

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

SW NE SEC. 17 T8N R60W 6th P.M.

HUNT 8-60 17B-20-3

ORIGINAL WELLBORE

31 July, 2018

Plan: PROPOSAL #2

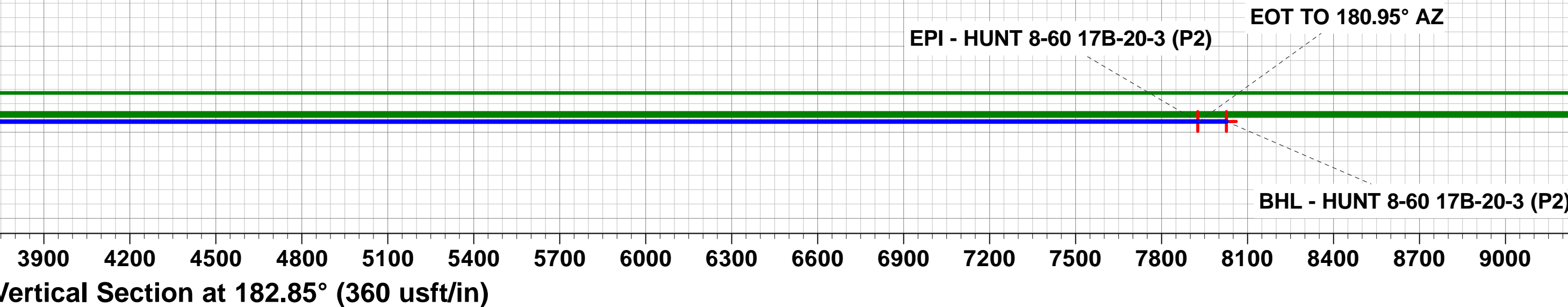
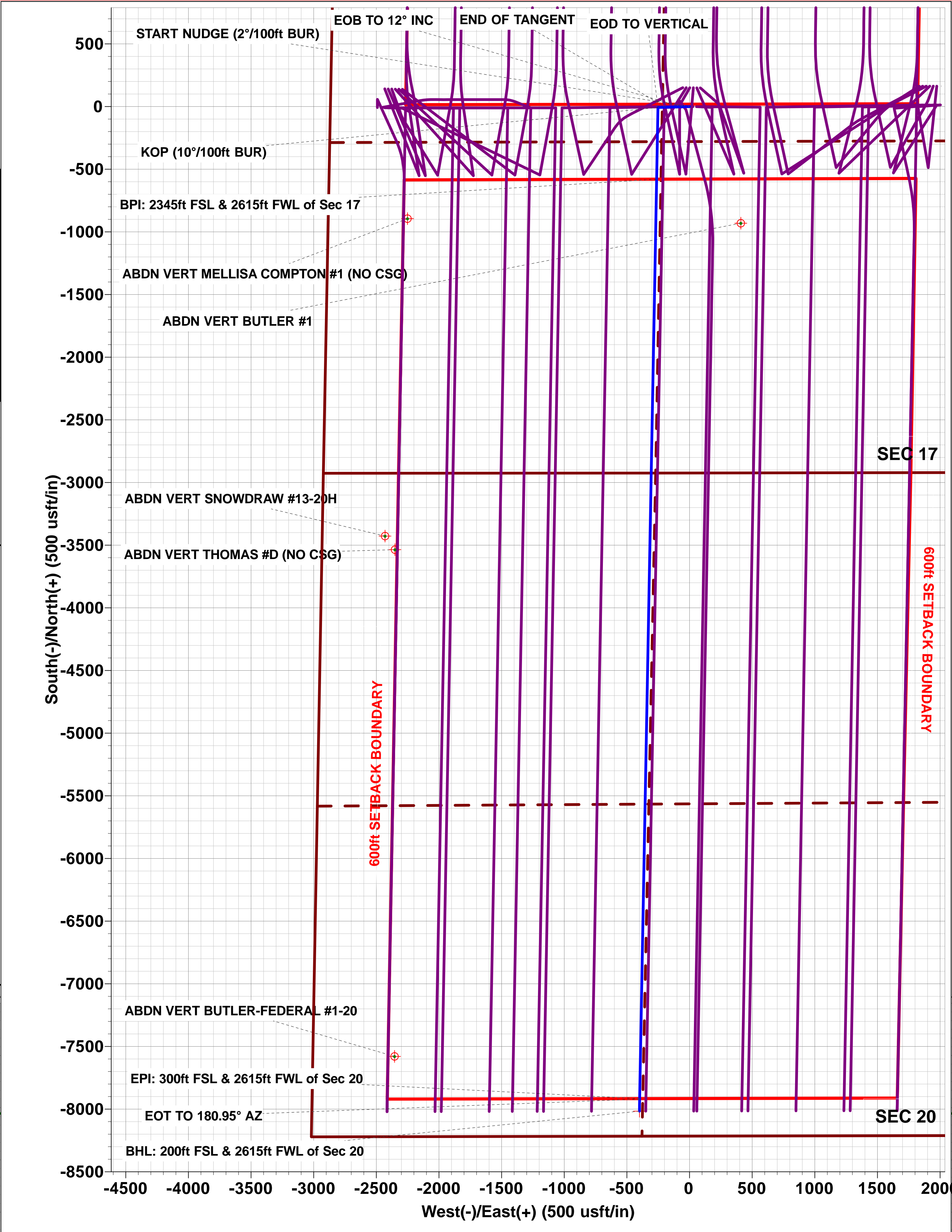
