

MORNING GUN EXPLORATION

WELD COUNTY, COLORADO (NAD 83)

SW SE SEC. 12 T7N R59W 6th P.M.

CASTOR 7-59 12-1-5

ORIGINAL WELLBORE

11 September, 2018

Plan: PROPOSAL #1



WELD COUNTY, COLORADO (NAD 83)
 SW SE SEC. 12 T7N R59W 6th P.M.
 CASTOR 7-59 12-1-5
 ORIGINAL WELLBORE
 PROPOSAL #1

ANNOTATIONS

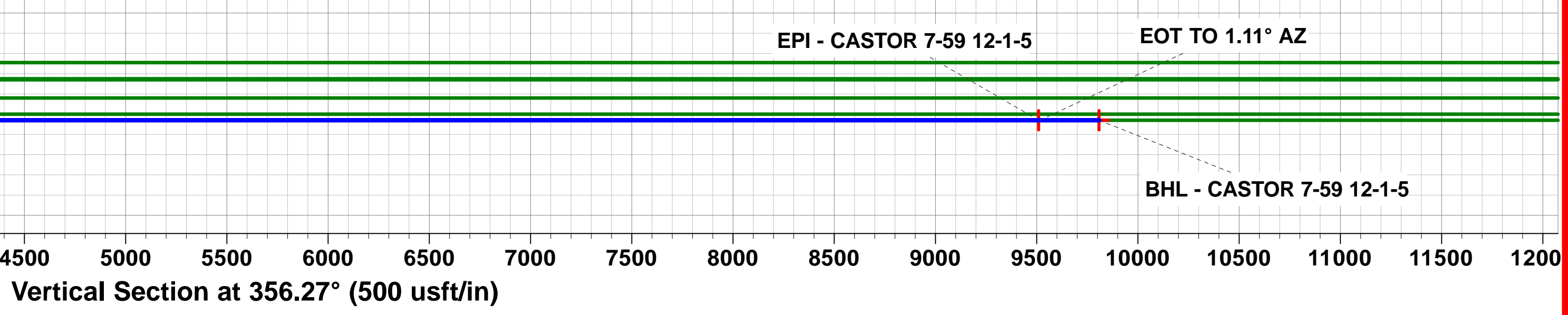
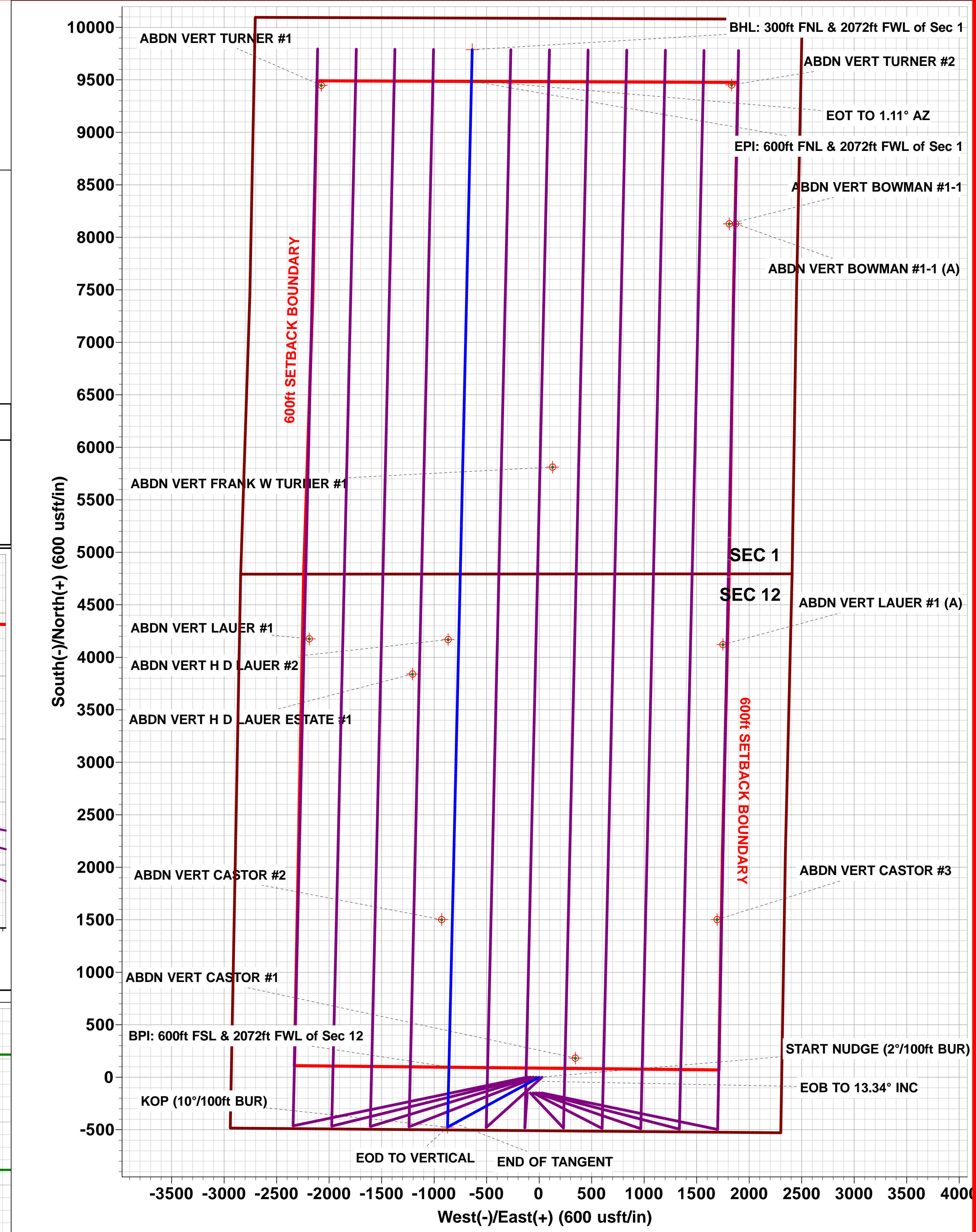
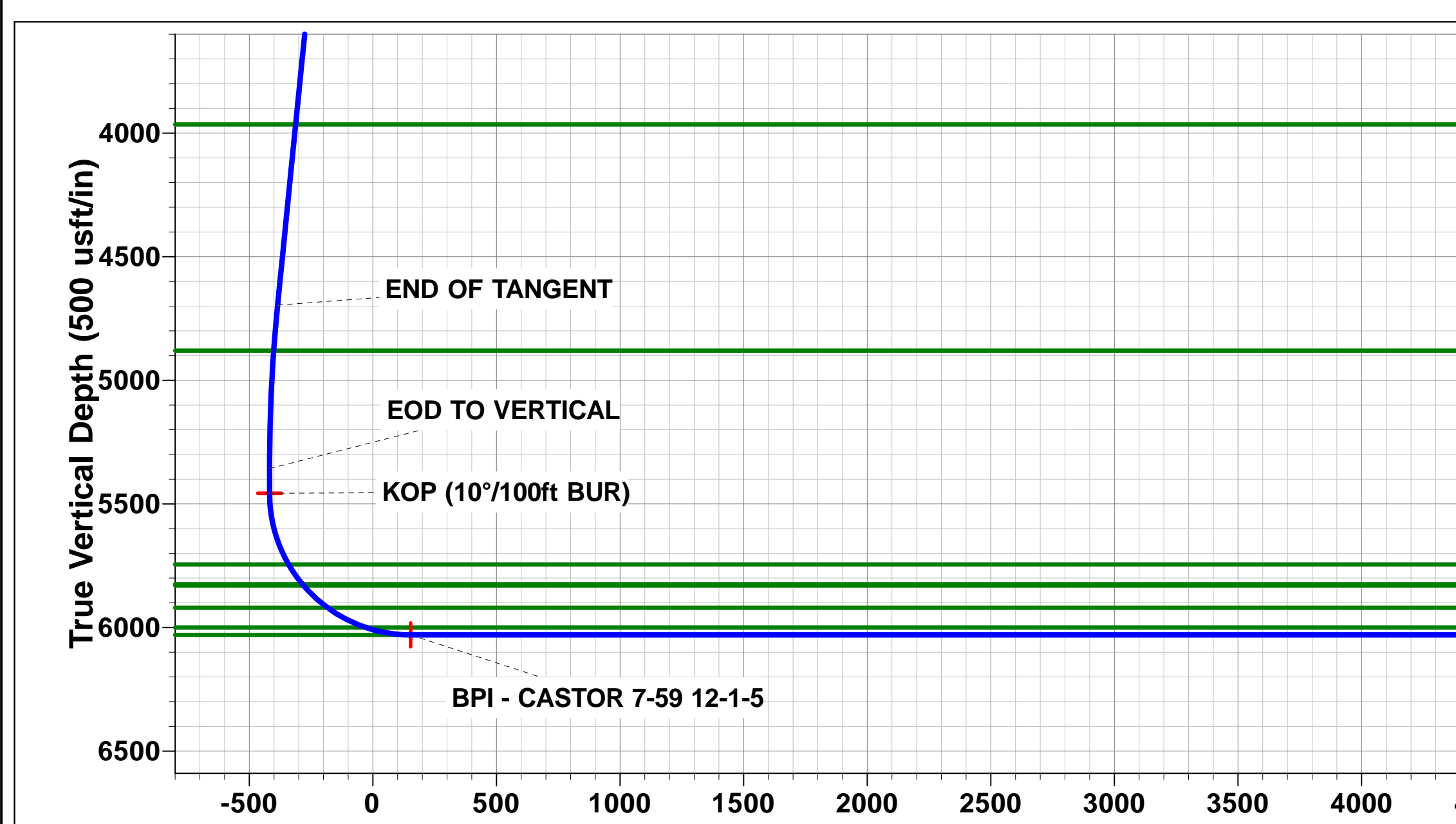
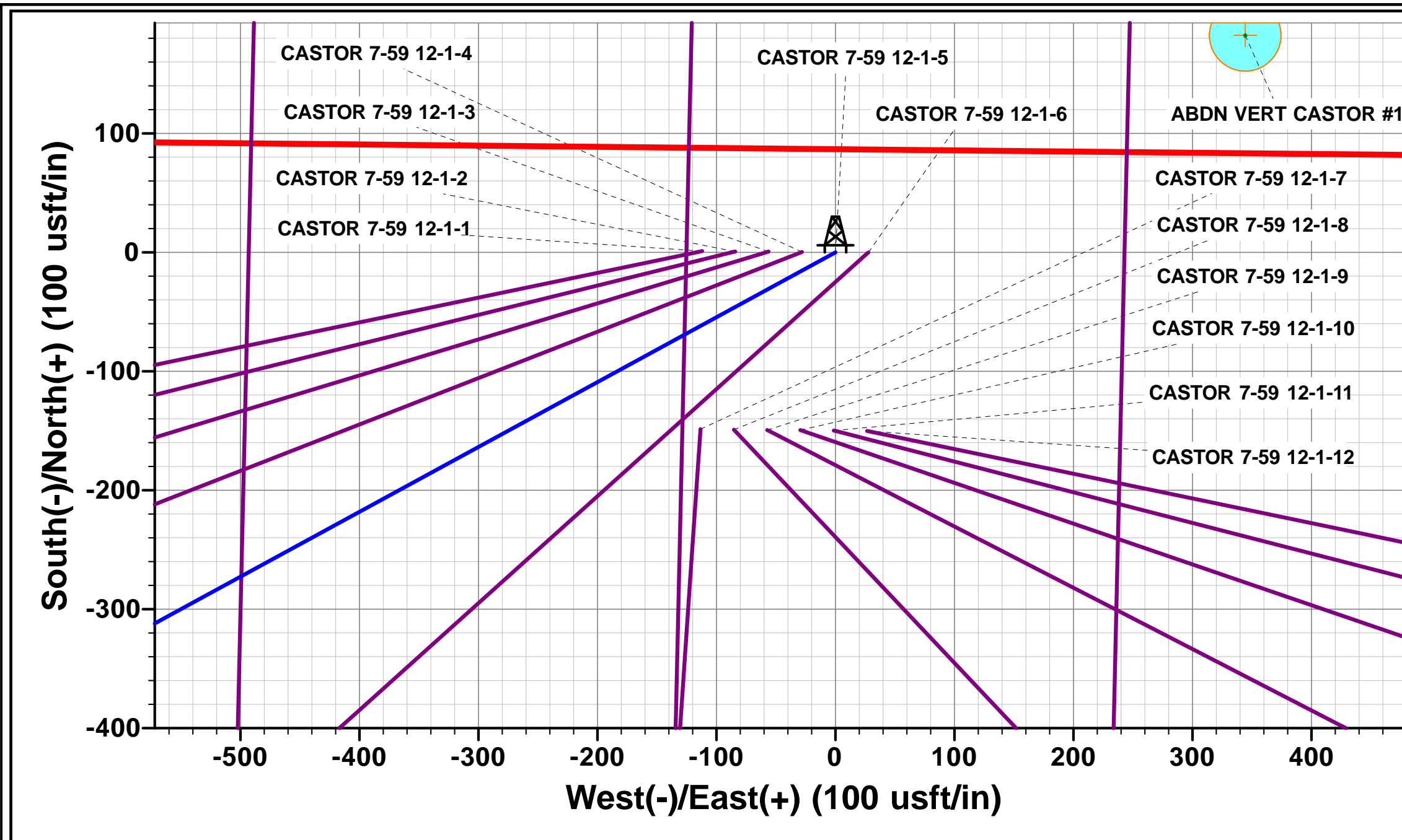
