

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

NE NE SEC. 15 T8N R61W 6th P.M.

SIEVERS 8-61 15A-9

ORIGINAL WELLBORE

27 September, 2017

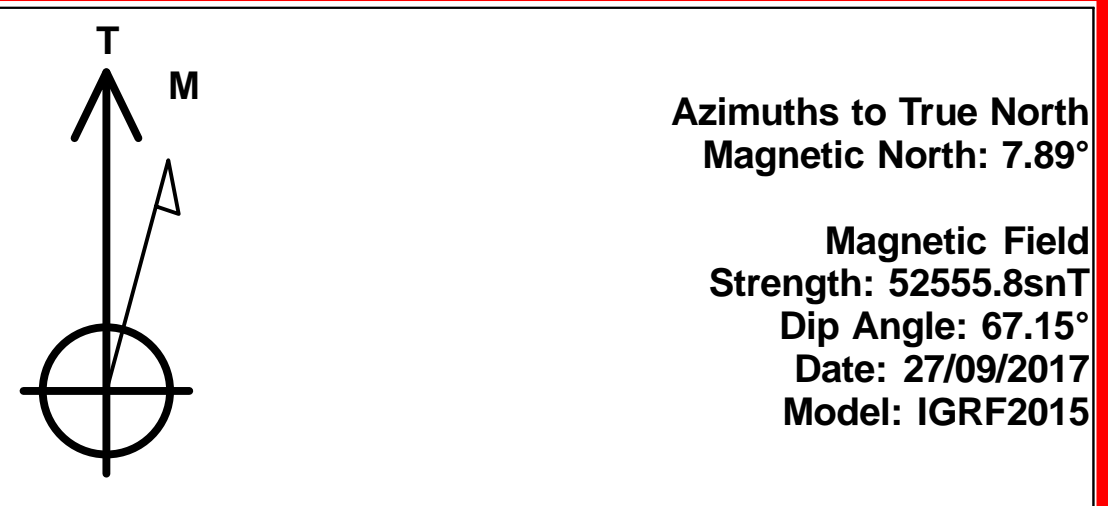
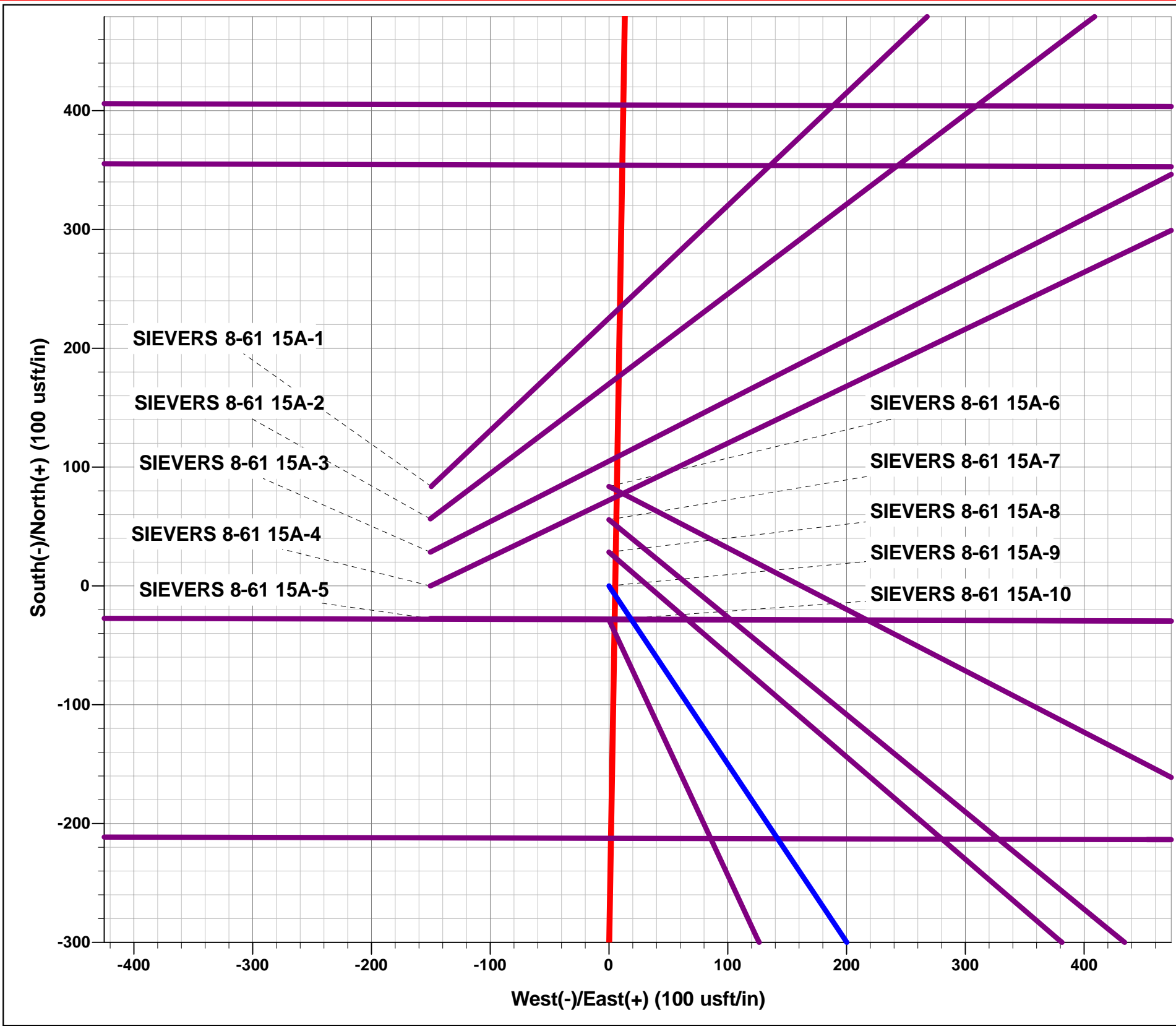
Plan: PROPOSAL #1