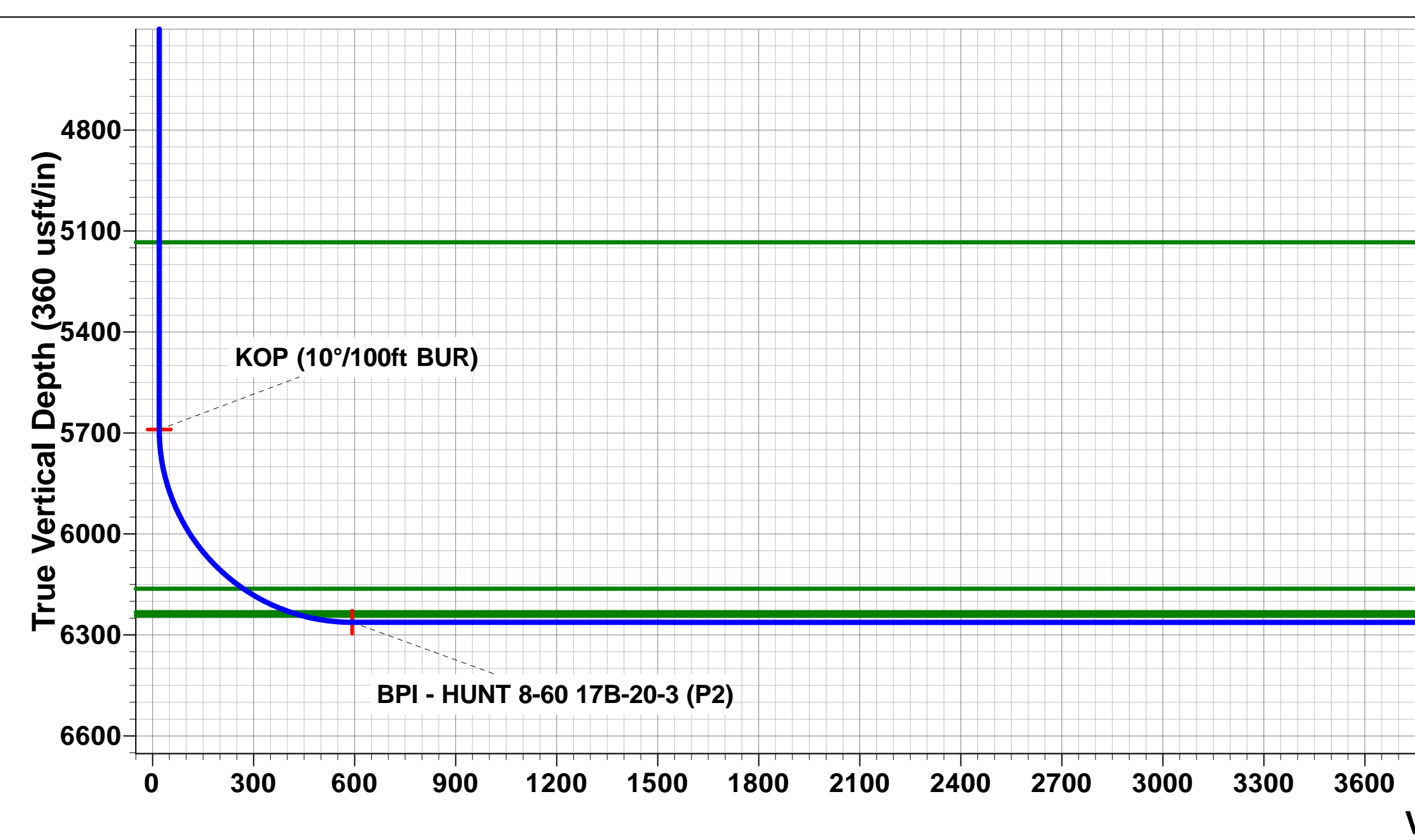
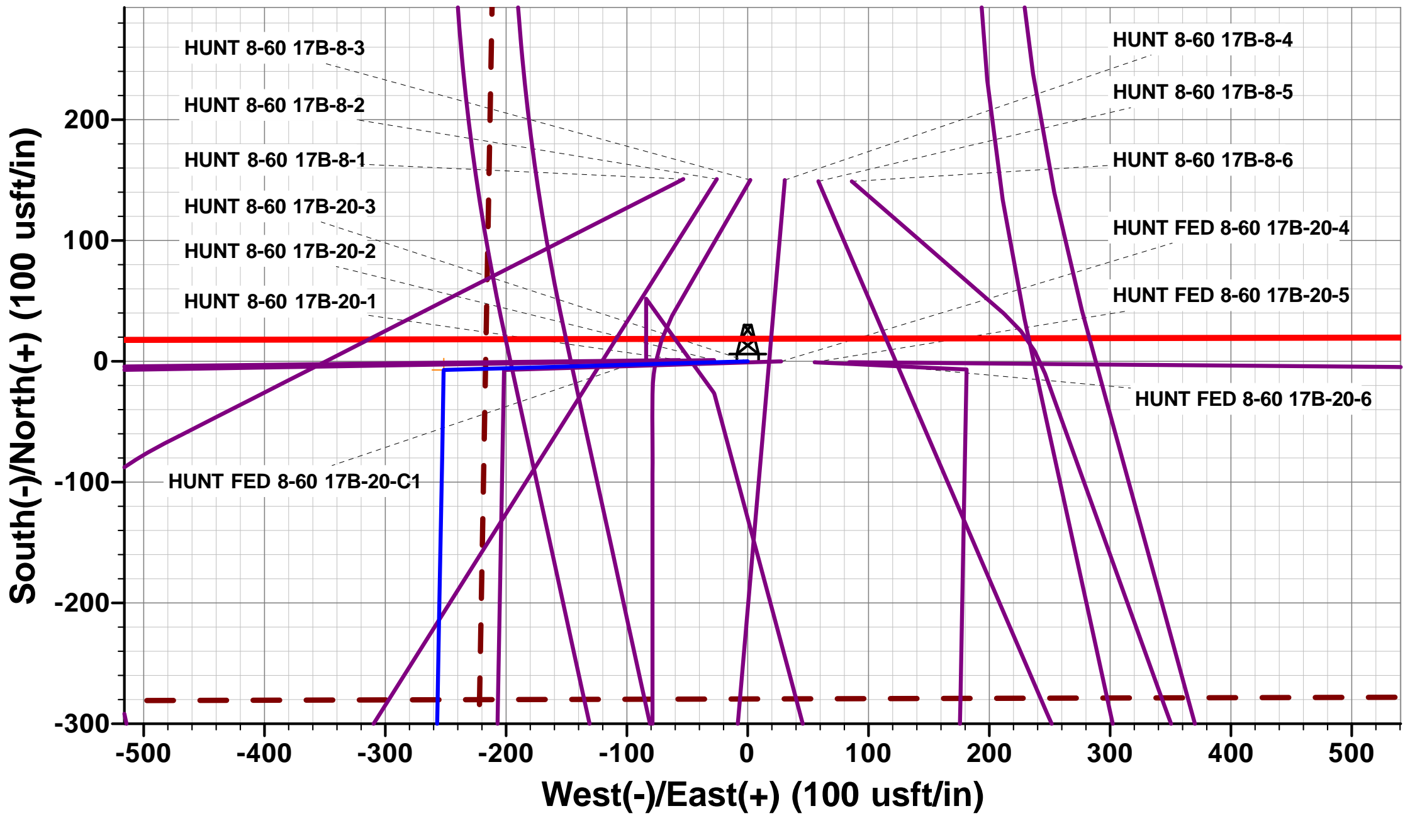
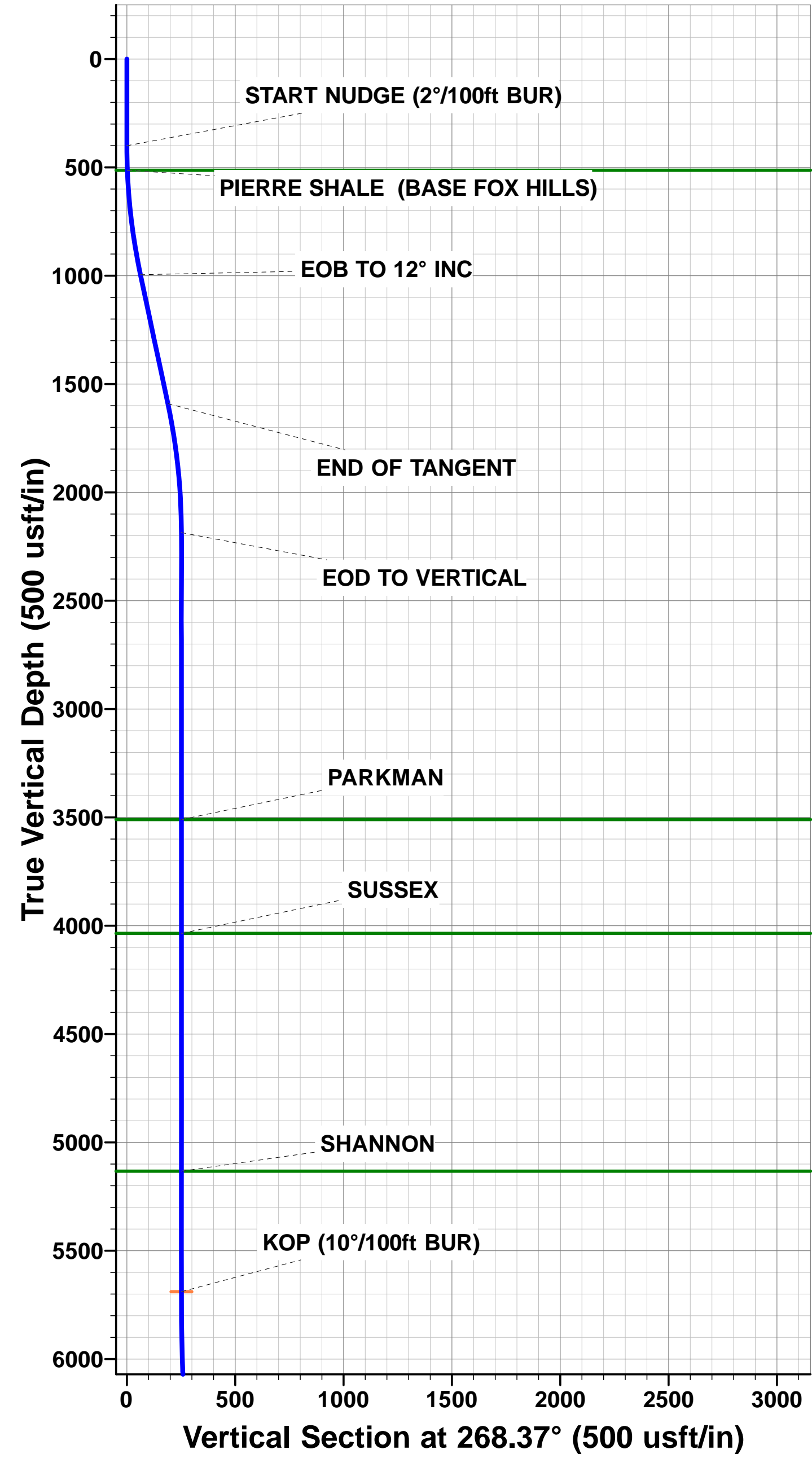




