

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

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

GROTHER 5-61 11B-14-23-5

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-14-23-5
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 460ft FSL 1126ft FEL of Sec 11
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)
900.00	12.00	119.98	895.62	-31.28	54.23	33.92	62.60	EOB TO 12° INC
3584.22	12.00	119.98	3521.19	-310.18	537.62	336.29	620.68	END OF TANGENT
4184.22	0.00	119.98	4116.81	-341.46	591.85	370.20	683.29	EOD TO VERTICAL
5603.95	0.00	0.00	5536.54	-341.46	591.85	370.20	683.29	KOP (10°/100ft BUR)
6503.95	90.00	180.34	6109.50	-914.41	588.45	942.29	1256.24	BPI: 460ft FNL & 529ft FEL of Sec 14
16227.22	90.00	180.35	6109.50	-10637.50	530.18	10650.70	10979.51	EPI: 460ft FSL & 515ft FEL of Sec 23
16327.04	90.00	180.32	6109.50	-10737.32	529.62	10750.37	11079.33	BHL: 360ft FSL & 515ft FEL of Sec 23

PROPOSED LOCAL COORDINATES:

SHL: 460ft FSL & 1126ft FEL Sec 11

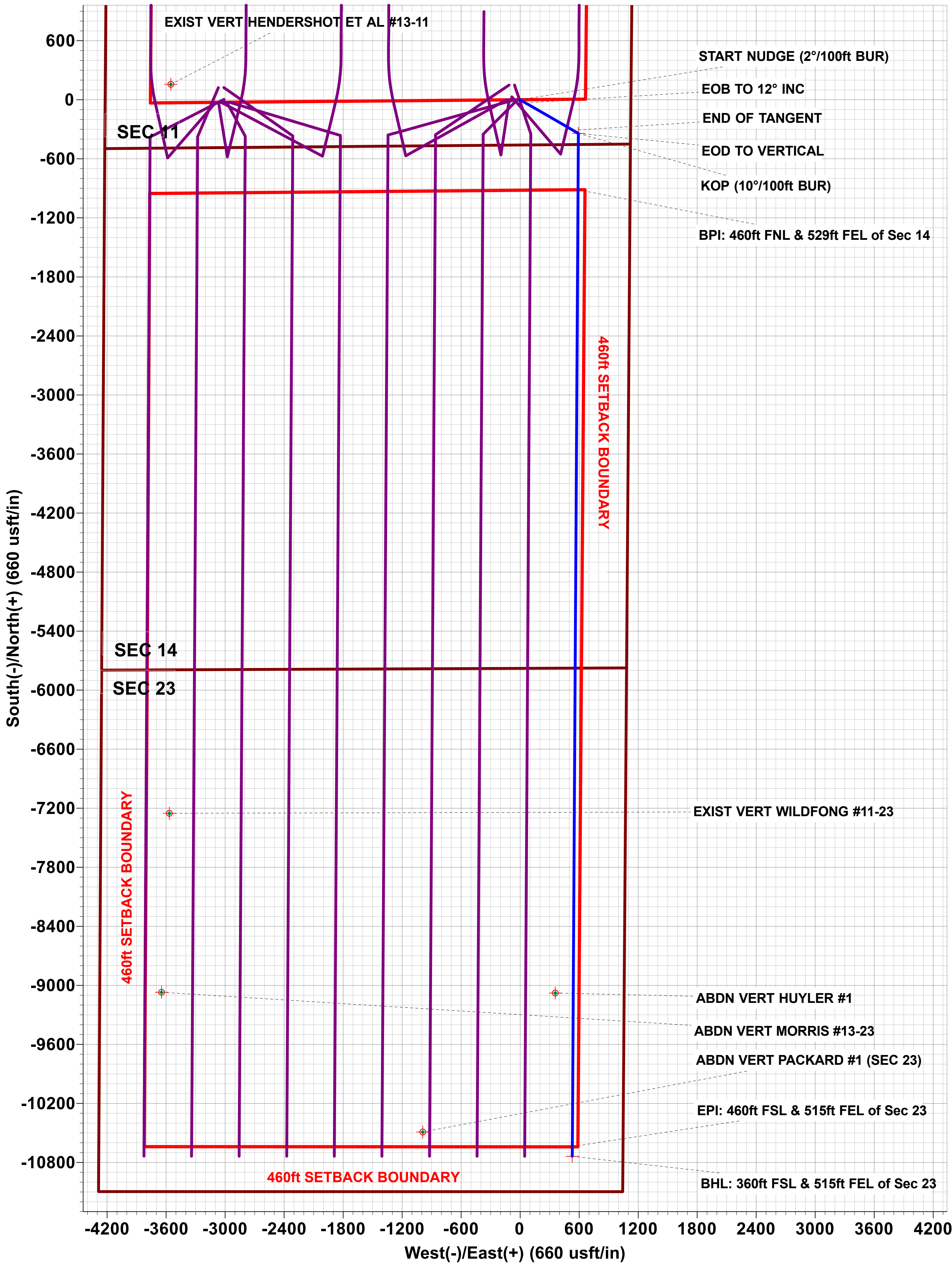
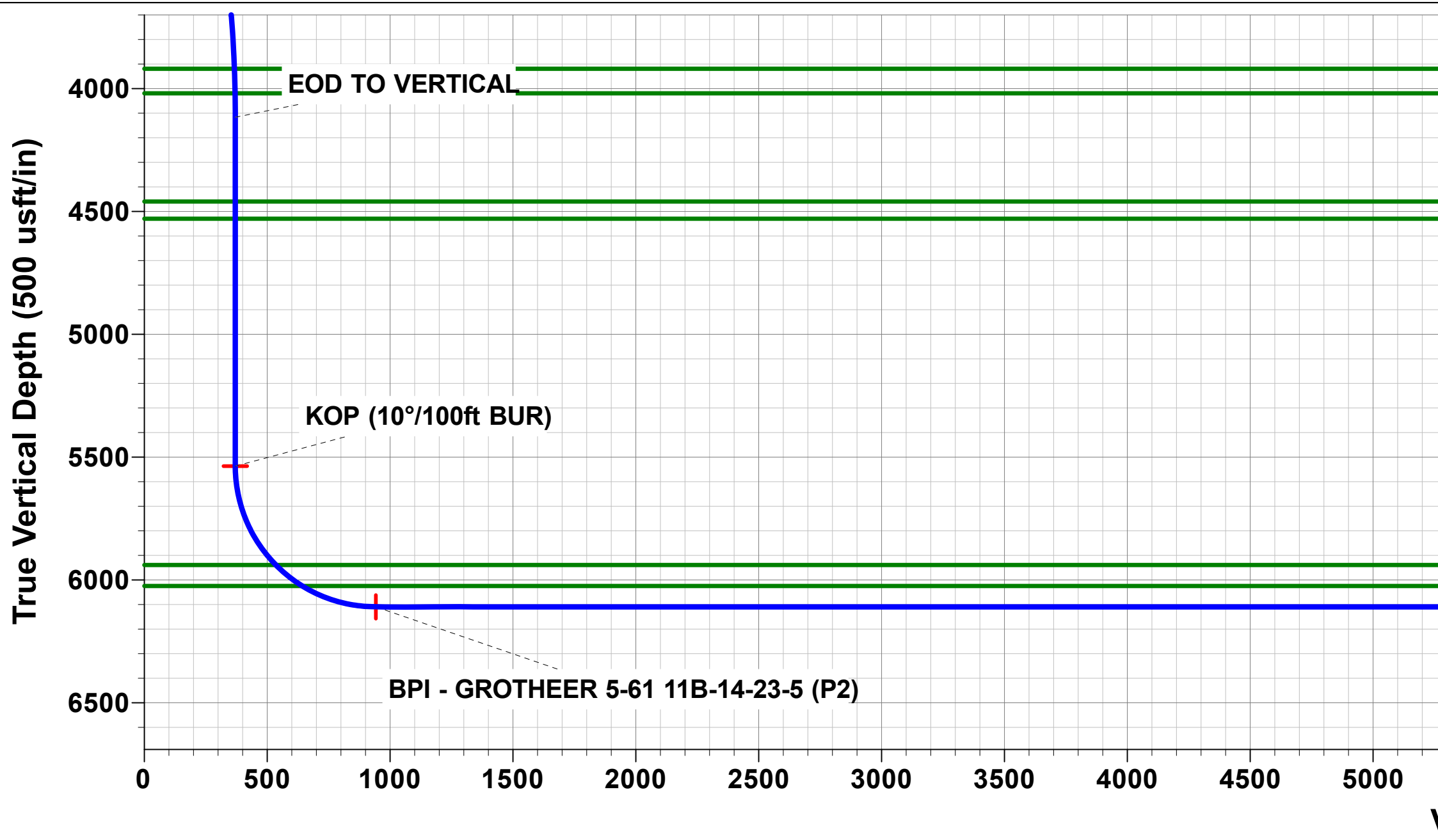
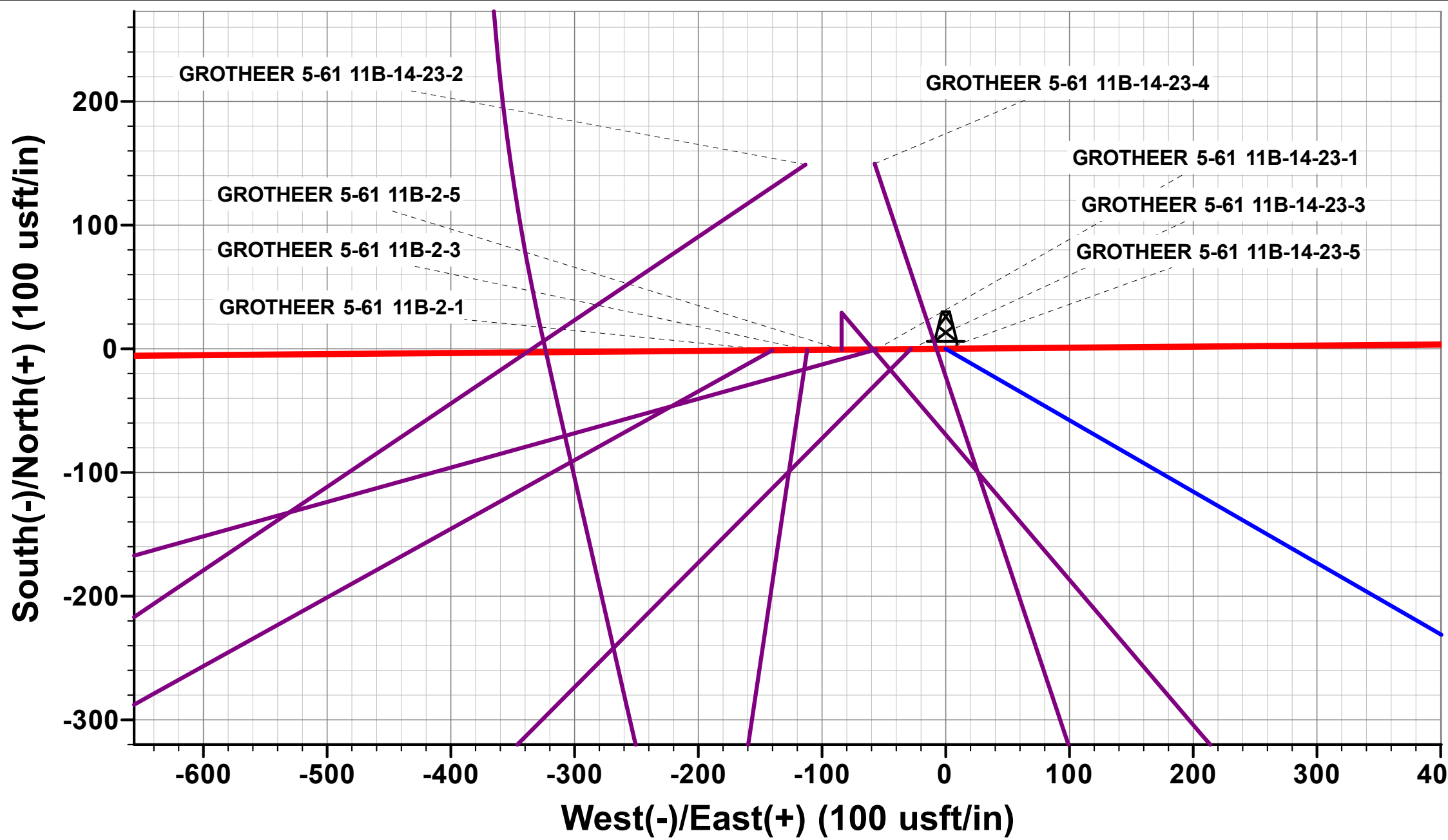
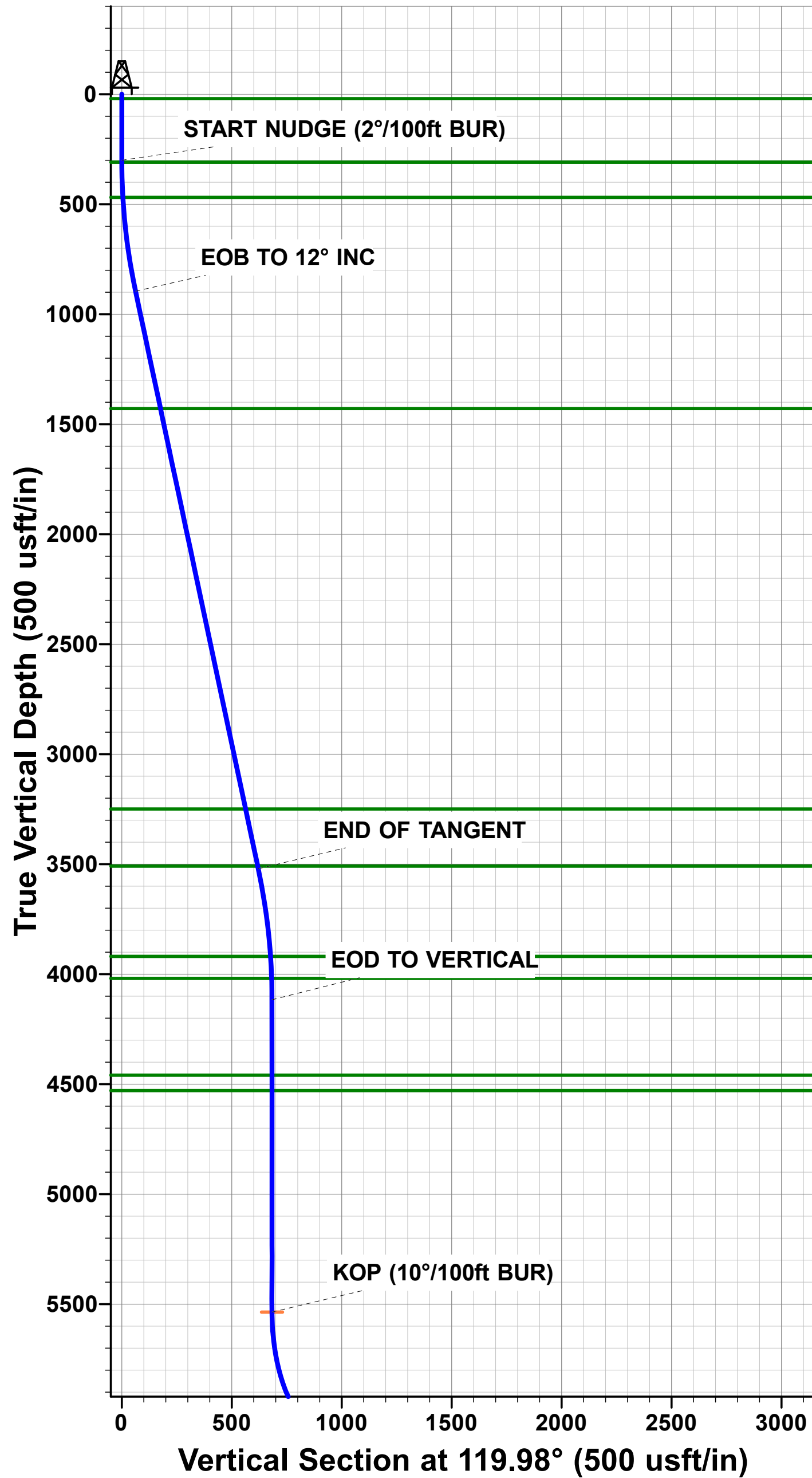
BPI : 460ft FNL & 529ft FEL Sec 14

