

# **BISON OIL & GAS II, LLC**

**WELD COUNTY, COLORADO (NAD 83)**

**SW SW SEC. 11 T5N R61W 6th P.M.**

**GROTHER 5-61 11A-2-1**

**ORIGINAL WELLBORE**

**25 February, 2019**

**Plan: PROPOSAL #1**





Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SW SW SEC. 11 T5N R61W 6th P.M.  
Well: GROTHEER 5-61 11A-2-1  
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: 460ft FSL & 1125ft FWL of Sec 11	
100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)	
695.62	700.00	12.00	220.87	-47.34	-40.97	-44.68	62.60	EOB TO 12° INC	
3620.40	3690.12	12.00	220.87	-517.41	-447.80	-488.42	684.28	END OF TANGENT	
4216.03	4290.12	0.00	0.00	-564.75	-488.77	-533.11	746.89	EOD TO VERTICAL	
5572.24	5646.34	0.00	0.00	-564.75	-488.77	-533.11	746.89	KOP (10°/100ft BUR)	
6145.20	6546.33	90.00	347.30	-5.81	-614.73	32.61	1319.84	BPI *NEW*: 460ft FSL & 510ft FWL of Sec 11	
6145.20	6979.53	90.00	0.30	423.92	-661.43	464.42	1753.03	EOT TO 0.3° AZ	
6145.20	16251.94	90.00	0.30	9696.21	-613.53	9715.60	11025.44	EPI: 460ft FNL & 460ft FWL of Sec 2	
6145.20	16256.53	90.00	0.16	9700.81	-613.51	9720.19	11030.04	EOT TO 0.16° AZ	
6145.20	16351.76	90.00	0.16	9796.03	-613.25	9815.21	11125.27	BHL: 360ft FNL & 460ft FWL of Sec 2	

PROPOSED LOCAL COORDINATES:

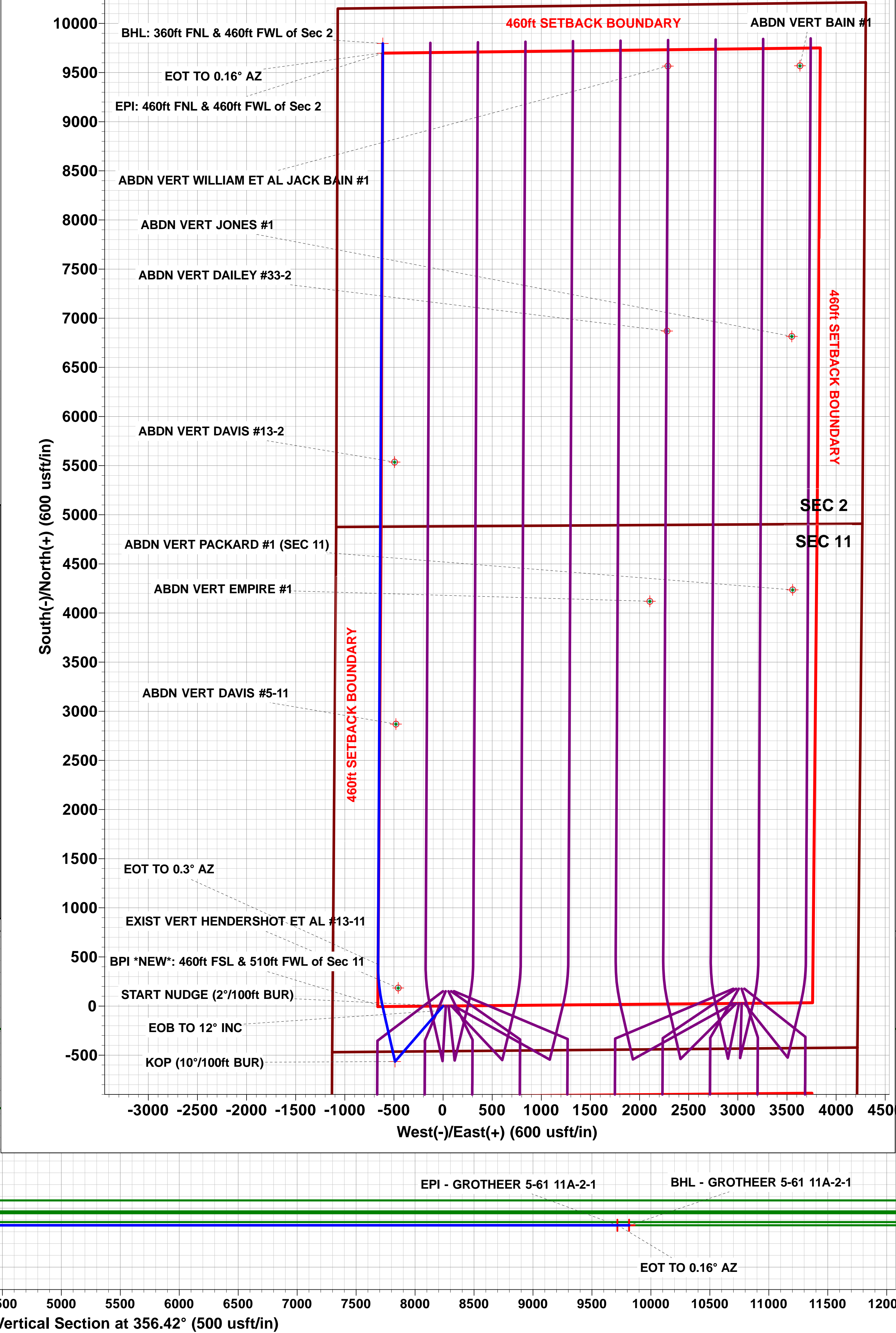
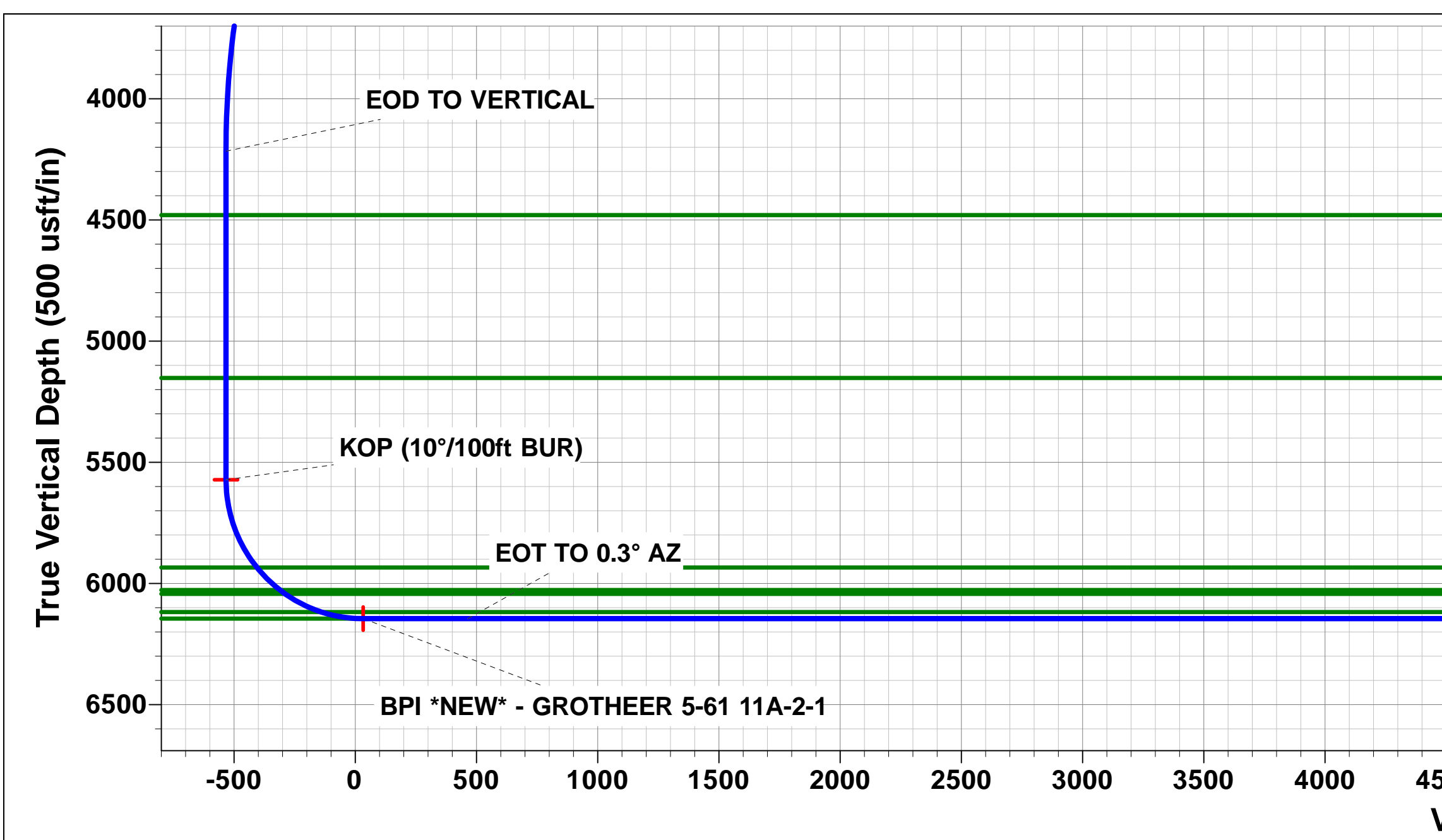