Project: WELD COUNTY, COLORADO (NAD 83)
Site: SW NE SEC. 17 T8N R60W 6th P.M.
Well: HUNT 8-60 17B-20-3
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

ANNOTATIONS										PROPOSED LOCAL COORDINATES: SHL: 2364ft FNL & 2419ft FEL Sec 17 BPI: 2345ft FSL & 2615ft FWL Sec 17 EPI: 300ft FSL & 2615ft FWL Sec 20 BHL: 200ft FSL & 2615ft FWL of Sec 20
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: 2364ft FNL & 2419ft FEL of Sec 17		
400.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)		
995.62	1000.00	12.00	268.37	-1.78	-62.58	4.89	62.60	EOB TO 12° INC		
1590.65	1608.32	12.00	268.37	-5.36	-189.00	14.76	189.08	END OF TANGENT		
2186.27	2208.32	0.00	0.00	-7.14	-251.58	19.65	251.68	EOD TO VERTICAL		
5689.50	5711.55	0.00	0.00	-7.14	-251.58	19.65	251.68	KOP (10°/100ft BUR)		
6262.50	6611.57	90.00	181.06	-580.00	-262.18	592.33	824.64	BPI: 2345ft FSL & 2615ft FWL of Sec 17		
6262.50	13949.27	90.00	181.06	-7916.45	-397.69	7926.43	8162.34	EPI: 300ft FSL & 2615ft FWL of Sec 20		
6262.50	13952.65	90.00	180.95	-7919.83	-397.75	7929.81	8165.72	EOT TO 180.95° AZ		
6262.50	14049.11	90.00	180.95	-8016.27	-399.36	8026.21	8262.18	BHL: 200ft FSL & 2615ft FWL of Sec 20		

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - HUNT 8-60 17B-20-3 (P2)	5689.50	-7.14	-251.58	40.663049	-104.115357
BHL - HUNT 8-60 17B-20-3 (P2)	6262.50	-8016.27	-399.36	40.641066	-104.115889
BPI - HUNT 8-60 17B-20-3 (P2)	6262.50	-580.00	-262.18	40.661477	-104.115395
EPI - HUNT 8-60 17B-20-3 (P2)	6262.50	-7916.45	-397.69	40.641340	-104.115883



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HUNT 8-60 17B-20-3
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4963.50usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4963.50usft (Original Well Elev)
Site:	SW NE SEC. 17 T8N R60W 6th P.M.	North Reference:	True
Well:	HUNT 8-60 17B-20-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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 NE SEC. 17 T8N R60W 6th P.M.			
Site Position:		Northing:	1,487,551.70 usft	Latitude:	40.663483
From:	Lat/Long	Easting:	3,384,321.29 usft	Longitude:	-104.114642
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000 ft	Grid Convergence:	0.90 °

Well	HUNT 8-60 17B-20-3					
Well Position	+N-S	-150.84 usft	Northing:	1,487,401.72 usft	Latitude:	40.663069
	+E-W	53.27 usft	Easting:	3,384,376.90 usft	Longitude:	-104.114450
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,938.50 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	05/08/2017	7.87	67.16	52,578

Design	PROPOSAL #2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.00	0.00	0.00	182.85

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	-4,963.50	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	-4,563.50	0.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	12.00	268.37	995.62	-3,967.88	-1.78	-62.58	2.00	2.00	0.00	268.37	
1,608.32	12.00	268.37	1,590.65	-3,372.85	-5.36	-189.00	0.00	0.00	0.00	0.00	
2,208.32	0.00	0.00	2,186.27	-2,777.23	-7.14	-251.58	2.00	-2.00	0.00	180.00	
5,711.55	0.00	0.00	5,689.50	726.00	-7.14	-251.58	0.00	0.00	0.00	0.00	KOP - HUNT 8-60 1
6,611.57	90.00	181.06	6,262.50	1,299.00	-580.00	-262.18	10.00	10.00	-19.88	181.06	BPI - HUNT 8-60 17
13,949.27	90.00	181.06	6,262.50	1,299.00	-7,916.45	-397.69	0.00	0.00	0.00	-26.42	EPI - HUNT 8-60 17
13,952.65	90.00	180.95	6,262.50	1,299.00	-7,919.82	-397.75	3.00	-0.12	-3.00	-92.37	
14,049.11	90.00	180.95	6,262.50	1,299.00	-8,016.27	-399.36	0.00	0.00	0.00	0.00	BHL - HUNT 8-60 1

