

BISON OIL & GAS II, LLC

WELD COUNTY, COLORADO (NAD 83)

NW SW SEC. 8 T9N R59W 6th P.M.

TIMBRO 9-59 8B-9-1

ORIGINAL WELLBORE

05 March, 2018

Plan: PROPOSAL #1





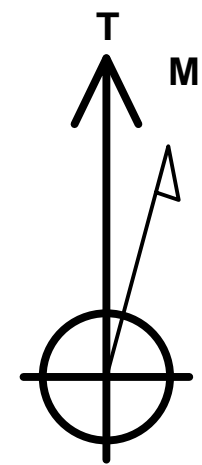
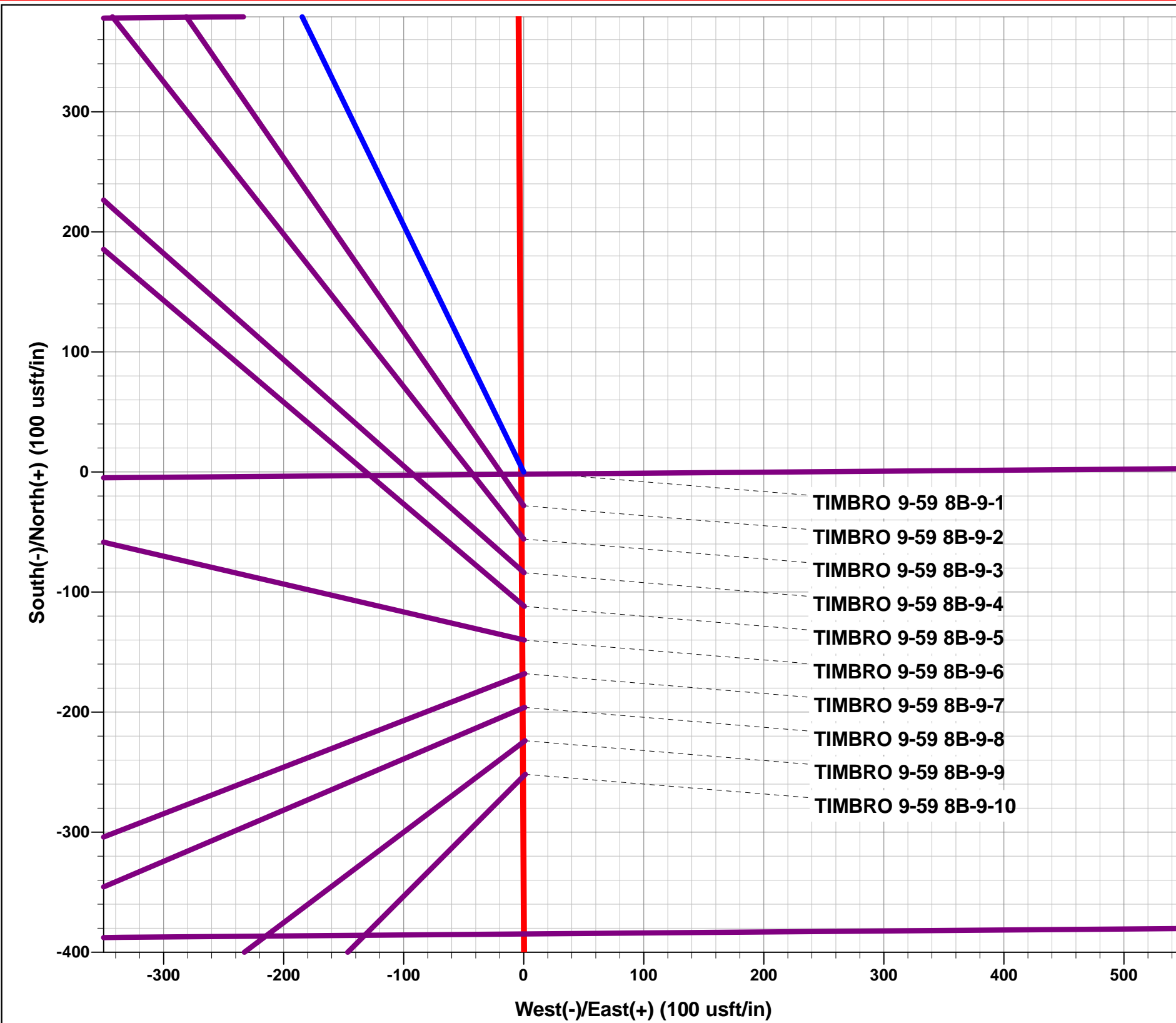
Project: WELD COUNTY, COLORADO (NAD 83)
Site: NW SW SEC. 8 T9N R59W 6th P.M.
Well: TIMBRO 9-59 8B-9-1
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

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: 1443ft FSL & 600ft FWL of Sec 8
100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)
859.41	868.59	15.37	334.06	92.16	-44.83	-32.25	102.49	EOB TO 15.37° INC
4935.63	5096.06	15.37	334.06	1099.88	-535.04	-384.87	1223.11	END OF TANGENT
5695.04	5864.65	0.00	0.00	1192.04	-579.87	-417.11	1325.60	EOD TO VERTICAL
5795.04	5964.65	0.00	0.00	1192.04	-579.87	-417.11	1325.60	KOP (10°/100ft BUR)
6368.00	6864.66	90.00	89.52	1196.84	-6.93	151.43	1898.56	BPI: 2640ft FSL & 600ft FWL of Sec 8
6368.00	16147.90	90.00	89.51	1275.10	9275.99	9363.14	11181.81	EPI: 2636ft FSL & 600ft FEL of Sec 9
6368.00	16148.71	90.00	89.49	1275.11	9276.80	9363.95	11182.61	EOT TO 89.49° AZ
6368.00	16447.91	90.00	89.49	1277.77	9575.99	9660.86	11481.82	BHL: 2635ft FSL & 300ft FEL of Sec 9