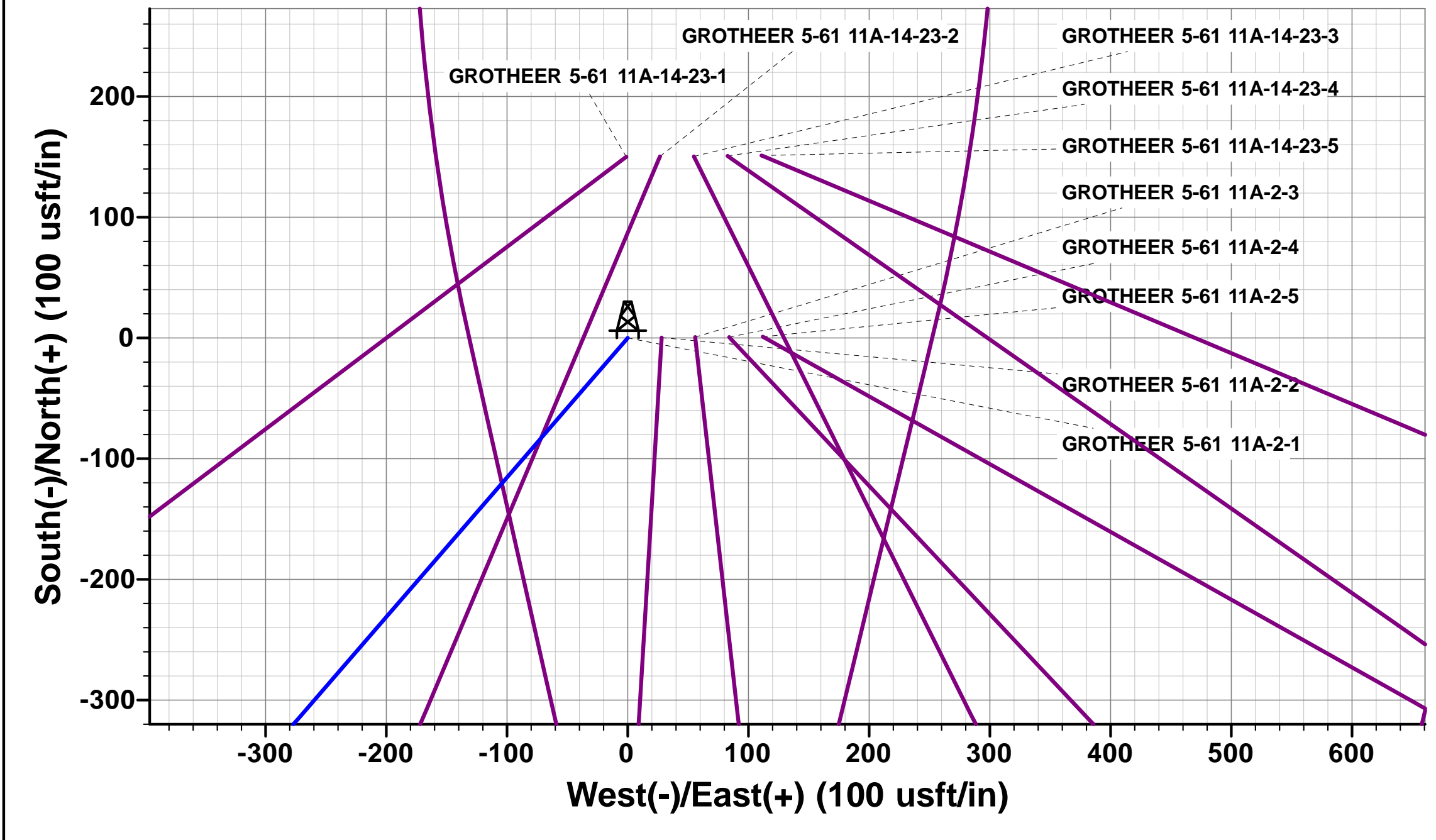
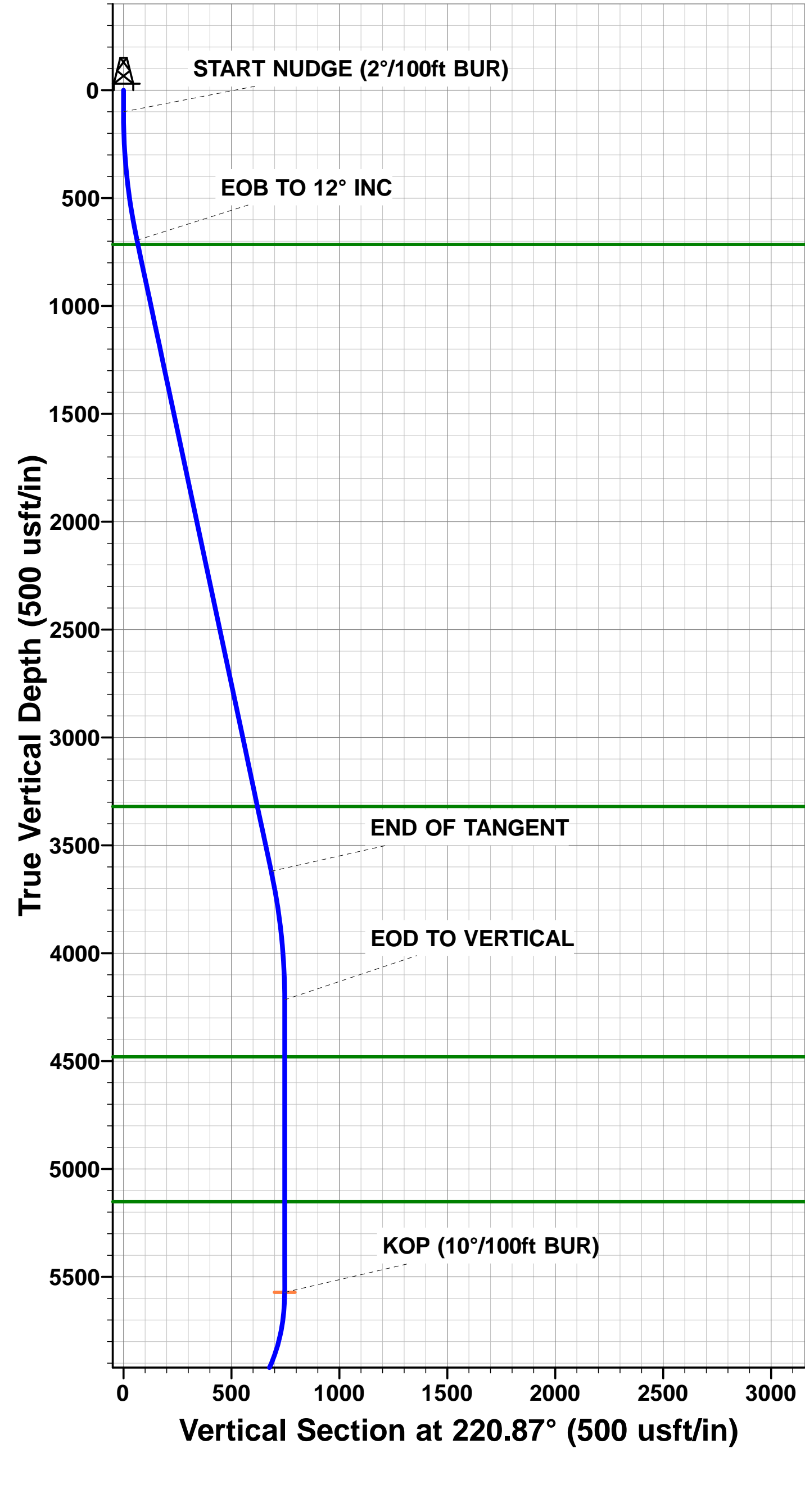
SHL: 460ft FSL & 1125ft FWL Sec 11