Planning Report



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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4963.50usft (Original Well Elev)
Site:	SW NE SEC. 17 T8N R60W 6th P.M.	North Reference:	True
Well:	HUNT 8-60 17B-20-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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: 2364ft FNL & 2419ft FEL of Sec 17										
0.00	0.00	0.00	0.00	4,963.50	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,863.50	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,763.50	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	4,663.50	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	4,563.50	0.00	0.00	0.00	0.00	0.00	0.00
500.00	2.00	268.37	499.98	4,463.52	-0.05	-1.74	0.14	2.00	2.00	0.00
PIERRE SHALE (BASE FOX HILLS)										
513.53	2.27	268.37	513.50	4,450.00	-0.06	-2.25	0.18	2.00	2.00	0.00
600.00	4.00	268.37	599.84	4,363.66	-0.20	-6.98	0.54	2.00	2.00	0.00
700.00	6.00	268.37	699.45	4,264.05	-0.45	-15.69	1.23	2.00	2.00	0.00
800.00	8.00	268.37	798.70	4,164.80	-0.79	-27.87	2.18	2.00	2.00	0.00
900.00	10.00	268.37	897.47	4,066.03	-1.23	-43.51	3.40	2.00	2.00	0.00
EOB TO 12° INC										
1,000.00	12.00	268.37	995.62	3,967.88	-1.78	-62.58	4.89	2.00	2.00	0.00
1,100.00	12.00	268.37	1,093.44	3,870.06	-2.37	-83.36	6.51	0.00	0.00	0.00
1,200.00	12.00	268.37	1,191.25	3,772.25	-2.96	-104.14	8.13	0.00	0.00	0.00
1,300.00	12.00	268.37	1,289.07	3,674.43	-3.55	-124.93	9.76	0.00	0.00	0.00
1,400.00	12.00	268.37	1,386.88	3,576.62	-4.14	-145.71	11.38	0.00	0.00	0.00
1,500.00	12.00	268.37	1,484.70	3,478.80	-4.73	-166.49	13.00	0.00	0.00	0.00
1,600.00	12.00	268.37	1,582.51	3,380.99	-5.31	-187.27	14.63	0.00	0.00	0.00
END OF TANGENT										
1,608.32	12.00	268.37	1,590.65	3,372.85	-5.36	-189.00	14.76	0.00	0.00	0.00
1,700.00	10.17	268.37	1,680.62	3,282.88	-5.86	-206.62	16.14	2.00	-2.00	0.00
1,800.00	8.17	268.37	1,779.33	3,184.17	-6.32	-222.54	17.38	2.00	-2.00	0.00
1,900.00	6.17	268.37	1,878.55	3,084.95	-6.67	-235.01	18.35	2.00	-2.00	0.00
2,000.00	4.17	268.37	1,978.14	2,985.36	-6.93	-244.01	19.06	2.00	-2.00	0.00
2,100.00	2.17	268.37	2,077.98	2,885.52	-7.08	-249.53	19.49	2.00	-2.00	0.00
2,200.00	0.17	268.37	2,177.95	2,785.55	-7.14	-251.57	19.65	2.00	-2.00	0.00
EOD TO VERTICAL										
2,208.32	0.00	0.00	2,186.27	2,777.23	-7.14	-251.58	19.65	2.00	-2.00	0.00
2,300.00	0.00	0.00	2,277.95	2,685.55	-7.14	-251.58	19.65	0.00	0.00	0.00
2,400.00	0.00	0.00	2,377.95	2,585.55	-7.14	-251.58	19.65	0.00	0.00	0.00
2,500.00	0.00	0.00	2,477.95	2,485.55	-7.14	-251.58	19.65	0.00	0.00	0.00
2,600.00	0.00	0.00	2,577.95	2,385.55	-7.14	-251.58	19.65	0.00	0.00	0.00
2,700.00	0.00	0.00	2,677.95	2,285.55	-7.14	-251.58	19.65	0.00	0.00	0.00
2,800.00	0.00	0.00	2,777.95	2,185.55	-7.14	-251.58	19.65	0.00	0.00	0.00
2,900.00	0.00	0.00	2,877.95	2,085.55	-7.14	-251.58	19.65	0.00	0.00	0.00
3,000.00	0.00	0.00	2,977.95	1,985.55	-7.14	-251.58	19.65	0.00	0.00	0.00
3,100.00	0.00	0.00	3,077.95	1,885.55	-7.14	-251.58	19.65	0.00	0.00	0.00
3,200.00	0.00	0.00	3,177.95	1,785.55	-7.14	-251.58	19.65	0.00	0.00	0.00
3,300.00	0.00	0.00	3,277.95	1,685.55	-7.14	-251.58	19.65	0.00	0.00	0.00
3,400.00	0.00	0.00	3,377.95	1,585.55	-7.14	-251.58	19.65	0.00	0.00	0.00
3,500.00	0.00	0.00	3,477.95	1,485.55	-7.14	-251.58	19.65	0.00	0.00	0.00
PARKMAN										
3,532.55	0.00	0.00	3,510.50	1,453.00	-7.14	-251.58	19.65	0.00	0.00	0.00
3,600.00	0.00	0.00	3,577.95	1,385.55	-7.14	-251.58	19.65	0.00	0.00	0.00
3,700.00	0.00	0.00	3,677.95	1,285.55	-7.14	-251.58	19.65	0.00	0.00	0.00
3,800.00	0.00	0.00	3,777.95	1,185.55	-7.14	-251.58	19.65	0.00	0.00	0.00
3,900.00	0.00	0.00	3,877.95	1,085.55	-7.14	-251.58	19.65	0.00	0.00	0.00
4,000.00	0.00	0.00	3,977.95	985.55	-7.14	-251.58	19.65	0.00	0.00	0.00
SUSSEX										

