

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

NW NE SEC. 13 T8N R62W 6th P.M.

FREEMAN 8-62 13-24-13

ORIGINAL WELLBORE

29 August, 2018

Plan: PROPOSAL #1





Project: WELD COUNTY, COLORADO (NAD 83)
 Site: NW NE SEC. 13 T8N R62W 6th P.M.
 Well: FREEMAN 8-62 13-24-13
 Wellbore: ORIGINAL WELLBORE
 Design: PROPOSAL #1

ANNOTATIONS

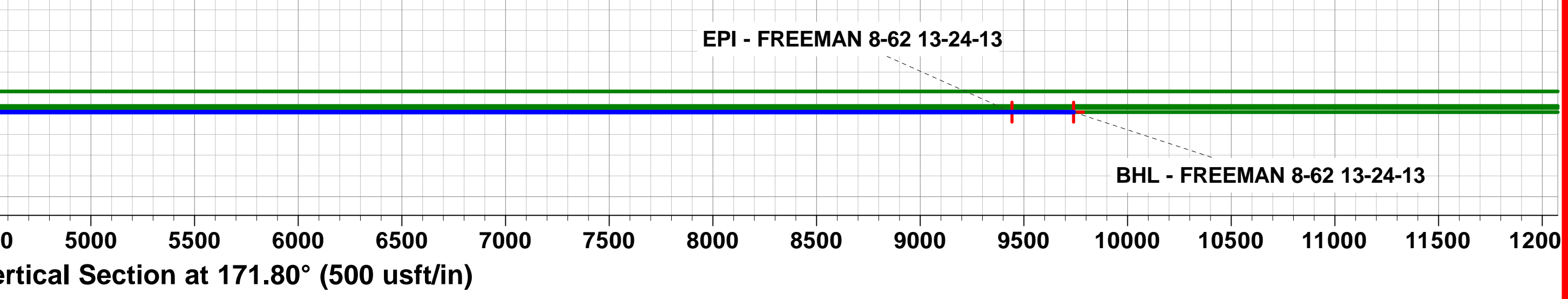
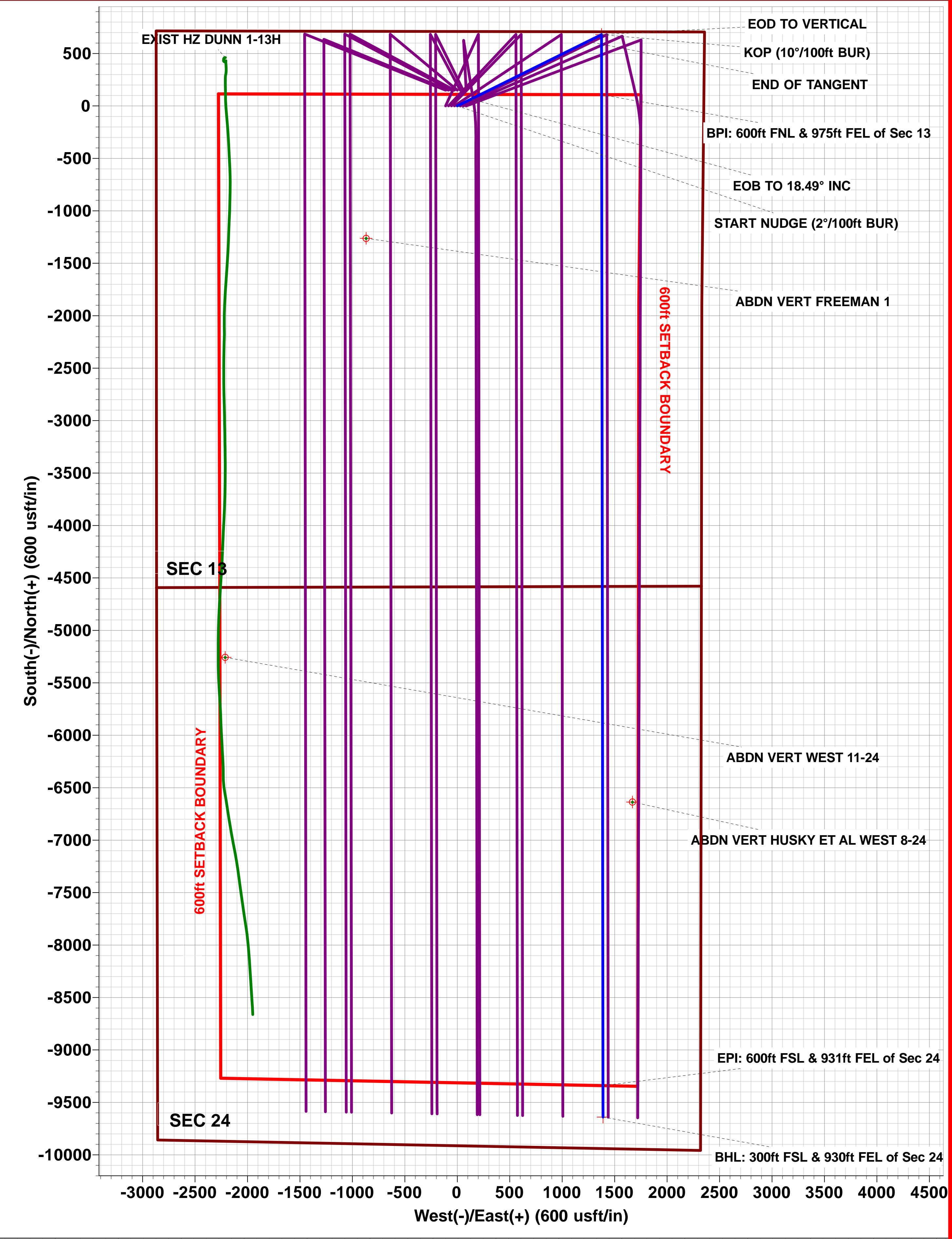
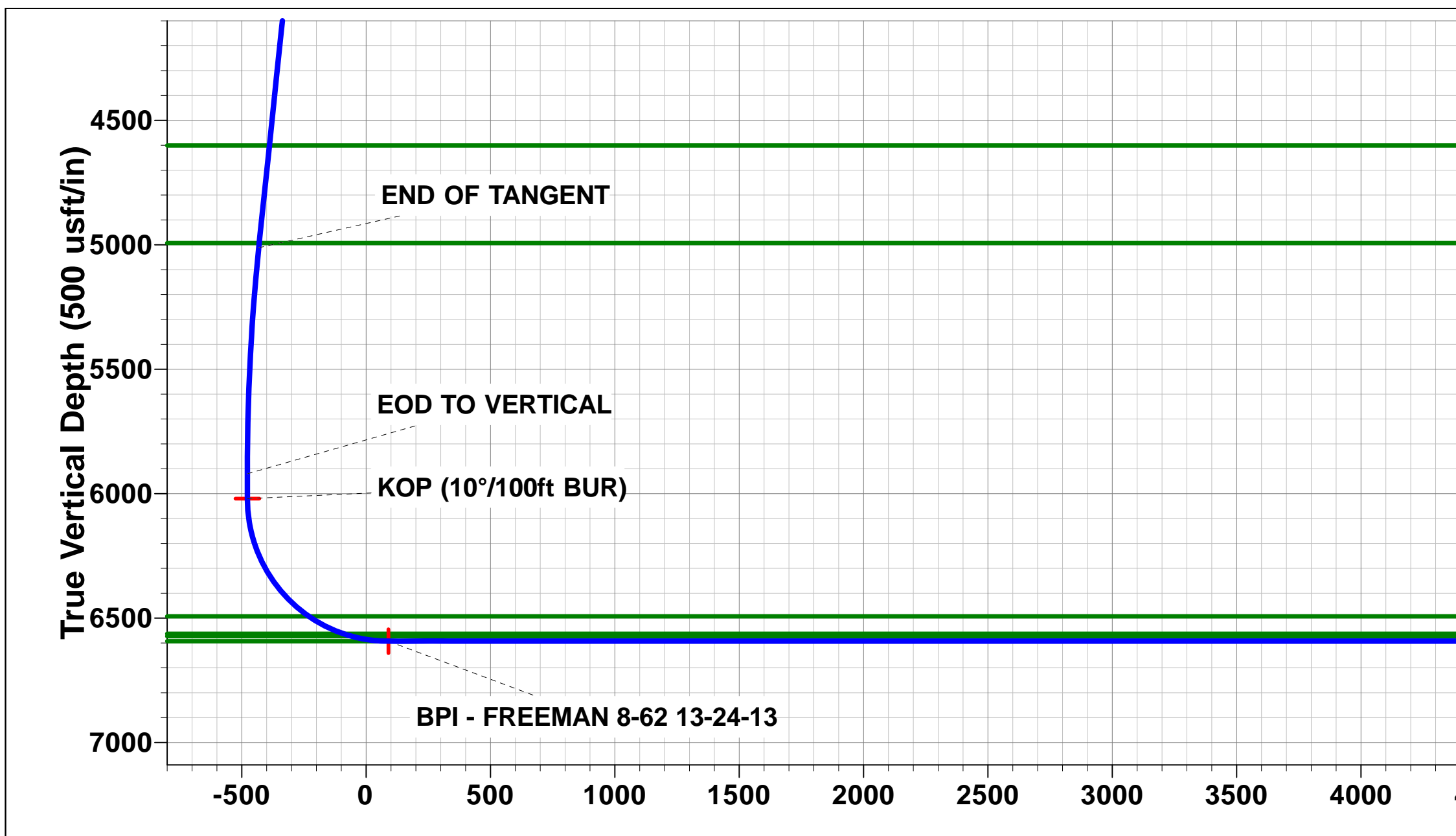
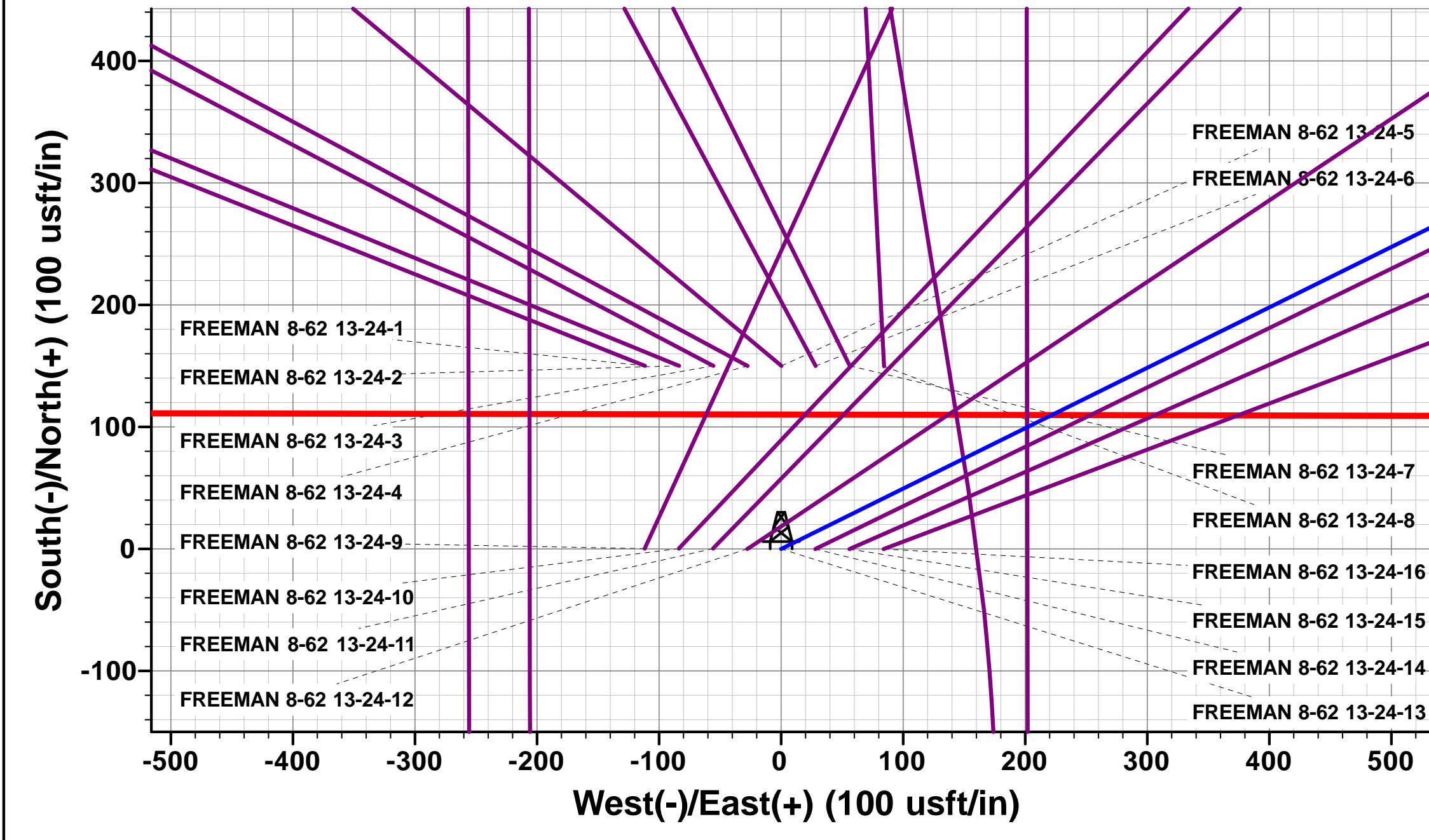
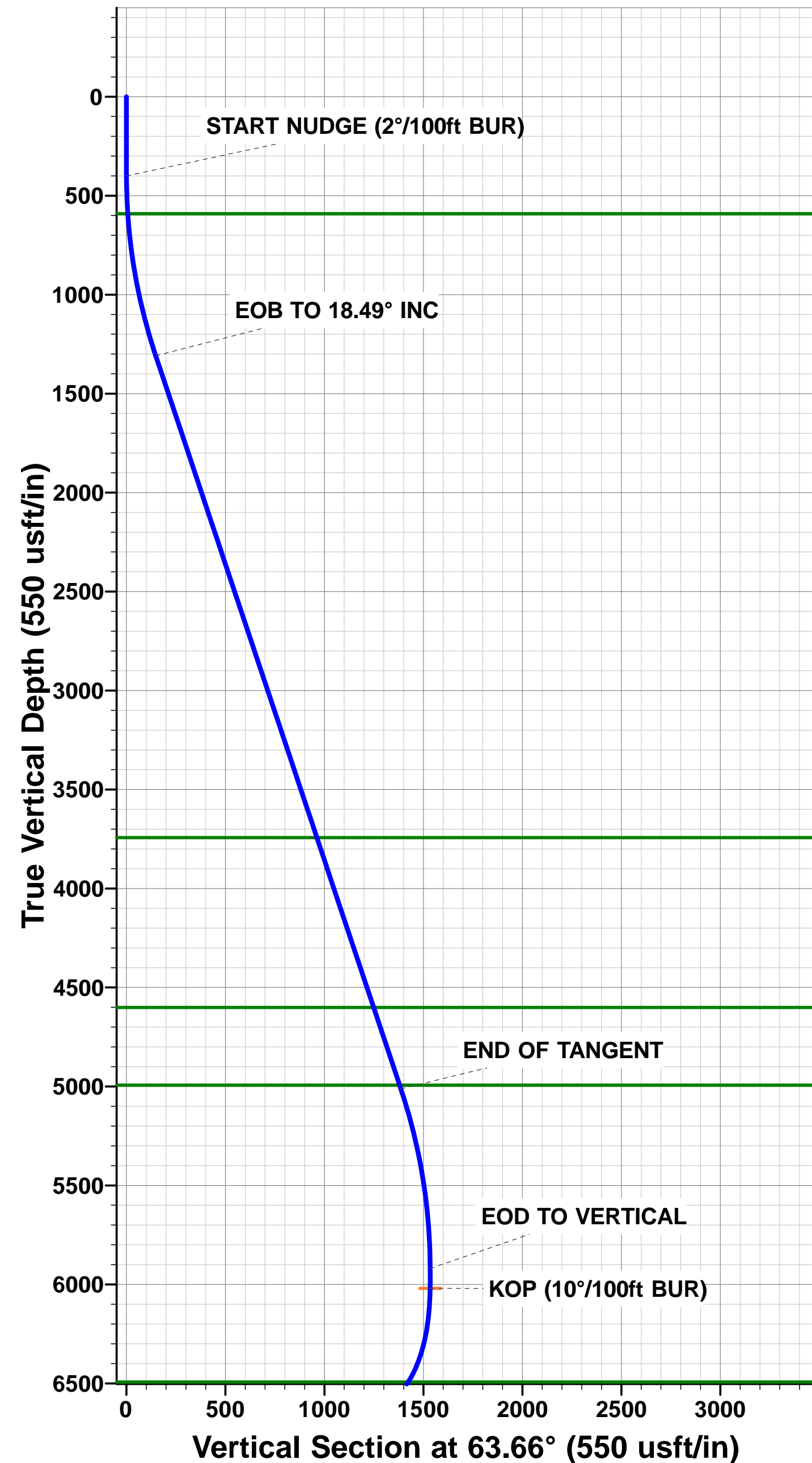
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 710ft FNL & 2350ft FEL of Sec 13
400.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUUDGE (2°/100ft BUR)
1308.41	1324.37	18.49	63.66	65.59	132.50	-46.02	147.84	EOB TO 18.49° INC
5011.63	5229.09	18.49	63.66	614.91	1242.14	-431.47	1386.01	END OF TANGENT
5920.04	6153.46	0.00	0.00	680.50	1374.64	-477.50	1533.86	EOD TO VERTICAL
6020.04	6253.46	0.00	0.00	680.50	1374.64	-477.50	1533.86	KOP (10°/100ft BUR)
6593.00	7153.47	90.00	179.92	107.54	1375.44	89.72	2106.82	BPI: 600ft FNL & 975ft FEL of Sec 13
6592.91	16601.20	90.00	179.92	-9340.19	1388.55	9442.74	11554.55	EPI: 600ft FSL & 931ft FEL of Sec 24
6593.00	16901.04	90.00	179.86	-9640.03	1389.02	9739.59	11854.39	BHL: 300ft FSL & 930ft FEL of Sec 24

