.00	270.63	6,130.0	-1,250.01	3,100.5	-181.6	1,434.4	0.00	0.00	0.00
7,700.0	90.00	270.63	6,130.0	-1,250.02	3,101.6	-281.6	1,526.0	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CASTOR FED 8-59 19-24-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4880.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4880.0usft (Original Well Elev)
Site:	NE SE SEC. 19 T8N R59W 6th P.M.	North Reference:	True
Well:	CASTOR FED 8-59 19-24-1	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)
7,800.0	90.00	270.63	6,130.0	-1,250.02	3,102.7	-381.6	1,617.7	0.00	0.00	0.00
7,900.0	90.00	270.63	6,130.0	-1,250.03	3,103.8	-481.6	1,709.4	0.00	0.00	0.00
8,000.0	90.00	270.63	6,130.0	-1,250.04	3,104.9	-581.6	1,801.1	0.00	0.00	0.00
8,100.0	90.00	270.63	6,130.0	-1,250.04	3,106.0	-681.6	1,892.8	0.00	0.00	0.00
8,200.0	90.00	270.63	6,130.0	-1,250.05	3,107.1	-781.6	1,984.5	0.00	0.00	0.00
8,300.0	90.00	270.63	6,130.1	-1,250.05	3,108.2	-881.6	2,076.2	0.00	0.00	0.00
8,400.0	90.00	270.63	6,130.1	-1,250.06	3,109.3	-981.6	2,167.9	0.00	0.00	0.00
8,500.0	90.00	270.63	6,130.1	-1,250.06	3,110.4	-1,081.6	2,259.6	0.00	0.00	0.00
8,600.0	90.00	270.63	6,130.1	-1,250.07	3,111.5	-1,181.6	2,351.3	0.00	0.00	0.00
8,700.0	90.00	270.63	6,130.1	-1,250.07	3,112.6	-1,281.6	2,442.9	0.00	0.00	0.00
8,800.0	90.00	270.63	6,130.1	-1,250.07	3,113.7	-1,381.6	2,534.6	0.00	0.00	0.00
8,900.0	90.00	270.63	6,130.1	-1,250.08	3,114.8	-1,481.6	2,626.3	0.00	0.00	0.00
9,000.0	90.00	270.63	6,130.1	-1,250.08	3,115.9	-1,581.6	2,718.0	0.00	0.00	0.00
9,100.0	90.00	270.63	6,130.1	-1,250.09	3,117.0	-1,681.5	2,809.7	0.00	0.00	0.00
9,200.0	90.00	270.63	6,130.1	-1,250.09	3,118.1	-1,781.5	2,901.4	0.00	0.00	0.00
9,300.0	90.00	270.63	6,130.1	-1,250.09	3,119.2	-1,881.5	2,993.1	0.00	0.00	0.00
9,400.0	90.00	270.63	6,130.1	-1,250.10	3,120.3	-1,981.5	3,084.8	0.00	0.00	0.00
9,500.0	90.00	270.63	6,130.1	-1,250.10	3,121.4	-2,081.5	3,176.5	0.00	0.00	0.00
9,600.0	90.00	270.63	6,130.1	-1,250.10	3,122.5	-2,181.5	3,268.2	0.00	0.00	0.00
9,700.0	90.00	270.63	6,130.1	-1,250.10	3,123.6	-2,281.5	3,359.8	0.00	0.00	0.00
9,800.0	90.00	270.63	6,130.1	-1,250.11	3,124.7	-2,381.5	3,451.5	0.00	0.00	0.00
9,900.0	90.00	270.63	6,130.1	-1,250.11	3,125.8	-2,481.5	3,543.2	0.00	0.00	0.00
10,000.0	90.00	270.63	6,130.1	-1,250.11	3,126.9	-2,581.5	3,634.9	0.00	0.00	0.00
10,100.0	90.00	270.63	6,130.1	-1,250.11	3,128.0	-2,681.5	3,726.6	0.00	0.00	0.00
10,200.0	90.00	270.63	6,130.1	-1,250.11	3,129.1	-2,781.5	3,818.3	0.00	0.00	0.00