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - TIMBRO 9-59 8B-9-1	5795.04	1192.04	-579.87	40.764967	-104.011617
BPI - TIMBRO 9-59 8B-9-1	6368.00	1196.84	-6.93	40.764980	-104.009549
EPI - TIMBRO 9-59 8B-9-1	6368.00	1275.10	9275.99	40.765190	-103.976038
BHL - TIMBRO 9-59 8B-9-1	6368.00	1277.77	9575.99	40.765197	-103.974955



Azimuths to True North
Magnetic North: 7.75°

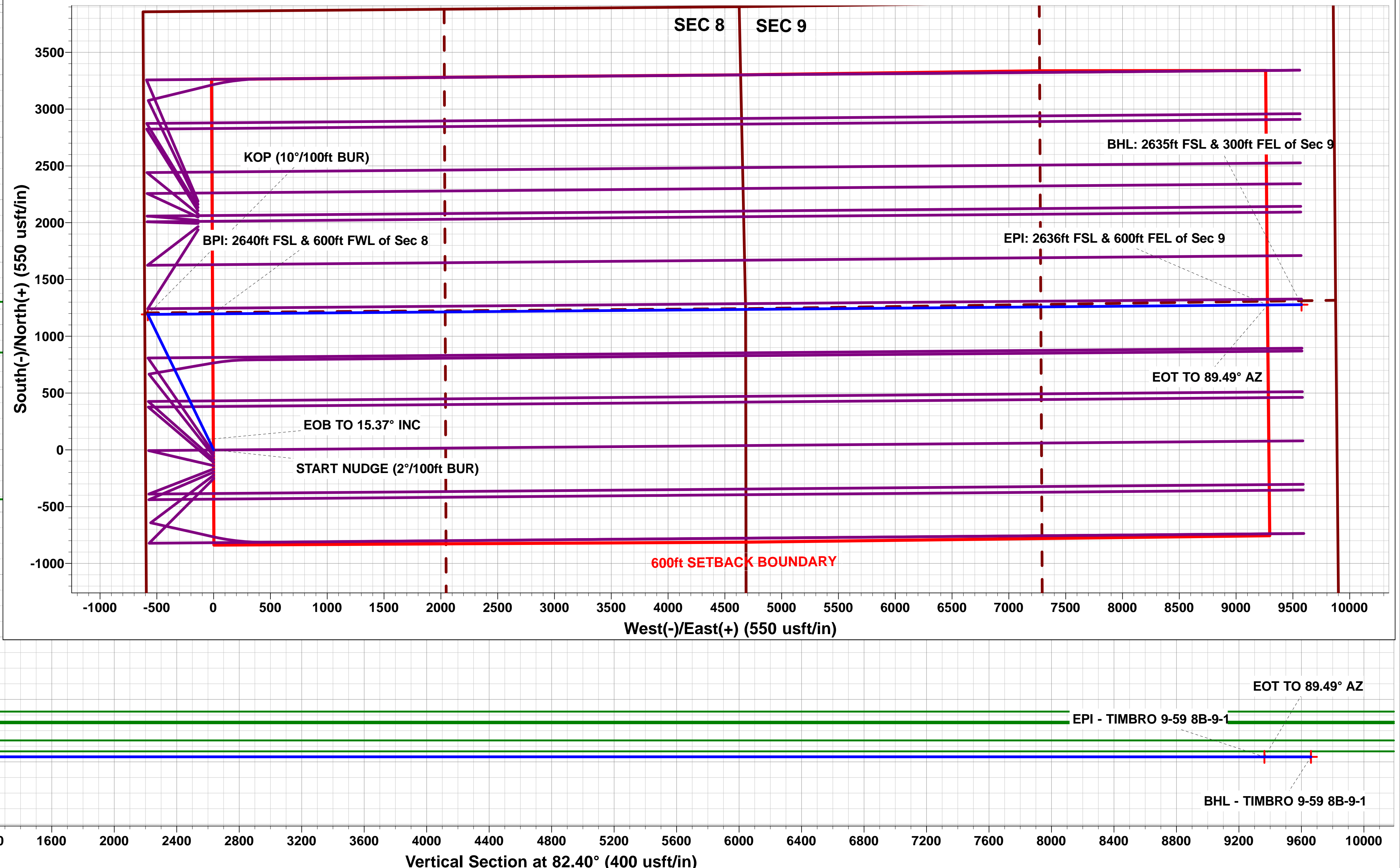
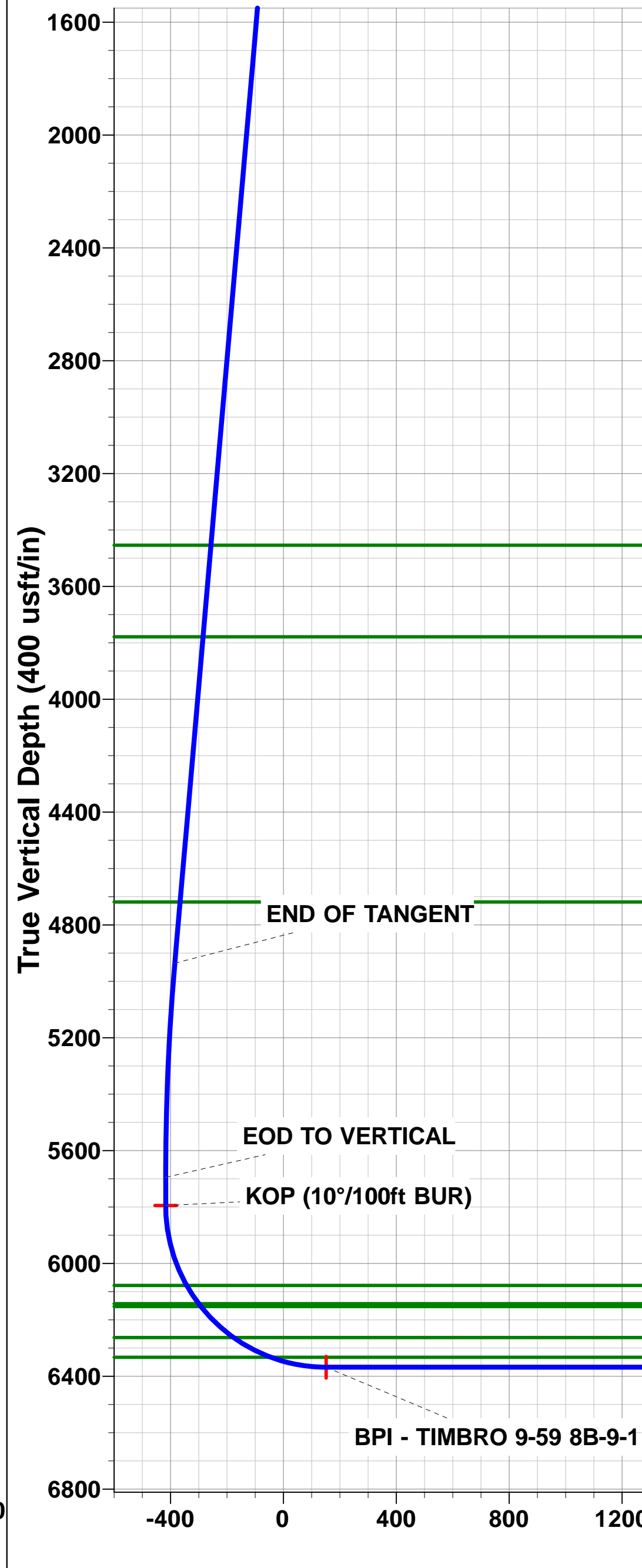
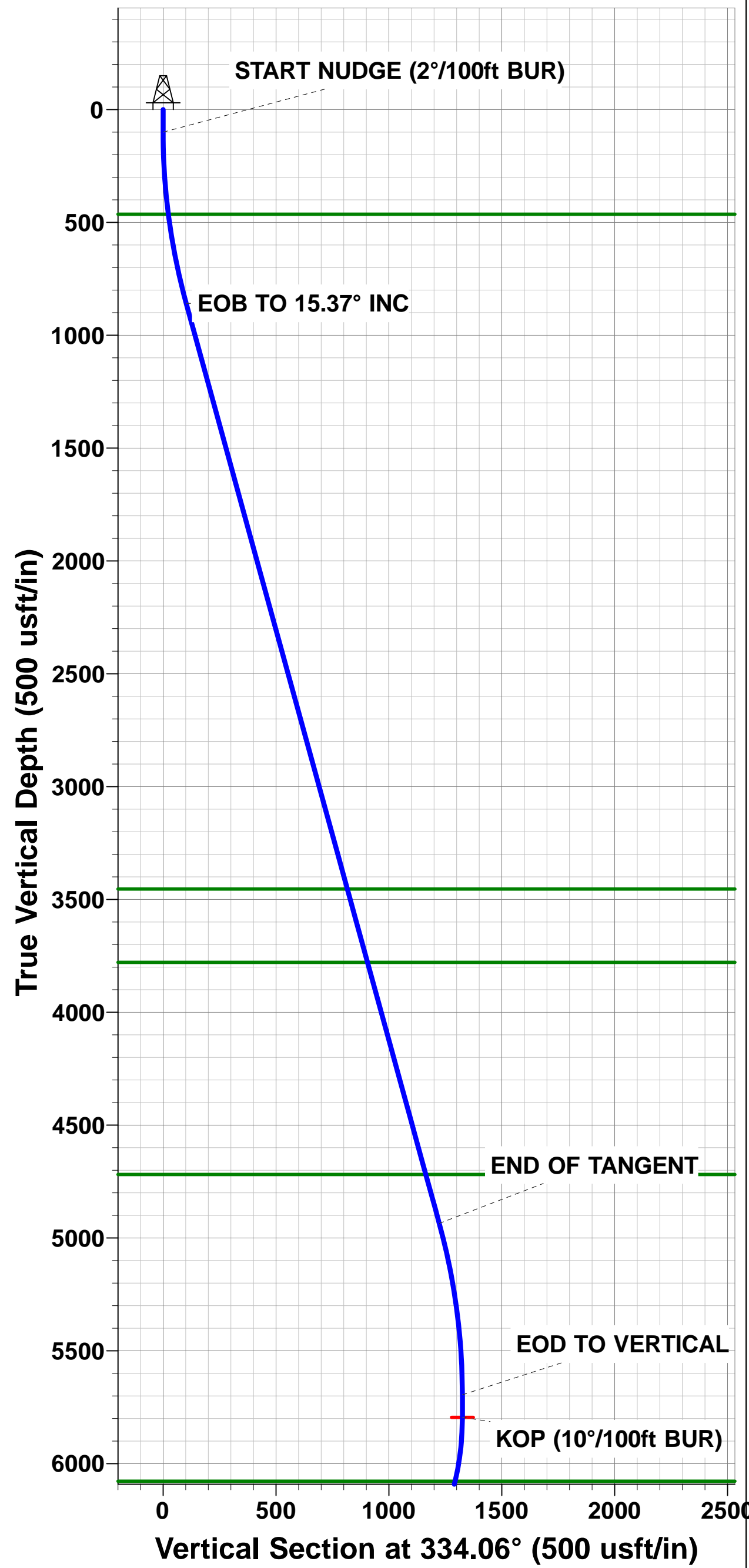
Magnetic Field
Strength: 52571.9snT
Dip Angle: 67.24°
Date: 05/03/2018
Model: IGRF2015