BPI \*NEW\* : 460ft FSL & 510ft FWL Sec 11

EPI: 460ft FNL & 460ft FWL Sec 2

BHL: 360ft FNL & 460ft FWL of Sec 2

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - GROTHEER 5-61 11A-2-1	5572.24	-564.75	-488.77	40.408221	-104.182896
BPI *NEW* - GROTHEER 5-61 11A-2-1	6145.20	-5.81	-614.73	40.409755	-104.183348
EPI - GROTHEER 5-61 11A-2-1	6145.20	9696.21	-613.53	40.436386	-104.183345
BHL - GROTHEER 5-61 11A-2-1	6145.20	9796.03	-613.25	40.436660	-104.183344



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11A-2-1
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4730.20usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4730.20usft
<b>Site:</b>	SW SW SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11A-2-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

<b>Project</b>	WELD COUNTY, COLORADO (NAD 83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site	SW SW SEC. 11 T5N R61W 6th P.M.				
Site Position:		Northing:	1,395,001.09 usft	Latitude:	40.410183
From:	Lat/Long	Easting:	3,367,246.06 usft	Longitude:	-104.181145
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000ft	Grid Convergence:	0.85 °

Well	GROTHEER 5-61 11A-2-1					
Well Position	+N/-S	-150.10 usft	Northing:	1,394,851.03 usft	Latitude:	40.409771
	+E/-W	1.11 usft	Easting:	3,367,249.41 usft	Longitude:	-104.181141
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,705.20 usft

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	25/02/2019	7.72	66.91	52,265

<b>Design</b>	PROPOSAL #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	356.42

<b>Plan Sections</b>											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	-4,730.20	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	-4,630.20	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	12.00	220.87	695.62	-4,034.58	-47.34	-40.97	2.00	2.00	0.00	220.87	
3,690.12	12.00	220.87	3,620.40	-1,109.80	-517.41	-447.80	0.00	0.00	0.00	0.00	
4,290.12	0.00	0.00	4,216.03	-514.17	-564.75	-488.77	2.00	-2.00	0.00	180.00	
5,646.34	0.00	0.00	5,572.24	842.04	-564.75	-488.77	0.00	0.00	0.00	0.00	KOP - GROTHEER
6,546.33	90.00	347.30	6,145.20	1,415.00	-5.81	-614.73	10.00	10.00	-1.41	347.30	BPI *NEW* - GROT
6,979.53	90.00	0.30	6,145.20	1,415.00	423.92	-661.43	3.00	0.00	3.00	90.00	
16,251.94	90.00	0.30	6,145.20	1,415.00	9,696.21	-613.53	0.00	0.00	0.00	0.00	EPI - GROTHEER !
16,256.53	90.00	0.16	6,145.20	1,415.00	9,700.81	-613.51	3.00	0.00	-3.00	-90.00	
16,351.76	90.00	0.16	6,145.20	1,415.00	9,796.03	-613.25	0.00	0.00	0.00	0.00	BHL - GROTHEER

# Planning Report



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<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4730.20usft
<b>Site:</b>	SW SW SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11A-2-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
<b>SHL: 460ft FSL &amp; 1125ft FWL of Sec 11</b>										
0.00	0.00	0.00	0.00	4,730.20	0.00	0.00	0.00	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
100.00	0.00	0.00	100.00	4,630.20	0.00	0.00	0.00	0.00	0.00	0.00
200.00	2.00	220.87	199.98	4,530.22	-1.32	-1.14	-1.25	2.00	2.00	0.00
300.00	4.00	220.87	299.84	4,430.36	-5.28	-4.57	-4.98	2.00	2.00	0.00
400.00	6.00	220.87	399.45	4,330.75	-11.87	-10.27	-11.20	2.00	2.00	0.00
500.00	8.00	220.87	498.70	4,231.50	-21.08	-18.24	-19.90	2.00	2.00	0.00
600.00	10.00	220.87	597.47	4,132.73	-32.91	-28.48	-31.07	2.00	2.00	0.00
<b>EOB TO 12° INC</b>										
700.00	12.00	220.87	695.62	4,034.58	-47.34	-40.97	-44.68	2.00	2.00	0.00
<b>PIERRE SHALE (BASE FOX HILLS)</b>										
720.01	12.00	220.87	715.20	4,015.00	-50.48	-43.69	-47.65	0.00	0.00	0.00
800.00	12.00	220.87	793.44	3,936.76	-63.06	-54.57	-59.52	0.00	0.00	0.00
900.00	12.00	220.87	891.25	3,838.95	-78.78	-68.18	-74.36	0.00	0.00	0.00
1,000.00	12.00	220.87	989.07	3,741.13	-94.50	-81.79	-89.20	0.00	0.00	0.00
1,100.00	12.00	220.87	1,086.88	3,643.32	-110.22	-95.39	-104.04	0.00	0.00	0.00
1,200.00	12.00	220.87	1,184.70	3,545.50	-125.94	-109.00	-118.89	0.00	0.00	0.00
1,300.00	12.00	220.87	1,282.51	3,447.69	-141.66	-122.60	-133.73	0.00	0.00	0.00
1,400.00	12.00	220.87	1,380.33	3,349.87	-157.38	-136.21	-148.57	0.00	0.00	0.00
1,500.00	12.00	220.87	1,478.14	3,252.06	-173.10	-149.82	-163.41	0.00	0.00	0.00
1,600.00	12.00	220.87	1,575.96	3,154.24	-188.83	-163.42	-178.25	0.00	0.00	0.00
1,700.00	12.00	220.87	1,673.77	3,056.43	-204.55	-177.03	-193.09	0.00	0.00	0.00
1,800.00	12.00	220.87	1,771.59	2,958.61	-220.27	-190.63	-207.93	0.00	0.00	0.00
1,900.00	12.00	220.87	1,869.40	2,860.80	-235.99	-204.24	-222.77	0.00	0.00	0.00
2,000.00	12.00	220.87	1,967.22	2,762.98	-251.71	-217.85	-237.61	0.00	0.00	0.00
2,100.00	12.00	220.87	2,065.03	2,665.17	-267.43	-231.45	-252.45	0.00	0.00	0.00
2,200.00	12.00	220.87	2,162.84	2,567.36	-283.15	-245.06	-267.29	0.00	0.00	0.00
2,300.00	12.00	220.87	2,260.66	2,469.54	-298.87	-258.66	-282.13	0.00	0.00	0.00
2,400.00	12.00	220.87	2,358.47	2,371.73	-314.59	-272.27	-296.97	0.00	0.00	0.00
2,500.00	12.00	220.87	2,456.29	2,273.91	-330.31	-285.87	-311.81	0.00	0.00	0.00
2,600.00	12.00	220.87	2,554.10	2,176.10	-346.04	-299.48	-326.65	0.00	0.00	0.00
2,700.00	12.00	220.87	2,651.92	2,078.28	-361.76	-313.09	-341.49	0.00	0.00	0.00
2,800.00	12.00	220.87	2,749.73	1,980.47	-377.48	-326.69	-356.33	0.00	0.00	0.00
2,900.00	12.00	220.87	2,847.55	1,882.65	-393.20	-340.30	-371.17	0.00	0.00	0.00
3,000.00	12.00	220.87	2,945.36	1,784.84	-408.92	-353.90	-386.01	0.00	0.00	0.00
3,100.00	12.00	220.87	3,043.18	1,687.02	-424.64	-367.51	-400.85	0.00	0.00	0.00
3,200.00	12.00	220.87	3,140.99	1,589.21	-440.36	-381.12	-415.69	0.00	0.00	0.00
3,300.00	12.00	220.87	3,238.81	1,491.39	-456.08	-394.72	-430.53	0.00	0.00	0.00
<b>PARKMAN</b>										
3,383.21	12.00	220.87	3,320.20	1,410.00	-469.16	-406.04	-442.88	0.00	0.00	0.00
3,400.00	12.00	220.87	3,336.62	1,393.58	-471.80	-408.33	-445.37	0.00	0.00	0.00
3,500.00	12.00	220.87	3,434.44	1,295.76	-487.52	-421.93	-460.21	0.00	0.00	0.00
3,600.00	12.00	220.87	3,532.25	1,197.95	-503.25	-435.54	-475.05	0.00	0.00	0.00
<b>END OF TANGENT</b>										
3,690.12	12.00	220.87	3,620.40	1,109.80	-517.41	-447.80	-488.42	0.00	0.00	0.00
3,700.00	11.80	220.87	3,630.07	1,100.13	-518.95	-449.14	-489.88	2.00	-2.00	0.00
3,800.00	9.80	220.87	3,728.29	1,001.91	-533.13	-461.40	-503.26	2.00	-2.00	0.00
3,900.00	7.80	220.87	3,827.11	903.09	-544.70	-471.41	-514.18	2.00	-2.00	0.00
4,000.00	5.80	220.87	3,926.40	803.80	-553.65	-479.16	-522.63	2.00	-2.00	0.00
4,100.00	3.80	220.87	4,026.04	704.16	-559.98	-484.64	-528.61	2.00	-2.00	0.00
4,200.00	1.80	220.87	4,125.92	604.28	-563.68	-487.84	-532.10	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										