Planning Report



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Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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)
4,057.55	0.00	0.00	4,035.50	928.00	-7.14	-251.58	19.65	0.00	0.00	0.00
4,100.00	0.00	0.00	4,077.95	885.55	-7.14	-251.58	19.65	0.00	0.00	0.00
4,200.00	0.00	0.00	4,177.95	785.55	-7.14	-251.58	19.65	0.00	0.00	0.00
4,300.00	0.00	0.00	4,277.95	685.55	-7.14	-251.58	19.65	0.00	0.00	0.00
4,400.00	0.00	0.00	4,377.95	585.55	-7.14	-251.58	19.65	0.00	0.00	0.00
4,500.00	0.00	0.00	4,477.95	485.55	-7.14	-251.58	19.65	0.00	0.00	0.00
4,600.00	0.00	0.00	4,577.95	385.55	-7.14	-251.58	19.65	0.00	0.00	0.00
4,700.00	0.00	0.00	4,677.95	285.55	-7.14	-251.58	19.65	0.00	0.00	0.00
4,800.00	0.00	0.00	4,777.95	185.55	-7.14	-251.58	19.65	0.00	0.00	0.00
4,900.00	0.00	0.00	4,877.95	85.55	-7.14	-251.58	19.65	0.00	0.00	0.00
5,000.00	0.00	0.00	4,977.95	-14.45	-7.14	-251.58	19.65	0.00	0.00	0.00
5,100.00	0.00	0.00	5,077.95	-114.45	-7.14	-251.58	19.65	0.00	0.00	0.00
SHANNON										
5,155.55	0.00	0.00	5,133.50	-170.00	-7.14	-251.58	19.65	0.00	0.00	0.00
5,200.00	0.00	0.00	5,177.95	-214.45	-7.14	-251.58	19.65	0.00	0.00	0.00
5,300.00	0.00	0.00	5,277.95	-314.45	-7.14	-251.58	19.65	0.00	0.00	0.00
5,400.00	0.00	0.00	5,377.95	-414.45	-7.14	-251.58	19.65	0.00	0.00	0.00
5,500.00	0.00	0.00	5,477.95	-514.45	-7.14	-251.58	19.65	0.00	0.00	0.00
5,600.00	0.00	0.00	5,577.95	-614.45	-7.14	-251.58	19.65	0.00	0.00	0.00
5,700.00	0.00	0.00	5,677.95	-714.45	-7.14	-251.58	19.65	0.00	0.00	0.00
KOP (10°/100ft BUR)										
5,711.55	0.00	0.00	5,689.50	-726.00	-7.14	-251.58	19.65	0.00	0.00	0.00
5,800.00	8.84	181.06	5,777.60	-814.10	-13.95	-251.71	26.46	10.00	10.00	0.00
5,900.00	18.84	181.06	5,874.57	-911.07	-37.85	-252.15	50.35	10.00	10.00	0.00
6,000.00	28.84	181.06	5,965.92	-1,002.42	-78.21	-252.90	90.70	10.00	10.00	0.00
6,100.00	38.84	181.06	6,048.87	-1,085.37	-133.82	-253.92	146.29	10.00	10.00	0.00
6,200.00	48.84	181.06	6,120.91	-1,157.41	-202.99	-255.20	215.44	10.00	10.00	0.00
SHARON SPRINGS SHALE										
6,267.96	55.64	181.06	6,162.50	-1,199.00	-256.68	-256.20	269.11	10.00	10.00	0.00
6,300.00	58.84	181.06	6,179.84	-1,216.34	-283.61	-256.70	296.03	10.00	10.00	0.00
6,400.00	68.84	181.06	6,223.87	-1,260.37	-373.24	-258.36	385.63	10.00	10.00	0.00
NIOBRARA FORMATION										
6,425.38	71.38	181.06	6,232.50	-1,269.00	-397.10	-258.80	409.48	10.00	10.00	0.00
NIOBRARA A CHALK										
6,459.78	74.82	181.06	6,242.50	-1,279.00	-430.00	-259.41	442.38	10.00	10.00	0.00
6,500.00	78.84	181.06	6,251.66	-1,288.16	-469.15	-260.13	481.51	10.00	10.00	0.00
6,600.00	88.84	181.06	6,262.38	-1,298.88	-568.43	-261.97	580.76	10.00	10.00	0.00
BPI: 2345ft FSL & 2615ft FWL of Sec 17										
6,611.57	90.00	181.06	6,262.50	-1,299.00	-580.00	-262.18	592.33	10.00	10.00	0.00
6,700.00	90.00	181.06	6,262.51	-1,299.01	-668.41	-263.82	680.71	0.00	0.00	0.00
6,800.00	90.00	181.06	6,262.51	-1,299.01	-768.40	-265.67	780.66	0.00	0.00	0.00
6,900.00	90.00	181.06	6,262.52	-1,299.02	-868.38	-267.52	880.61	0.00	0.00	0.00
7,000.00	90.00	181.06	6,262.53	-1,299.03	-968.36	-269.37	980.57	0.00	0.00	0.00
7,100.00	90.00	181.06	6,262.53	-1,299.03	-1,068.35	-271.22	1,080.52	0.00	0.00	0.00
7,200.00	90.00	181.06	6,262.54	-1,299.04	-1,168.33	-273.07	1,180.47	0.00	0.00	0.00
7,300.00	90.00	181.06	6,262.54	-1,299.04	-1,268.31	-274.92	1,280.42	0.00	0.00	0.00
7,400.00	90.00	181.06	6,262.55	-1,299.05	-1,368.29	-276.77	1,380.37	0.00	0.00	0.00
7,500.00	90.00	181.06	6,262.56	-1,299.06	-1,468.28	-278.62	1,480.32	0.00	0.00	0.00
7,600.00	90.00	181.06	6,262.56	-1,299.06	-1,568.26	-280.47	1,580.27	0.00	0.00	0.00
7,700.00	90.00	181.06	6,262.57	-1,299.07	-1,668.24	-282.32	1,680.22	0.00	0.00	0.00
7,800.00	90.00	181.06	6,262.57	-1,299.07	-1,768.23	-284.16	1,780.17	0.00	0.00	0.00
7,900.00	90.00	181.06	6,262.58	-1,299.08	-1,868.21	-286.01	1,880.13	0.00	0.00	0.00
8,000.00	90.00	181.06	6,262.58	-1,299.08	-1,968.19	-287.86	1,980.08	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HUNT 8-60 17B-20-3
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4963.50usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4963.50usft (Original Well Elev)
Site:	SW NE SEC. 17 T8N R60W 6th P.M.	North Reference:	True
Well:	HUNT 8-60 17B-20-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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	181.06	6,262.59	-1,299.09	-2,068.17	-289.71	2,080.03	0.00	0.00	0.00
8,200.00	90.00	181.06	6,262.59	-1,299.09	-2,168.16	-291.56	2,179.98	0.00	0.00	0.00
8,300.00	90.00	181.06	6,262.59	-1,299.09	-2,268.14	-293.41	2,279.93	0.00	0.00	0.00
8,400.00	90.00	181.06	6,262.60	-1,299.10	-2,368.12	-295.26	2,379.88	0.00	0.00	0.00
8,500.00	90.00	181.06	6,262.60	-1,299.10	-2,468.11	-297.11	2,479.83	0.00	0.00	0.00
8,600.00	90.00	181.06	6,262.60	-1,299.10	-2,568.09	-298.96	2,579.78	0.00	0.00	0.00
8,700.00	90.00	181.06	6,262.61	-1,299.11	-2,668.07	-300.80	2,679.73	0.00	0.00	0.00
8,800.00	90.00	181.06	6,262.61	-1,299.11	-2,768.05	-302.65	2,779.68	0.00	0.00	0.00
8,900.00	90.00	181.06	6,262.61	-1,299.11	-2,868.04	-304.50	2,879.64	0.00	0.00	0.00