PROPOSED LOCAL COORDINATES:

SHL: 710ft FNL & 2350ft FEL Sec 13
 BPI: 600ft FNL & 975ft FEL Sec 13
 EPI: 600ft FSL & 931ft FEL Sec 24
 BHL: 300ft FSL & 930ft FEL of Sec 24

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - FREEMAN 8-62 13-24-13	6020.04	680.50	1374.64	40.668747	-104.261830
BPI - FREEMAN 8-62 13-24-13	6593.00	107.54	1375.44	40.667174	-104.261827
EPI - FREEMAN 8-62 13-24-13	6593.00	-9340.19	1388.45	40.641242	-104.261782
BHL - FREEMAN 8-62 13-24-13	6593.00	-9640.03	1389.02	40.640419	-104.261780



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well FREEMAN 8-62 13-24-13
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Site:	NW NE SEC. 13 T8N R62W 6th P.M.	North Reference:	True
Well:	FREEMAN 8-62 13-24-13	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	NW NE SEC. 13 T8N R62W 6th P.M.				
Site Position:		Northing:	1,488,314.17 usft	Latitude:	40.667291
From:	Lat/Long	Easting:	3,341,986.38 usft	Longitude:	-104.267187
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000ft	Grid Convergence:	0.80 °

Well	FREEMAN 8-62 13-24-13					
Well Position	+N-S	-150.12 usft	Northing:	1,488,165.61 usft	Latitude:	40.666879
	+E-W	111.52 usft	Easting:	3,342,099.98 usft	Longitude:	-104.266785
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,998.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	29/08/2018	7.84	67.11	52,443

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 (°)
	6,593.00	0.00	0.00	171.80

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
0.00	0.00	0.00	0.00	-5,023.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	-4,623.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,324.37	18.49	63.66	1,308.41	-3,714.59	65.59	132.50	2.00	2.00	0.00	63.66	
5,229.09	18.49	63.66	5,011.63	-11.37	614.91	1,242.14	0.00	0.00	0.00	0.00	
6,153.46	0.00	0.00	5,920.04	897.04	680.50	1,374.64	2.00	-2.00	0.00	180.00	
6,253.46	0.00	0.00	6,020.04	997.04	680.50	1,374.64	0.00	0.00	0.00	0.00	KOP - FREEMAN 8
7,153.47	90.00	179.92	6,593.00	1,570.00	107.54	1,375.44	10.00	10.00	19.99	179.92	BPI - FREEMAN 8-
16,601.20	90.00	179.92	6,593.00	1,570.00	-9,340.19	1,388.45	0.00	0.00	0.00	0.00	EPI - FREEMAN 8-
16,901.04	90.00	179.86	6,593.00	1,570.00	-9,640.03	1,389.02	0.02	0.00	-0.02	-91.02	BHL - FREEMAN 8

