

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

SE SE SEC. 11 T5N R61W 6th P.M.

GROTHER 5-61 11B-2-5

ORIGINAL WELLBORE

26 April, 2022

Plan: PROPOSAL #2





Project: WELD COUNTY, COLORADO (NAD 83)
Site: SE SE SEC. 11 T5N R61W 6th P.M.
Well: GROTHEER 5-61 11B-2-5
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSection	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 460ft FSL & 1210ft FEL of Sec 11
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	START NUDGE #1 (2°/100ft BUR)
550.00	5.00	0.00	549.68	10.90	0.00	10.87	10.90	EOB TO 5° INC
644.00	5.00	0.00	643.33	19.09	0.00	19.04	19.09	END OF TANGENT
894.00	0.00	0.00	893.01	30.00	0.00	29.91	30.00	EOD TO VERTICAL
1245.60	0.00	0.00	1244.61	30.00	0.00	29.91	30.00	START NUDGE #2 (2°/100ft BUR)
1845.60	12.00	139.55	1840.23	-17.64	40.62	-14.58	92.60	EOB TO 12° INC
4918.03	12.00	139.55	4845.52	-503.75	455.05	-468.57	731.39	END OF TANGENT
5518.03	0.00	0.00	5441.14	-551.39	495.67	-513.06	793.99	EOD TO VERTICAL
5618.03	0.00	0.00	5541.14	-551.39	495.67	-513.06	793.99	KOP (10°/100ft BUR)
6518.02	90.00	13.45	6114.10	5.85	628.93	52.53	1366.94	BPI: 460ft FSL & 581ft FEL of Sec 11
6956.13	90.00	0.31	6114.10	439.85	681.29	489.22	1805.05	EOT TO 0.31° AZ
16237.76	90.00	0.31	6114.10	9721.35	731.00	9748.79	11086.68	EPI: 460ft FNL & 558ft FEL of Sec 2
16242.85	90.00	0.15	6114.10	9726.44	731.02	9753.87	11091.77	EOT TO 0.15° AZ
16337.59	90.00	0.15	6114.10	9821.17	731.28	9848.36	11186.51	BHL: 360ft FNL & 559ft FEL of Sec 2

PROPOSED LOCAL COORDINATES:

SHL: 460ft FSL & 1210ft FEL Sec 11

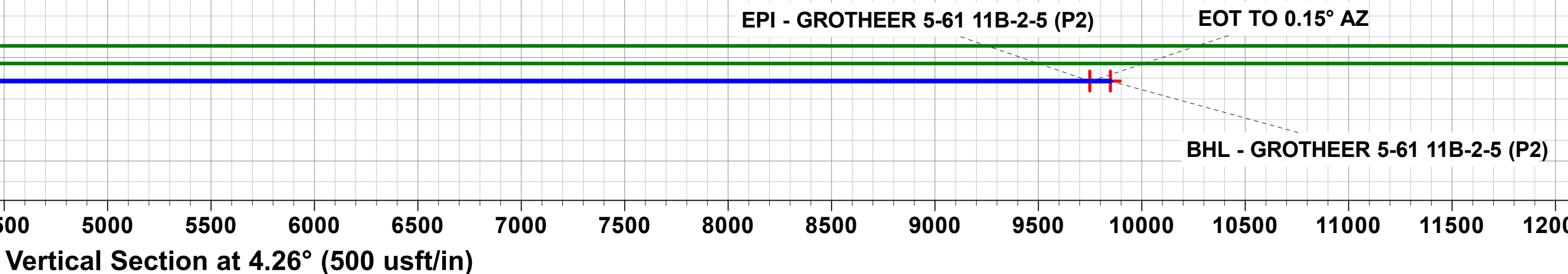
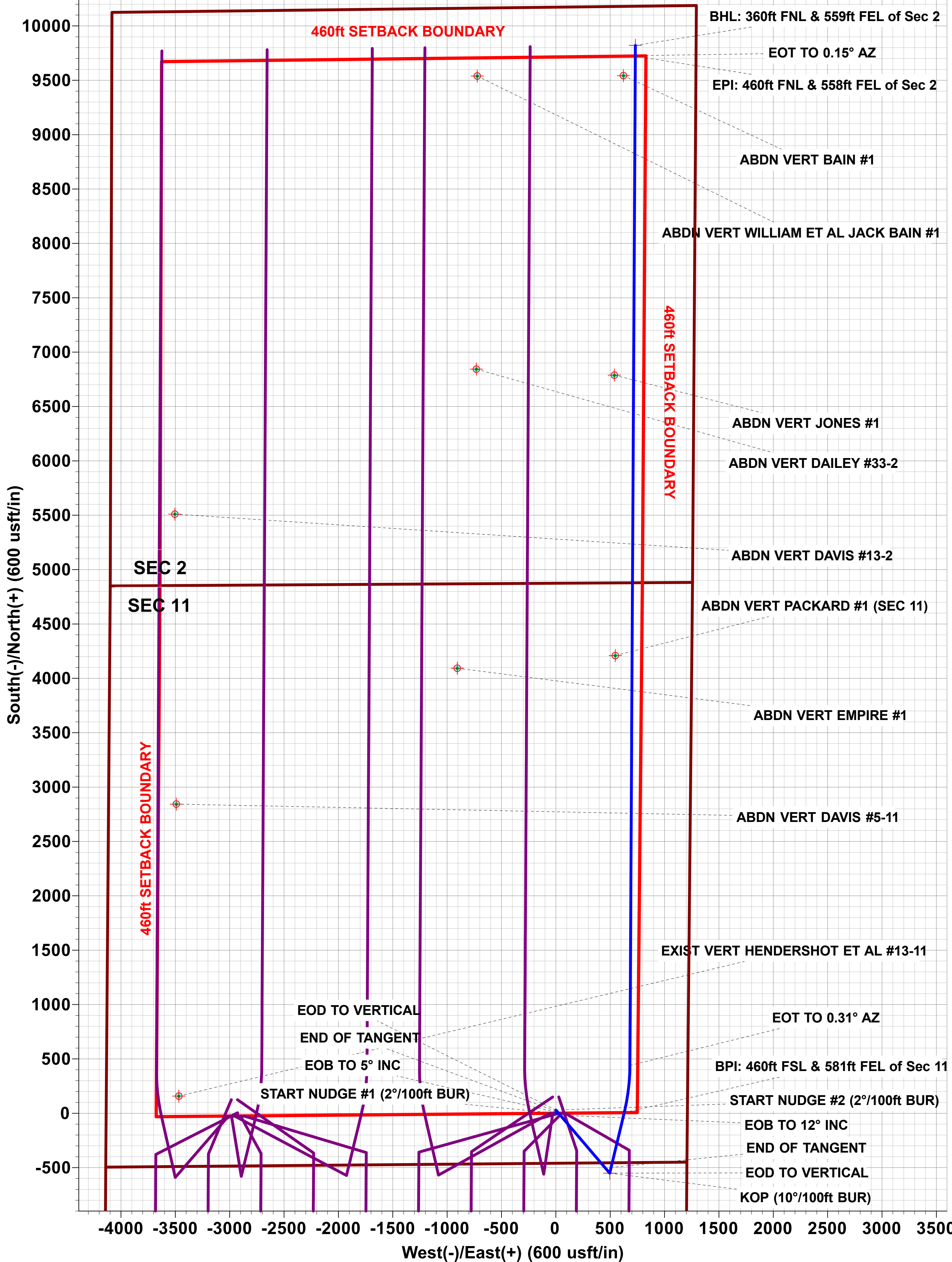