Project: WELD COUNTY, COLORADO (NAD 83)
Site: NE NE SEC. 15 T8N R61W 6th P.M.
Well: SIEVERS 8-61 15A-9
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

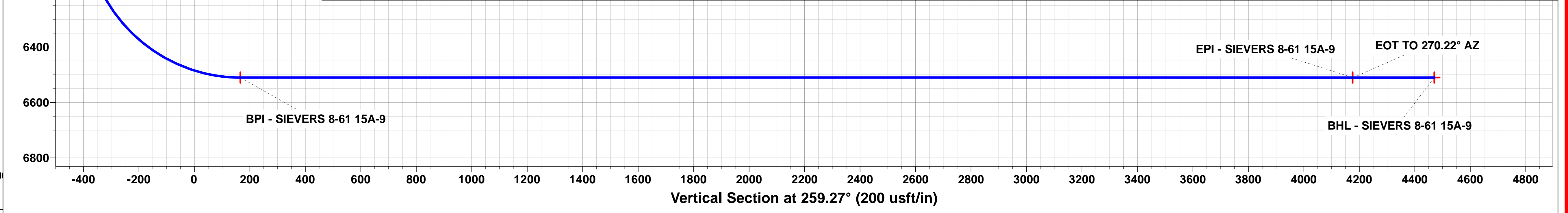
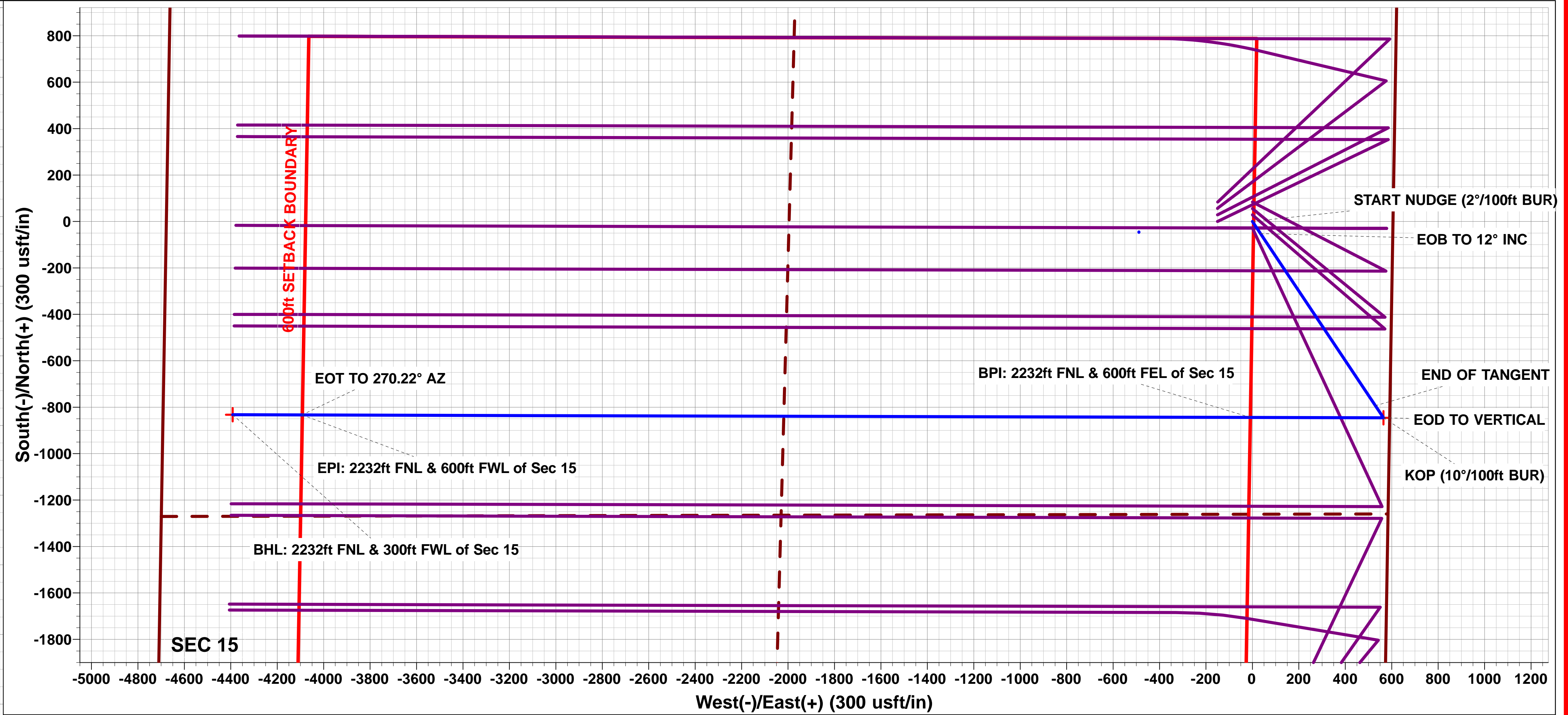
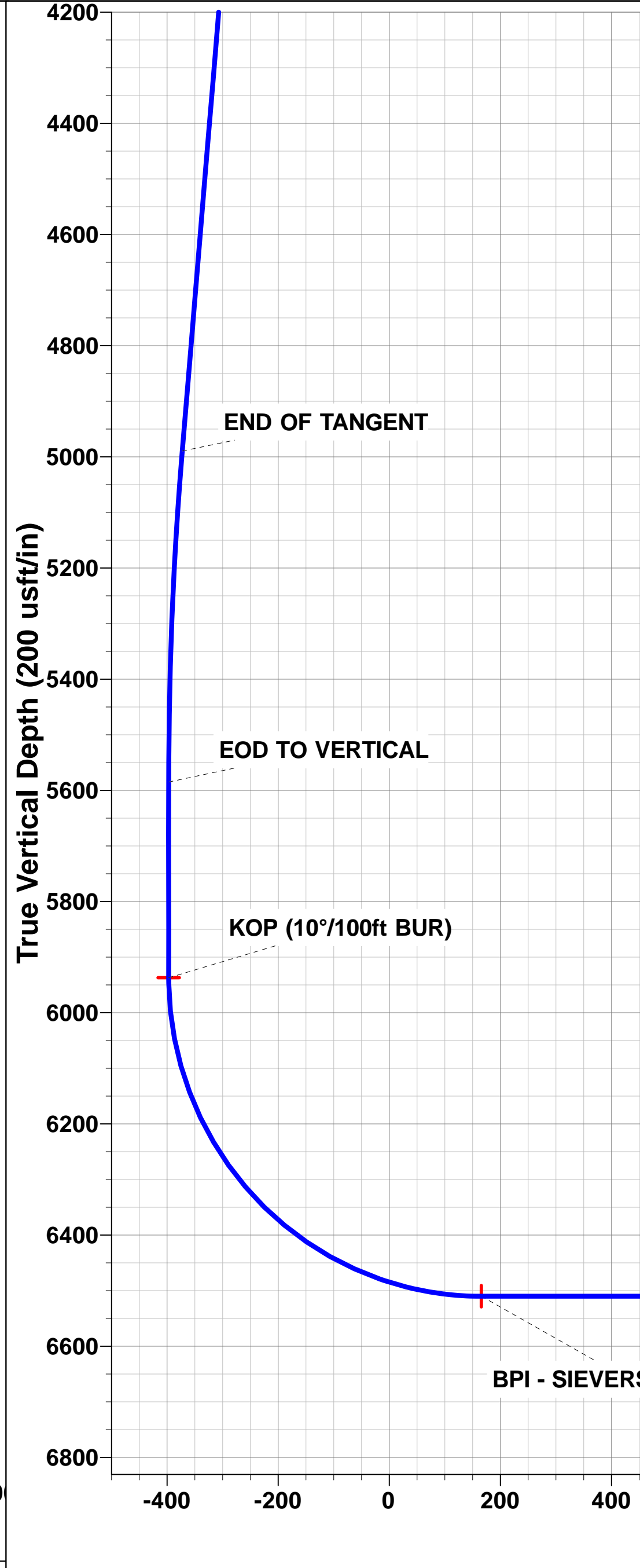
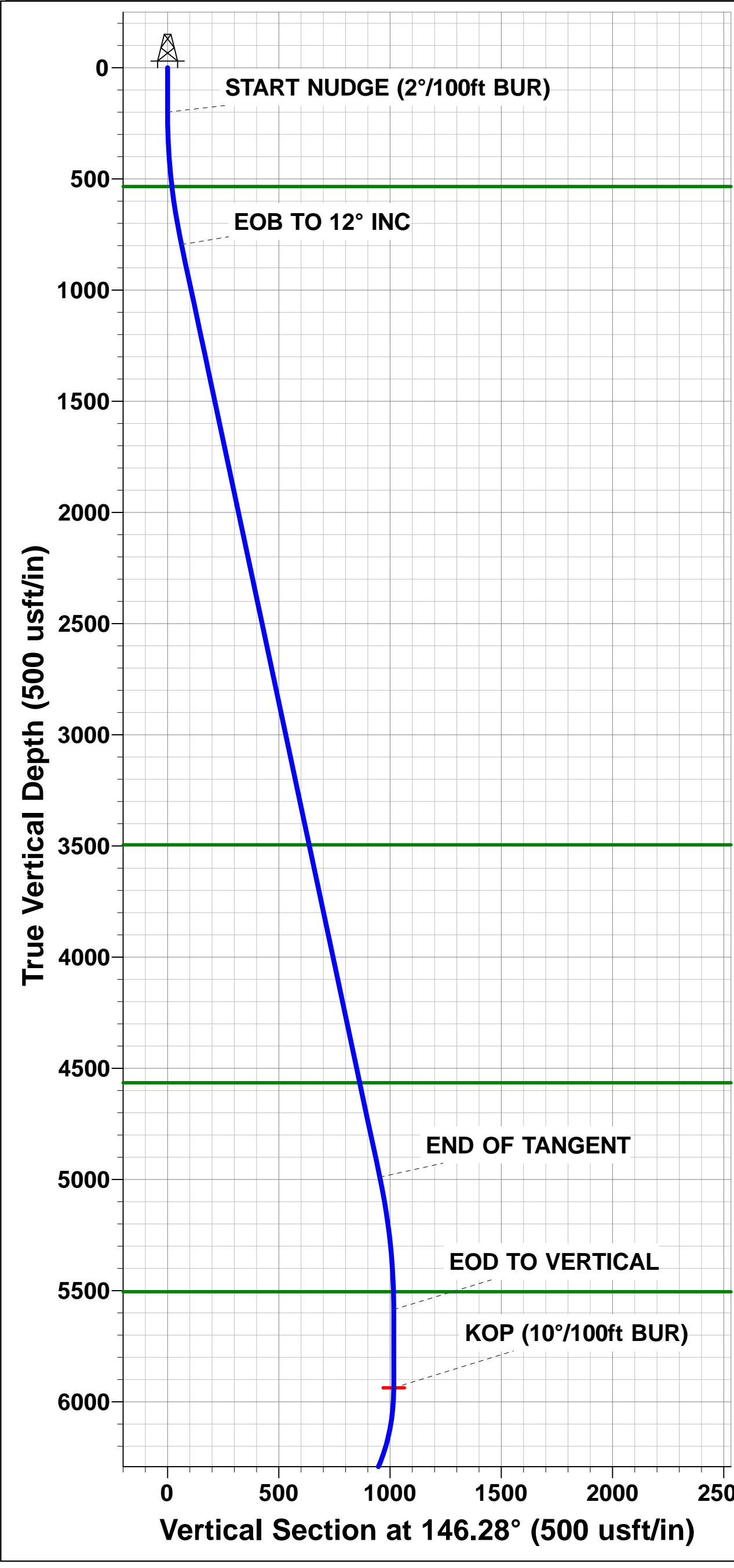
ANNOTATIONS										
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation		
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 1387ft FNL & 606ft FEL of Sec 15		
200.0	200.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)		
795.6	800.0	12.00	146.28	-52.1	34.8	-24.4	62.6	EOB TO 12° INC		
4989.6	5087.6	12.00	146.28	-793.5	529.6	-372.6	954.1	END OF TANGENT		
5585.2	5687.6	0.00	0.00	-845.6	564.4	-397.1	1016.7	EOD TO VERTICAL		
5937.2	6039.6	0.00	0.00	-845.6	564.4	-397.1	1016.7	KOP (10°/100ft BUR)		
6510.2	6939.7	90.00	270.15	-844.1	-8.6	165.6	1589.7	BPI: 2232ft FNL & 600ft FEL of Sec 15		
6510.2	11023.3	90.00	270.15	-833.6	-4092.2	4175.8	5673.2	EPI: 2232ft FNL & 600ft FWL of Sec 15		
6510.2	11025.6	90.00	270.22	-833.6	-4094.5	4178.1	5675.6	EOT TO 270.22° AZ		
6510.2	11323.2	90.00	270.22	-832.5	-4392.1	4470.3	5973.1	BHL: 2232ft FNL & 300ft FWL of Sec 15		