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well FREEMAN 8-62 13-24-13
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Site:	NW NE SEC. 13 T8N R62W 6th P.M.	North Reference:	True
Well:	FREEMAN 8-62 13-24-13	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: 710ft FNL & 2350ft FEL of Sec 13										
0.00	0.00	0.00	0.00	5,023.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,923.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,823.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	4,723.00	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
400.00	0.00	0.00	400.00	4,623.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	2.00	63.66	499.98	4,523.02	0.77	1.56	-0.54	2.00	2.00	0.00
PIERRE SHALE (BASE OF FOX HILLS)										
591.14	3.82	63.66	591.00	4,432.00	2.83	5.71	-1.98	2.00	2.00	0.00
600.00	4.00	63.66	599.84	4,423.16	3.10	6.25	-2.17	2.00	2.00	0.00
700.00	6.00	63.66	699.45	4,323.55	6.96	14.06	-4.89	2.00	2.00	0.00
800.00	8.00	63.66	798.70	4,224.30	12.37	24.99	-8.68	2.00	2.00	0.00
900.00	10.00	63.66	897.47	4,125.53	19.31	39.00	-13.55	2.00	2.00	0.00
1,000.00	12.00	63.66	995.62	4,027.38	27.77	56.10	-19.49	2.00	2.00	0.00
1,100.00	14.00	63.66	1,093.06	3,929.94	37.75	76.26	-26.49	2.00	2.00	0.00
1,200.00	16.00	63.66	1,189.64	3,833.36	49.24	99.46	-34.55	2.00	2.00	0.00
1,300.00	18.00	63.66	1,285.27	3,737.73	62.21	125.66	-43.65	2.00	2.00	0.00
EOB TO 18.49° INC										
1,324.37	18.49	63.66	1,308.41	3,714.59	65.59	132.50	-46.02	2.00	2.00	0.00
1,400.00	18.49	63.66	1,380.14	3,642.86	76.23	153.99	-53.49	0.00	0.00	0.00
1,500.00	18.49	63.66	1,474.98	3,548.02	90.30	182.41	-63.36	0.00	0.00	0.00
1,600.00	18.49	63.66	1,569.82	3,453.18	104.37	210.82	-73.23	0.00	0.00	0.00
1,700.00	18.49	63.66	1,664.66	3,358.34	118.43	239.24	-83.10	0.00	0.00	0.00
1,800.00	18.49	63.66	1,759.50	3,263.50	132.50	267.66	-92.98	0.00	0.00	0.00
1,900.00	18.49	63.66	1,854.34	3,168.66	146.57	296.08	-102.85	0.00	0.00	0.00
2,000.00	18.49	63.66	1,949.18	3,073.82	160.64	324.50	-112.72	0.00	0.00	0.00
2,100.00	18.49	63.66	2,044.02	2,978.98	174.71	352.92	-122.59	0.00	0.00	0.00
2,200.00	18.49	63.66	2,138.86	2,884.14	188.77	381.33	-132.46	0.00	0.00	0.00
2,300.00	18.49	63.66	2,233.69	2,789.31	202.84	409.75	-142.33	0.00	0.00	0.00
2,400.00	18.49	63.66	2,328.53	2,694.47	216.91	438.17	-152.20	0.00	0.00	0.00
2,500.00	18.49	63.66	2,423.37	2,599.63	230.98	466.59	-162.07	0.00	0.00	0.00
2,600.00	18.49	63.66	2,518.21	2,504.79	245.05	495.01	-171.95	0.00	0.00	0.00
2,700.00	18.49	63.66	2,613.05	2,409.95	259.12	523.42	-181.82	0.00	0.00	0.00
2,800.00	18.49	63.66	2,707.89	2,315.11	273.18	551.84	-191.69	0.00	0.00	0.00
2,900.00	18.49	63.66	2,802.73	2,220.27	287.25	580.26	-201.56	0.00	0.00	0.00
3,000.00	18.49	63.66	2,897.57	2,125.43	301.32	608.68	-211.43	0.00	0.00	0.00
3,100.00	18.49	63.66	2,992.41	2,030.59	315.39	637.10	-221.30	0.00	0.00	0.00
3,200.00	18.49	63.66	3,087.25	1,935.75	329.46	665.51	-231.17	0.00	0.00	0.00
3,300.00	18.49	63.66	3,182.09	1,840.91	343.52	693.93	-241.05	0.00	0.00	0.00
3,400.00	18.49	63.66	3,276.93	1,746.07	357.59	722.35	-250.92	0.00	0.00	0.00
3,500.00	18.49	63.66	3,371.77	1,651.23	371.66	750.77	-260.79	0.00	0.00	0.00
3,600.00	18.49	63.66	3,466.61	1,556.39	385.73	779.19	-270.66	0.00	0.00	0.00
3,700.00	18.49	63.66	3,561.45	1,461.55	399.80	807.60	-280.53	0.00	0.00	0.00
3,800.00	18.49	63.66	3,656.28	1,366.72	413.86	836.02	-290.40	0.00	0.00	0.00
PARKMAN										
3,891.43	18.49	63.66	3,743.00	1,280.00	426.73	862.01	-299.43	0.00	0.00	0.00
3,900.00	18.49	63.66	3,751.12	1,271.88	427.93	864.44	-300.27	0.00	0.00	0.00
4,000.00	18.49	63.66	3,845.96	1,177.04	442.00	892.86	-310.15	0.00	0.00	0.00
4,100.00	18.49	63.66	3,940.80	1,082.20	456.07	921.28	-320.02	0.00	0.00	0.00
4,200.00	18.49	63.66	4,035.64	987.36	470.14	949.70	-329.89	0.00	0.00	0.00
4,300.00	18.49	63.66	4,130.48	892.52	484.20	978.11	-339.76	0.00	0.00	0.00
4,400.00	18.49	63.66	4,225.32	797.68	498.27	1,006.53	-349.63	0.00	0.00	0.00
4,500.00	18.49	63.66	4,320.16	702.84	512.34	1,034.95	-359.50	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well FREEMAN 8-62 13-24-13