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
464.00	464.99	PIERRE SHALE
3454.00	3559.45	PARKMAN
3779.00	3896.51	SUSSEX
4719.00	4871.38	SHANNON
6078.00	6260.59	SHARON SPRINGS SHALE
6143.00	6338.60	NIOBRARA FORMATION
6153.00	6351.29	NIOBRARA A CHALK
6263.00	6512.25	NIOBRARA B CHALK
6333.00	6663.35	NIOBRARA C CHALK

PROPOSED LOCAL COORDINATES:

SHL: 1443ft FSL & 600ft FWL of Sec 8
BEGIN PROD INT: 2640ft FSL & 600ft FWL of Sec 8
END PROD INTERVAL: 2636ft FSL & 600ft FEL of Sec 9
BHL: 2635ft FSL & 300ft FEL of Sec 9



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 9-59 8B-9-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5069.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5069.00usft (Original Well Elev)
Site:	NW SW SEC. 8 T9N R59W 6th P.M.	North Reference:	True
Well:	TIMBRO 9-59 8B-9-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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

Site		NW SW SEC. 8 T9N R59W 6th P.M.			
Site Position:		Northing:	1,523,800.83 usft	Latitude:	40.761695
From:	Lat/Long	Easting:	3,412,878.72 usft	Longitude:	-104.009524
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000 ft	Grid Convergence:	0.96 °

Well	TIMBRO 9-59 8B-9-1					
Well Position	+N/-S	0.00 usft	Northing:	1,523,800.83 usft	Latitude:	40.761695
	+E/-W	0.00 usft	Easting:	3,412,878.72 usft	Longitude:	-104.009524
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,044.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	05/03/2018	7.75	67.24	52,572

Design	PROPOSAL #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	6,368.00	0.00	0.00	82.40

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100usf)	Turn Rate (°/100usf)	TFO (°)	Target
0.00	0.00	0.00	0.00	-5,069.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	-4,969.00	0.00	0.00	0.00	0.00	0.00	0.00	
868.59	15.37	334.06	859.41	-4,209.59	92.16	-44.83	2.00	2.00	0.00	334.06	
5,096.06	15.37	334.06	4,935.63	-133.37	1,099.88	-535.04	0.00	0.00	0.00	0.00	
5,864.65	0.00	0.00	5,695.04	626.04	1,192.04	-579.87	2.00	-2.00	0.00	180.00	
5,964.65	0.00	0.00	5,795.04	726.04	1,192.04	-579.87	0.00	0.00	0.00	0.00	KOP - TIMBRO 9-5
6,864.66	90.00	89.52	6,368.00	1,299.00	1,196.84	-6.93	10.00	10.00	9.95	89.52	BPI - TIMBRO 9-59
16,147.90	90.00	89.51	6,368.00	1,299.00	1,275.10	9,275.99	0.00	0.00	0.00	-99.90	EPI - TIMBRO 9-59
16,148.71	90.00	89.49	6,368.00	1,299.00	1,275.11	9,276.80	3.00	0.00	-3.00	-90.00	
16,447.91	90.00	89.49	6,368.00	1,299.00	1,277.77	9,575.99	0.00	0.00	0.00	62.23	BHL - TIMBRO 9-59

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 9-59 8B-9-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5069.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5069.00usft (Original Well Elev)
Site:	NW SW SEC. 8 T9N R59W 6th P.M.	North Reference:	True
Well:	TIMBRO 9-59 8B-9-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
SHL: 1443ft FSL & 600ft FWL of Sec 8										
0.00	0.00	0.00	0.00	5,069.00	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
100.00	0.00	0.00	100.00	4,969.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	2.00	334.06	199.98	4,869.02	1.57	-0.76	-0.55	2.00	2.00	0.00
300.00	4.00	334.06	299.84	4,769.16	6.28	-3.05	-2.20	2.00	2.00	0.00
400.00	6.00	334.06	399.45	4,669.55	14.11	-6.87	-4.94	2.00	2.00	0.00
PIERRE SHALE										