10,300.0	90.00	270.63	6,130.1	-1,250.11	3,130.2	-2,881.5	3,910.0	0.00	0.00	0.00
10,400.0	90.00	270.63	6,130.1	-1,250.12	3,131.3	-2,981.5	4,001.7	0.00	0.00	0.00
10,500.0	90.00	270.63	6,130.1	-1,250.12	3,132.4	-3,081.5	4,093.4	0.00	0.00	0.00
10,600.0	90.00	270.63	6,130.1	-1,250.12	3,133.5	-3,181.5	4,185.1	0.00	0.00	0.00
10,700.0	90.00	270.63	6,130.1	-1,250.12	3,134.6	-3,281.5	4,276.7	0.00	0.00	0.00
10,800.0	90.00	270.63	6,130.1	-1,250.12	3,135.7	-3,381.4	4,368.4	0.00	0.00	0.00
10,900.0	90.00	270.63	6,130.1	-1,250.12	3,136.8	-3,481.4	4,460.1	0.00	0.00	0.00
11,000.0	90.00	270.63	6,130.1	-1,250.12	3,137.9	-3,581.4	4,551.8	0.00	0.00	0.00
11,100.0	90.00	270.63	6,130.1	-1,250.12	3,139.0	-3,681.4	4,643.5	0.00	0.00	0.00
11,200.0	90.00	270.63	6,130.1	-1,250.12	3,140.0	-3,781.4	4,735.2	0.00	0.00	0.00
11,300.0	90.00	270.63	6,130.1	-1,250.12	3,141.1	-3,881.4	4,826.9	0.00	0.00	0.00
11,400.0	90.00	270.63	6,130.1	-1,250.12	3,142.2	-3,981.4	4,918.6	0.00	0.00	0.00
11,500.0	90.00	270.63	6,130.1	-1,250.12	3,143.3	-4,081.4	5,010.3	0.00	0.00	0.00
11,600.0	90.00	270.63	6,130.1	-1,250.11	3,144.4	-4,181.4	5,101.9	0.00	0.00	0.00
11,700.0	90.00	270.63	6,130.1	-1,250.11	3,145.5	-4,281.4	5,193.6	0.00	0.00	0.00
11,800.0	90.00	270.63	6,130.1	-1,250.11	3,146.6	-4,381.4	5,285.3	0.00	0.00	0.00
11,900.0	90.00	270.63	6,130.1	-1,250.11	3,147.7	-4,481.4	5,377.0	0.00	0.00	0.00
12,000.0	90.00	270.63	6,130.1	-1,250.11	3,148.8	-4,581.4	5,468.7	0.00	0.00	0.00
12,100.0	90.00	270.63	6,130.1	-1,250.11	3,149.9	-4,681.4	5,560.4	0.00	0.00	0.00
12,200.0	90.00	270.63	6,130.1	-1,250.10	3,151.0	-4,781.4	5,652.1	0.00	0.00	0.00
12,300.0	90.00	270.63	6,130.1	-1,250.10	3,152.1	-4,881.4	5,743.8	0.00	0.00	0.00
12,400.0	90.00	270.63	6,130.1	-1,250.10	3,153.2	-4,981.3	5,835.4	0.00	0.00	0.00
12,500.0	90.00	270.63	6,130.1	-1,250.10	3,154.3	-5,081.3	5,927.1	0.00	0.00	0.00
12,600.0	90.00	270.63	6,130.1	-1,250.09	3,155.4	-5,181.3	6,018.8	0.00	0.00	0.00
12,700.0	90.00	270.63	6,130.1	-1,250.09	3,156.5	-5,281.3	6,110.5	0.00	0.00	0.00
12,800.0	90.00	270.63	6,130.1	-1,250.09	3,157.6	-5,381.3	6,202.2	0.00	0.00	0.00
12,900.0	90.00	270.63	6,130.1	-1,250.08	3,158.6	-5,481.3	6,293.9	0.00	0.00	0.00
13,000.0	90.00	270.63	6,130.1	-1,250.08	3,159.7	-5,581.3	6,385.6	0.00	0.00	0.00
13,100.0	90.00	270.63	6,130.1	-1,250.08	3,160.8	-5,681.3	6,477.3	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CASTOR FED 8-59 19-24-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4880.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4880.0usft (Original Well Elev)