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - SIEVERS 8-61 15A-9	5937.2	-845.6	564.4	40.663018	-104.182077
BPI - SIEVERS 8-61 15A-9	6510.2	-844.1	-8.6	40.663022	-104.184142
EPI - SIEVERS 8-61 15A-9	6510.2	-833.6	-4092.2	40.663050	-104.198861
BHL - SIEVERS 8-61 15A-9	6510.2	-832.5	-4392.1	40.663053	-104.199942



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
534.2	535.0	PIERRE SH (BASE FOX HILLS)
3495.2	3559.9	PARKMAN
4565.2	4653.8	SUSSEX
5505.2	5607.6	SHANNON
6300.2	6432.8	SHARON SPRINGS SHALE
6370.2	6530.5	NIOBRARA FORMATION
6380.2	6546.0	NIOBRARA A CHALK
6480.2	6753.5	NIOBRARA B CHALK

PROPOSED LOCAL COORDINATES:
SHL:1387ft FNL & 606ft FEL of Sec 15
BEGIN PROD INT: 2232ft FNL & 600ft FEL of Sec 15
END PROD INTERVAL: 2232ft FNL & 600ft FWL of Sec 15
BHL: 2232ft FNL & 300ft FWL of Sec 15



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SIEVERS 8-61 15A-9
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4990.2usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4990.2usft (Original Well Elev)
Site:	NE NE SEC. 15 T8N R61W 6th P.M.	North Reference:	True
Well:	SIEVERS 8-61 15A-9	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 NE SEC. 15 T8N R61W 6th P.M.			
Site Position:		Northing:	1,488,015.84 usft	Latitude:	40.665569
From:	Lat/Long	Easting:	3,364,890.10 usft	Longitude:	-104.184650
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000 ft	Grid Convergence:	0.85 °