464.99	7.30	334.06	464.00	4,605.00	20.88	-10.16	-7.31	2.00	2.00	0.00
500.00	8.00	334.06	498.70	4,570.30	25.07	-12.20	-8.77	2.00	2.00	0.00
600.00	10.00	334.06	597.47	4,471.53	39.14	-19.04	-13.69	2.00	2.00	0.00
700.00	12.00	334.06	695.62	4,373.38	56.30	-27.38	-19.70	2.00	2.00	0.00
800.00	14.00	334.06	793.06	4,275.94	76.52	-37.22	-26.78	2.00	2.00	0.00
EOB TO 15.37° INC										
868.59	15.37	334.06	859.41	4,209.59	92.16	-44.83	-32.25	2.00	2.00	0.00
900.00	15.37	334.06	889.69	4,179.31	99.65	-48.47	-34.87	0.00	0.00	0.00
1,000.00	15.37	334.06	986.11	4,082.89	123.48	-60.07	-43.21	0.00	0.00	0.00
1,100.00	15.37	334.06	1,082.53	3,986.47	147.32	-71.66	-51.55	0.00	0.00	0.00
1,200.00	15.37	334.06	1,178.96	3,890.04	171.16	-83.26	-59.89	0.00	0.00	0.00
1,300.00	15.37	334.06	1,275.38	3,793.62	195.00	-94.86	-68.23	0.00	0.00	0.00
1,400.00	15.37	334.06	1,371.80	3,697.20	218.83	-106.45	-76.57	0.00	0.00	0.00
1,500.00	15.37	334.06	1,468.22	3,600.78	242.67	-118.05	-84.91	0.00	0.00	0.00
1,600.00	15.37	334.06	1,564.65	3,504.35	266.51	-129.64	-93.26	0.00	0.00	0.00
1,700.00	15.37	334.06	1,661.07	3,407.93	290.35	-141.24	-101.60	0.00	0.00	0.00
1,800.00	15.37	334.06	1,757.49	3,311.51	314.18	-152.84	-109.94	0.00	0.00	0.00
1,900.00	15.37	334.06	1,853.91	3,215.09	338.02	-164.43	-118.28	0.00	0.00	0.00
2,000.00	15.37	334.06	1,950.34	3,118.66	361.86	-176.03	-126.62	0.00	0.00	0.00
2,100.00	15.37	334.06	2,046.76	3,022.24	385.70	-187.62	-134.96	0.00	0.00	0.00
2,200.00	15.37	334.06	2,143.18	2,925.82	409.53	-199.22	-143.30	0.00	0.00	0.00
2,300.00	15.37	334.06	2,239.61	2,829.39	433.37	-210.81	-151.64	0.00	0.00	0.00
2,400.00	15.37	334.06	2,336.03	2,732.97	457.21	-222.41	-159.98	0.00	0.00	0.00
2,500.00	15.37	334.06	2,432.45	2,636.55	481.05	-234.01	-168.33	0.00	0.00	0.00
2,600.00	15.37	334.06	2,528.87	2,540.13	504.88	-245.60	-176.67	0.00	0.00	0.00
2,700.00	15.37	334.06	2,625.30	2,443.70	528.72	-257.20	-185.01	0.00	0.00	0.00
2,800.00	15.37	334.06	2,721.72	2,347.28	552.56	-268.79	-193.35	0.00	0.00	0.00
2,900.00	15.37	334.06	2,818.14	2,250.86	576.40	-280.39	-201.69	0.00	0.00	0.00
3,000.00	15.37	334.06	2,914.56	2,154.44	600.23	-291.98	-210.03	0.00	0.00	0.00
3,100.00	15.37	334.06	3,010.99	2,058.01	624.07	-303.58	-218.37	0.00	0.00	0.00
3,200.00	15.37	334.06	3,107.41	1,961.59	647.91	-315.18	-226.71	0.00	0.00	0.00
3,300.00	15.37	334.06	3,203.83	1,865.17	671.75	-326.77	-235.05	0.00	0.00	0.00
3,400.00	15.37	334.06	3,300.25	1,768.75	695.58	-338.37	-243.40	0.00	0.00	0.00
3,500.00	15.37	334.06	3,396.68	1,672.32	719.42	-349.96	-251.74	0.00	0.00	0.00
PARKMAN										
3,559.45	15.37	334.06	3,454.00	1,615.00	733.59	-356.86	-256.70	0.00	0.00	0.00
3,600.00	15.37	334.06	3,493.10	1,575.90	743.26	-361.56	-260.08	0.00	0.00	0.00
3,700.00	15.37	334.06	3,589.52	1,479.48	767.10	-373.16	-268.42	0.00	0.00	0.00
3,800.00	15.37	334.06	3,685.94	1,383.06	790.93	-384.75	-276.76	0.00	0.00	0.00
SUSSEX										
3,896.51	15.37	334.06	3,779.00	1,290.00	813.94	-395.94	-284.81	0.00	0.00	0.00
3,900.00	15.37	334.06	3,782.37	1,286.63	814.77	-396.35	-285.10	0.00	0.00	0.00
4,000.00	15.37	334.06	3,878.79	1,190.21	838.61	-407.94	-293.44	0.00	0.00	0.00
4,100.00	15.37	334.06	3,975.21	1,093.79	862.45	-419.54	-301.78	0.00	0.00	0.00
4,200.00	15.37	334.06	4,071.63	997.37	886.28	-431.13	-310.12	0.00	0.00	0.00