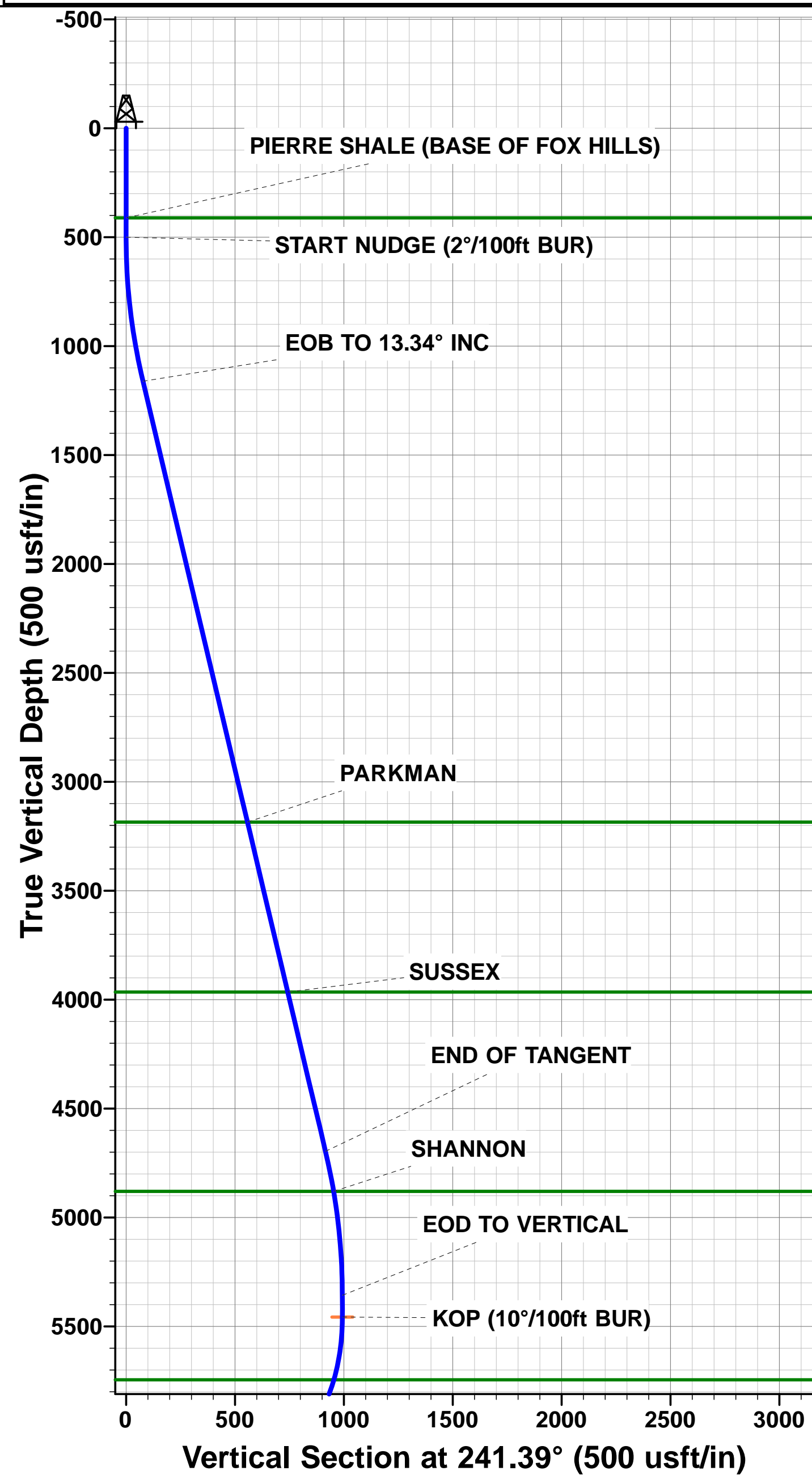
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 510ft FSL & 2310ft FEL of Sec 12
500.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDDGE (2°/100ft BUR)
1161.19	1167.21	13.34	241.39	-37.03	-67.90	-32.54	77.35	EOB TO 13.34° INC
4696.05	4800.15	13.34	241.39	-438.48	-804.04	-385.27	915.83	END OF TANGENT
5357.24	5467.36	0.00	0.00	-475.51	-871.94	-417.81	993.17	EOD TO VERTICAL
5457.24	5567.36	0.00	0.00	-475.51	-871.94	-417.81	993.17	KOP (10°/100ft BUR)
6030.20	6467.36	90.00	1.31	97.30	-858.84	152.94	1566.13	BPI: 600ft FSL & 2072ft FWL of Sec 12
6030.20	15860.27	90.00	1.32	9487.75	-643.61	9509.52	10959.05	EPI: 600ft FNL & 2072ft FWL of Sec 1
6030.20	15867.05	90.00	1.11	9494.52	-643.47	9516.27	10965.82	EOT TO 1.11° AZ
6030.20	16160.17	90.00	1.11	9787.59	-637.77	9808.35	11258.94	BHL: 300ft FNL & 2072ft FWL of Sec 1