# Planning Report



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<b>Site:</b>	SW SW SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11A-2-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
<b>4,290.12</b>	<b>0.00</b>	<b>0.00</b>	<b>4,216.03</b>	<b>514.17</b>	<b>-564.75</b>	<b>-488.77</b>	<b>-533.11</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
4,300.00	0.00	0.00	4,225.90	504.30	-564.75	-488.77	-533.11	0.00	0.00	0.00
4,400.00	0.00	0.00	4,325.90	404.30	-564.75	-488.77	-533.11	0.00	0.00	0.00
4,500.00	0.00	0.00	4,425.90	304.30	-564.75	-488.77	-533.11	0.00	0.00	0.00
<b>SUSSEX</b>										
<b>4,554.30</b>	<b>0.00</b>	<b>0.00</b>	<b>4,480.20</b>	<b>250.00</b>	<b>-564.75</b>	<b>-488.77</b>	<b>-533.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,600.00	0.00	0.00	4,525.90	204.30	-564.75	-488.77	-533.11	0.00	0.00	0.00
4,700.00	0.00	0.00	4,625.90	104.30	-564.75	-488.77	-533.11	0.00	0.00	0.00
4,800.00	0.00	0.00	4,725.90	4.30	-564.75	-488.77	-533.11	0.00	0.00	0.00
4,900.00	0.00	0.00	4,825.90	-95.70	-564.75	-488.77	-533.11	0.00	0.00	0.00
5,000.00	0.00	0.00	4,925.90	-195.70	-564.75	-488.77	-533.11	0.00	0.00	0.00
5,100.00	0.00	0.00	5,025.90	-295.70	-564.75	-488.77	-533.11	0.00	0.00	0.00
5,200.00	0.00	0.00	5,125.90	-395.70	-564.75	-488.77	-533.11	0.00	0.00	0.00
<b>SHANNON</b>										
<b>5,226.30</b>	<b>0.00</b>	<b>0.00</b>	<b>5,152.20</b>	<b>-422.00</b>	<b>-564.75</b>	<b>-488.77</b>	<b>-533.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,300.00	0.00	0.00	5,225.90	-495.70	-564.75	-488.77	-533.11	0.00	0.00	0.00
5,400.00	0.00	0.00	5,325.90	-595.70	-564.75	-488.77	-533.11	0.00	0.00	0.00
5,500.00	0.00	0.00	5,425.90	-695.70	-564.75	-488.77	-533.11	0.00	0.00	0.00
5,600.00	0.00	0.00	5,525.90	-795.70	-564.75	-488.77	-533.11	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>5,646.34</b>	<b>0.00</b>	<b>0.00</b>	<b>5,572.24</b>	<b>-842.04</b>	<b>-564.75</b>	<b>-488.77</b>	<b>-533.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,700.00	5.37	347.30	5,625.83	-895.63	-562.30	-489.32	-530.63	10.00	10.00	0.00
5,800.00	15.37	347.30	5,724.07	-993.87	-544.77	-493.27	-512.88	10.00	10.00	0.00
5,900.00	25.37	347.30	5,817.70	-1,087.50	-510.86	-500.91	-478.57	10.00	10.00	0.00
6,000.00	35.37	347.30	5,903.87	-1,173.67	-461.61	-512.01	-428.71	10.00	10.00	0.00
<b>SHARON SPRINGS SHALE</b>										
<b>6,038.12</b>	<b>39.18</b>	<b>347.30</b>	<b>5,934.20</b>	<b>-1,204.00</b>	<b>-439.09</b>	<b>-517.09</b>	<b>-405.92</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,100.00	45.37	347.30	5,979.97	-1,249.77	-398.50	-526.23	-364.85	10.00	10.00	0.00
<b>NIOBRARA FORMATION</b>										
<b>6,172.00</b>	<b>52.57</b>	<b>347.30</b>	<b>6,027.20</b>	<b>-1,297.00</b>	<b>-345.56</b>	<b>-538.17</b>	<b>-311.26</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>NIOBRARA A CHALK</b>										
<b>6,199.17</b>	<b>55.28</b>	<b>347.30</b>	<b>6,043.20</b>	<b>-1,313.00</b>	<b>-324.14</b>	<b>-542.99</b>	<b>-289.58</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,200.00	55.37	347.30	6,043.67	-1,313.47	-323.47	-543.14	-288.90	10.00	10.00	0.00
6,300.00	65.37	347.30	6,093.06	-1,362.86	-238.78	-562.23	-203.19	10.00	10.00	0.00
<b>NIOBRARA B CHALK</b>										
<b>6,369.74</b>	<b>72.34</b>	<b>347.30</b>	<b>6,118.20</b>	<b>-1,388.00</b>	<b>-175.37</b>	<b>-576.52</b>	<b>-139.00</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,400.00	75.37	347.30	6,126.61	-1,396.41	-147.02	-582.91	-110.31	10.00	10.00	0.00
6,500.00	85.37	347.30	6,143.33	-1,413.13	-50.96	-604.55	-13.09	10.00	10.00	0.00
<b>BPI *NEW*: 460ft FSL &amp; 510ft FWL of Sec 11 - NIOBRARA B LP</b>										