Well	SIEVERS 8-61 15A-9					
Well Position	+N-S	-83.8 usft	Northing:	1,487,934.27 usft	Latitude:	40.665339
	+E-W	149.5 usft	Easting:	3,365,040.85 usft	Longitude:	-104.184111
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,965.2 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	27/09/2017	7.89	67.15	52,556

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 (°)
	6,510.2	0.0	0.0	259.27

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	-4,990.2	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	-4,790.2	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	12.00	146.28	795.6	-4,194.6	-52.1	34.8	2.00	2.00	0.00	146.28	
5,087.6	12.00	146.28	4,989.6	-0.6	-793.5	529.6	0.00	0.00	0.00	0.00	
5,687.6	0.00	0.00	5,585.2	595.0	-845.6	564.4	2.00	-2.00	0.00	180.00	
6,039.6	0.00	0.00	5,937.2	947.0	-845.6	564.4	0.00	0.00	0.00	0.00	KOP - SIEVERS 8-61
6,939.7	90.00	270.15	6,510.2	1,520.0	-844.1	-8.6	10.00	10.00	-9.98	270.15	BPI - SIEVERS 8-6
11,023.3	90.00	270.15	6,510.2	1,520.0	-833.6	-4,092.2	0.00	0.00	0.00	96.90	EPI - SIEVERS 8-6
11,025.6	90.00	270.22	6,510.2	1,520.0	-833.6	-4,094.5	3.00	0.00	3.00	90.00	
11,323.2	90.00	270.22	6,510.2	1,520.0	-832.5	-4,392.1	0.00	0.00	0.00	-77.36	BHL - SIEVERS 8-6

Planning Report



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Site:	NE NE SEC. 15 T8N R61W 6th P.M.	North Reference:	True
Well:	SIEVERS 8-61 15A-9	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: 1387ft FNL & 606ft FEL of Sec 15										
0.0	0.00	0.00	0.0	4,990.20	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,890.20	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
200.0	0.00	0.00	200.0	4,790.20	0.0	0.0	0.0	0.00	0.00	0.00
300.0	2.00	146.28	300.0	4,690.22	-1.5	1.0	-0.7	2.00	2.00	0.00
400.0	4.00	146.28	399.8	4,590.36	-5.8	3.9	-2.7	2.00	2.00	0.00
500.0	6.00	146.28	499.5	4,490.75	-13.1	8.7	-6.1	2.00	2.00	0.00
PIERRE SHALE (BASE FOX HILLS)										
535.0	6.70	146.28	534.2	4,456.00	-16.3	10.9	-7.6	2.00	2.00	0.00
600.0	8.00	146.28	598.7	4,391.50	-23.2	15.5	-10.9	2.00	2.00	0.00
700.0	10.00	146.28	697.5	4,292.73	-36.2	24.2	-17.0	2.00	2.00	0.00
EOB TO 12° INC										
800.0	12.00	146.28	795.6	4,194.58	-52.1	34.8	-24.4	2.00	2.00	0.00
900.0	12.00	146.28	893.4	4,096.76	-69.4	46.3	-32.6	0.00	0.00	0.00
1,000.0	12.00	146.28	991.3	3,998.95	-86.7	57.8	-40.7	0.00	0.00	0.00
1,100.0	12.00	146.28	1,089.1	3,901.13	-103.9	69.4	-48.8	0.00	0.00	0.00
1,200.0	12.00	146.28	1,186.9	3,803.32	-121.2	80.9	-56.9	0.00	0.00	0.00
1,300.0	12.00	146.28	1,284.7	3,705.50	-138.5	92.5	-65.1	0.00	0.00	0.00
1,400.0	12.00	146.28	1,382.5	3,607.69	-155.8	104.0	-73.2	0.00	0.00	0.00
1,500.0	12.00	146.28	1,480.3	3,509.87	-173.1	115.6	-81.3	0.00	0.00	0.00
1,600.0	12.00	146.28	1,578.1	3,412.06	-190.4	127.1	-89.4	0.00	0.00	0.00
1,700.0	12.00	146.28	1,676.0	3,314.24	-207.7	138.6	-97.5	0.00	0.00	0.00
1,800.0	12.00	146.28	1,773.8	3,216.43	-225.0	150.2	-105.7	0.00	0.00	0.00
1,900.0	12.00	146.28	1,871.6	3,118.61	-242.3	161.7	-113.8	0.00	0.00	0.00
2,000.0	12.00	146.28	1,969.4	3,020.80	-259.6	173.3	-121.9	0.00	0.00	0.00
2,100.0	12.00	146.28	2,067.2	2,922.98	-276.9	184.8	-130.0	0.00	0.00	0.00
2,200.0	12.00	146.28	2,165.0	2,825.17	-294.2	196.3	-138.1	0.00	0.00	0.00
2,300.0	12.00	146.28	2,262.8	2,727.36	-311.5	207.9	-146.3	0.00	0.00	0.00
2,400.0	12.00	146.28	2,360.7	2,629.54	-328.8	219.4	-154.4	0.00	0.00	0.00
2,500.0	12.00	146.28	2,458.5	2,531.73	-346.1	231.0	-162.5	0.00	0.00	0.00
2,600.0	12.00	146.28	2,556.3	2,433.91	-363.3	242.5	-170.6	0.00	0.00	0.00
2,700.0	12.00	146.28	2,654.1	2,336.10	-380.6	254.1	-178.7	0.00	0.00	0.00
2,800.0	12.00	146.28	2,751.9	2,238.28	-397.9	265.6	-186.9	0.00	0.00	0.00
2,900.0	12.00	146.28	2,849.7	2,140.47	-415.2	277.1	-195.0	0.00	0.00	0.00
3,000.0	12.00	146.28	2,947.5	2,042.65	-432.5	288.7	-203.1	0.00	0.00	0.00
3,100.0	12.00	146.28	3,045.4	1,944.84	-449.8	300.2	-211.2	0.00	0.00	0.00
3,200.0	12.00	146.28	3,143.2	1,847.02	-467.1	311.8	-219.3	0.00	0.00	0.00
3,300.0	12.00	146.28	3,241.0	1,749.21	-484.4	323.3	-227.5	0.00	0.00	0.00
3,400.0	12.00	146.28	3,338.8	1,651.39	-501.7	334.9	-235.6	0.00	0.00	0.00
3,500.0	12.00	146.28	3,436.6	1,553.58	-519.0	346.4	-243.7	0.00	0.00	0.00
PARKMAN										
3,559.9	12.00	146.28	3,495.2	1,495.00	-529.3	353.3	-248.6	0.00	0.00	0.00
3,600.0	12.00	146.28	3,534.4	1,455.76	-536.3	357.9	-251.8	0.00	0.00	0.00
3,700.0	12.00	146.28	3,632.3	1,357.95	-553.6	369.5	-259.9	0.00	0.00	0.00
3,800.0	12.00	146.28	3,730.1	1,260.13	-570.9	381.0	-268.1	0.00	0.00	0.00
3,900.0	12.00	146.28	3,827.9	1,162.32	-588.2	392.6	-276.2	0.00	0.00	0.00
4,000.0	12.00	146.28	3,925.7	1,064.50	-605.4	404.1	-284.3	0.00	0.00	0.00
4,100.0	12.00	146.28	4,023.5	966.69	-622.7	415.7	-292.4	0.00	0.00	0.00
4,200.0	12.00	146.28	4,121.3	868.88	-640.0	427.2	-300.5	0.00	0.00	0.00
4,300.0	12.00	146.28	4,219.1	771.06	-657.3	438.7	-308.7	0.00	0.00	0.00
4,400.0	12.00	146.28	4,317.0	673.25	-674.6	450.3	-316.8	0.00	0.00	0.00
4,500.0	12.00	146.28	4,414.8	575.43	-691.9	461.8	-324.9	0.00	0.00	0.00
4,600.0	12.00	146.28	4,512.6	477.62	-709.2	473.4	-333.0	0.00	0.00	0.00