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Site:	NW NE SEC. 13 T8N R62W 6th P.M.	North Reference:	True
Well:	FREEMAN 8-62 13-24-13	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)
4,600.00	18.49	63.66	4,415.00	608.00	526.41	1,063.37	-369.37	0.00	0.00	0.00
4,700.00	18.49	63.66	4,509.84	513.16	540.48	1,091.79	-379.25	0.00	0.00	0.00
SUSSEX										
4,796.12	18.49	63.66	4,601.00	422.00	554.00	1,119.10	-388.73	0.00	0.00	0.00
4,800.00	18.49	63.66	4,604.68	418.32	554.54	1,120.20	-389.12	0.00	0.00	0.00
4,900.00	18.49	63.66	4,699.52	323.48	568.61	1,148.62	-398.99	0.00	0.00	0.00
5,000.00	18.49	63.66	4,794.36	228.64	582.68	1,177.04	-408.86	0.00	0.00	0.00
5,100.00	18.49	63.66	4,889.20	133.80	596.75	1,205.46	-418.73	0.00	0.00	0.00
5,200.00	18.49	63.66	4,984.04	38.96	610.82	1,233.88	-428.60	0.00	0.00	0.00
SHANNON										
5,209.45	18.49	63.66	4,993.00	30.00	612.15	1,236.56	-429.54	0.00	0.00	0.00
END OF TANGENT										
5,229.09	18.49	63.66	5,011.63	11.37	614.91	1,242.14	-431.47	0.00	0.00	0.00
5,300.00	17.07	63.66	5,079.15	-56.15	624.51	1,261.55	-438.21	2.00	-2.00	0.00
5,400.00	15.07	63.66	5,175.23	-152.23	636.79	1,286.35	-446.83	2.00	-2.00	0.00
5,500.00	13.07	63.66	5,272.23	-249.23	647.58	1,308.14	-454.40	2.00	-2.00	0.00
5,600.00	11.07	63.66	5,370.01	-347.01	656.85	1,326.88	-460.91	2.00	-2.00	0.00
5,700.00	9.07	63.66	5,468.47	-445.47	664.61	1,342.54	-466.35	2.00	-2.00	0.00
5,800.00	7.07	63.66	5,567.47	-544.47	670.84	1,355.12	-470.72	2.00	-2.00	0.00
5,900.00	5.07	63.66	5,666.91	-643.91	675.53	1,364.60	-474.01	2.00	-2.00	0.00
6,000.00	3.07	63.66	5,766.65	-743.65	678.68	1,370.96	-476.22	2.00	-2.00	0.00
6,100.00	1.07	63.66	5,866.58	-843.58	680.28	1,374.19	-477.34	2.00	-2.00	0.00
EOD TO VERTICAL										
6,153.46	0.00	0.00	5,920.04	-897.04	680.50	1,374.64	-477.50	2.00	-2.00	0.00
6,200.00	0.00	0.00	5,966.58	-943.58	680.50	1,374.64	-477.50	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,253.46	0.00	0.00	6,020.04	-997.04	680.50	1,374.64	-477.50	0.00	0.00	0.00
6,300.00	4.65	179.92	6,066.53	-1,043.53	678.61	1,374.64	-475.63	10.00	10.00	0.00
6,400.00	14.65	179.92	6,164.99	-1,141.99	661.86	1,374.67	-459.05	10.00	10.00	0.00
6,500.00	24.65	179.92	6,259.04	-1,236.04	628.27	1,374.71	-425.79	10.00	10.00	0.00
6,600.00	34.65	179.92	6,345.83	-1,322.83	578.86	1,374.78	-376.88	10.00	10.00	0.00
6,700.00	44.65	179.92	6,422.73	-1,399.73	515.13	1,374.87	-313.78	10.00	10.00	0.00
6,800.00	54.65	179.92	6,487.39	-1,464.39	439.01	1,374.98	-238.43	10.00	10.00	0.00
SHARON SPRINGS SHALE										
6,809.82	55.64	179.92	6,493.00	-1,470.00	430.95	1,374.99	-230.45	10.00	10.00	0.00
6,900.00	64.65	179.92	6,537.84	-1,514.84	352.82	1,375.09	-153.10	10.00	10.00	0.00
NIORRARA FORMATION										
6,967.24	71.38	179.92	6,563.00	-1,540.00	290.51	1,375.18	-91.42	10.00	10.00	0.00
7,000.00	74.65	179.92	6,572.57	-1,549.57	259.18	1,375.22	-60.40	10.00	10.00	0.00
NIORRARA A CHALK										
7,001.63	74.82	179.92	6,573.00	-1,550.00	257.60	1,375.23	-58.84	10.00	10.00	0.00
7,100.00	84.65	179.92	6,590.51	-1,567.51	160.93	1,375.36	36.86	10.00	10.00	0.00
BPI: 600ft FNL & 975ft FEL of Sec 13 - NIOBRARA A LP										
7,153.47	90.00	179.92	6,593.00	-1,570.00	107.54	1,375.44	89.72	10.00	10.00	0.00
7,200.00	90.00	179.92	6,593.00	-1,570.00	61.01	1,375.50	135.79	0.00	0.00	0.00
7,300.00	90.00	179.92	6,593.00	-1,570.00	-38.99	1,375.64	234.78	0.00	0.00	0.00
7,400.00	90.00	179.92	6,593.00	-1,570.00	-138.99	1,375.78	333.78	0.00	0.00	0.00
7,500.00	90.00	179.92	6,593.00	-1,570.00	-238.99	1,375.92	432.78	0.00	0.00	0.00
7,600.00	90.00	179.92	6,593.00	-1,570.00	-338.99	1,376.06	531.78	0.00	0.00	0.00
7,700.00	90.00	179.92	6,592.99	-1,569.99	-438.99	1,376.19	630.77	0.00	0.00	0.00
7,800.00	90.00	179.92	6,592.99	-1,569.99	-538.99	1,376.33	729.77	0.00	0.00	0.00
7,900.00	90.00	179.92	6,592.99	-1,569.99	-638.99	1,376.47	828.77	0.00	0.00	0.00
8,000.00	90.00	179.92	6,592.99	-1,569.99	-738.99	1,376.61	927.77	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well FREEMAN 8-62 13-24-13
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Site:	NW NE SEC. 13 T8N R62W 6th P.M.	North Reference:	True