9,000.00	90.00	181.06	6,262.62	-1,299.12	-2,968.02	-306.35	2,979.59	0.00	0.00	0.00
9,100.00	90.00	181.06	6,262.62	-1,299.12	-3,068.00	-308.20	3,079.54	0.00	0.00	0.00
9,200.00	90.00	181.06	6,262.62	-1,299.12	-3,167.99	-310.04	3,179.49	0.00	0.00	0.00
9,300.00	90.00	181.06	6,262.62	-1,299.12	-3,267.97	-311.89	3,279.44	0.00	0.00	0.00
9,400.00	90.00	181.06	6,262.62	-1,299.12	-3,367.95	-313.74	3,379.39	0.00	0.00	0.00
9,500.00	90.00	181.06	6,262.63	-1,299.13	-3,467.93	-315.59	3,479.34	0.00	0.00	0.00
9,600.00	90.00	181.06	6,262.63	-1,299.13	-3,567.92	-317.43	3,579.29	0.00	0.00	0.00
9,700.00	90.00	181.06	6,262.63	-1,299.13	-3,667.90	-319.28	3,679.24	0.00	0.00	0.00
9,800.00	90.00	181.06	6,262.63	-1,299.13	-3,767.88	-321.13	3,779.19	0.00	0.00	0.00
9,900.00	90.00	181.06	6,262.63	-1,299.13	-3,867.87	-322.98	3,879.15	0.00	0.00	0.00
10,000.00	90.00	181.06	6,262.63	-1,299.13	-3,967.85	-324.82	3,979.10	0.00	0.00	0.00
10,100.00	90.00	181.06	6,262.63	-1,299.13	-4,067.83	-326.67	4,079.05	0.00	0.00	0.00
10,200.00	90.00	181.06	6,262.63	-1,299.13	-4,167.82	-328.52	4,179.00	0.00	0.00	0.00
10,300.00	90.00	181.06	6,262.63	-1,299.13	-4,267.80	-330.36	4,278.95	0.00	0.00	0.00
10,400.00	90.00	181.06	6,262.63	-1,299.13	-4,367.78	-332.21	4,378.90	0.00	0.00	0.00
10,500.00	90.00	181.06	6,262.63	-1,299.13	-4,467.76	-334.06	4,478.85	0.00	0.00	0.00
10,600.00	90.00	181.06	6,262.63	-1,299.13	-4,567.75	-335.90	4,578.80	0.00	0.00	0.00
10,700.00	90.00	181.06	6,262.63	-1,299.13	-4,667.73	-337.75	4,678.75	0.00	0.00	0.00
10,800.00	90.00	181.06	6,262.63	-1,299.13	-4,767.71	-339.60	4,778.70	0.00	0.00	0.00
10,900.00	90.00	181.06	6,262.63	-1,299.13	-4,867.70	-341.44	4,878.66	0.00	0.00	0.00
11,000.00	90.00	181.06	6,262.63	-1,299.13	-4,967.68	-343.29	4,978.61	0.00	0.00	0.00
11,100.00	90.00	181.06	6,262.63	-1,299.13	-5,067.66	-345.13	5,078.56	0.00	0.00	0.00
11,200.00	90.00	181.06	6,262.62	-1,299.12	-5,167.65	-346.98	5,178.51	0.00	0.00	0.00
11,300.00	90.00	181.06	6,262.62	-1,299.12	-5,267.63	-348.83	5,278.46	0.00	0.00	0.00
11,400.00	90.00	181.06	6,262.62	-1,299.12	-5,367.61	-350.67	5,378.41	0.00	0.00	0.00
11,500.00	90.00	181.06	6,262.62	-1,299.12	-5,467.59	-352.52	5,478.36	0.00	0.00	0.00
11,600.00	90.00	181.06	6,262.61	-1,299.11	-5,567.58	-354.36	5,578.31	0.00	0.00	0.00
11,700.00	90.00	181.06	6,262.61	-1,299.11	-5,667.56	-356.21	5,678.26	0.00	0.00	0.00
11,800.00	90.00	181.06	6,262.61	-1,299.11	-5,767.54	-358.05	5,778.21	0.00	0.00	0.00
11,900.00	90.00	181.06	6,262.61	-1,299.11	-5,867.53	-359.90	5,878.17	0.00	0.00	0.00
12,000.00	90.00	181.06	6,262.60	-1,299.10	-5,967.51	-361.74	5,978.12	0.00	0.00	0.00
12,100.00	90.00	181.06	6,262.60	-1,299.10	-6,067.49	-363.59	6,078.07	0.00	0.00	0.00
12,200.00	90.00	181.06	6,262.60	-1,299.10	-6,167.47	-365.43	6,178.02	0.00	0.00	0.00
12,300.00	90.00	181.06	6,262.59	-1,299.09	-6,267.46	-367.28	6,277.97	0.00	0.00	0.00
12,400.00	90.00	181.06	6,262.59	-1,299.09	-6,367.44	-369.12	6,377.92	0.00	0.00	0.00
12,500.00	90.00	181.06	6,262.58	-1,299.08	-6,467.42	-370.97	6,477.87	0.00	0.00	0.00
12,600.00	90.00	181.06	6,262.58	-1,299.08	-6,567.41	-372.81	6,577.82	0.00	0.00	0.00
12,700.00	90.00	181.06	6,262.57	-1,299.07	-6,667.39	-374.66	6,677.77	0.00	0.00	0.00
12,800.00	90.00	181.06	6,262.57	-1,299.07	-6,767.37	-376.50	6,777.72	0.00	0.00	0.00
12,900.00	90.00	181.06	6,262.56	-1,299.06	-6,867.36	-378.35	6,877.67	0.00	0.00	0.00
13,000.00	90.00	181.06	6,262.56	-1,299.06	-6,967.34	-380.19	6,977.63	0.00	0.00	0.00
13,100.00	90.00	181.06	6,262.55	-1,299.05	-7,067.32	-382.03	7,077.58	0.00	0.00	0.00
13,200.00	90.00	181.06	6,262.55	-1,299.05	-7,167.30	-383.88	7,177.53	0.00	0.00	0.00
13,300.00	90.00	181.06	6,262.54	-1,299.04	-7,267.29	-385.72	7,277.48	0.00	0.00	0.00
13,400.00	90.00	181.06	6,262.54	-1,299.04	-7,367.27	-387.57	7,377.43	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well HUNT 8-60 17B-20-3
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 4963.50usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4963.50usft (Original Well Elev)
Site:	SW NE SEC. 17 T8N R60W 6th P.M.	North Reference:	True
Well:	HUNT 8-60 17B-20-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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	181.06	6,262.53	-1,299.03	-7,467.25	-389.41	7,477.38	0.00	0.00	0.00
13,600.00	90.00	181.06	6,262.52	-1,299.02	-7,567.24	-391.25	7,577.33	0.00	0.00	0.00
13,700.00	90.00	181.06	6,262.52	-1,299.02	-7,667.22	-393.10	7,677.28	0.00	0.00	0.00
13,800.00	90.00	181.06	6,262.51	-1,299.01	-7,767.20	-394.94	7,777.23	0.00	0.00	0.00
13,900.00	90.00	181.06	6,262.50	-1,299.00	-7,867.19	-396.78	7,877.18	0.00	0.00	0.00
EPI: 300ft FSL & 2615ft FWL of Sec 20										
13,949.27	90.00	181.06	6,262.50	-1,299.00	-7,916.45	-397.69	7,926.43	0.00	0.00	0.00
EOT TO 180.95° AZ										
13,952.65	90.00	180.95	6,262.50	-1,299.00	-7,919.83	-397.75	7,929.81	3.00	-0.12	-3.00
14,000.00	90.00	180.95	6,262.50	-1,299.00	-7,967.17	-398.54	7,977.13	0.00	0.00	0.00
BHL: 200ft FSL & 2615ft FWL of Sec 20										
14,049.11	90.00	180.95	6,262.50	-1,299.00	-8,016.27	-399.36	8,026.21	0.00	0.00	0.00