PROPOSED LOCAL COORDINATES:

SHL: 510ft FSL & 2310ft FEL Sec 12
 BPI: 600ft FSL & 2072ft FWL Sec 12
 EPI: 600ft FNL & 2072ft FWL Sec 1
 BHL: 300ft FNL & 2072ft FWL of Sec 1

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - CASTOR 7-59 12-1-5	5457.24	-475.51	-871.94	40.581990	-103.927855
BPI - CASTOR 7-59 12-1-5	6030.20	97.30	-858.84	40.583562	-103.927808
EPI - CASTOR 7-59 12-1-5	6030.20	9487.75	-643.61	40.609337	-103.927034
BHL - CASTOR 7-59 12-1-5	6030.20	9787.59	-637.77	40.610160	-103.927013



Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CASTOR 7-59 12-1-5
Company:	MORNING GUN EXPLORATION	TVD Reference:	KB-EST @ 4900.20usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4900.20usft (Original Well Elev)
Site:	SW SE SEC. 12 T7N R59W 6th P.M.	North Reference:	True
Well:	CASTOR 7-59 12-1-5	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 SW SE SEC. 12 T7N R59W 6th P.M.					
Site Position:		Northing:	1,459,221.09 usft	Latitude:	40.583298
From:	Lat/Long	Easting:	3,437,411.71 usft	Longitude:	-103.925119
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000ft	Grid Convergence:	1.02 °

Well CASTOR 7-59 12-1-5					
Well Position	+N-S	-1.10 usft	Northing:	1,459,221.98 usft	Latitude: 40.583295
	+E-W	111.94 usft	Easting:	3,437,523.65 usft	Longitude: -103.924716
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level: 4,875.20 usft

Wellbore ORIGINAL WELLBORE					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/09/2018	7.64	67.09	52,431

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 (°)
	6,030.20	0.00	0.00	356.27