Planning Report



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Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,300.00	15.37	334.06	4,168.06	900.94	910.12	-442.73	-318.47	0.00	0.00	0.00
4,400.00	15.37	334.06	4,264.48	804.52	933.96	-454.33	-326.81	0.00	0.00	0.00
4,500.00	15.37	334.06	4,360.90	708.10	957.80	-465.92	-335.15	0.00	0.00	0.00
4,600.00	15.37	334.06	4,457.32	611.68	981.63	-477.52	-343.49	0.00	0.00	0.00
4,700.00	15.37	334.06	4,553.75	515.25	1,005.47	-489.11	-351.83	0.00	0.00	0.00
4,800.00	15.37	334.06	4,650.17	418.83	1,029.31	-500.71	-360.17	0.00	0.00	0.00
SHANNON										
4,871.38	15.37	334.06	4,719.00	350.00	1,046.32	-508.99	-366.13	0.00	0.00	0.00
4,900.00	15.37	334.06	4,746.59	322.41	1,053.15	-512.30	-368.51	0.00	0.00	0.00
5,000.00	15.37	334.06	4,843.01	225.99	1,076.98	-523.90	-376.85	0.00	0.00	0.00
END OF TANGENT										
5,096.06	15.37	334.06	4,935.63	133.37	1,099.88	-535.04	-384.87	0.00	0.00	0.00
5,100.00	15.29	334.06	4,939.44	129.56	1,100.82	-535.49	-385.19	2.00	-2.00	0.00
5,200.00	13.29	334.06	5,036.34	32.66	1,123.02	-546.29	-392.96	2.00	-2.00	0.00
5,300.00	11.29	334.06	5,134.04	-65.04	1,142.16	-555.61	-399.66	2.00	-2.00	0.00
5,400.00	9.29	334.06	5,232.43	-163.43	1,158.23	-563.42	-405.28	2.00	-2.00	0.00
5,500.00	7.29	334.06	5,331.37	-262.37	1,171.20	-569.73	-409.82	2.00	-2.00	0.00
5,600.00	5.29	334.06	5,430.77	-361.77	1,181.06	-574.53	-413.27	2.00	-2.00	0.00
5,700.00	3.29	334.06	5,530.48	-461.48	1,187.79	-577.80	-415.63	2.00	-2.00	0.00
5,800.00	1.29	334.06	5,630.40	-561.40	1,191.38	-579.55	-416.88	2.00	-2.00	0.00
EOD TO VERTICAL										
5,864.65	0.00	0.00	5,695.04	-626.04	1,192.04	-579.87	-417.11	2.00	-2.00	0.00
5,900.00	0.00	0.00	5,730.39	-661.39	1,192.04	-579.87	-417.11	0.00	0.00	0.00
KOP (10°/100ft BUR)										
5,964.65	0.00	0.00	5,795.04	-726.04	1,192.04	-579.87	-417.11	0.00	0.00	0.00
6,000.00	3.54	89.52	5,830.37	-761.37	1,192.05	-578.78	-416.03	10.00	10.00	0.00
6,100.00	13.54	89.52	5,929.14	-860.14	1,192.17	-563.96	-401.32	10.00	10.00	0.00
6,200.00	23.54	89.52	6,023.83	-954.83	1,192.44	-532.21	-369.82	10.00	10.00	0.00
SHARON SPRINGS SHALE										
6,260.59	29.59	89.52	6,078.00	-1,009.00	1,192.67	-505.13	-342.94	10.00	10.00	0.00
6,300.00	33.53	89.52	6,111.57	-1,042.57	1,192.84	-484.50	-322.48	10.00	10.00	0.00
NIORARA FORMATION										
6,338.60	37.39	89.52	6,143.00	-1,074.00	1,193.03	-462.11	-300.26	10.00	10.00	0.00
NIORARA A CHALK										
6,351.29	38.66	89.52	6,153.00	-1,084.00	1,193.09	-454.29	-292.50	10.00	10.00	0.00
6,400.00	43.53	89.52	6,189.69	-1,120.69	1,193.36	-422.29	-260.74	10.00	10.00	0.00
6,500.00	53.53	89.52	6,255.83	-1,186.83	1,193.99	-347.45	-186.47	10.00	10.00	0.00
NIORARA B CHALK										
6,512.25	54.76	89.52	6,263.00	-1,194.00	1,194.07	-337.52	-176.62	10.00	10.00	0.00
6,600.00	63.53	89.52	6,307.96	-1,238.96	1,194.70	-262.26	-101.94	10.00	10.00	0.00
NIORARA C CHALK										
6,663.35	69.87	89.52	6,333.00	-1,264.00	1,195.19	-204.11	-44.24	10.00	10.00	0.00
6,700.00	73.53	89.52	6,344.50	-1,275.50	1,195.48	-169.32	-9.72	10.00	10.00	0.00
6,800.00	83.53	89.52	6,364.36	-1,295.36	1,196.30	-71.44	87.41	10.00	10.00	0.00
BPI: 2640ft FSL & 600ft FWL of Sec 8										
6,864.66	90.00	89.52	6,368.00	-1,299.00	1,196.84	-6.93	151.43	10.00	10.00	0.00
6,900.00	90.00	89.52	6,368.00	-1,299.00	1,197.14	28.42	186.50	0.00	0.00	0.00
7,000.00	90.00	89.52	6,368.00	-1,299.00	1,197.98	128.41	285.73	0.00	0.00	0.00
7,100.00	90.00	89.52	6,368.00	-1,299.00	1,198.82	228.41	384.96	0.00	0.00	0.00
7,200.00	90.00	89.52	6,368.00	-1,299.00	1,199.65	328.41	484.19	0.00	0.00	0.00
7,300.00	90.00	89.52	6,368.00	-1,299.00	1,200.49	428.40	583.42	0.00	0.00	0.00
7,400.00	90.00	89.52	6,368.00	-1,299.00	1,201.33	528.40	682.65	0.00	0.00	0.00
7,500.00	90.00	89.52	6,368.00	-1,299.00	1,202.17	628.40	781.88	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 9-59 8B-9-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5069.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5069.00usft (Original Well Elev)
Site:	NW SW SEC. 8 T9N R59W 6th P.M.	North Reference:	True
Well:	TIMBRO 9-59 8B-9-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,600.00	90.00	89.52	6,367.99	-1,298.99	1,203.01	728.39	881.11	0.00	0.00	0.00
7,700.00	90.00	89.52	6,367.99	-1,298.99	1,203.85	828.39	980.33	0.00	0.00	0.00
7,800.00	90.00	89.52	6,367.99	-1,298.99	1,204.69	928.38	1,079.56	0.00	0.00	0.00
7,900.00	90.00	89.52	6,367.99	-1,298.99	1,205.53	1,028.38	1,178.79	0.00	0.00	0.00