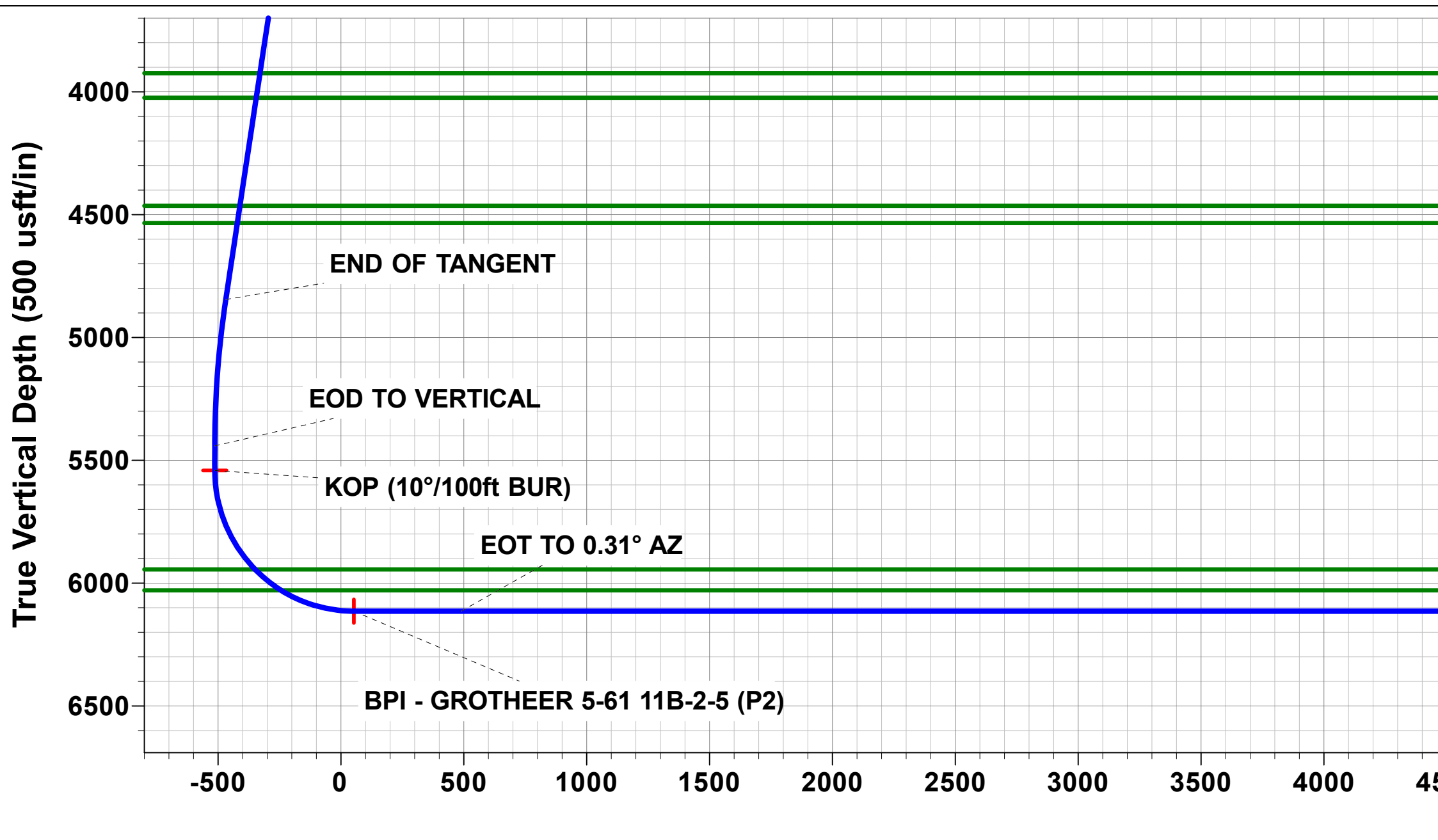
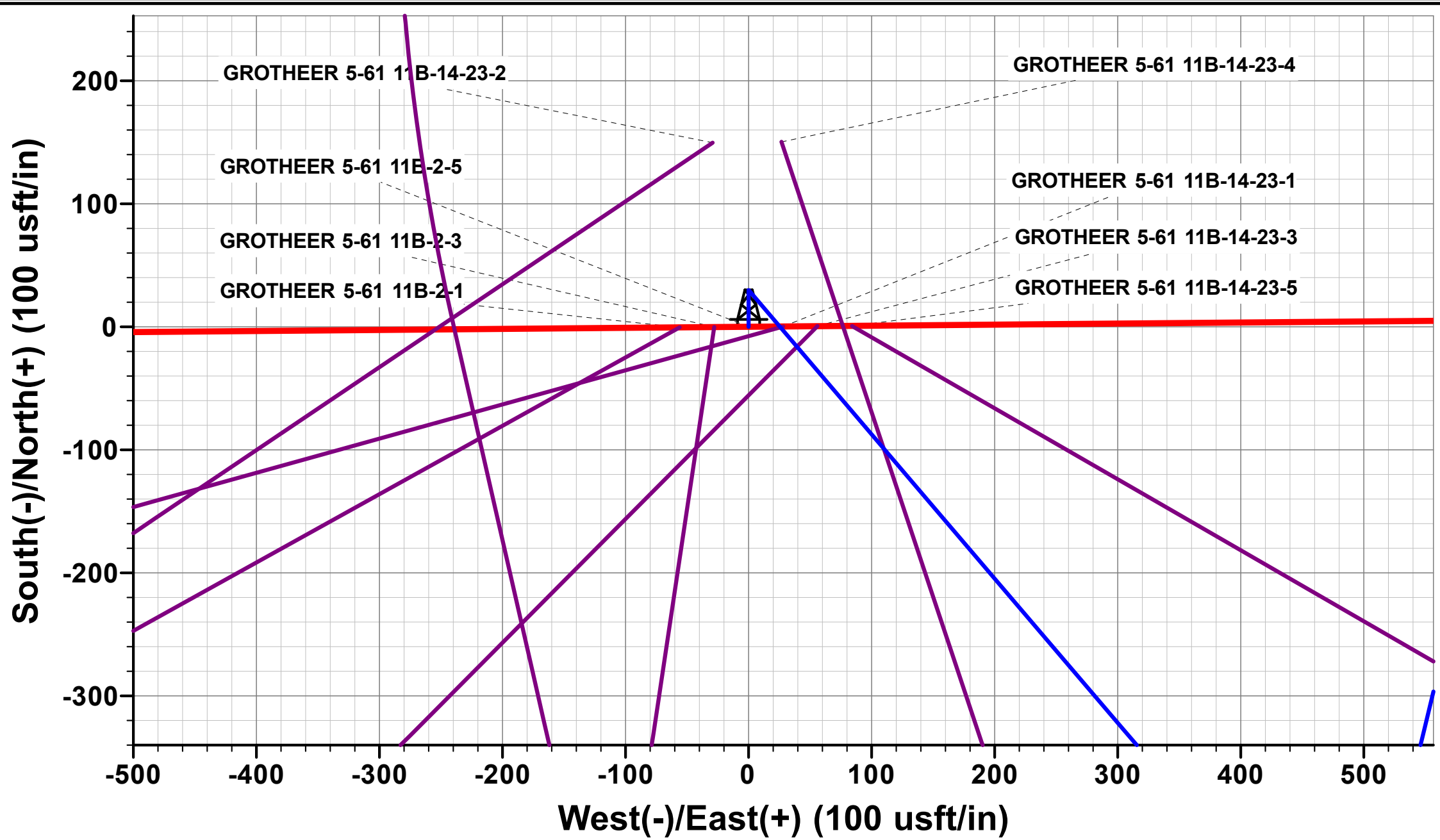
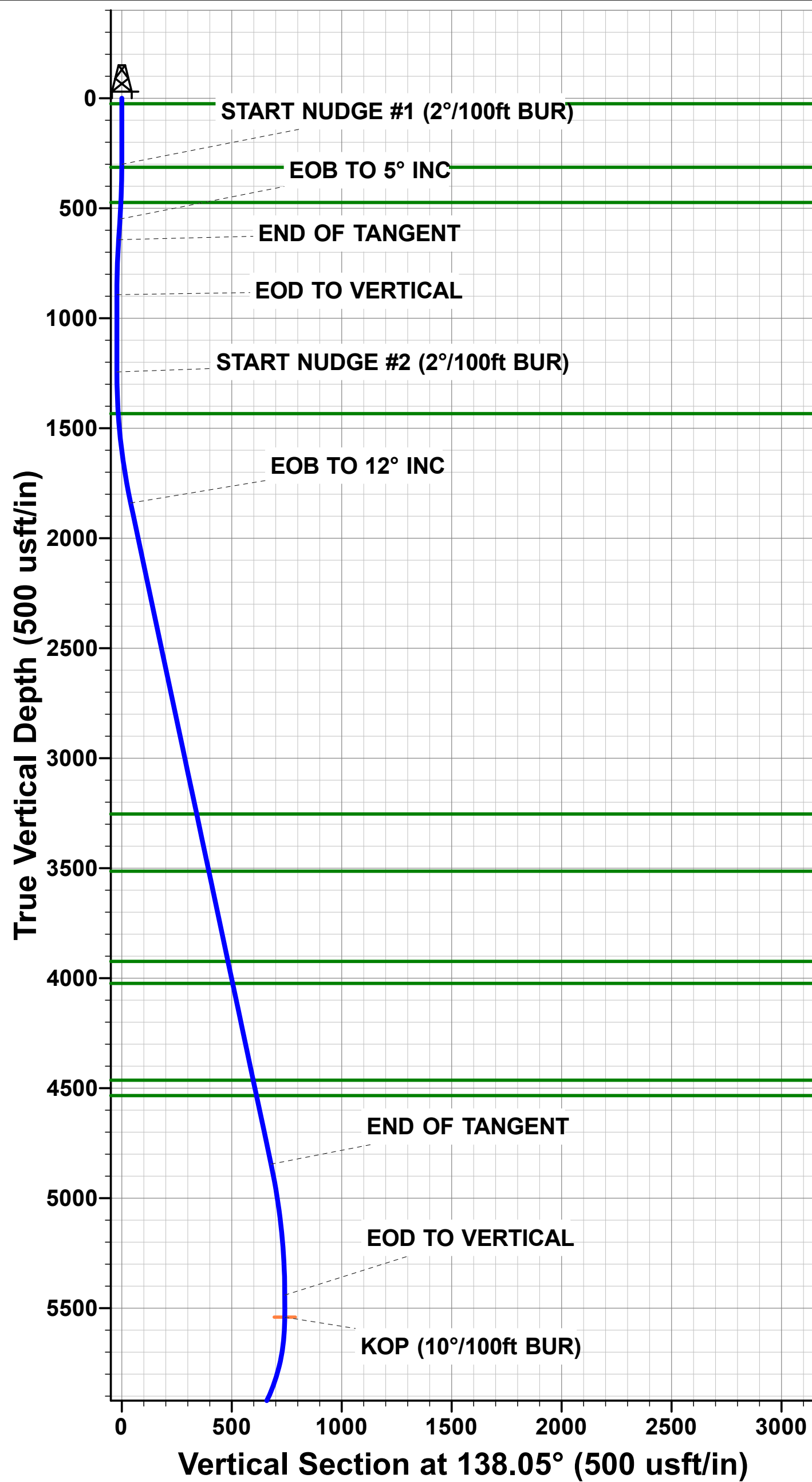
BPI : 460ft FSL & 581ft FEL Sec 11