EPI: 460ft FSL & 515ft FEL Sec 23

BHL: 360ft FSL & 515ft FEL of Sec 23

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - GROTHEER 5-61 11B-14-23-5 (P2)	5536.54	-341.46	591.85	40.408908	-104.167900
BPI - GROTHEER 5-61 11B-14-23-5 (P2)	6109.50	-914.41	588.45	40.407335	-104.167912
EPI - GROTHEER 5-61 11B-14-23-5 (P2)	6109.50	-10637.50	530.18	40.380646	-104.168122
BHL - GROTHEER 5-61 11B-14-23-5 (P2)	6109.50	-10737.32	529.62	40.380372	-104.168124



Planning Report



Database:	EDM 5000.15.1	Local Co-ordinate Reference:	Well GROTHEER 5-61 11B-14-23-5
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KBE 24ft @ 4709.50usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE 24ft @ 4709.50usft
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-14-23-5	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-14-23-5				
Well Position	+N/-S	-149.01 usft	Northing:	1,394,924.22 usft	Latitude:	40.409845
	+E/-W	141.47 usft	Easting:	3,370,344.13 usft	Longitude:	-104.170025
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,685.50 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2022-04-26	7.44	66.71	51,929.38728357

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	177.18

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	-4,709.50	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	-4,409.50	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	12.00	119.98	895.62	-3,813.88	-31.28	54.23	2.00	2.00	0.00	119.98	
3,584.22	12.00	119.98	3,521.19	-1,188.31	-310.18	537.62	0.00	0.00	0.00	0.00	
4,184.22	0.00	0.00	4,116.81	-592.69	-341.46	591.85	2.00	-2.00	0.00	180.00	
5,603.95	0.00	0.00	5,536.54	827.04	-341.46	591.85	0.00	0.00	0.00	0.00	KOP - GROTHEER
6,503.95	90.00	180.34	6,109.50	1,400.00	-914.41	588.45	10.00	10.00	-19.96	180.34	BPI - GROTHEER !
16,227.22	90.00	180.35	6,109.50	1,400.00	-10,637.50	530.18	0.00	0.00	0.00	85.35	EPI - GROTHEER !
16,228.12	90.00	180.32	6,109.50	1,400.00	-10,638.40	530.17	3.00	0.00	-3.00	-90.00	
16,327.04	90.00	180.32	6,109.50	1,400.00	-10,737.32	529.62	0.00	0.00	0.00	0.00	BHL - GROTHEER

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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE 24ft @ 4709.50usft
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-14-23-5	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 1126ft FEL of Sec 11										
0.00	0.00	0.00	0.00	4,709.50	0.00	0.00	0.00	0.00	0.00	0.00
Laramie-Fox Hills Formation										
20.50	0.00	0.00	20.50	4,689.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,609.50	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,509.50	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
300.00	0.00	0.00	300.00	4,409.50	0.00	0.00	0.00	0.00	0.00	0.00
Pierre Formation										
309.50	0.19	119.98	309.50	4,400.00	-0.01	0.01	0.01	2.00	2.00	0.00
400.00	2.00	119.98	399.98	4,309.52	-0.87	1.51	0.95	2.00	2.00	0.00
Upper Pierre aquifer										
469.60	3.39	119.98	469.50	4,240.00	-2.51	4.35	2.72	2.00	2.00	0.00
500.00	4.00	119.98	499.84	4,209.66	-3.49	6.04	3.78	2.00	2.00	0.00
600.00	6.00	119.98	599.45	4,110.05	-7.84	13.59	8.50	2.00	2.00	0.00
700.00	8.00	119.98	698.70	4,010.80	-13.93	24.15	15.11	2.00	2.00	0.00
800.00	10.00	119.98	797.47	3,912.03	-21.75	37.70	23.58	2.00	2.00	0.00
EOB TO 12° INC										
900.00	12.00	119.98	895.62	3,813.88	-31.28	54.23	33.92	2.00	2.00	0.00
1,000.00	12.00	119.98	993.44	3,716.06	-41.67	72.23	45.18	0.00	0.00	0.00
1,100.00	12.00	119.98	1,091.25	3,618.25	-52.06	90.24	56.45	0.00	0.00	0.00
1,200.00	12.00	119.98	1,189.07	3,520.43	-62.45	108.25	67.71	0.00	0.00	0.00
1,300.00	12.00	119.98	1,286.88	3,422.62	-72.84	126.26	78.98	0.00	0.00	0.00
1,400.00	12.00	119.98	1,384.70	3,324.80	-83.23	144.27	90.24	0.00	0.00	0.00
Base of Upper Pierre aquifer										
1,445.80	12.00	119.98	1,429.50	3,280.00	-87.99	152.52	95.40	0.00	0.00	0.00
1,500.00	12.00	119.98	1,482.51	3,226.99	-93.62	162.28	101.51	0.00	0.00	0.00
1,600.00	12.00	119.98	1,580.33	3,129.17	-104.01	180.29	112.77	0.00	0.00	0.00
1,700.00	12.00	119.98	1,678.14	3,031.36	-114.40	198.30	124.03	0.00	0.00	0.00
1,800.00	12.00	119.98	1,775.96	2,933.54	-124.79	216.31	135.30	0.00	0.00	0.00
1,900.00	12.00	119.98	1,873.77	2,835.73	-135.18	234.31	146.56	0.00	0.00	0.00
2,000.00	12.00	119.98	1,971.59	2,737.91	-145.57	252.32	157.83	0.00	0.00	0.00
2,100.00	12.00	119.98	2,069.40	2,640.10	-155.96	270.33	169.09	0.00	0.00	0.00
2,200.00	12.00	119.98	2,167.22	2,542.28	-166.35	288.34	180.36	0.00	0.00	0.00
2,300.00	12.00	119.98	2,265.03	2,444.47	-176.74	306.35	191.62	0.00	0.00	0.00
2,400.00	12.00	119.98	2,362.84	2,346.66	-187.13	324.36	202.89	0.00	0.00	0.00
2,500.00	12.00	119.98	2,460.66	2,248.84	-197.52	342.37	214.15	0.00	0.00	0.00
2,600.00	12.00	119.98	2,558.47	2,151.03	-207.91	360.38	225.42	0.00	0.00	0.00
2,700.00	12.00	119.98	2,656.29	2,053.21	-218.31	378.39	236.68	0.00	0.00	0.00
2,800.00	12.00	119.98	2,754.10	1,955.40	-228.70	396.39	247.95	0.00	0.00	0.00
2,900.00	12.00	119.98	2,851.92	1,857.58	-239.09	414.40	259.21	0.00	0.00	0.00
3,000.00	12.00	119.98	2,949.73	1,759.77	-249.48	432.41	270.48	0.00	0.00	0.00
3,100.00	12.00	119.98	3,047.55	1,661.95	-259.87	450.42	281.74	0.00	0.00	0.00
3,200.00	12.00	119.98	3,145.36	1,564.14	-270.26	468.43	293.00	0.00	0.00	0.00
3,300.00	12.00	119.98	3,243.18	1,466.32	-280.65	486.44	304.27	0.00	0.00	0.00
Larimer ("Parkman") sandstone										
3,306.46	12.00	119.98	3,249.50	1,460.00	-281.32	487.60	305.00	0.00	0.00	0.00
3,400.00	12.00	119.98	3,340.99	1,368.51	-291.04	504.45	315.53	0.00	0.00	0.00
3,500.00	12.00	119.98	3,438.81	1,270.69	-301.43	522.46	326.80	0.00	0.00	0.00
Pierre Formation										
3,572.27	12.00	119.98	3,509.50	1,200.00	-308.93	535.47	334.94	0.00	0.00	0.00
END OF TANGENT										
3,584.22	12.00	119.98	3,521.19	1,188.31	-310.18	537.62	336.29	0.00	0.00	0.00