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	-4,900.20	0.00	0.00	0.00	0.00	0.00	0.00		
500.00	0.00	0.00	500.00	-4,400.20	0.00	0.00	0.00	0.00	0.00	0.00		
1,167.21	13.34	241.39	1,161.19	-3,739.01	-37.03	-67.90	2.00	2.00	0.00	241.39		
4,800.15	13.34	241.39	4,696.05	-204.15	-438.48	-804.04	0.00	0.00	0.00	0.00		
5,467.36	0.00	0.00	5,357.24	457.04	-475.51	-871.94	2.00	-2.00	0.00	180.00		
5,567.36	0.00	0.00	5,457.24	557.04	-475.51	-871.94	0.00	0.00	0.00	0.00	KOP - CASTOR 7-5	
6,467.36	90.00	1.31	6,030.20	1,130.00	97.30	-858.84	10.00	10.00	0.15	1.31	BPI - CASTOR 7-5	
15,860.27	90.00	1.32	6,030.20	1,130.00	9,487.75	-643.61	0.00	0.00	0.00	84.82	EPI - CASTOR 7-5	
15,867.05	90.00	1.11	6,030.20	1,130.00	9,494.52	-643.47	3.00	0.00	-3.00	-90.09		
16,160.17	90.00	1.11	6,030.20	1,130.00	9,787.59	-637.77	0.00	0.00	0.00	0.00	BHL - CASTOR 7-5	

Planning Report

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Company:	MORNING GUN EXPLORATION	TVD Reference:	KB-EST @ 4900.20usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4900.20usft (Original Well Elev)
Site:	SW SE SEC. 12 T7N R59W 6th P.M.	North Reference:	True
Well:	CASTOR 7-59 12-1-5	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: 510ft FSL & 2310ft FEL of Sec 12										
0.00	0.00	0.00	0.00	4,900.20	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,800.20	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,700.20	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	4,600.20	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	4,500.20	0.00	0.00	0.00	0.00	0.00	0.00
PIERRE SHALE (BASE OF FOX HILLS)										
411.20	0.00	0.00	411.20	4,489.00	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
500.00	0.00	0.00	500.00	4,400.20	0.00	0.00	0.00	0.00	0.00	0.00
600.00	2.00	241.39	599.98	4,300.22	-0.84	-1.53	-0.73	2.00	2.00	0.00
700.00	4.00	241.39	699.84	4,200.36	-3.34	-6.13	-2.94	2.00	2.00	0.00
800.00	6.00	241.39	799.45	4,100.75	-7.51	-13.78	-6.60	2.00	2.00	0.00
900.00	8.00	241.39	898.70	4,001.50	-13.35	-24.48	-11.73	2.00	2.00	0.00
1,000.00	10.00	241.39	997.47	3,902.73	-20.84	-38.21	-18.31	2.00	2.00	0.00
1,100.00	12.00	241.39	1,095.62	3,804.58	-29.97	-54.96	-26.34	2.00	2.00	0.00
EOB TO 13.34° INC										
1,167.21	13.34	241.39	1,161.19	3,739.01	-37.03	-67.90	-32.54	2.00	2.00	0.00
1,200.00	13.34	241.39	1,193.10	3,707.10	-40.66	-74.55	-35.72	0.00	0.00	0.00
1,300.00	13.34	241.39	1,290.40	3,609.80	-51.71	-94.81	-45.43	0.00	0.00	0.00
1,400.00	13.34	241.39	1,387.70	3,512.50	-62.76	-115.07	-55.14	0.00	0.00	0.00
1,500.00	13.34	241.39	1,485.00	3,415.20	-73.81	-135.34	-64.85	0.00	0.00	0.00
1,600.00	13.34	241.39	1,582.30	3,317.90	-84.86	-155.60	-74.56	0.00	0.00	0.00
1,700.00	13.34	241.39	1,679.60	3,220.60	-95.91	-175.86	-84.27	0.00	0.00	0.00
1,800.00	13.34	241.39	1,776.90	3,123.30	-106.96	-196.13	-93.98	0.00	0.00	0.00
1,900.00	13.34	241.39	1,874.20	3,026.00	-118.01	-216.39	-103.69	0.00	0.00	0.00
2,000.00	13.34	241.39	1,971.50	2,928.70	-129.06	-236.65	-113.40	0.00	0.00	0.00
2,100.00	13.34	241.39	2,068.80	2,831.40	-140.11	-256.91	-123.11	0.00	0.00	0.00
2,200.00	13.34	241.39	2,166.10	2,734.10	-151.16	-277.18	-132.81	0.00	0.00	0.00
2,300.00	13.34	241.39	2,263.40	2,636.80	-162.21	-297.44	-142.52	0.00	0.00	0.00
2,400.00	13.34	241.39	2,360.70	2,539.50	-173.26	-317.70	-152.23	0.00	0.00	0.00
2,500.00	13.34	241.39	2,458.00	2,442.20	-184.31	-337.96	-161.94	0.00	0.00	0.00
2,600.00	13.34	241.39	2,555.30	2,344.90	-195.36	-358.23	-171.65	0.00	0.00	0.00
2,700.00	13.34	241.39	2,652.60	2,247.60	-206.41	-378.49	-181.36	0.00	0.00	0.00
2,800.00	13.34	241.39	2,749.90	2,150.30	-217.46	-398.75	-191.07	0.00	0.00	0.00
2,900.00	13.34	241.39	2,847.20	2,053.00	-228.51	-419.01	-200.78	0.00	0.00	0.00
3,000.00	13.34	241.39	2,944.50	1,955.70	-239.56	-439.28	-210.49	0.00	0.00	0.00
3,100.00	13.34	241.39	3,041.80	1,858.40	-250.61	-459.54	-220.20	0.00	0.00	0.00
3,200.00	13.34	241.39	3,139.10	1,761.10	-261.66	-479.80	-229.91	0.00	0.00	0.00
PARKMAN										
3,247.38	13.34	241.39	3,185.20	1,715.00	-266.89	-489.40	-234.51	0.00	0.00	0.00
3,300.00	13.34	241.39	3,236.40	1,663.80	-272.71	-500.07	-239.62	0.00	0.00	0.00
3,400.00	13.34	241.39	3,333.70	1,566.50	-283.76	-520.33	-249.33	0.00	0.00	0.00
3,500.00	13.34	241.39	3,431.00	1,469.20	-294.81	-540.59	-259.03	0.00	0.00	0.00
3,600.00	13.34	241.39	3,528.30	1,371.90	-305.86	-560.85	-268.74	0.00	0.00	0.00
3,700.00	13.34	241.39	3,625.60	1,274.60	-316.91	-581.12	-278.45	0.00	0.00	0.00
3,800.00	13.34	241.39	3,722.90	1,177.30	-327.96	-601.38	-288.16	0.00	0.00	0.00
3,900.00	13.34	241.39	3,820.20	1,080.00	-339.01	-621.64	-297.87	0.00	0.00	0.00
4,000.00	13.34	241.39	3,917.50	982.70	-350.06	-641.90	-307.58	0.00	0.00	0.00
SUSSEX										
4,049.02	13.34	241.39	3,965.20	935.00	-355.48	-651.84	-312.34	0.00	0.00	0.00
4,100.00	13.34	241.39	4,014.80	885.40	-361.11	-662.17	-317.29	0.00	0.00	0.00
4,200.00	13.34	241.39	4,112.10	788.10	-372.16	-682.43	-327.00	0.00	0.00	0.00