EPI: 460ft FNL & 558ft FEL Sec 2

BHL: 360ft FNL & 559ft FEL of Sec 2

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - GROTHEER 5-61 11B-2-5 (P2)	5541.14	-551.39	495.67	40.408329	-104.168547
BPI - GROTHEER 5-61 11B-2-5 (P2)	6114.10	5.85	628.93	40.409859	-104.168069
EPI - GROTHEER 5-61 11B-2-5 (P2)	6114.10	9721.35	731.00	40.436527	-104.167701
BHL - GROTHEER 5-61 11B-2-5 (P2)	6114.10	9821.17	731.28	40.436801	-104.167700



Planning Report



Database:	EDM 5000.15.1	Local Co-ordinate Reference:	Well GROTHEER 5-61 11B-2-5
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KBE 24ft @ 4714.10usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE 24ft @ 4714.10usft
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-2-5	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	SE SE SEC. 11 T5N R61W 6th P.M.				
Site Position:		Northing:	1,395,071.08 usft	Latitude:	40.410254
From:	Lat/Long	Easting:	3,370,200.45 usft	Longitude:	-104.170533
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000 ft	Grid Convergence:	0.86 °

Well	GROTHEER 5-61 11B-2-5					
Well Position	+N/-S	-149.74 usft	Northing:	1,394,922.23 usft	Latitude:	40.409843
	+E/-W	57.37 usft	Easting:	3,370,260.06 usft	Longitude:	-104.170327
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,690.10 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2022-04-26	7.44	66.71	51,929.31940076

Design	PROPOSAL #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	4.26

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	-4,714.10	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	-4,414.10	0.00	0.00	0.00	0.00	0.00	0.00	
550.00	5.00	0.00	549.68	-4,164.42	10.90	0.00	2.00	2.00	0.00	0.00	
644.00	5.00	0.00	643.33	-4,070.77	19.09	0.00	0.00	0.00	0.00	0.00	
894.00	0.00	0.00	893.01	-3,821.09	30.00	0.00	2.00	-2.00	0.00	180.00	
1,200.99	0.00	0.00	1,200.00	-3,514.10	30.00	0.00	0.00	0.00	0.00	0.00	
1,245.60	0.00	0.00	1,244.61	-3,469.49	30.00	0.00	0.00	0.00	0.00	0.00	
1,845.60	12.00	139.55	1,840.23	-2,873.87	-17.64	40.62	2.00	2.00	0.00	139.55	
4,918.03	12.00	139.55	4,845.52	131.42	-503.75	455.05	0.00	0.00	0.00	0.00	
5,518.03	0.00	0.00	5,441.14	727.04	-551.39	495.67	2.00	-2.00	0.00	180.00	
5,618.03	0.00	0.00	5,541.14	827.04	-551.39	495.67	0.00	0.00	0.00	0.00	KOP - GROTHEER
6,518.02	90.00	13.45	6,114.10	1,400.00	5.85	628.93	10.00	10.00	1.49	13.45	BPI - GROTHEER !
6,956.13	90.00	0.31	6,114.10	1,400.00	439.85	681.29	3.00	0.00	-3.00	-90.00	
16,237.76	90.00	0.31	6,114.10	1,400.00	9,721.35	731.00	0.00	0.00	0.00	0.00	EPI - GROTHEER !
16,242.85	90.00	0.15	6,114.10	1,400.00	9,726.44	731.02	3.00	0.00	-3.00	-90.01	
16,337.59	90.00	0.15	6,114.10	1,400.00	9,821.17	731.28	0.00	0.00	0.00	0.00	BHL - GROTHEER

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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE 24ft @ 4714.10usft
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-2-5	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: 460ft FSL & 1210ft FEL of Sec 11										
0.00	0.00	0.00	0.00	4,714.10	0.00	0.00	0.00	0.00	0.00	0.00
Laramie-Fox Hills Formation										
25.10	0.00	0.00	25.10	4,689.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,614.10	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,514.10	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE #1 (2°/100ft BUR)										
300.00	0.00	0.00	300.00	4,414.10	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Formation										
314.10	0.28	0.00	314.10	4,400.00	0.03	0.00	0.03	2.00	2.00	0.00
400.00	2.00	0.00	399.98	4,314.12	1.75	0.00	1.74	2.00	2.00	0.00
Upper Pierre aquifer										
474.21	3.48	0.00	474.10	4,240.00	5.30	0.00	5.28	2.00	2.00	0.00
500.00	4.00	0.00	499.84	4,214.26	6.98	0.00	6.96	2.00	2.00	0.00
EOB TO 5° INC										
550.00	5.00	0.00	549.68	4,164.42	10.90	0.00	10.87	2.00	2.00	0.00
600.00	5.00	0.00	599.49	4,114.61	15.26	0.00	15.22	0.00	0.00	0.00
END OF TANGENT										
644.00	5.00	0.00	643.33	4,070.77	19.09	0.00	19.04	0.00	0.00	0.00
700.00	3.88	0.00	699.16	4,014.94	23.43	0.00	23.36	2.00	-2.00	0.00
800.00	1.88	360.00	799.02	3,915.08	28.45	0.00	28.37	2.00	-2.00	0.00
EOD TO VERTICAL										
894.00	0.00	0.00	893.01	3,821.09	30.00	0.00	29.91	2.00	-2.00	0.00
900.00	0.00	0.00	899.01	3,815.09	30.00	0.00	29.91	0.00	0.00	0.00
1,000.00	0.00	0.00	999.01	3,715.09	30.00	0.00	29.91	0.00	0.00	0.00
1,100.00	0.00	0.00	1,099.01	3,615.09	30.00	0.00	29.91	0.00	0.00	0.00
1,200.00	0.00	0.00	1,199.01	3,515.09	30.00	0.00	29.91	0.00	0.00	0.00
1,200.99	0.00	0.00	1,200.00	3,514.10	30.00	0.00	29.91	0.00	0.00	0.00
START NUDGE #2 (2°/100ft BUR)										
1,245.60	0.00	0.00	1,244.61	3,469.49	30.00	0.00	29.91	0.00	0.00	0.00
1,300.00	1.09	139.55	1,299.00	3,415.10	29.60	0.34	29.55	2.00	2.00	0.00
1,400.00	3.09	139.55	1,398.93	3,315.17	26.83	2.70	26.96	2.00	2.00	0.00
Base of Upper Pierre aquifer										
1,435.23	3.79	139.55	1,434.10	3,280.00	25.22	4.07	25.45	2.00	2.00	0.00
1,500.00	5.09	139.55	1,498.67	3,215.43	21.41	7.32	21.89	2.00	2.00	0.00
1,600.00	7.09	139.55	1,598.10	3,116.00	13.33	14.20	14.35	2.00	2.00	0.00
1,700.00	9.09	139.55	1,697.10	3,017.00	2.63	23.33	4.35	2.00	2.00	0.00
1,800.00	11.09	139.55	1,795.55	2,918.55	-10.70	34.70	-8.09	2.00	2.00	0.00
EOB TO 12° INC										
1,845.60	12.00	139.55	1,840.23	2,873.87	-17.64	40.62	-14.58	2.00	2.00	0.00
1,900.00	12.00	139.55	1,893.44	2,820.66	-26.25	47.95	-22.62	0.00	0.00	0.00
2,000.00	12.00	139.55	1,991.26	2,722.84	-42.07	61.44	-37.39	0.00	0.00	0.00
2,100.00	12.00	139.55	2,089.07	2,625.03	-57.89	74.93	-52.17	0.00	0.00	0.00
2,200.00	12.00	139.55	2,186.89	2,527.21	-73.72	88.42	-66.95	0.00	0.00	0.00
2,300.00	12.00	139.55	2,284.70	2,429.40	-89.54	101.91	-81.72	0.00	0.00	0.00
2,400.00	12.00	139.55	2,382.52	2,331.58	-105.36	115.40	-96.50	0.00	0.00	0.00
2,500.00	12.00	139.55	2,480.33	2,233.77	-121.18	128.89	-111.28	0.00	0.00	0.00
2,600.00	12.00	139.55	2,578.15	2,135.95	-137.00	142.38	-126.05	0.00	0.00	0.00
2,700.00	12.00	139.55	2,675.96	2,038.14	-152.82	155.86	-140.83	0.00	0.00	0.00
2,800.00	12.00	139.55	2,773.78	1,940.32	-168.65	169.35	-155.60	0.00	0.00	0.00
2,900.00	12.00	139.55	2,871.59	1,842.51	-184.47	182.84	-170.38	0.00	0.00	0.00
3,000.00	12.00	139.55	2,969.40	1,744.70	-200.29	196.33	-185.16	0.00	0.00	0.00