<b>6,546.33</b>	<b>90.00</b>	<b>347.30</b>	<b>6,145.20</b>	<b>-1,415.00</b>	<b>-5.81</b>	<b>-614.73</b>	<b>32.61</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,600.00	90.00	348.91	6,145.20	-1,415.00	46.70	-625.79	85.71	3.00	0.00	3.00
6,700.00	90.00	351.91	6,145.20	-1,415.00	145.29	-642.45	185.15	3.00	0.00	3.00
6,800.00	90.00	354.91	6,145.20	-1,415.00	244.62	-653.92	285.00	3.00	0.00	3.00
6,900.00	90.00	357.91	6,145.20	-1,415.00	344.41	-660.18	384.99	3.00	0.00	3.00
<b>EOT TO 0.3° AZ</b>										
<b>6,979.53</b>	<b>90.00</b>	<b>0.30</b>	<b>6,145.20</b>	<b>-1,415.00</b>	<b>423.92</b>	<b>-661.43</b>	<b>464.42</b>	<b>3.00</b>	<b>0.00</b>	<b>3.00</b>
7,000.00	90.00	0.30	6,145.20	-1,415.00	444.40	-661.32	484.85	0.00	0.00	0.00
7,100.00	90.00	0.30	6,145.20	-1,415.00	544.39	-660.81	584.62	0.00	0.00	0.00
7,200.00	90.00	0.30	6,145.20	-1,415.00	644.39	-660.29	684.39	0.00	0.00	0.00
7,300.00	90.00	0.30	6,145.20	-1,415.00	744.39	-659.77	784.16	0.00	0.00	0.00
7,400.00	90.00	0.30	6,145.20	-1,415.00	844.39	-659.26	883.93	0.00	0.00	0.00
7,500.00	90.00	0.30	6,145.20	-1,415.00	944.39	-658.74	983.70	0.00	0.00	0.00
7,600.00	90.00	0.30	6,145.20	-1,415.00	1,044.39	-658.22	1,083.47	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11A-2-1
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4730.20usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4730.20usft
<b>Site:</b>	SW SW SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11A-2-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,700.00	90.00	0.30	6,145.20	-1,415.00	1,144.39	-657.71	1,183.24	0.00	0.00	0.00
7,800.00	90.00	0.30	6,145.20	-1,415.00	1,244.39	-657.19	1,283.02	0.00	0.00	0.00
7,900.00	90.00	0.30	6,145.20	-1,415.00	1,344.38	-656.67	1,382.79	0.00	0.00	0.00
8,000.00	90.00	0.30	6,145.20	-1,415.00	1,444.38	-656.16	1,482.56	0.00	0.00	0.00
8,100.00	90.00	0.30	6,145.20	-1,415.00	1,544.38	-655.64	1,582.33	0.00	0.00	0.00
8,200.00	90.00	0.30	6,145.20	-1,415.00	1,644.38	-655.12	1,682.10	0.00	0.00	0.00
8,300.00	90.00	0.30	6,145.20	-1,415.00	1,744.38	-654.61	1,781.87	0.00	0.00	0.00
8,400.00	90.00	0.30	6,145.20	-1,415.00	1,844.38	-654.09	1,881.64	0.00	0.00	0.00
8,500.00	90.00	0.30	6,145.20	-1,415.00	1,944.38	-653.57	1,981.41	0.00	0.00	0.00
8,600.00	90.00	0.30	6,145.20	-1,415.00	2,044.37	-653.06	2,081.18	0.00	0.00	0.00
8,700.00	90.00	0.30	6,145.20	-1,415.00	2,144.37	-652.54	2,180.95	0.00	0.00	0.00
8,800.00	90.00	0.30	6,145.20	-1,415.00	2,244.37	-652.02	2,280.73	0.00	0.00	0.00
8,900.00	90.00	0.30	6,145.20	-1,415.00	2,344.37	-651.51	2,380.50	0.00	0.00	0.00
9,000.00	90.00	0.30	6,145.20	-1,415.00	2,444.37	-650.99	2,480.27	0.00	0.00	0.00
9,100.00	90.00	0.30	6,145.20	-1,415.00	2,544.37	-650.48	2,580.04	0.00	0.00	0.00
9,200.00	90.00	0.30	6,145.20	-1,415.00	2,644.37	-649.96	2,679.81	0.00	0.00	0.00
9,300.00	90.00	0.30	6,145.20	-1,415.00	2,744.37	-649.44	2,779.58	0.00	0.00	0.00
9,400.00	90.00	0.30	6,145.20	-1,415.00	2,844.36	-648.93	2,879.35	0.00	0.00	0.00
9,500.00	90.00	0.30	6,145.20	-1,415.00	2,944.36	-648.41	2,979.12	0.00	0.00	0.00
9,600.00	90.00	0.30	6,145.20	-1,415.00	3,044.36	-647.89	3,078.89	0.00	0.00	0.00
9,700.00	90.00	0.30	6,145.20	-1,415.00	3,144.36	-647.38	3,178.66	0.00	0.00	0.00
9,800.00	90.00	0.30	6,145.20	-1,415.00	3,244.36	-646.86	3,278.44	0.00	0.00	0.00
9,900.00	90.00	0.30	6,145.20	-1,415.00	3,344.36	-646.34	3,378.21	0.00	0.00	0.00
10,000.00	90.00	0.30	6,145.20	-1,415.00	3,444.36	-645.83	3,477.98	0.00	0.00	0.00
10,100.00	90.00	0.30	6,145.20	-1,415.00	3,544.35	-645.31	3,577.75	0.00	0.00	0.00
10,200.00	90.00	0.30	6,145.20	-1,415.00	3,644.35	-644.79	3,677.52	0.00	0.00	0.00