Planning Report

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Well:	CASTOR 7-59 12-1-5	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)
4,300.00	13.34	241.39	4,209.40	690.80	-383.21	-702.69	-336.71	0.00	0.00	0.00
4,400.00	13.34	241.39	4,306.70	593.50	-394.26	-722.95	-346.42	0.00	0.00	0.00
4,500.00	13.34	241.39	4,404.00	496.20	-405.31	-743.22	-356.13	0.00	0.00	0.00
4,600.00	13.34	241.39	4,501.30	398.90	-416.36	-763.48	-365.84	0.00	0.00	0.00
4,700.00	13.34	241.39	4,598.60	301.60	-427.41	-783.74	-375.55	0.00	0.00	0.00
4,800.00	13.34	241.39	4,695.90	204.30	-438.46	-804.01	-385.26	0.00	0.00	0.00
END OF TANGENT										
4,800.15	13.34	241.39	4,696.05	204.15	-438.48	-804.04	-385.27	0.00	0.00	0.00
4,900.00	11.35	241.39	4,793.59	106.61	-448.70	-822.78	-394.25	2.00	-2.00	0.00
SHANNON										
4,988.08	9.59	241.39	4,880.20	20.00	-456.36	-836.83	-400.98	2.00	-2.00	0.00
5,000.00	9.35	241.39	4,891.95	8.25	-457.30	-838.55	-401.81	2.00	-2.00	0.00
5,100.00	7.35	241.39	4,990.89	-90.69	-464.25	-851.29	-407.91	2.00	-2.00	0.00
5,200.00	5.35	241.39	5,090.27	-190.07	-469.54	-861.00	-412.56	2.00	-2.00	0.00
5,300.00	3.35	241.39	5,189.98	-289.78	-473.17	-867.65	-415.75	2.00	-2.00	0.00
5,400.00	1.35	241.39	5,289.89	-389.69	-475.13	-871.24	-417.47	2.00	-2.00	0.00
EOD TO VERTICAL										
5,467.36	0.00	0.00	5,357.24	-457.04	-475.51	-871.94	-417.81	2.00	-2.00	0.00
5,500.00	0.00	0.00	5,389.88	-489.68	-475.51	-871.94	-417.81	0.00	0.00	0.00
KOP (10°/100ft BUR)										
5,567.36	0.00	0.00	5,457.24	-557.04	-475.51	-871.94	-417.81	0.00	0.00	0.00
5,600.00	3.26	1.31	5,489.87	-589.67	-474.58	-871.92	-416.88	10.00	10.00	0.00
5,700.00	13.26	1.31	5,588.70	-688.50	-460.23	-871.59	-402.58	10.00	10.00	0.00
5,800.00	23.26	1.31	5,683.54	-783.34	-428.94	-870.88	-371.40	10.00	10.00	0.00
SHARON SPRINGS SHALE										
5,869.07	30.17	1.31	5,745.20	-845.00	-397.91	-870.17	-340.49	10.00	10.00	0.00
5,900.00	33.26	1.31	5,771.51	-871.31	-381.65	-869.79	-324.29	10.00	10.00	0.00
NIOBRARA FORMATION										
5,966.92	39.96	1.31	5,825.20	-925.00	-341.78	-868.88	-284.55	10.00	10.00	0.00
NIOBRARA A CHALK										
5,973.48	40.61	1.31	5,830.20	-930.00	-337.54	-868.79	-280.33	10.00	10.00	0.00
6,000.00	43.26	1.31	5,849.93	-949.73	-319.82	-868.38	-262.68	10.00	10.00	0.00
6,100.00	53.26	1.31	5,916.41	-1,016.21	-245.31	-866.68	-188.44	10.00	10.00	0.00
NIOBRARA B CHALK										
6,106.38	53.90	1.31	5,920.20	-1,020.00	-240.18	-866.56	-183.32	10.00	10.00	0.00
6,200.00	63.26	1.31	5,968.95	-1,068.75	-160.39	-864.74	-103.83	10.00	10.00	0.00
NIOBRARA C CHALK										
6,281.13	71.38	1.31	6,000.20	-1,100.00	-85.62	-863.03	-29.32	10.00	10.00	0.00
6,300.00	73.26	1.31	6,005.93	-1,105.73	-67.65	-862.62	-11.41	10.00	10.00	0.00
6,400.00	83.26	1.31	6,026.25	-1,126.05	30.11	-860.38	86.00	10.00	10.00	0.00
BPI: 600ft FSL & 2072ft FWL of Sec 12 - NIOBRARA C LP										
6,467.36	90.00	1.31	6,030.20	-1,130.00	97.30	-858.84	152.94	10.00	10.00	0.00
6,500.00	90.00	1.31	6,030.20	-1,130.00	129.93	-858.10	185.45	0.00	0.00	0.00