Planning Report



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Well:	GROTHEER 5-61 11B-14-23-5	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)
3,600.00	11.68	119.98	3,536.63	1,172.87	-311.79	540.43	338.04	2.00	-2.00	0.00
3,700.00	9.68	119.98	3,634.89	1,074.61	-321.06	556.49	348.08	2.00	-2.00	0.00
3,800.00	7.68	119.98	3,733.74	975.76	-328.60	569.56	356.26	2.00	-2.00	0.00
3,900.00	5.68	119.98	3,833.06	876.44	-334.42	579.65	362.57	2.00	-2.00	0.00
Terry ("Sussex") sandstone										
3,986.75	3.95	119.98	3,919.50	790.00	-338.06	585.96	366.52	2.00	-2.00	0.00
4,000.00	3.68	119.98	3,932.72	776.78	-338.50	586.72	367.00	2.00	-2.00	0.00
Pierre Formation										
4,086.89	1.95	119.98	4,019.50	690.00	-340.63	590.42	369.31	2.00	-2.00	0.00
4,100.00	1.68	119.98	4,032.60	676.90	-340.84	590.78	369.53	2.00	-2.00	0.00
EOD TO VERTICAL										
4,184.22	0.00	119.98	4,116.81	592.69	-341.46	591.85	370.20	2.00	-2.00	0.00
4,200.00	0.00	0.00	4,132.59	576.91	-341.46	591.85	370.20	0.00	0.00	0.00
4,300.00	0.00	0.00	4,232.59	476.91	-341.46	591.85	370.20	0.00	0.00	0.00
4,400.00	0.00	0.00	4,332.59	376.91	-341.46	591.85	370.20	0.00	0.00	0.00
4,500.00	0.00	0.00	4,432.59	276.91	-341.46	591.85	370.20	0.00	0.00	0.00
Hygiene ("Shannon") sandstone										
4,526.91	0.00	0.00	4,459.50	250.00	-341.46	591.85	370.20	0.00	0.00	0.00
Pierre Formation										
4,596.91	0.00	0.00	4,529.50	180.00	-341.46	591.85	370.20	0.00	0.00	0.00
4,600.00	0.00	0.00	4,532.59	176.91	-341.46	591.85	370.20	0.00	0.00	0.00
4,700.00	0.00	0.00	4,632.59	76.91	-341.46	591.85	370.20	0.00	0.00	0.00
4,800.00	0.00	0.00	4,732.59	-23.09	-341.46	591.85	370.20	0.00	0.00	0.00
4,900.00	0.00	0.00	4,832.59	-123.09	-341.46	591.85	370.20	0.00	0.00	0.00
5,000.00	0.00	0.00	4,932.59	-223.09	-341.46	591.85	370.20	0.00	0.00	0.00
5,100.00	0.00	0.00	5,032.59	-323.09	-341.46	591.85	370.20	0.00	0.00	0.00
5,200.00	0.00	0.00	5,132.59	-423.09	-341.46	591.85	370.20	0.00	0.00	0.00
5,300.00	0.00	0.00	5,232.59	-523.09	-341.46	591.85	370.20	0.00	0.00	0.00
5,400.00	0.00	0.00	5,332.59	-623.09	-341.46	591.85	370.20	0.00	0.00	0.00
5,500.00	0.00	0.00	5,432.59	-723.09	-341.46	591.85	370.20	0.00	0.00	0.00
5,600.00	0.00	0.00	5,532.59	-823.09	-341.46	591.85	370.20	0.00	0.00	0.00
KOP (10°/100ft BUR)										
5,603.95	0.00	0.00	5,536.54	-827.04	-341.46	591.85	370.20	0.00	0.00	0.00
5,700.00	9.60	180.34	5,632.14	-922.64	-349.49	591.80	378.22	10.00	10.00	0.00
5,800.00	19.60	180.34	5,728.79	-1,019.29	-374.68	591.65	403.37	10.00	10.00	0.00
5,900.00	29.60	180.34	5,819.59	-1,110.09	-416.26	591.41	444.89	10.00	10.00	0.00
6,000.00	39.60	180.34	5,901.80	-1,192.30	-472.98	591.07	501.52	10.00	10.00	0.00
Sharon Springs Member										
6,050.87	44.69	180.34	5,939.50	-1,230.00	-507.10	590.87	535.60	10.00	10.00	0.00
6,100.00	49.60	180.34	5,972.90	-1,263.40	-543.11	590.65	571.55	10.00	10.00	0.00
Niobrara Formation										
6,187.87	58.39	180.34	6,024.50	-1,315.00	-614.12	590.23	642.45	10.00	10.00	0.00
6,200.00	59.60	180.34	6,030.75	-1,321.25	-624.52	590.17	652.84	10.00	10.00	0.00
6,300.00	69.60	180.34	6,073.58	-1,364.08	-714.74	589.64	742.92	10.00	10.00	0.00
6,400.00	79.60	180.34	6,100.10	-1,390.60	-811.03	589.06	839.06	10.00	10.00	0.00
6,500.00	89.60	180.34	6,109.49	-1,399.99	-910.46	588.48	938.34	10.00	10.00	0.00
BPI: 460ft FNL & 529ft FEL of Sec 14										
6,503.95	90.00	180.34	6,109.50	-1,400.00	-914.41	588.45	942.29	10.00	10.00	0.00
6,600.00	90.00	180.34	6,109.50	-1,400.00	-1,010.45	587.88	1,038.19	0.00	0.00	0.00
6,700.00	90.00	180.34	6,109.50	-1,400.00	-1,110.45	587.29	1,138.04	0.00	0.00	0.00
6,800.00	90.00	180.34	6,109.50	-1,400.00	-1,210.45	586.70	1,237.89	0.00	0.00	0.00
6,900.00	90.00	180.34	6,109.50	-1,400.00	-1,310.45	586.10	1,337.73	0.00	0.00	0.00
7,000.00	90.00	180.34	6,109.50	-1,400.00	-1,410.45	585.51	1,437.58	0.00	0.00	0.00