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
513.53	513.50	PIERRE SHALE (BASE FOX HILLS			
3,532.55	3,510.50	PARKMAN			
4,057.55	4,035.50	SUSSEX			
5,155.55	5,133.50	SHANNON			
6,267.96	6,162.50	SHARON SPRINGS SHALE			
6,425.38	6,232.50	NIOBRARA FORMATION			
6,459.78	6,242.50	NIOBRARA A CHALK			

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 2364ft FNL & 2419ft FEL of Sec 17
400.00	400.00	0.00	0.00	START NUDGE (2°/100ft BUR)
1,000.00	995.62	-1.78	-62.58	EOB TO 12° INC
1,608.32	1,590.65	-5.36	-189.00	END OF TANGENT
2,208.32	2,186.27	-7.14	-251.58	EOD TO VERTICAL
5,711.55	5,689.50	-7.14	-251.58	KOP (10°/100ft BUR)
6,611.57	6,262.50	-580.00	-262.18	BPI: 2345ft FSL & 2615ft FWL of Sec 17
13,949.27	6,262.50	-7,916.45	-397.69	EPI: 300ft FSL & 2615ft FWL of Sec 20
13,952.65	6,262.50	-7,919.83	-397.75	EOT TO 180.95° AZ
14,049.11	6,262.50	-8,016.27	-399.36	BHL: 200ft FSL & 2615ft FWL of Sec 20