10,300.00	90.00	0.30	6,145.20	-1,415.00	3,744.35	-644.28	3,777.29	0.00	0.00	0.00
10,400.00	90.00	0.30	6,145.20	-1,415.00	3,844.35	-643.76	3,877.06	0.00	0.00	0.00
10,500.00	90.00	0.30	6,145.20	-1,415.00	3,944.35	-643.24	3,976.83	0.00	0.00	0.00
10,600.00	90.00	0.30	6,145.20	-1,415.00	4,044.35	-642.73	4,076.60	0.00	0.00	0.00
10,700.00	90.00	0.30	6,145.20	-1,415.00	4,144.35	-642.21	4,176.37	0.00	0.00	0.00
10,800.00	90.00	0.30	6,145.20	-1,415.00	4,244.35	-641.69	4,276.15	0.00	0.00	0.00
10,900.00	90.00	0.30	6,145.20	-1,415.00	4,344.34	-641.18	4,375.92	0.00	0.00	0.00
11,000.00	90.00	0.30	6,145.20	-1,415.00	4,444.34	-640.66	4,475.69	0.00	0.00	0.00
11,100.00	90.00	0.30	6,145.20	-1,415.00	4,544.34	-640.14	4,575.46	0.00	0.00	0.00
11,200.00	90.00	0.30	6,145.20	-1,415.00	4,644.34	-639.63	4,675.23	0.00	0.00	0.00
11,300.00	90.00	0.30	6,145.20	-1,415.00	4,744.34	-639.11	4,775.00	0.00	0.00	0.00
11,400.00	90.00	0.30	6,145.20	-1,415.00	4,844.34	-638.59	4,874.77	0.00	0.00	0.00
11,500.00	90.00	0.30	6,145.20	-1,415.00	4,944.34	-638.08	4,974.54	0.00	0.00	0.00
11,600.00	90.00	0.30	6,145.20	-1,415.00	5,044.33	-637.56	5,074.31	0.00	0.00	0.00
11,700.00	90.00	0.30	6,145.20	-1,415.00	5,144.33	-637.04	5,174.08	0.00	0.00	0.00
11,800.00	90.00	0.30	6,145.20	-1,415.00	5,244.33	-636.53	5,273.86	0.00	0.00	0.00
11,900.00	90.00	0.30	6,145.20	-1,415.00	5,344.33	-636.01	5,373.63	0.00	0.00	0.00
12,000.00	90.00	0.30	6,145.20	-1,415.00	5,444.33	-635.50	5,473.40	0.00	0.00	0.00
12,100.00	90.00	0.30	6,145.20	-1,415.00	5,544.33	-634.98	5,573.17	0.00	0.00	0.00
12,200.00	90.00	0.30	6,145.20	-1,415.00	5,644.33	-634.46	5,672.94	0.00	0.00	0.00
12,300.00	90.00	0.30	6,145.20	-1,415.00	5,744.33	-633.95	5,772.71	0.00	0.00	0.00
12,400.00	90.00	0.30	6,145.20	-1,415.00	5,844.32	-633.43	5,872.48	0.00	0.00	0.00
12,500.00	90.00	0.30	6,145.20	-1,415.00	5,944.32	-632.91	5,972.25	0.00	0.00	0.00
12,600.00	90.00	0.30	6,145.20	-1,415.00	6,044.32	-632.40	6,072.02	0.00	0.00	0.00
12,700.00	90.00	0.30	6,145.20	-1,415.00	6,144.32	-631.88	6,171.80	0.00	0.00	0.00
12,800.00	90.00	0.30	6,145.20	-1,415.00	6,244.32	-631.36	6,271.57	0.00	0.00	0.00
12,900.00	90.00	0.30	6,145.20	-1,415.00	6,344.32	-630.85	6,371.34	0.00	0.00	0.00
13,000.00	90.00	0.30	6,145.20	-1,415.00	6,444.32	-630.33	6,471.11	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11A-2-1
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4730.20usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4730.20usft
<b>Site:</b>	SW SW SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11A-2-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
13,100.00	90.00	0.30	6,145.20	-1,415.00	6,544.31	-629.81	6,570.88	0.00	0.00	0.00
13,200.00	90.00	0.30	6,145.20	-1,415.00	6,644.31	-629.30	6,670.65	0.00	0.00	0.00
13,300.00	90.00	0.30	6,145.20	-1,415.00	6,744.31	-628.78	6,770.42	0.00	0.00	0.00
13,400.00	90.00	0.30	6,145.20	-1,415.00	6,844.31	-628.26	6,870.19	0.00	0.00	0.00
13,500.00	90.00	0.30	6,145.20	-1,415.00	6,944.31	-627.75	6,969.96	0.00	0.00	0.00
13,600.00	90.00	0.30	6,145.20	-1,415.00	7,044.31	-627.23	7,069.73	0.00	0.00	0.00
13,700.00	90.00	0.30	6,145.20	-1,415.00	7,144.31	-626.71	7,169.51	0.00	0.00	0.00
13,800.00	90.00	0.30	6,145.20	-1,415.00	7,244.31	-626.20	7,269.28	0.00	0.00	0.00
13,900.00	90.00	0.30	6,145.20	-1,415.00	7,344.30	-625.68	7,369.05	0.00	0.00	0.00
14,000.00	90.00	0.30	6,145.20	-1,415.00	7,444.30	-625.16	7,468.82	0.00	0.00	0.00
14,100.00	90.00	0.30	6,145.20	-1,415.00	7,544.30	-624.65	7,568.59	0.00	0.00	0.00
14,200.00	90.00	0.30	6,145.20	-1,415.00	7,644.30	-624.13	7,668.36	0.00	0.00	0.00