Planning Report



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Well:	SIEVERS 8-61 15A-9	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)
SUSSEX										
4,653.8	12.00	146.28	4,565.2	425.00	-718.5	479.6	-337.4	0.00	0.00	0.00
4,700.0	12.00	146.28	4,610.4	379.80	-726.5	484.9	-341.1	0.00	0.00	0.00
4,800.0	12.00	146.28	4,708.2	281.99	-743.8	496.4	-349.3	0.00	0.00	0.00
4,900.0	12.00	146.28	4,806.0	184.17	-761.1	508.0	-357.4	0.00	0.00	0.00
5,000.0	12.00	146.28	4,903.8	86.36	-778.4	519.5	-365.5	0.00	0.00	0.00
END OF TANGENT										
5,087.6	12.00	146.28	4,989.6	0.64	-793.5	529.6	-372.6	0.00	0.00	0.00
5,100.0	11.75	146.28	5,001.7	-11.46	-795.6	531.1	-373.6	2.00	-2.00	0.00
5,200.0	9.75	146.28	5,099.9	-109.70	-811.2	541.4	-380.9	2.00	-2.00	0.00
5,300.0	7.75	146.28	5,198.7	-208.53	-823.8	549.9	-386.8	2.00	-2.00	0.00
5,400.0	5.75	146.28	5,298.0	-307.83	-833.6	556.4	-391.4	2.00	-2.00	0.00
5,500.0	3.75	146.28	5,397.7	-407.49	-840.5	561.0	-394.7	2.00	-2.00	0.00
5,600.0	1.75	146.28	5,497.6	-507.36	-844.5	563.7	-396.5	2.00	-2.00	0.00
SHANNON										
5,607.6	1.60	146.28	5,505.2	-515.00	-844.7	563.8	-396.6	2.00	-2.00	0.00
EOD TO VERTICAL										
5,687.6	0.00	0.00	5,585.2	-594.99	-845.6	564.4	-397.1	2.00	-2.00	0.00
5,700.0	0.00	0.00	5,597.6	-607.35	-845.6	564.4	-397.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,697.6	-707.35	-845.6	564.4	-397.1	0.00	0.00	0.00
5,900.0	0.00	0.00	5,797.6	-807.35	-845.6	564.4	-397.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,897.6	-907.35	-845.6	564.4	-397.1	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,039.6	0.00	0.00	5,937.2	-947.00	-845.6	564.4	-397.1	0.00	0.00	0.00
6,100.0	6.03	270.15	5,997.4	-1,007.24	-845.6	561.2	-393.9	10.00	10.00	0.00
6,200.0	16.03	270.15	6,095.5	-1,105.27	-845.5	542.1	-375.2	10.00	10.00	0.00
6,300.0	26.03	270.15	6,188.7	-1,198.48	-845.5	506.3	-340.0	10.00	10.00	0.00
6,400.0	36.03	270.15	6,274.3	-1,284.06	-845.3	454.8	-289.4	10.00	10.00	0.00
SHARON SPRINGS SHALE										
6,432.8	39.31	270.15	6,300.2	-1,310.00	-845.3	434.8	-269.7	10.00	10.00	0.00
6,500.0	46.03	270.15	6,349.6	-1,359.40	-845.2	389.2	-225.0	10.00	10.00	0.00
NIORRARA FORMATION										
6,530.5	49.08	270.15	6,370.2	-1,380.00	-845.1	366.7	-202.9	10.00	10.00	0.00
NIORRARA A CHALK										
6,546.0	50.64	270.15	6,380.2	-1,390.00	-845.1	354.8	-191.3	10.00	10.00	0.00
6,600.0	56.03	270.15	6,412.4	-1,422.21	-845.0	311.6	-148.8	10.00	10.00	0.00
6,700.0	66.03	270.15	6,460.8	-1,470.58	-844.7	224.2	-63.0	10.00	10.00	0.00
NIORRARA B CHALK										
6,753.5	71.38	270.15	6,480.2	-1,490.00	-844.6	174.4	-14.0	10.00	10.00	0.00
6,800.0	76.03	270.15	6,493.3	-1,503.05	-844.5	129.7	29.8	10.00	10.00	0.00
6,900.0	86.03	270.15	6,508.8	-1,518.62	-844.2	31.1	126.7	10.00	10.00	0.00
BPI: 2232ft FNL & 600ft FEL of Sec 15										
6,939.7	90.00	270.15	6,510.2	-1,520.00	-844.1	-8.6	165.6	10.00	10.00	0.00
7,000.0	90.00	270.15	6,510.2	-1,520.00	-844.0	-68.9	224.8	0.00	0.00	0.00
7,100.0	90.00	270.15	6,510.2	-1,520.00	-843.7	-168.9	323.0	0.00	0.00	0.00
7,200.0	90.00	270.15	6,510.2	-1,520.00	-843.5	-268.9	421.3	0.00	0.00	0.00
7,300.0	90.00	270.15	6,510.2	-1,520.00	-843.2	-368.9	519.5	0.00	0.00	0.00
7,400.0	90.00	270.15	6,510.2	-1,520.00	-843.0	-468.9	617.7	0.00	0.00	0.00
7,500.0	90.00	270.15	6,510.2	-1,520.00	-842.7	-568.9	715.9	0.00	0.00	0.00
7,600.0	90.00	270.15	6,510.2	-1,520.00	-842.5	-668.9	814.1	0.00	0.00	0.00
7,700.0	90.00	270.15	6,510.2	-1,520.00	-842.2	-768.9	912.3	0.00	0.00	0.00