8,000.00	90.00	89.52	6,367.99	-1,298.99	1,206.37	1,128.38	1,278.02	0.00	0.00	0.00
8,100.00	90.00	89.52	6,367.99	-1,298.99	1,207.21	1,228.37	1,377.25	0.00	0.00	0.00
8,200.00	90.00	89.52	6,367.99	-1,298.99	1,208.04	1,328.37	1,476.48	0.00	0.00	0.00
8,300.00	90.00	89.52	6,367.99	-1,298.99	1,208.88	1,428.37	1,575.71	0.00	0.00	0.00
8,400.00	90.00	89.52	6,367.99	-1,298.99	1,209.72	1,528.36	1,674.94	0.00	0.00	0.00
8,500.00	90.00	89.52	6,367.99	-1,298.99	1,210.56	1,628.36	1,774.17	0.00	0.00	0.00
8,600.00	90.00	89.52	6,367.99	-1,298.99	1,211.40	1,728.36	1,873.40	0.00	0.00	0.00
8,700.00	90.00	89.52	6,367.99	-1,298.99	1,212.24	1,828.35	1,972.62	0.00	0.00	0.00
8,800.00	90.00	89.52	6,367.99	-1,298.99	1,213.08	1,928.35	2,071.85	0.00	0.00	0.00
8,900.00	90.00	89.52	6,367.99	-1,298.99	1,213.92	2,028.35	2,171.08	0.00	0.00	0.00
9,000.00	90.00	89.52	6,367.99	-1,298.99	1,214.77	2,128.34	2,270.31	0.00	0.00	0.00
9,100.00	90.00	89.52	6,367.99	-1,298.99	1,215.61	2,228.34	2,369.54	0.00	0.00	0.00
9,200.00	90.00	89.52	6,367.99	-1,298.99	1,216.45	2,328.34	2,468.77	0.00	0.00	0.00
9,300.00	90.00	89.52	6,367.98	-1,298.98	1,217.29	2,428.33	2,568.00	0.00	0.00	0.00
9,400.00	90.00	89.52	6,367.98	-1,298.98	1,218.13	2,528.33	2,667.23	0.00	0.00	0.00
9,500.00	90.00	89.52	6,367.98	-1,298.98	1,218.97	2,628.32	2,766.46	0.00	0.00	0.00
9,600.00	90.00	89.52	6,367.98	-1,298.98	1,219.81	2,728.32	2,865.69	0.00	0.00	0.00
9,700.00	90.00	89.52	6,367.98	-1,298.98	1,220.65	2,828.32	2,964.92	0.00	0.00	0.00
9,800.00	90.00	89.52	6,367.98	-1,298.98	1,221.49	2,928.31	3,064.15	0.00	0.00	0.00
9,900.00	90.00	89.52	6,367.98	-1,298.98	1,222.33	3,028.31	3,163.37	0.00	0.00	0.00
10,000.00	90.00	89.52	6,367.98	-1,298.98	1,223.17	3,128.31	3,262.60	0.00	0.00	0.00
10,100.00	90.00	89.52	6,367.98	-1,298.98	1,224.02	3,228.30	3,361.83	0.00	0.00	0.00
10,200.00	90.00	89.52	6,367.98	-1,298.98	1,224.86	3,328.30	3,461.06	0.00	0.00	0.00
10,300.00	90.00	89.52	6,367.98	-1,298.98	1,225.70	3,428.30	3,560.29	0.00	0.00	0.00
10,400.00	90.00	89.52	6,367.98	-1,298.98	1,226.54	3,528.29	3,659.52	0.00	0.00	0.00
10,500.00	90.00	89.52	6,367.98	-1,298.98	1,227.38	3,628.29	3,758.75	0.00	0.00	0.00
10,600.00	90.00	89.52	6,367.98	-1,298.98	1,228.23	3,728.29	3,857.98	0.00	0.00	0.00
10,700.00	90.00	89.52	6,367.98	-1,298.98	1,229.07	3,828.28	3,957.21	0.00	0.00	0.00
10,800.00	90.00	89.52	6,367.98	-1,298.98	1,229.91	3,928.28	4,056.44	0.00	0.00	0.00
10,900.00	90.00	89.52	6,367.98	-1,298.98	1,230.75	4,028.28	4,155.67	0.00	0.00	0.00
11,000.00	90.00	89.52	6,367.98	-1,298.98	1,231.59	4,128.27	4,254.90	0.00	0.00	0.00
11,100.00	90.00	89.52	6,367.98	-1,298.98	1,232.44	4,228.27	4,354.13	0.00	0.00	0.00
11,200.00	90.00	89.52	6,367.98	-1,298.98	1,233.28	4,328.26	4,453.36	0.00	0.00	0.00
11,300.00	90.00	89.52	6,367.98	-1,298.98	1,234.12	4,428.26	4,552.59	0.00	0.00	0.00
11,400.00	90.00	89.52	6,367.98	-1,298.98	1,234.97	4,528.26	4,651.81	0.00	0.00	0.00
11,500.00	90.00	89.52	6,367.98	-1,298.98	1,235.81	4,628.25	4,751.04	0.00	0.00	0.00
11,600.00	90.00	89.52	6,367.98	-1,298.98	1,236.65	4,728.25	4,850.27	0.00	0.00	0.00
11,700.00	90.00	89.52	6,367.98	-1,298.98	1,237.49	4,828.25	4,949.50	0.00	0.00	0.00
11,800.00	90.00	89.52	6,367.98	-1,298.98	1,238.34	4,928.24	5,048.73	0.00	0.00	0.00
11,900.00	90.00	89.52	6,367.98	-1,298.98	1,239.18	5,028.24	5,147.96	0.00	0.00	0.00
12,000.00	90.00	89.52	6,367.98	-1,298.98	1,240.02	5,128.24	5,247.19	0.00	0.00	0.00
12,100.00	90.00	89.52	6,367.98	-1,298.98	1,240.87	5,228.23	5,346.42	0.00	0.00	0.00
12,200.00	90.00	89.52	6,367.98	-1,298.98	1,241.71	5,328.23	5,445.65	0.00	0.00	0.00
12,300.00	90.00	89.52	6,367.98	-1,298.98	1,242.56	5,428.23	5,544.88	0.00	0.00	0.00
12,400.00	90.00	89.52	6,367.98	-1,298.98	1,243.40	5,528.22	5,644.11	0.00	0.00	0.00
12,500.00	90.00	89.52	6,367.98	-1,298.98	1,244.24	5,628.22	5,743.34	0.00	0.00	0.00
12,600.00	90.00	89.52	6,367.98	-1,298.98	1,245.09	5,728.21	5,842.57	0.00	0.00	0.00
12,700.00	90.00	89.52	6,367.98	-1,298.98	1,245.93	5,828.21	5,941.80	0.00	0.00	0.00
12,800.00	90.00	89.52	6,367.98	-1,298.98	1,246.78	5,928.21	6,041.03	0.00	0.00	0.00
12,900.00	90.00	89.52	6,367.98	-1,298.98	1,247.62	6,028.20	6,140.26	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 9-59 8B-9-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5069.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5069.00usft (Original Well Elev)
Site:	NW SW SEC. 8 T9N R59W 6th P.M.	North Reference:	True
Well:	TIMBRO 9-59 8B-9-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,000.00	90.00	89.52	6,367.98	-1,298.98	1,248.47	6,128.20	6,239.49	0.00	0.00	0.00