Planning Report



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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE 24ft @ 4709.50usft
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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)
7,100.00	90.00	180.34	6,109.50	-1,400.00	-1,510.45	584.92	1,537.43	0.00	0.00	0.00
7,200.00	90.00	180.34	6,109.50	-1,400.00	-1,610.44	584.32	1,637.28	0.00	0.00	0.00
7,300.00	90.00	180.34	6,109.50	-1,400.00	-1,710.44	583.73	1,737.12	0.00	0.00	0.00
7,400.00	90.00	180.34	6,109.50	-1,400.00	-1,810.44	583.13	1,836.97	0.00	0.00	0.00
7,500.00	90.00	180.34	6,109.50	-1,400.00	-1,910.44	582.54	1,936.82	0.00	0.00	0.00
7,600.00	90.00	180.34	6,109.51	-1,400.01	-2,010.44	581.95	2,036.67	0.00	0.00	0.00
7,700.00	90.00	180.34	6,109.51	-1,400.01	-2,110.44	581.35	2,136.51	0.00	0.00	0.00
7,800.00	90.00	180.34	6,109.51	-1,400.01	-2,210.43	580.76	2,236.36	0.00	0.00	0.00
7,900.00	90.00	180.34	6,109.51	-1,400.01	-2,310.43	580.16	2,336.21	0.00	0.00	0.00
8,000.00	90.00	180.34	6,109.51	-1,400.01	-2,410.43	579.57	2,436.06	0.00	0.00	0.00
8,100.00	90.00	180.34	6,109.51	-1,400.01	-2,510.43	578.97	2,535.90	0.00	0.00	0.00
8,200.00	90.00	180.34	6,109.51	-1,400.01	-2,610.43	578.38	2,635.75	0.00	0.00	0.00
8,300.00	90.00	180.34	6,109.51	-1,400.01	-2,710.42	577.78	2,735.60	0.00	0.00	0.00
8,400.00	90.00	180.34	6,109.51	-1,400.01	-2,810.42	577.19	2,835.45	0.00	0.00	0.00
8,500.00	90.00	180.34	6,109.51	-1,400.01	-2,910.42	576.59	2,935.29	0.00	0.00	0.00
8,600.00	90.00	180.34	6,109.51	-1,400.01	-3,010.42	575.99	3,035.14	0.00	0.00	0.00
8,700.00	90.00	180.34	6,109.51	-1,400.01	-3,110.42	575.40	3,134.99	0.00	0.00	0.00
8,800.00	90.00	180.34	6,109.51	-1,400.01	-3,210.42	574.80	3,234.84	0.00	0.00	0.00
8,900.00	90.00	180.34	6,109.51	-1,400.01	-3,310.41	574.21	3,334.68	0.00	0.00	0.00
9,000.00	90.00	180.34	6,109.51	-1,400.01	-3,410.41	573.61	3,434.53	0.00	0.00	0.00
9,100.00	90.00	180.34	6,109.51	-1,400.01	-3,510.41	573.01	3,534.38	0.00	0.00	0.00
9,200.00	90.00	180.34	6,109.51	-1,400.01	-3,610.41	572.42	3,634.23	0.00	0.00	0.00
9,300.00	90.00	180.34	6,109.51	-1,400.01	-3,710.41	571.82	3,734.07	0.00	0.00	0.00
9,400.00	90.00	180.34	6,109.51	-1,400.01	-3,810.41	571.22	3,833.92	0.00	0.00	0.00
9,500.00	90.00	180.34	6,109.51	-1,400.01	-3,910.40	570.63	3,933.77	0.00	0.00	0.00
9,600.00	90.00	180.34	6,109.51	-1,400.01	-4,010.40	570.03	4,033.61	0.00	0.00	0.00
9,700.00	90.00	180.34	6,109.51	-1,400.01	-4,110.40	569.43	4,133.46	0.00	0.00	0.00
9,800.00	90.00	180.34	6,109.51	-1,400.01	-4,210.40	568.84	4,233.31	0.00	0.00	0.00
9,900.00	90.00	180.34	6,109.51	-1,400.01	-4,310.40	568.24	4,333.16	0.00	0.00	0.00
10,000.00	90.00	180.34	6,109.51	-1,400.01	-4,410.39	567.64	4,433.00	0.00	0.00	0.00
10,100.00	90.00	180.34	6,109.51	-1,400.01	-4,510.39	567.04	4,532.85	0.00	0.00	0.00
10,200.00	90.00	180.34	6,109.51	-1,400.01	-4,610.39	566.45	4,632.70	0.00	0.00	0.00
10,300.00	90.00	180.34	6,109.51	-1,400.01	-4,710.39	565.85	4,732.55	0.00	0.00	0.00
10,400.00	90.00	180.34	6,109.51	-1,400.01	-4,810.39	565.25	4,832.39	0.00	0.00	0.00
10,500.00	90.00	180.34	6,109.51	-1,400.01	-4,910.39	564.65	4,932.24	0.00	0.00	0.00
10,600.00	90.00	180.34	6,109.51	-1,400.01	-5,010.38	564.05	5,032.09	0.00	0.00	0.00
10,700.00	90.00	180.34	6,109.51	-1,400.01	-5,110.38	563.46	5,131.94	0.00	0.00	0.00
10,800.00	90.00	180.34	6,109.51	-1,400.01	-5,210.38	562.86	5,231.78	0.00	0.00	0.00