6,600.00	90.00	1.31	6,030.20	-1,130.00	229.91	-855.81	285.07	0.00	0.00	0.00
6,700.00	90.00	1.31	6,030.20	-1,130.00	329.88	-853.53	384.68	0.00	0.00	0.00
6,800.00	90.00	1.31	6,030.20	-1,130.00	429.85	-851.24	484.30	0.00	0.00	0.00
6,900.00	90.00	1.31	6,030.20	-1,130.00	529.83	-848.96	583.91	0.00	0.00	0.00
7,000.00	90.00	1.31	6,030.20	-1,130.00	629.80	-846.67	683.52	0.00	0.00	0.00
7,100.00	90.00	1.31	6,030.20	-1,130.00	729.78	-844.38	783.14	0.00	0.00	0.00
7,200.00	90.00	1.31	6,030.20	-1,130.00	829.75	-842.10	882.75	0.00	0.00	0.00
7,300.00	90.00	1.31	6,030.20	-1,130.00	929.72	-839.81	982.36	0.00	0.00	0.00
7,400.00	90.00	1.31	6,030.20	-1,130.00	1,029.70	-837.52	1,081.98	0.00	0.00	0.00
7,500.00	90.00	1.31	6,030.20	-1,130.00	1,129.67	-835.24	1,181.59	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CASTOR 7-59 12-1-5
Company:	MORNING GUN EXPLORATION	TVD Reference:	KB-EST @ 4900.20usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4900.20usft (Original Well Elev)
Site:	SW SE SEC. 12 T7N R59W 6th P.M.	North Reference:	True
Well:	CASTOR 7-59 12-1-5	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	1.31	6,030.21	-1,130.01	1,229.65	-832.95	1,281.20	0.00	0.00	0.00
7,700.00	90.00	1.31	6,030.21	-1,130.01	1,329.62	-830.66	1,380.82	0.00	0.00	0.00
7,800.00	90.00	1.31	6,030.21	-1,130.01	1,429.59	-828.38	1,480.43	0.00	0.00	0.00
7,900.00	90.00	1.31	6,030.21	-1,130.01	1,529.57	-826.09	1,580.05	0.00	0.00	0.00
8,000.00	90.00	1.31	6,030.21	-1,130.01	1,629.54	-823.80	1,679.66	0.00	0.00	0.00
8,100.00	90.00	1.31	6,030.21	-1,130.01	1,729.51	-821.51	1,779.27	0.00	0.00	0.00
8,200.00	90.00	1.31	6,030.21	-1,130.01	1,829.49	-819.23	1,878.89	0.00	0.00	0.00
8,300.00	90.00	1.31	6,030.21	-1,130.01	1,929.46	-816.94	1,978.50	0.00	0.00	0.00
8,400.00	90.00	1.31	6,030.21	-1,130.01	2,029.44	-814.65	2,078.11	0.00	0.00	0.00
8,500.00	90.00	1.31	6,030.21	-1,130.01	2,129.41	-812.36	2,177.73	0.00	0.00	0.00
8,600.00	90.00	1.31	6,030.21	-1,130.01	2,229.38	-810.07	2,277.34	0.00	0.00	0.00
8,700.00	90.00	1.31	6,030.21	-1,130.01	2,329.36	-807.79	2,376.95	0.00	0.00	0.00
8,800.00	90.00	1.31	6,030.21	-1,130.01	2,429.33	-805.50	2,476.57	0.00	0.00	0.00
8,900.00	90.00	1.31	6,030.21	-1,130.01	2,529.31	-803.21	2,576.18	0.00	0.00	0.00
9,000.00	90.00	1.31	6,030.21	-1,130.01	2,629.28	-800.92	2,675.79	0.00	0.00	0.00
9,100.00	90.00	1.31	6,030.21	-1,130.01	2,729.25	-798.63	2,775.41	0.00	0.00	0.00
9,200.00	90.00	1.31	6,030.21	-1,130.01	2,829.23	-796.34	2,875.02	0.00	0.00	0.00
9,300.00	90.00	1.31	6,030.21	-1,130.01	2,929.20	-794.05	2,974.63	0.00	0.00	0.00
9,400.00	90.00	1.31	6,030.21	-1,130.01	3,029.17	-791.76	3,074.25	0.00	0.00	0.00
9,500.00	90.00	1.31	6,030.21	-1,130.01	3,129.15	-789.47	3,173.86	0.00	0.00	0.00
9,600.00	90.00	1.31	6,030.21	-1,130.01	3,229.12	-787.19	3,273.47	0.00	0.00	0.00
9,700.00	90.00	1.31	6,030.21	-1,130.01	3,329.10	-784.90	3,373.09	0.00	0.00	0.00
9,800.00	90.00	1.31	6,030.21	-1,130.01	3,429.07	-782.61	3,472.70	0.00	0.00	0.00
9,900.00	90.00	1.31	6,030.21	-1,130.01	3,529.04	-780.32	3,572.31	0.00	0.00	0.00