7,800.0	90.00	270.15	6,510.2	-1,520.00	-841.9	-868.9	1,010.5	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SIEVERS 8-61 15A-9
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4990.2usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4990.2usft (Original Well Elev)
Site:	NE NE SEC. 15 T8N R61W 6th P.M.	North Reference:	True
Well:	SIEVERS 8-61 15A-9	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)
7,900.0	90.00	270.15	6,510.2	-1,520.00	-841.7	-968.9	1,108.7	0.00	0.00	0.00
8,000.0	90.00	270.15	6,510.2	-1,520.00	-841.4	-1,068.9	1,206.9	0.00	0.00	0.00
8,100.0	90.00	270.15	6,510.2	-1,520.00	-841.2	-1,168.9	1,305.1	0.00	0.00	0.00
8,200.0	90.00	270.15	6,510.2	-1,520.00	-840.9	-1,268.9	1,403.3	0.00	0.00	0.00
8,300.0	90.00	270.15	6,510.2	-1,520.00	-840.7	-1,368.9	1,501.5	0.00	0.00	0.00
8,400.0	90.00	270.15	6,510.2	-1,520.00	-840.4	-1,468.9	1,599.7	0.00	0.00	0.00
8,500.0	90.00	270.15	6,510.2	-1,520.00	-840.1	-1,568.9	1,697.9	0.00	0.00	0.00
8,600.0	90.00	270.15	6,510.2	-1,520.00	-839.9	-1,668.9	1,796.1	0.00	0.00	0.00
8,700.0	90.00	270.15	6,510.2	-1,520.00	-839.6	-1,768.9	1,894.3	0.00	0.00	0.00
8,800.0	90.00	270.15	6,510.2	-1,520.00	-839.4	-1,868.9	1,992.5	0.00	0.00	0.00
8,900.0	90.00	270.15	6,510.2	-1,520.00	-839.1	-1,968.9	2,090.7	0.00	0.00	0.00
9,000.0	90.00	270.15	6,510.2	-1,520.00	-838.9	-2,068.9	2,188.9	0.00	0.00	0.00
9,100.0	90.00	270.15	6,510.2	-1,520.00	-838.6	-2,168.9	2,287.1	0.00	0.00	0.00
9,200.0	90.00	270.15	6,510.2	-1,520.00	-838.3	-2,268.9	2,385.3	0.00	0.00	0.00
9,300.0	90.00	270.15	6,510.2	-1,520.00	-838.1	-2,368.9	2,483.5	0.00	0.00	0.00
9,400.0	90.00	270.15	6,510.2	-1,520.00	-837.8	-2,468.9	2,581.7	0.00	0.00	0.00
9,500.0	90.00	270.15	6,510.2	-1,520.00	-837.6	-2,568.9	2,679.9	0.00	0.00	0.00
9,600.0	90.00	270.15	6,510.2	-1,520.00	-837.3	-2,668.9	2,778.1	0.00	0.00	0.00
9,700.0	90.00	270.15	6,510.2	-1,520.00	-837.0	-2,768.9	2,876.3	0.00	0.00	0.00
9,800.0	90.00	270.15	6,510.2	-1,520.00	-836.8	-2,868.9	2,974.5	0.00	0.00	0.00
9,900.0	90.00	270.15	6,510.2	-1,520.00	-836.5	-2,968.9	3,072.7	0.00	0.00	0.00
10,000.0	90.00	270.15	6,510.2	-1,520.00	-836.3	-3,068.9	3,170.9	0.00	0.00	0.00
10,100.0	90.00	270.15	6,510.2	-1,520.00	-836.0	-3,168.9	3,269.1	0.00	0.00	0.00
10,200.0	90.00	270.15	6,510.2	-1,520.00	-835.7	-3,268.9	3,367.3	0.00	0.00	0.00
10,300.0	90.00	270.15	6,510.2	-1,520.00	-835.5	-3,368.9	3,465.5	0.00	0.00	0.00
10,400.0	90.00	270.15	6,510.2	-1,520.00	-835.2	-3,468.9	3,563.7	0.00	0.00	0.00
10,500.0	90.00	270.15	6,510.2	-1,520.00	-835.0	-3,568.9	3,661.9	0.00	0.00	0.00
10,600.0	90.00	270.15	6,510.2	-1,520.00	-834.7	-3,668.9	3,760.1	0.00	0.00	0.00
10,700.0	90.00	270.15	6,510.2	-1,520.00	-834.4	-3,768.9	3,858.3	0.00	0.00	0.00
10,800.0	90.00	270.15	6,510.2	-1,520.00	-834.2	-3,868.9	3,956.5	0.00	0.00	0.00
10,900.0	90.00	270.15	6,510.2	-1,520.00	-833.9	-3,968.9	4,054.7	0.00	0.00	0.00
11,000.0	90.00	270.15	6,510.2	-1,520.00	-833.7	-4,068.9	4,152.9	0.00	0.00	0.00
EPI: 2232ft FNL & 600ft FWL of Sec 15										
11,023.3	90.00	270.15	6,510.2	-1,520.00	-833.6	-4,092.2	4,175.8	0.00	0.00	0.00
EOT TO 270.22° AZ										
11,025.6	90.00	270.22	6,510.2	-1,520.00	-833.6	-4,094.5	4,178.1	3.00	0.00	3.00
11,100.0	90.00	270.22	6,510.2	-1,520.00	-833.3	-4,168.9	4,251.1	0.00	0.00	0.00
11,200.0	90.00	270.22	6,510.2	-1,520.00	-832.9	-4,268.9	4,349.3	0.00	0.00	0.00
11,300.0	90.00	270.22	6,510.2	-1,520.00	-832.5	-4,368.9	4,447.5	0.00	0.00	0.00
BHL: 2232ft FNL & 300ft FWL of Sec 15										
11,323.2	90.00	270.22	6,510.2	-1,520.00	-832.5	-4,392.1	4,470.3	0.00	0.00	0.00