Well:	FREEMAN 8-62 13-24-13	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)
8,100.00	90.00	179.92	6,592.99	-1,569.99	-838.99	1,376.75	1,026.76	0.00	0.00	0.00
8,200.00	90.00	179.92	6,592.99	-1,569.99	-938.99	1,376.89	1,125.76	0.00	0.00	0.00
8,300.00	90.00	179.92	6,592.99	-1,569.99	-1,038.99	1,377.03	1,224.76	0.00	0.00	0.00
8,400.00	90.00	179.92	6,592.99	-1,569.99	-1,138.99	1,377.17	1,323.76	0.00	0.00	0.00
8,500.00	90.00	179.92	6,592.99	-1,569.99	-1,238.99	1,377.30	1,422.75	0.00	0.00	0.00
8,600.00	90.00	179.92	6,592.99	-1,569.99	-1,338.99	1,377.44	1,521.75	0.00	0.00	0.00
8,700.00	90.00	179.92	6,592.99	-1,569.99	-1,438.99	1,377.58	1,620.75	0.00	0.00	0.00
8,800.00	90.00	179.92	6,592.98	-1,569.98	-1,538.99	1,377.72	1,719.75	0.00	0.00	0.00
8,900.00	90.00	179.92	6,592.98	-1,569.98	-1,638.99	1,377.86	1,818.74	0.00	0.00	0.00
9,000.00	90.00	179.92	6,592.98	-1,569.98	-1,738.99	1,378.00	1,917.74	0.00	0.00	0.00
9,100.00	90.00	179.92	6,592.98	-1,569.98	-1,838.99	1,378.14	2,016.74	0.00	0.00	0.00
9,200.00	90.00	179.92	6,592.98	-1,569.98	-1,938.99	1,378.28	2,115.74	0.00	0.00	0.00
9,300.00	90.00	179.92	6,592.98	-1,569.98	-2,038.99	1,378.41	2,214.73	0.00	0.00	0.00
9,400.00	90.00	179.92	6,592.98	-1,569.98	-2,138.99	1,378.55	2,313.73	0.00	0.00	0.00
9,500.00	90.00	179.92	6,592.98	-1,569.98	-2,238.99	1,378.69	2,412.73	0.00	0.00	0.00
9,600.00	90.00	179.92	6,592.98	-1,569.98	-2,338.99	1,378.83	2,511.73	0.00	0.00	0.00
9,700.00	90.00	179.92	6,592.98	-1,569.98	-2,438.99	1,378.97	2,610.72	0.00	0.00	0.00
9,800.00	90.00	179.92	6,592.98	-1,569.98	-2,538.99	1,379.11	2,709.72	0.00	0.00	0.00
9,900.00	90.00	179.92	6,592.97	-1,569.97	-2,638.99	1,379.25	2,808.72	0.00	0.00	0.00
10,000.00	90.00	179.92	6,592.97	-1,569.97	-2,738.99	1,379.39	2,907.72	0.00	0.00	0.00
10,100.00	90.00	179.92	6,592.97	-1,569.97	-2,838.99	1,379.53	3,006.71	0.00	0.00	0.00
10,200.00	90.00	179.92	6,592.97	-1,569.97	-2,938.99	1,379.66	3,105.71	0.00	0.00	0.00
10,300.00	90.00	179.92	6,592.97	-1,569.97	-3,038.99	1,379.80	3,204.71	0.00	0.00	0.00
10,400.00	90.00	179.92	6,592.97	-1,569.97	-3,138.99	1,379.94	3,303.71	0.00	0.00	0.00
10,500.00	90.00	179.92	6,592.97	-1,569.97	-3,238.99	1,380.08	3,402.70	0.00	0.00	0.00
10,600.00	90.00	179.92	6,592.97	-1,569.97	-3,338.99	1,380.22	3,501.70	0.00	0.00	0.00
10,700.00	90.00	179.92	6,592.97	-1,569.97	-3,438.99	1,380.36	3,600.70	0.00	0.00	0.00
10,800.00	90.00	179.92	6,592.97	-1,569.97	-3,538.99	1,380.50	3,699.70	0.00	0.00	0.00
10,900.00	90.00	179.92	6,592.97	-1,569.97	-3,638.99	1,380.64	3,798.69	0.00	0.00	0.00
11,000.00	90.00	179.92	6,592.96	-1,569.96	-3,738.99	1,380.77	3,897.69	0.00	0.00	0.00
11,100.00	90.00	179.92	6,592.96	-1,569.96	-3,838.99	1,380.91	3,996.69	0.00	0.00	0.00
11,200.00	90.00	179.92	6,592.96	-1,569.96	-3,938.99	1,381.05	4,095.69	0.00	0.00	0.00
11,300.00	90.00	179.92	6,592.96	-1,569.96	-4,038.99	1,381.19	4,194.68	0.00	0.00	0.00
11,400.00	90.00	179.92	6,592.96	-1,569.96	-4,138.99	1,381.33	4,293.68	0.00	0.00	0.00
11,500.00	90.00	179.92	6,592.96	-1,569.96	-4,238.99	1,381.47	4,392.68	0.00	0.00	0.00
11,600.00	90.00	179.92	6,592.96	-1,569.96	-4,338.99	1,381.61	4,491.68	0.00	0.00	0.00
11,700.00	90.00	179.92	6,592.96	-1,569.96	-4,438.99	1,381.75	4,590.67	0.00	0.00	0.00
11,800.00	90.00	179.92	6,592.96	-1,569.96	-4,538.99	1,381.89	4,689.67	0.00	0.00	0.00
11,900.00	90.00	179.92	6,592.96	-1,569.96	-4,638.99	1,382.02	4,788.67	0.00	0.00	0.00
12,000.00	90.00	179.92	6,592.96	-1,569.96	-4,738.99	1,382.16	4,887.67	0.00	0.00	0.00
12,100.00	90.00	179.92	6,592.95	-1,569.95	-4,838.99	1,382.30	4,986.66	0.00	0.00	0.00
12,200.00	90.00	179.92	6,592.95	-1,569.95	-4,938.99	1,382.44	5,085.66	0.00	0.00	0.00
12,300.00	90.00	179.92	6,592.95	-1,569.95	-5,038.99	1,382.58	5,184.66	0.00	0.00	0.00
12,400.00	90.00	179.92	6,592.95	-1,569.95	-5,138.99	1,382.72	5,283.66	0.00	0.00	0.00
12,500.00	90.00	179.92	6,592.95	-1,569.95	-5,238.99	1,382.86	5,382.65	0.00	0.00	0.00
12,600.00	90.00	179.92	6,592.95	-1,569.95	-5,338.99	1,383.00	5,481.65	0.00	0.00	0.00
12,700.00	90.00	179.92	6,592.95	-1,569.95	-5,438.99	1,383.13	5,580.65	0.00	0.00	0.00