10,900.00	90.00	180.34	6,109.51	-1,400.01	-5,310.38	562.26	5,331.63	0.00	0.00	0.00
11,000.00	90.00	180.34	6,109.51	-1,400.01	-5,410.38	561.66	5,431.48	0.00	0.00	0.00
11,100.00	90.00	180.34	6,109.51	-1,400.01	-5,510.38	561.06	5,531.32	0.00	0.00	0.00
11,200.00	90.00	180.34	6,109.51	-1,400.01	-5,610.37	560.46	5,631.17	0.00	0.00	0.00
11,300.00	90.00	180.34	6,109.51	-1,400.01	-5,710.37	559.86	5,731.02	0.00	0.00	0.00
11,400.00	90.00	180.34	6,109.51	-1,400.01	-5,810.37	559.26	5,830.87	0.00	0.00	0.00
11,500.00	90.00	180.34	6,109.51	-1,400.01	-5,910.37	558.66	5,930.71	0.00	0.00	0.00
11,600.00	90.00	180.34	6,109.51	-1,400.01	-6,010.37	558.06	6,030.56	0.00	0.00	0.00
11,700.00	90.00	180.34	6,109.51	-1,400.01	-6,110.36	557.47	6,130.41	0.00	0.00	0.00
11,800.00	90.00	180.34	6,109.51	-1,400.01	-6,210.36	556.87	6,230.26	0.00	0.00	0.00
11,900.00	90.00	180.34	6,109.51	-1,400.01	-6,310.36	556.27	6,330.10	0.00	0.00	0.00
12,000.00	90.00	180.34	6,109.51	-1,400.01	-6,410.36	555.67	6,429.95	0.00	0.00	0.00
12,100.00	90.00	180.34	6,109.51	-1,400.01	-6,510.36	555.06	6,529.80	0.00	0.00	0.00
12,200.00	90.00	180.34	6,109.51	-1,400.01	-6,610.36	554.46	6,629.64	0.00	0.00	0.00
12,300.00	90.00	180.34	6,109.51	-1,400.01	-6,710.35	553.86	6,729.49	0.00	0.00	0.00
12,400.00	90.00	180.34	6,109.51	-1,400.01	-6,810.35	553.26	6,829.34	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.15.1	Local Co-ordinate Reference:	Well GROTHEER 5-61 11B-14-23-5
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KBE 24ft @ 4709.50usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE 24ft @ 4709.50usft
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-14-23-5	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)
12,500.00	90.00	180.34	6,109.51	-1,400.01	-6,910.35	552.66	6,929.19	0.00	0.00	0.00
12,600.00	90.00	180.34	6,109.51	-1,400.01	-7,010.35	552.06	7,029.03	0.00	0.00	0.00
12,700.00	90.00	180.34	6,109.51	-1,400.01	-7,110.35	551.46	7,128.88	0.00	0.00	0.00
12,800.00	90.00	180.34	6,109.51	-1,400.01	-7,210.34	550.86	7,228.73	0.00	0.00	0.00
12,900.00	90.00	180.34	6,109.51	-1,400.01	-7,310.34	550.26	7,328.57	0.00	0.00	0.00
13,000.00	90.00	180.34	6,109.51	-1,400.01	-7,410.34	549.66	7,428.42	0.00	0.00	0.00
13,100.00	90.00	180.34	6,109.51	-1,400.01	-7,510.34	549.06	7,528.27	0.00	0.00	0.00
13,200.00	90.00	180.34	6,109.51	-1,400.01	-7,610.34	548.45	7,628.12	0.00	0.00	0.00
13,300.00	90.00	180.34	6,109.51	-1,400.01	-7,710.34	547.85	7,727.96	0.00	0.00	0.00
13,400.00	90.00	180.34	6,109.51	-1,400.01	-7,810.33	547.25	7,827.81	0.00	0.00	0.00
13,500.00	90.00	180.35	6,109.51	-1,400.01	-7,910.33	546.65	7,927.66	0.00	0.00	0.00
13,600.00	90.00	180.35	6,109.51	-1,400.01	-8,010.33	546.05	8,027.50	0.00	0.00	0.00
13,700.00	90.00	180.35	6,109.51	-1,400.01	-8,110.33	545.44	8,127.35	0.00	0.00	0.00
13,800.00	90.00	180.35	6,109.51	-1,400.01	-8,210.33	544.84	8,227.20	0.00	0.00	0.00
13,900.00	90.00	180.35	6,109.51	-1,400.01	-8,310.32	544.24	8,327.05	0.00	0.00	0.00
14,000.00	90.00	180.35	6,109.51	-1,400.01	-8,410.32	543.64	8,426.89	0.00	0.00	0.00
14,100.00	90.00	180.35	6,109.51	-1,400.01	-8,510.32	543.03	8,526.74	0.00	0.00	0.00
14,200.00	90.00	180.35	6,109.51	-1,400.01	-8,610.32	542.43	8,626.59	0.00	0.00	0.00
14,300.00	90.00	180.35	6,109.51	-1,400.01	-8,710.32	541.83	8,726.43	0.00	0.00	0.00
14,400.00	90.00	180.35	6,109.51	-1,400.01	-8,810.32	541.22	8,826.28	0.00	0.00	0.00