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)
3,100.00	12.00	139.55	3,067.22	1,646.88	-216.11	209.82	-199.93	0.00	0.00	0.00
3,200.00	12.00	139.55	3,165.03	1,549.07	-231.93	223.31	-214.71	0.00	0.00	0.00
Larimer ("Parkman") sandstone										
3,291.06	12.00	139.55	3,254.10	1,460.00	-246.34	235.59	-228.16	0.00	0.00	0.00
3,300.00	12.00	139.55	3,262.85	1,451.25	-247.75	236.80	-229.49	0.00	0.00	0.00
3,400.00	12.00	139.55	3,360.66	1,353.44	-263.58	250.29	-244.26	0.00	0.00	0.00
3,500.00	12.00	139.55	3,458.48	1,255.62	-279.40	263.78	-259.04	0.00	0.00	0.00
Pierre Formation										
3,556.86	12.00	139.55	3,514.10	1,200.00	-288.39	271.45	-267.44	0.00	0.00	0.00
3,600.00	12.00	139.55	3,556.29	1,157.81	-295.22	277.26	-273.82	0.00	0.00	0.00
3,700.00	12.00	139.55	3,654.11	1,059.99	-311.04	290.75	-288.59	0.00	0.00	0.00
3,800.00	12.00	139.55	3,751.92	962.18	-326.86	304.24	-303.37	0.00	0.00	0.00
3,900.00	12.00	139.55	3,849.74	864.36	-342.68	317.73	-318.14	0.00	0.00	0.00
Terry ("Sussex") sandstone										
3,976.02	12.00	139.55	3,924.10	790.00	-354.71	327.99	-329.38	0.00	0.00	0.00
4,000.00	12.00	139.55	3,947.55	766.55	-358.50	331.22	-332.92	0.00	0.00	0.00
Pierre Formation										
4,078.26	12.00	139.55	4,024.10	690.00	-370.89	341.78	-344.48	0.00	0.00	0.00
4,100.00	12.00	139.55	4,045.37	668.73	-374.33	344.71	-347.70	0.00	0.00	0.00
4,200.00	12.00	139.55	4,143.18	570.92	-390.15	358.20	-362.47	0.00	0.00	0.00
4,300.00	12.00	139.55	4,241.00	473.10	-405.97	371.69	-377.25	0.00	0.00	0.00
4,400.00	12.00	139.55	4,338.81	375.29	-421.79	385.17	-392.03	0.00	0.00	0.00
4,500.00	12.00	139.55	4,436.63	277.47	-437.61	398.66	-406.80	0.00	0.00	0.00
Hygiene ("Shannon") sandstone										
4,528.09	12.00	139.55	4,464.10	250.00	-442.06	402.45	-410.95	0.00	0.00	0.00
Pierre Formation										
4,599.65	12.00	139.55	4,534.10	180.00	-453.38	412.11	-421.53	0.00	0.00	0.00
4,600.00	12.00	139.55	4,534.44	179.66	-453.43	412.15	-421.58	0.00	0.00	0.00
4,700.00	12.00	139.55	4,632.26	81.84	-469.26	425.64	-436.36	0.00	0.00	0.00
4,800.00	12.00	139.55	4,730.07	-15.97	-485.08	439.13	-451.13	0.00	0.00	0.00
4,900.00	12.00	139.55	4,827.89	-113.79	-500.90	452.62	-465.91	0.00	0.00	0.00
END OF TANGENT										
4,918.03	12.00	139.55	4,845.52	-131.42	-503.75	455.05	-468.57	0.00	0.00	0.00
5,000.00	10.36	139.55	4,925.93	-211.83	-515.85	465.36	-479.87	2.00	-2.00	0.00
5,100.00	8.36	139.55	5,024.60	-310.50	-528.22	475.91	-491.43	2.00	-2.00	0.00
5,200.00	6.36	139.55	5,123.77	-409.67	-537.97	484.23	-500.53	2.00	-2.00	0.00
5,300.00	4.36	139.55	5,223.32	-509.22	-545.08	490.29	-507.17	2.00	-2.00	0.00
5,400.00	2.36	139.55	5,323.15	-609.05	-549.54	494.09	-511.34	2.00	-2.00	0.00
5,500.00	0.36	139.55	5,423.11	-709.01	-551.35	495.63	-513.02	2.00	-2.00	0.00
EOD TO VERTICAL										
5,518.03	0.00	0.00	5,441.14	-727.04	-551.39	495.67	-513.06	2.00	-2.00	0.00
5,600.00	0.00	0.00	5,523.11	-809.01	-551.39	495.67	-513.06	0.00	0.00	0.00
KOP (10°/100ft BUR)										
5,618.03	0.00	0.00	5,541.14	-827.04	-551.39	495.67	-513.06	0.00	0.00	0.00
5,700.00	8.20	13.45	5,622.83	-908.73	-545.70	497.03	-507.28	10.00	10.00	0.00
5,800.00	18.20	13.45	5,720.07	-1,005.97	-523.52	502.33	-484.78	10.00	10.00	0.00
5,900.00	28.20	13.45	5,811.87	-1,097.77	-485.26	511.48	-445.94	10.00	10.00	0.00
6,000.00	38.20	13.45	5,895.44	-1,181.34	-432.08	524.20	-391.96	10.00	10.00	0.00
Sharon Springs Member										
6,064.95	44.69	13.45	5,944.10	-1,230.00	-390.29	534.19	-349.55	10.00	10.00	0.00
6,100.00	48.20	13.45	5,968.25	-1,254.15	-365.59	540.10	-324.47	10.00	10.00	0.00
6,200.00	58.20	13.45	6,028.08	-1,313.98	-287.81	558.70	-245.53	10.00	10.00	0.00
Niobrara Formation										