12,800.00	90.00	179.92	6,592.95	-1,569.95	-5,538.99	1,383.27	5,679.65	0.00	0.00	0.00
12,900.00	90.00	179.92	6,592.95	-1,569.95	-5,638.99	1,383.41	5,778.64	0.00	0.00	0.00
13,000.00	90.00	179.92	6,592.95	-1,569.95	-5,738.99	1,383.55	5,877.64	0.00	0.00	0.00
13,100.00	90.00	179.92	6,592.95	-1,569.95	-5,838.99	1,383.69	5,976.64	0.00	0.00	0.00
13,200.00	90.00	179.92	6,592.94	-1,569.94	-5,938.99	1,383.83	6,075.64	0.00	0.00	0.00
13,300.00	90.00	179.92	6,592.94	-1,569.94	-6,038.99	1,383.97	6,174.63	0.00	0.00	0.00
13,400.00	90.00	179.92	6,592.94	-1,569.94	-6,138.99	1,384.11	6,273.63	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well FREEMAN 8-62 13-24-13
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Site:	NW NE SEC. 13 T8N R62W 6th P.M.	North Reference:	True
Well:	FREEMAN 8-62 13-24-13	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)
13,500.00	90.00	179.92	6,592.94	-1,569.94	-6,238.99	1,384.25	6,372.63	0.00	0.00	0.00
13,600.00	90.00	179.92	6,592.94	-1,569.94	-6,338.99	1,384.38	6,471.63	0.00	0.00	0.00
13,700.00	90.00	179.92	6,592.94	-1,569.94	-6,438.99	1,384.52	6,570.62	0.00	0.00	0.00
13,800.00	90.00	179.92	6,592.94	-1,569.94	-6,538.99	1,384.66	6,669.62	0.00	0.00	0.00
13,900.00	90.00	179.92	6,592.94	-1,569.94	-6,638.99	1,384.80	6,768.62	0.00	0.00	0.00
14,000.00	90.00	179.92	6,592.94	-1,569.94	-6,738.99	1,384.94	6,867.62	0.00	0.00	0.00
14,100.00	90.00	179.92	6,592.94	-1,569.94	-6,838.99	1,385.08	6,966.61	0.00	0.00	0.00
14,200.00	90.00	179.92	6,592.94	-1,569.94	-6,938.99	1,385.22	7,065.61	0.00	0.00	0.00
14,300.00	90.00	179.92	6,592.93	-1,569.93	-7,038.99	1,385.36	7,164.61	0.00	0.00	0.00
14,400.00	90.00	179.92	6,592.93	-1,569.93	-7,138.99	1,385.49	7,263.61	0.00	0.00	0.00
14,500.00	90.00	179.92	6,592.93	-1,569.93	-7,238.99	1,385.63	7,362.60	0.00	0.00	0.00
14,600.00	90.00	179.92	6,592.93	-1,569.93	-7,338.99	1,385.77	7,461.60	0.00	0.00	0.00
14,700.00	90.00	179.92	6,592.93	-1,569.93	-7,438.99	1,385.91	7,560.60	0.00	0.00	0.00
14,800.00	90.00	179.92	6,592.93	-1,569.93	-7,538.99	1,386.05	7,659.60	0.00	0.00	0.00
14,900.00	90.00	179.92	6,592.93	-1,569.93	-7,638.99	1,386.19	7,758.59	0.00	0.00	0.00
15,000.00	90.00	179.92	6,592.93	-1,569.93	-7,738.99	1,386.33	7,857.59	0.00	0.00	0.00
15,100.00	90.00	179.92	6,592.93	-1,569.93	-7,838.99	1,386.47	7,956.59	0.00	0.00	0.00
15,200.00	90.00	179.92	6,592.93	-1,569.93	-7,938.99	1,386.60	8,055.59	0.00	0.00	0.00
15,300.00	90.00	179.92	6,592.92	-1,569.92	-8,038.99	1,386.74	8,154.58	0.00	0.00	0.00
15,400.00	90.00	179.92	6,592.92	-1,569.92	-8,138.99	1,386.88	8,253.58	0.00	0.00	0.00
15,500.00	90.00	179.92	6,592.92	-1,569.92	-8,238.99	1,387.02	8,352.58	0.00	0.00	0.00
15,600.00	90.00	179.92	6,592.92	-1,569.92	-8,338.99	1,387.16	8,451.58	0.00	0.00	0.00
15,700.00	90.00	179.92	6,592.92	-1,569.92	-8,438.99	1,387.30	8,550.57	0.00	0.00	0.00
15,800.00	90.00	179.92	6,592.92	-1,569.92	-8,538.99	1,387.44	8,649.57	0.00	0.00	0.00
15,900.00	90.00	179.92	6,592.92	-1,569.92	-8,638.98	1,387.58	8,748.57	0.00	0.00	0.00
16,000.00	90.00	179.92	6,592.92	-1,569.92	-8,738.98	1,387.72	8,847.57	0.00	0.00	0.00
16,100.00	90.00	179.92	6,592.92	-1,569.92	-8,838.98	1,387.85	8,946.56	0.00	0.00	0.00
16,200.00	90.00	179.92	6,592.92	-1,569.92	-8,938.98	1,387.99	9,045.56	0.00	0.00	0.00
16,300.00	90.00	179.92	6,592.92	-1,569.92	-9,038.98	1,388.13	9,144.56	0.00	0.00	0.00
16,400.00	90.00	179.92	6,592.91	-1,569.91	-9,138.98	1,388.27	9,243.56	0.00	0.00	0.00
16,500.00	90.00	179.92	6,592.91	-1,569.91	-9,238.98	1,388.41	9,342.55	0.00	0.00	0.00
16,600.00	90.00	179.92	6,592.91	-1,569.91	-9,338.98	1,388.55	9,441.55	0.00	0.00	0.00
EPI: 600ft FSL & 931ft FEL of Sec 24										
16,601.20	90.00	179.92	6,593.00	-1,570.00	-9,340.19	1,388.45	9,442.73	0.00	0.00	0.00
16,700.00	90.00	179.90	6,593.00	-1,570.00	-9,438.98	1,388.61	9,540.54	0.02	0.00	-0.02
16,800.00	90.00	179.88	6,593.00	-1,570.00	-9,538.98	1,388.80	9,639.54	0.02	0.00	-0.02
16,900.00	90.00	179.86	6,593.00	-1,570.00	-9,638.98	1,389.02	9,738.55	0.02	0.00	-0.02
BHL: 300ft FSL & 930ft FEL of Sec 24										
16,901.04	90.00	179.86	6,593.00	-1,570.00	-9,640.03	1,389.02	9,739.59	0.02	0.00	-0.02