13,100.00	90.00	89.52	6,367.98	-1,298.98	1,249.31	6,228.20	6,338.72	0.00	0.00	0.00
13,200.00	90.00	89.52	6,367.98	-1,298.98	1,250.16	6,328.19	6,437.95	0.00	0.00	0.00
13,300.00	90.00	89.52	6,367.98	-1,298.98	1,251.00	6,428.19	6,537.18	0.00	0.00	0.00
13,400.00	90.00	89.52	6,367.98	-1,298.98	1,251.84	6,528.19	6,636.41	0.00	0.00	0.00
13,500.00	90.00	89.52	6,367.98	-1,298.98	1,252.69	6,628.18	6,735.64	0.00	0.00	0.00
13,600.00	90.00	89.52	6,367.98	-1,298.98	1,253.54	6,728.18	6,834.87	0.00	0.00	0.00
13,700.00	90.00	89.52	6,367.98	-1,298.98	1,254.38	6,828.18	6,934.10	0.00	0.00	0.00
13,800.00	90.00	89.52	6,367.99	-1,298.99	1,255.23	6,928.17	7,033.33	0.00	0.00	0.00
13,900.00	90.00	89.52	6,367.99	-1,298.99	1,256.07	7,028.17	7,132.55	0.00	0.00	0.00
14,000.00	90.00	89.52	6,367.99	-1,298.99	1,256.92	7,128.16	7,231.78	0.00	0.00	0.00
14,100.00	90.00	89.52	6,367.99	-1,298.99	1,257.76	7,228.16	7,331.01	0.00	0.00	0.00
14,200.00	90.00	89.52	6,367.99	-1,298.99	1,258.61	7,328.16	7,430.24	0.00	0.00	0.00
14,300.00	90.00	89.52	6,367.99	-1,298.99	1,259.45	7,428.15	7,529.47	0.00	0.00	0.00
14,400.00	90.00	89.52	6,367.99	-1,298.99	1,260.30	7,528.15	7,628.70	0.00	0.00	0.00
14,500.00	90.00	89.52	6,367.99	-1,298.99	1,261.15	7,628.15	7,727.93	0.00	0.00	0.00
14,600.00	90.00	89.52	6,367.99	-1,298.99	1,261.99	7,728.14	7,827.16	0.00	0.00	0.00
14,700.00	90.00	89.52	6,367.99	-1,298.99	1,262.84	7,828.14	7,926.39	0.00	0.00	0.00
14,800.00	90.00	89.52	6,367.99	-1,298.99	1,263.69	7,928.14	8,025.62	0.00	0.00	0.00
14,900.00	90.00	89.51	6,367.99	-1,298.99	1,264.53	8,028.13	8,124.85	0.00	0.00	0.00
15,000.00	90.00	89.51	6,367.99	-1,298.99	1,265.38	8,128.13	8,224.08	0.00	0.00	0.00
15,100.00	90.00	89.51	6,367.99	-1,298.99	1,266.23	8,228.13	8,323.31	0.00	0.00	0.00
15,200.00	90.00	89.51	6,367.99	-1,298.99	1,267.07	8,328.12	8,422.54	0.00	0.00	0.00
15,300.00	90.00	89.51	6,367.99	-1,298.99	1,267.92	8,428.12	8,521.77	0.00	0.00	0.00
15,400.00	90.00	89.51	6,367.99	-1,298.99	1,268.77	8,528.11	8,621.00	0.00	0.00	0.00
15,500.00	90.00	89.51	6,367.99	-1,298.99	1,269.61	8,628.11	8,720.23	0.00	0.00	0.00
15,600.00	90.00	89.51	6,368.00	-1,299.00	1,270.46	8,728.11	8,819.46	0.00	0.00	0.00
15,700.00	90.00	89.51	6,368.00	-1,299.00	1,271.31	8,828.10	8,918.69	0.00	0.00	0.00
15,800.00	90.00	89.51	6,368.00	-1,299.00	1,272.16	8,928.10	9,017.92	0.00	0.00	0.00
15,900.00	90.00	89.51	6,368.00	-1,299.00	1,273.00	9,028.10	9,117.15	0.00	0.00	0.00
16,000.00	90.00	89.51	6,368.00	-1,299.00	1,273.85	9,128.09	9,216.38	0.00	0.00	0.00
16,100.00	90.00	89.51	6,368.00	-1,299.00	1,274.70	9,228.09	9,315.61	0.00	0.00	0.00
EPI: 2636ft FSL & 600ft FEL of Sec 9										
16,147.90	90.00	89.51	6,368.00	-1,299.00	1,275.10	9,275.99	9,363.14	0.00	0.00	0.00
EOT TO 89.49° AZ										
16,148.71	90.00	89.49	6,368.00	-1,299.00	1,275.11	9,276.80	9,363.95	3.00	0.00	-3.00
16,200.00	90.00	89.49	6,368.00	-1,299.00	1,275.57	9,328.09	9,414.85	0.00	0.00	0.00
16,300.00	90.00	89.49	6,368.00	-1,299.00	1,276.46	9,428.08	9,514.08	0.00	0.00	0.00
16,400.00	90.00	89.49	6,368.00	-1,299.00	1,277.34	9,528.08	9,613.32	0.00	0.00	0.00
BHL: 2635ft FSL & 300ft FEL of Sec 9										
16,447.91	90.00	89.49	6,368.00	-1,299.00	1,277.77	9,575.99	9,660.86	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TIMBRO 9-59 8B-9-1
Company:	BISON OIL & GAS II, LLC	TVD Reference:	KB-EST @ 5069.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5069.00usft (Original Well Elev)
Site:	NW SW SEC. 8 T9N R59W 6th P.M.	North Reference:	True
Well:	TIMBRO 9-59 8B-9-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
464.99	464.00	PIERRE SHALE				
3,559.45	3,454.00	PARKMAN				
3,896.51	3,779.00	SUSSEX				
4,871.38	4,719.00	SHANNON				
6,260.59	6,078.00	SHARON SPRINGS SHALE				
6,338.60	6,143.00	NIOBRARA FORMATION				
6,351.29	6,153.00	NIOBRARA A CHALK				
6,512.25	6,263.00	NIOBRARA B CHALK				
6,663.35	6,333.00	NIOBRARA C 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: 1443ft FSL & 600ft FWL of Sec 8
100.00	100.00	0.00	0.00	START NUDGE (2°/100ft BUR)
868.59	859.41	92.16	-44.83	EOB TO 15.37° INC
5,096.06	4,935.63	1,099.88	-535.04	END OF TANGENT
5,864.65	5,695.04	1,192.04	-579.87	EOD TO VERTICAL
5,964.65	5,795.04	1,192.04	-579.87	KOP (10°/100ft BUR)
6,864.66	6,368.00	1,196.84	-6.93	BPI: 2640ft FSL & 600ft FWL of Sec 8
16,147.90	6,368.00	1,275.10	9,275.99	EPI: 2636ft FSL & 600ft FEL of Sec 9
16,148.71	6,368.00	1,275.11	9,276.80	EOT TO 89.49° AZ
16,447.91	6,368.00	1,277.77	9,575.99	BHL: 2635ft FSL & 300ft FEL of Sec 9