Planning Report



Database:	EDM 5000.15.1	Local Co-ordinate Reference:	Well GROTHEER 5-61 11B-2-5
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KBE 24ft @ 4714.10usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE 24ft @ 4714.10usft
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-2-5	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)
6,201.94	58.39	13.45	6,029.10	-1,315.00	-286.21	559.09	-243.90	10.00	10.00	0.00
6,300.00	68.20	13.45	6,073.11	-1,359.01	-201.11	579.44	-157.53	10.00	10.00	0.00
6,400.00	78.20	13.45	6,101.99	-1,387.89	-108.13	601.68	-63.15	10.00	10.00	0.00
6,500.00	88.20	13.45	6,113.82	-1,399.72	-11.68	624.74	34.74	10.00	10.00	0.00
BPI: 460ft FSL & 581ft FEL of Sec 11										
6,518.02	90.00	13.45	6,114.10	-1,400.00	5.85	628.93	52.53	10.00	10.00	0.00
6,600.00	90.00	10.99	6,114.10	-1,400.00	85.96	646.29	133.71	3.00	0.00	-3.00
6,700.00	90.00	7.99	6,114.10	-1,400.00	184.58	662.77	233.29	3.00	0.00	-3.00
6,800.00	90.00	4.99	6,114.10	-1,400.00	283.93	674.08	333.20	3.00	0.00	-3.00
6,900.00	90.00	1.99	6,114.10	-1,400.00	383.73	680.16	433.18	3.00	0.00	-3.00
EOT TO 0.31° AZ										
6,956.13	90.00	0.31	6,114.10	-1,400.00	439.85	681.29	489.22	3.00	0.00	-3.00
7,000.00	90.00	0.31	6,114.10	-1,400.00	483.72	681.53	532.99	0.00	0.00	0.00
7,100.00	90.00	0.31	6,114.10	-1,400.00	583.72	682.06	632.75	0.00	0.00	0.00
7,200.00	90.00	0.31	6,114.10	-1,400.00	683.72	682.60	732.51	0.00	0.00	0.00
7,300.00	90.00	0.31	6,114.10	-1,400.00	783.71	683.13	832.28	0.00	0.00	0.00
7,400.00	90.00	0.31	6,114.10	-1,400.00	883.71	683.67	932.04	0.00	0.00	0.00
7,500.00	90.00	0.31	6,114.10	-1,400.00	983.71	684.20	1,031.80	0.00	0.00	0.00
7,600.00	90.00	0.31	6,114.10	-1,400.00	1,083.71	684.74	1,131.56	0.00	0.00	0.00
7,700.00	90.00	0.31	6,114.10	-1,400.00	1,183.71	685.27	1,231.33	0.00	0.00	0.00
7,800.00	90.00	0.31	6,114.10	-1,400.00	1,283.71	685.81	1,331.09	0.00	0.00	0.00
7,900.00	90.00	0.31	6,114.10	-1,400.00	1,383.71	686.35	1,430.85	0.00	0.00	0.00
8,000.00	90.00	0.31	6,114.10	-1,400.00	1,483.70	686.88	1,530.61	0.00	0.00	0.00
8,100.00	90.00	0.31	6,114.10	-1,400.00	1,583.70	687.42	1,630.37	0.00	0.00	0.00
8,200.00	90.00	0.31	6,114.10	-1,400.00	1,683.70	687.95	1,730.14	0.00	0.00	0.00
8,300.00	90.00	0.31	6,114.10	-1,400.00	1,783.70	688.49	1,829.90	0.00	0.00	0.00
8,400.00	90.00	0.31	6,114.10	-1,400.00	1,883.70	689.02	1,929.66	0.00	0.00	0.00
8,500.00	90.00	0.31	6,114.10	-1,400.00	1,983.70	689.56	2,029.42	0.00	0.00	0.00
8,600.00	90.00	0.31	6,114.10	-1,400.00	2,083.70	690.09	2,129.19	0.00	0.00	0.00
8,700.00	90.00	0.31	6,114.10	-1,400.00	2,183.69	690.63	2,228.95	0.00	0.00	0.00
8,800.00	90.00	0.31	6,114.10	-1,400.00	2,283.69	691.17	2,328.71	0.00	0.00	0.00
8,900.00	90.00	0.31	6,114.10	-1,400.00	2,383.69	691.70	2,428.47	0.00	0.00	0.00
9,000.00	90.00	0.31	6,114.10	-1,400.00	2,483.69	692.24	2,528.23	0.00	0.00	0.00
9,100.00	90.00	0.31	6,114.10	-1,400.00	2,583.69	692.77	2,628.00	0.00	0.00	0.00
9,200.00	90.00	0.31	6,114.10	-1,400.00	2,683.69	693.31	2,727.76	0.00	0.00	0.00
9,300.00	90.00	0.31	6,114.10	-1,400.00	2,783.69	693.84	2,827.52	0.00	0.00	0.00
9,400.00	90.00	0.31	6,114.10	-1,400.00	2,883.68	694.38	2,927.28	0.00	0.00	0.00
9,500.00	90.00	0.31	6,114.10	-1,400.00	2,983.68	694.92	3,027.05	0.00	0.00	0.00
9,600.00	90.00	0.31	6,114.10	-1,400.00	3,083.68	695.45	3,126.81	0.00	0.00	0.00
9,700.00	90.00	0.31	6,114.10	-1,400.00	3,183.68	695.99	3,226.57	0.00	0.00	0.00
9,800.00	90.00	0.31	6,114.10	-1,400.00	3,283.68	696.52	3,326.33	0.00	0.00	0.00
9,900.00	90.00	0.31	6,114.10	-1,400.00	3,383.68	697.06	3,426.10	0.00	0.00	0.00
10,000.00	90.00	0.31	6,114.10	-1,400.00	3,483.68	697.59	3,525.86	0.00	0.00	0.00
10,100.00	90.00	0.31	6,114.10	-1,400.00	3,583.67	698.13	3,625.62	0.00	0.00	0.00
10,200.00	90.00	0.31	6,114.10	-1,400.00	3,683.67	698.66	3,725.38	0.00	0.00	0.00
10,300.00	90.00	0.31	6,114.10	-1,400.00	3,783.67	699.20	3,825.14	0.00	0.00	0.00
10,400.00	90.00	0.31	6,114.10	-1,400.00	3,883.67	699.74	3,924.91	0.00	0.00	0.00
10,500.00	90.00	0.31	6,114.10	-1,400.00	3,983.67	700.27	4,024.67	0.00	0.00	0.00
10,600.00	90.00	0.31	6,114.10	-1,400.00	4,083.67	700.81	4,124.43	0.00	0.00	0.00
10,700.00	90.00	0.31	6,114.10	-1,400.00	4,183.67	701.34	4,224.19	0.00	0.00	0.00
10,800.00	90.00	0.31	6,114.10	-1,400.00	4,283.66	701.88	4,323.96	0.00	0.00	0.00
10,900.00	90.00	0.31	6,114.10	-1,400.00	4,383.66	702.41	4,423.72	0.00	0.00	0.00
11,000.00	90.00	0.31	6,114.10	-1,400.00	4,483.66	702.95	4,523.48	0.00	0.00	0.00
11,100.00	90.00	0.31	6,114.10	-1,400.00	4,583.66	703.48	4,623.24	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.15.1	Local Co-ordinate Reference:	Well GROTHEER 5-61 11B-2-5