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well FREEMAN 8-62 13-24-13
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5023.00usft (Original Well Elev)
Site:	NW NE SEC. 13 T8N R62W 6th P.M.	North Reference:	True
Well:	FREEMAN 8-62 13-24-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
591.14	591.00	PIERRE SHALE (BASE OF FOX HI			
3,891.43	3,743.00	PARKMAN			
4,796.12	4,601.00	SUSSEX			
5,209.45	4,993.00	SHANNON			
6,809.82	6,493.00	SHARON SPRINGS SHALE			
6,967.24	6,563.00	NIOBRARA FORMATION			
7,001.63	6,573.00	NIOBRARA A CHALK			
7,153.47	6,593.00	NIOBRARA A LP			

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
0.00	0.00	0.00	0.00	SHL: 710ft FNL & 2350ft FEL of Sec 13
400.00	400.00	0.00	0.00	START NUDGE (2°/100ft BUR)
1,324.37	1,308.41	65.59	132.50	EOB TO 18.49° INC
5,229.09	5,011.63	614.91	1,242.14	END OF TANGENT
6,153.46	5,920.04	680.50	1,374.64	EOD TO VERTICAL
6,253.46	6,020.04	680.50	1,374.64	KOP (10°/100ft BUR)
7,153.47	6,593.00	107.54	1,375.44	BPI: 600ft FNL & 975ft FEL of Sec 13
16,601.20	6,593.00	-9,340.19	1,388.45	EPI: 600ft FSL & 931ft FEL of Sec 24
16,901.04	6,593.00	-9,640.03	1,389.02	BHL: 300ft FSL & 930ft FEL of Sec 24