Site:	NE SE SEC. 19 T8N R59W 6th P.M.	North Reference:	True
Well:	CASTOR FED 8-59 19-24-1	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)
13,200.0	90.00	270.63	6,130.1	-1,250.07	3,161.9	-5,781.3	6,569.0	0.00	0.00	0.00
13,300.0	90.00	270.63	6,130.1	-1,250.07	3,163.0	-5,881.3	6,660.6	0.00	0.00	0.00
13,400.0	90.00	270.63	6,130.1	-1,250.06	3,164.1	-5,981.3	6,752.3	0.00	0.00	0.00
13,500.0	90.00	270.63	6,130.1	-1,250.06	3,165.2	-6,081.3	6,844.0	0.00	0.00	0.00
13,600.0	90.00	270.63	6,130.1	-1,250.05	3,166.3	-6,181.3	6,935.7	0.00	0.00	0.00
13,700.0	90.00	270.63	6,130.0	-1,250.05	3,167.4	-6,281.3	7,027.4	0.00	0.00	0.00
13,800.0	90.00	270.63	6,130.0	-1,250.04	3,168.5	-6,381.3	7,119.1	0.00	0.00	0.00
13,900.0	90.00	270.63	6,130.0	-1,250.04	3,169.6	-6,481.3	7,210.8	0.00	0.00	0.00
14,000.0	90.00	270.63	6,130.0	-1,250.03	3,170.7	-6,581.3	7,302.5	0.00	0.00	0.00
14,100.0	90.00	270.63	6,130.0	-1,250.03	3,171.7	-6,681.2	7,394.1	0.00	0.00	0.00
14,200.0	90.00	270.63	6,130.0	-1,250.02	3,172.8	-6,781.2	7,485.8	0.00	0.00	0.00
EPI: 603.2ft FNL & 2040ft FEL of Sec 24										
14,201.9	90.00	270.63	6,130.0	-1,250.02	3,172.9	-6,783.1	7,487.6	0.00	0.00	0.00
14,300.0	90.00	270.63	6,130.0	-1,250.01	3,173.9	-6,881.2	7,577.5	0.00	0.00	0.00
14,400.0	90.00	270.62	6,130.0	-1,250.01	3,175.0	-6,981.2	7,669.2	0.00	0.00	0.00
14,500.0	90.00	270.62	6,130.0	-1,250.00	3,176.1	-7,081.2	7,760.9	0.00	0.00	0.00
BHL: 600ft FNL & 2340ft FEL of Sec 24										
14,501.8	90.00	270.62	6,130.0	-1,250.00	3,176.1	-7,083.1	7,762.6	0.01	0.01	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
487.7	485.0	PIERRE SHALE (BASE FOX HILLS			
3,669.3	3,110.0	PARKMAN			
4,573.3	3,830.0	SUSSEX			
5,491.8	4,570.0	SHANNON			
6,917.3	5,920.0	SHARON SPRINGS SHALE			
7,030.5	6,000.0	NIOBRARA FORMATION			
7,046.6	6,010.0	NIOBRARA A CHALK			
7,238.0	6,100.0	NIOBRARA B 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: 1616ft FSL & 560ft FEL of Sec 19
100.0	100.0	0.0	0.0	START NUDGE (3°/100ft BUR)
1,340.1	1,254.8	382.3	70.1	EOB TO 37.2° INC
5,254.0	4,372.2	2,710.0	497.0	END OF TANGENT
6,494.2	5,527.0	3,092.3	567.1	EOD TO VERTICAL
6,524.2	5,557.0	3,092.3	567.1	KOP (10°/100ft BUR)
7,424.2	6,130.0	3,098.6	-5.8	BPI: 600ft FNL & 600ft FEL of Sec 19
14,201.9	6,130.0	3,172.9	-6,783.1	EPI: 603.2ft FNL & 2040ft FEL of Sec 24
14,501.8	6,130.0	3,176.1	-7,083.1	BHL: 600ft FNL & 2340ft FEL of Sec 24