14,300.00	90.00	0.30	6,145.20	-1,415.00	7,744.30	-623.61	7,768.13	0.00	0.00	0.00
14,400.00	90.00	0.30	6,145.20	-1,415.00	7,844.30	-623.10	7,867.90	0.00	0.00	0.00
14,500.00	90.00	0.30	6,145.20	-1,415.00	7,944.30	-622.58	7,967.67	0.00	0.00	0.00
14,600.00	90.00	0.30	6,145.20	-1,415.00	8,044.29	-622.06	8,067.44	0.00	0.00	0.00
14,700.00	90.00	0.30	6,145.20	-1,415.00	8,144.29	-621.55	8,167.22	0.00	0.00	0.00
14,800.00	90.00	0.30	6,145.20	-1,415.00	8,244.29	-621.03	8,266.99	0.00	0.00	0.00
14,900.00	90.00	0.30	6,145.20	-1,415.00	8,344.29	-620.51	8,366.76	0.00	0.00	0.00
15,000.00	90.00	0.30	6,145.20	-1,415.00	8,444.29	-620.00	8,466.53	0.00	0.00	0.00
15,100.00	90.00	0.30	6,145.20	-1,415.00	8,544.29	-619.48	8,566.30	0.00	0.00	0.00
15,200.00	90.00	0.30	6,145.20	-1,415.00	8,644.29	-618.97	8,666.07	0.00	0.00	0.00
15,300.00	90.00	0.30	6,145.20	-1,415.00	8,744.29	-618.45	8,765.84	0.00	0.00	0.00
15,400.00	90.00	0.30	6,145.20	-1,415.00	8,844.28	-617.93	8,865.61	0.00	0.00	0.00
15,500.00	90.00	0.30	6,145.20	-1,415.00	8,944.28	-617.42	8,965.38	0.00	0.00	0.00
15,600.00	90.00	0.30	6,145.20	-1,415.00	9,044.28	-616.90	9,065.15	0.00	0.00	0.00
15,700.00	90.00	0.30	6,145.20	-1,415.00	9,144.28	-616.38	9,164.93	0.00	0.00	0.00
15,800.00	90.00	0.30	6,145.20	-1,415.00	9,244.28	-615.87	9,264.70	0.00	0.00	0.00
15,900.00	90.00	0.30	6,145.20	-1,415.00	9,344.28	-615.35	9,364.47	0.00	0.00	0.00
16,000.00	90.00	0.30	6,145.20	-1,415.00	9,444.28	-614.83	9,464.24	0.00	0.00	0.00
16,100.00	90.00	0.30	6,145.20	-1,415.00	9,544.27	-614.32	9,564.01	0.00	0.00	0.00
16,200.00	90.00	0.30	6,145.20	-1,415.00	9,644.27	-613.80	9,663.78	0.00	0.00	0.00
<b>EPI: 460ft FNL &amp; 460ft FWL of Sec 2</b>										
<b>16,251.94</b>	<b>90.00</b>	<b>0.30</b>	<b>6,145.20</b>	<b>-1,415.00</b>	<b>9,696.21</b>	<b>-613.53</b>	<b>9,715.60</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>EOT TO 0.16° AZ</b>										
<b>16,256.53</b>	<b>90.00</b>	<b>0.16</b>	<b>6,145.20</b>	<b>-1,415.00</b>	<b>9,700.81</b>	<b>-613.51</b>	<b>9,720.19</b>	<b>3.00</b>	<b>0.00</b>	<b>-3.00</b>
16,300.00	90.00	0.16	6,145.20	-1,415.00	9,744.27	-613.39	9,763.56	0.00	0.00	0.00
<b>BHL: 360ft FNL &amp; 460ft FWL of Sec 2</b>										
<b>16,351.76</b>	<b>90.00</b>	<b>0.16</b>	<b>6,145.20</b>	<b>-1,415.00</b>	<b>9,796.03</b>	<b>-613.25</b>	<b>9,815.21</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11A-2-1
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4730.20usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4730.20usft
<b>Site:</b>	SW SW SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11A-2-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
720.01	715.20	PIERRE SHALE (BASE FOX HILLS			
3,383.21	3,320.20	PARKMAN			
4,554.30	4,480.20	SUSSEX			
5,226.30	5,152.20	SHANNON			
6,038.12	5,934.20	SHARON SPRINGS SHALE			
6,172.00	6,027.20	NIOBRARA FORMATION			
6,199.17	6,043.20	NIOBRARA A CHALK			
6,369.74	6,118.20	NIOBRARA B CHALK			
6,546.33	6,145.20	NIOBRARA B 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: 460ft FSL & 1125ft FWL of Sec 11
100.00	100.00	0.00	0.00	START NUDGE (2°/100ft BUR)
700.00	695.62	-47.34	-40.97	EOB TO 12° INC
3,690.12	3,620.40	-517.41	-447.80	END OF TANGENT
4,290.12	4,216.03	-564.75	-488.77	EOD TO VERTICAL
5,646.34	5,572.24	-564.75	-488.77	KOP (10°/100ft BUR)
6,546.33	6,145.20	-5.81	-614.73	BPI *NEW*: 460ft FSL & 510ft FWL of Sec 11
6,979.53	6,145.20	423.92	-661.43	EOT TO 0.3° AZ
16,251.94	6,145.20	9,696.21	-613.53	EPI: 460ft FNL & 460ft FWL of Sec 2
16,256.53	6,145.20	9,700.81	-613.51	EOT TO 0.16° AZ
16,351.76	6,145.20	9,796.03	-613.25	BHL: 360ft FNL & 460ft FWL of Sec 2