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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4990.2usft (Original Well Elev)
Site:	NE NE SEC. 15 T8N R61W 6th P.M.	North Reference:	True
Well:	SIEVERS 8-61 15A-9	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
535.0	534.2	PIERRE SHALE (BASE FOX HILLS			
3,559.9	3,495.2	PARKMAN			
4,653.8	4,565.2	SUSSEX			
5,607.6	5,505.2	SHANNON			
6,432.8	6,300.2	SHARON SPRINGS SHALE			
6,530.5	6,370.2	NIOBRARA FORMATION			
6,546.0	6,380.2	NIOBRARA A CHALK			
6,753.5	6,480.2	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: 1387ft FNL & 606ft FEL of Sec 15
200.0	200.0	0.0	0.0	START NUDGE (2°/100ft BUR)
800.0	795.6	-52.1	34.8	EOB TO 12° INC
5,087.6	4,989.6	-793.5	529.6	END OF TANGENT
5,687.6	5,585.2	-845.6	564.4	EOD TO VERTICAL
6,039.6	5,937.2	-845.6	564.4	KOP (10°/100ft BUR)
6,939.7	6,510.2	-844.1	-8.6	BPI: 2232ft FNL & 600ft FEL of Sec 15
11,023.3	6,510.2	-833.6	-4,092.2	EPI: 2232ft FNL & 600ft FWL of Sec 15
11,025.6	6,510.2	-833.6	-4,094.5	EOT TO 270.22° AZ
11,323.2	6,510.2	-832.5	-4,392.1	BHL: 2232ft FNL & 300ft FWL of Sec 15