14,500.00	90.00	180.35	6,109.51	-1,400.01	-8,910.31	540.62	8,926.13	0.00	0.00	0.00
14,600.00	90.00	180.35	6,109.51	-1,400.01	-9,010.31	540.02	9,025.97	0.00	0.00	0.00
14,700.00	90.00	180.35	6,109.51	-1,400.01	-9,110.31	539.41	9,125.82	0.00	0.00	0.00
14,800.00	90.00	180.35	6,109.51	-1,400.01	-9,210.31	538.81	9,225.67	0.00	0.00	0.00
14,900.00	90.00	180.35	6,109.51	-1,400.01	-9,310.31	538.21	9,325.52	0.00	0.00	0.00
15,000.00	90.00	180.35	6,109.51	-1,400.01	-9,410.30	537.60	9,425.36	0.00	0.00	0.00
15,100.00	90.00	180.35	6,109.51	-1,400.01	-9,510.30	537.00	9,525.21	0.00	0.00	0.00
15,200.00	90.00	180.35	6,109.50	-1,400.00	-9,610.30	536.39	9,625.06	0.00	0.00	0.00
15,300.00	90.00	180.35	6,109.50	-1,400.00	-9,710.30	535.79	9,724.90	0.00	0.00	0.00
15,400.00	90.00	180.35	6,109.50	-1,400.00	-9,810.30	535.18	9,824.75	0.00	0.00	0.00
15,500.00	90.00	180.35	6,109.50	-1,400.00	-9,910.30	534.58	9,924.60	0.00	0.00	0.00
15,600.00	90.00	180.35	6,109.50	-1,400.00	-10,010.29	533.97	10,024.44	0.00	0.00	0.00
15,700.00	90.00	180.35	6,109.50	-1,400.00	-10,110.29	533.37	10,124.29	0.00	0.00	0.00
15,800.00	90.00	180.35	6,109.50	-1,400.00	-10,210.29	532.76	10,224.14	0.00	0.00	0.00
15,900.00	90.00	180.35	6,109.50	-1,400.00	-10,310.29	532.16	10,323.99	0.00	0.00	0.00
16,000.00	90.00	180.35	6,109.50	-1,400.00	-10,410.29	531.55	10,423.83	0.00	0.00	0.00
16,100.00	90.00	180.35	6,109.50	-1,400.00	-10,510.28	530.95	10,523.68	0.00	0.00	0.00
16,200.00	90.00	180.35	6,109.50	-1,400.00	-10,610.28	530.34	10,623.53	0.00	0.00	0.00
EPI: 460ft FSL & 515ft FEL of Sec 23										
16,227.22	90.00	180.35	6,109.50	-1,400.00	-10,637.50	530.18	10,650.70	0.00	0.00	0.00
16,228.12	90.00	180.32	6,109.50	-1,400.00	-10,638.40	530.17	10,651.60	3.01	0.00	-3.01
16,300.00	90.00	180.32	6,109.50	-1,400.00	-10,710.28	529.77	10,723.38	0.00	0.00	0.00
BHL: 360ft FSL & 515ft FEL of Sec 23										
16,327.04	90.00	180.32	6,109.50	-1,400.00	-10,737.32	529.62	10,750.37	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.15.1	Local Co-ordinate Reference:	Well GROTHEER 5-61 11B-14-23-5
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KBE 24ft @ 4709.50usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KBE 24ft @ 4709.50usft
Site:	SE SE SEC. 11 T5N R61W 6th P.M.	North Reference:	True
Well:	GROTHEER 5-61 11B-14-23-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
20.50	20.50	Laramie-Fox Hills Formation				
309.50	309.50	Pierre Formation				
469.60	469.50	Upper Pierre aquifer				
1,445.80	1,429.50	Base of Upper Pierre aquifer				
3,306.46	3,249.50	Larimer ("Parkman") sandstone				
3,572.27	3,509.50	Pierre Formation				
3,986.75	3,919.50	Terry ("Sussex") sandstone				
4,086.89	4,019.50	Pierre Formation				
4,526.91	4,459.50	Hygiene ("Shannon") sandstone				
4,596.91	4,529.50	Pierre Formation				
6,050.87	5,939.50	Sharon Springs Member				
6,187.87	6,024.50	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 1126ft FEL of Sec 11
300.00	300.00	0.00	0.00	START NUDGE (2"/100ft BUR)
900.00	895.62	-31.28	54.23	EOB TO 12° INC
3,584.22	3,521.19	-310.18	537.62	END OF TANGENT
4,184.22	4,116.81	-341.46	591.85	EOD TO VERTICAL
5,603.95	5,536.54	-341.46	591.85	KOP (10"/100ft BUR)
6,503.95	6,109.50	-914.41	588.45	BPI: 460ft FNL & 529ft FEL of Sec 14
16,227.22	6,109.50	-10,637.50	530.18	EPI: 460ft FSL & 515ft FEL of Sec 23
16,327.04	6,109.50	-10,737.32	529.62	BHL: 360ft FSL & 515ft FEL of Sec 23