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KBE 24ft @ 4714.10usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE 24ft @ 4714.10usft
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-2-5	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)
11,200.00	90.00	0.31	6,114.10	-1,400.00	4,683.66	704.02	4,723.00	0.00	0.00	0.00
11,300.00	90.00	0.31	6,114.10	-1,400.00	4,783.66	704.56	4,822.77	0.00	0.00	0.00
11,400.00	90.00	0.31	6,114.10	-1,400.00	4,883.66	705.09	4,922.53	0.00	0.00	0.00
11,500.00	90.00	0.31	6,114.10	-1,400.00	4,983.65	705.63	5,022.29	0.00	0.00	0.00
11,600.00	90.00	0.31	6,114.10	-1,400.00	5,083.65	706.16	5,122.05	0.00	0.00	0.00
11,700.00	90.00	0.31	6,114.10	-1,400.00	5,183.65	706.70	5,221.82	0.00	0.00	0.00
11,800.00	90.00	0.31	6,114.10	-1,400.00	5,283.65	707.23	5,321.58	0.00	0.00	0.00
11,900.00	90.00	0.31	6,114.10	-1,400.00	5,383.65	707.77	5,421.34	0.00	0.00	0.00
12,000.00	90.00	0.31	6,114.10	-1,400.00	5,483.65	708.31	5,521.10	0.00	0.00	0.00
12,100.00	90.00	0.31	6,114.10	-1,400.00	5,583.65	708.84	5,620.87	0.00	0.00	0.00
12,200.00	90.00	0.31	6,114.10	-1,400.00	5,683.64	709.38	5,720.63	0.00	0.00	0.00
12,300.00	90.00	0.31	6,114.10	-1,400.00	5,783.64	709.91	5,820.39	0.00	0.00	0.00
12,400.00	90.00	0.31	6,114.10	-1,400.00	5,883.64	710.45	5,920.15	0.00	0.00	0.00
12,500.00	90.00	0.31	6,114.10	-1,400.00	5,983.64	710.98	6,019.91	0.00	0.00	0.00
12,600.00	90.00	0.31	6,114.10	-1,400.00	6,083.64	711.52	6,119.68	0.00	0.00	0.00
12,700.00	90.00	0.31	6,114.10	-1,400.00	6,183.64	712.05	6,219.44	0.00	0.00	0.00
12,800.00	90.00	0.31	6,114.10	-1,400.00	6,283.64	712.59	6,319.20	0.00	0.00	0.00
12,900.00	90.00	0.31	6,114.10	-1,400.00	6,383.63	713.13	6,418.96	0.00	0.00	0.00
13,000.00	90.00	0.31	6,114.10	-1,400.00	6,483.63	713.66	6,518.73	0.00	0.00	0.00
13,100.00	90.00	0.31	6,114.10	-1,400.00	6,583.63	714.20	6,618.49	0.00	0.00	0.00
13,200.00	90.00	0.31	6,114.10	-1,400.00	6,683.63	714.73	6,718.25	0.00	0.00	0.00
13,300.00	90.00	0.31	6,114.10	-1,400.00	6,783.63	715.27	6,818.01	0.00	0.00	0.00
13,400.00	90.00	0.31	6,114.10	-1,400.00	6,883.63	715.80	6,917.77	0.00	0.00	0.00
13,500.00	90.00	0.31	6,114.10	-1,400.00	6,983.63	716.34	7,017.54	0.00	0.00	0.00
13,600.00	90.00	0.31	6,114.10	-1,400.00	7,083.62	716.87	7,117.30	0.00	0.00	0.00
13,700.00	90.00	0.31	6,114.10	-1,400.00	7,183.62	717.41	7,217.06	0.00	0.00	0.00
13,800.00	90.00	0.31	6,114.10	-1,400.00	7,283.62	717.95	7,316.82	0.00	0.00	0.00
13,900.00	90.00	0.31	6,114.10	-1,400.00	7,383.62	718.48	7,416.59	0.00	0.00	0.00
14,000.00	90.00	0.31	6,114.10	-1,400.00	7,483.62	719.02	7,516.35	0.00	0.00	0.00
14,100.00	90.00	0.31	6,114.10	-1,400.00	7,583.62	719.55	7,616.11	0.00	0.00	0.00
14,200.00	90.00	0.31	6,114.10	-1,400.00	7,683.62	720.09	7,715.87	0.00	0.00	0.00
14,300.00	90.00	0.31	6,114.10	-1,400.00	7,783.61	720.62	7,815.64	0.00	0.00	0.00
14,400.00	90.00	0.31	6,114.10	-1,400.00	7,883.61	721.16	7,915.40	0.00	0.00	0.00
14,500.00	90.00	0.31	6,114.10	-1,400.00	7,983.61	721.70	8,015.16	0.00	0.00	0.00
14,600.00	90.00	0.31	6,114.10	-1,400.00	8,083.61	722.23	8,114.92	0.00	0.00	0.00
14,700.00	90.00	0.31	6,114.10	-1,400.00	8,183.61	722.77	8,214.68	0.00	0.00	0.00
14,800.00	90.00	0.31	6,114.10	-1,400.00	8,283.61	723.30	8,314.45	0.00	0.00	0.00
14,900.00	90.00	0.31	6,114.10	-1,400.00	8,383.61	723.84	8,414.21	0.00	0.00	0.00
15,000.00	90.00	0.31	6,114.10	-1,400.00	8,483.60	724.37	8,513.97	0.00	0.00	0.00
15,100.00	90.00	0.31	6,114.10	-1,400.00	8,583.60	724.91	8,613.73	0.00	0.00	0.00
15,200.00	90.00	0.31	6,114.10	-1,400.00	8,683.60	725.44	8,713.50	0.00	0.00	0.00
15,300.00	90.00	0.31	6,114.10	-1,400.00	8,783.60	725.98	8,813.26	0.00	0.00	0.00
15,400.00	90.00	0.31	6,114.10	-1,400.00	8,883.60	726.52	8,913.02	0.00	0.00	0.00
15,500.00	90.00	0.31	6,114.10	-1,400.00	8,983.60	727.05	9,012.78	0.00	0.00	0.00
15,600.00	90.00	0.31	6,114.10	-1,400.00	9,083.60	727.59	9,112.55	0.00	0.00	0.00
15,700.00	90.00	0.31	6,114.10	-1,400.00	9,183.59	728.12	9,212.31	0.00	0.00	0.00
15,800.00	90.00	0.31	6,114.10	-1,400.00	9,283.59	728.66	9,312.07	0.00	0.00	0.00
15,900.00	90.00	0.31	6,114.10	-1,400.00	9,383.59	729.19	9,411.83	0.00	0.00	0.00
16,000.00	90.00	0.31	6,114.10	-1,400.00	9,483.59	729.73	9,511.59	0.00	0.00	0.00
16,100.00	90.00	0.31	6,114.10	-1,400.00	9,583.59	730.27	9,611.36	0.00	0.00	0.00
16,200.00	90.00	0.31	6,114.10	-1,400.00	9,683.59	730.80	9,711.12	0.00	0.00	0.00
EPI: 460ft FNL & 558ft FEL of Sec 2										
16,237.76	90.00	0.31	6,114.10	-1,400.00	9,721.35	731.00	9,748.79	0.00	0.00	0.00

Database:	EDM 5000.15.1	Local Co-ordinate Reference:	Well GROTHEER 5-61 11B-2-5
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KBE 24ft @ 4714.10usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE 24ft @ 4714.10usft
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-2-5	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)
EOT TO 0.15° AZ										
16,242.85	90.00	0.15	6,114.10	-1,400.00	9,726.44	731.02	9,753.87	3.00	0.00	-3.00
16,300.00	90.00	0.15	6,114.10	-1,400.00	9,783.59	731.18	9,810.87	0.00	0.00	0.00
BHL: 360ft FNL & 559ft FEL of Sec 2										
16,337.59	90.00	0.15	6,114.10	-1,400.00	9,821.17	731.28	9,848.36	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
25.10	25.10	Laramie-Fox Hills Formation			
314.10	314.10	Pierre Formation			
474.21	474.10	Upper Pierre aquifer			
1,435.23	1,434.10	Base of Upper Pierre aquifer			
3,291.06	3,254.10	Larimer ("Parkman") sandstone			
3,556.86	3,514.10	Pierre Formation			
3,976.02	3,924.10	Terry ("Sussex") sandstone			
4,078.26	4,024.10	Pierre Formation			
4,528.09	4,464.10	Hygiene ("Shannon") sandstone			
4,599.65	4,534.10	Pierre Formation			
6,064.95	5,944.10	Sharon Springs Member			
6,201.94	6,029.10	Niobrara Formation			

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 460ft FSL & 1210ft FEL of Sec 11
300.00	300.00	0.00	0.00	START NUDGE #1 (2°/100ft BUR)
550.00	549.68	10.90	0.00	EOB TO 5° INC
644.00	643.33	19.09	0.00	END OF TANGENT
894.00	893.01	30.00	0.00	EOD TO VERTICAL
1,245.60	1,244.61	30.00	0.00	START NUDGE #2 (2°/100ft BUR)
1,845.60	1,840.23	-17.64	40.62	EOB TO 12° INC
4,918.03	4,845.52	-503.75	455.05	END OF TANGENT
5,518.03	5,441.14	-551.39	495.67	EOD TO VERTICAL
5,618.03	5,541.14	-551.39	495.67	KOP (10°/100ft BUR)
6,518.02	6,114.10	5.85	628.93	BPI: 460ft FSL & 581ft FEL of Sec 11
6,956.13	6,114.10	439.85	681.29	EOT TO 0.31° AZ
16,237.76	6,114.10	9,721.35	731.00	EPI: 460ft FNL & 558ft FEL of Sec 2
16,242.85	6,114.10	9,726.44	731.02	EOT TO 0.15° AZ
16,337.59	6,114.10	9,821.17	731.28	BHL: 360ft FNL & 559ft FEL of Sec 2