10,000.00	90.00	1.31	6,030.21	-1,130.01	3,629.02	-778.03	3,671.93	0.00	0.00	0.00
10,100.00	90.00	1.31	6,030.21	-1,130.01	3,728.99	-775.74	3,771.54	0.00	0.00	0.00
10,200.00	90.00	1.31	6,030.21	-1,130.01	3,828.96	-773.45	3,871.15	0.00	0.00	0.00
10,300.00	90.00	1.31	6,030.21	-1,130.01	3,928.94	-771.16	3,970.77	0.00	0.00	0.00
10,400.00	90.00	1.31	6,030.21	-1,130.01	4,028.91	-768.87	4,070.38	0.00	0.00	0.00
10,500.00	90.00	1.31	6,030.21	-1,130.01	4,128.89	-766.57	4,169.99	0.00	0.00	0.00
10,600.00	90.00	1.31	6,030.21	-1,130.01	4,228.86	-764.28	4,269.61	0.00	0.00	0.00
10,700.00	90.00	1.31	6,030.21	-1,130.01	4,328.83	-761.99	4,369.22	0.00	0.00	0.00
10,800.00	90.00	1.31	6,030.21	-1,130.01	4,428.81	-759.70	4,468.83	0.00	0.00	0.00
10,900.00	90.00	1.31	6,030.21	-1,130.01	4,528.78	-757.41	4,568.45	0.00	0.00	0.00
11,000.00	90.00	1.31	6,030.21	-1,130.01	4,628.75	-755.12	4,668.06	0.00	0.00	0.00
11,100.00	90.00	1.31	6,030.21	-1,130.01	4,728.73	-752.83	4,767.67	0.00	0.00	0.00
11,200.00	90.00	1.31	6,030.21	-1,130.01	4,828.70	-750.54	4,867.29	0.00	0.00	0.00
11,300.00	90.00	1.31	6,030.21	-1,130.01	4,928.68	-748.25	4,966.90	0.00	0.00	0.00
11,400.00	90.00	1.31	6,030.21	-1,130.01	5,028.65	-745.95	5,066.51	0.00	0.00	0.00
11,500.00	90.00	1.31	6,030.21	-1,130.01	5,128.62	-743.66	5,166.13	0.00	0.00	0.00
11,600.00	90.00	1.31	6,030.21	-1,130.01	5,228.60	-741.37	5,265.74	0.00	0.00	0.00
11,700.00	90.00	1.31	6,030.21	-1,130.01	5,328.57	-739.08	5,365.35	0.00	0.00	0.00
11,800.00	90.00	1.31	6,030.21	-1,130.01	5,428.54	-736.79	5,464.96	0.00	0.00	0.00
11,900.00	90.00	1.31	6,030.21	-1,130.01	5,528.52	-734.49	5,564.58	0.00	0.00	0.00
12,000.00	90.00	1.31	6,030.21	-1,130.01	5,628.49	-732.20	5,664.19	0.00	0.00	0.00
12,100.00	90.00	1.31	6,030.21	-1,130.01	5,728.47	-729.91	5,763.80	0.00	0.00	0.00
12,200.00	90.00	1.31	6,030.21	-1,130.01	5,828.44	-727.62	5,863.42	0.00	0.00	0.00
12,300.00	90.00	1.31	6,030.21	-1,130.01	5,928.41	-725.32	5,963.03	0.00	0.00	0.00
12,400.00	90.00	1.31	6,030.21	-1,130.01	6,028.39	-723.03	6,062.64	0.00	0.00	0.00
12,500.00	90.00	1.31	6,030.21	-1,130.01	6,128.36	-720.74	6,162.26	0.00	0.00	0.00
12,600.00	90.00	1.31	6,030.21	-1,130.01	6,228.33	-718.44	6,261.87	0.00	0.00	0.00
12,700.00	90.00	1.31	6,030.21	-1,130.01	6,328.31	-716.15	6,361.48	0.00	0.00	0.00
12,800.00	90.00	1.31	6,030.21	-1,130.01	6,428.28	-713.86	6,461.10	0.00	0.00	0.00
12,900.00	90.00	1.31	6,030.21	-1,130.01	6,528.26	-711.56	6,560.71	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CASTOR 7-59 12-1-5
Company:	MORNING GUN EXPLORATION	TVD Reference:	KB-EST @ 4900.20usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4900.20usft (Original Well Elev)
Site:	SW SE SEC. 12 T7N R59W 6th P.M.	North Reference:	True
Well:	CASTOR 7-59 12-1-5	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	1.31	6,030.21	-1,130.01	6,628.23	-709.27	6,660.32	0.00	0.00	0.00
13,100.00	90.00	1.31	6,030.21	-1,130.01	6,728.20	-706.98	6,759.93	0.00	0.00	0.00
13,200.00	90.00	1.31	6,030.21	-1,130.01	6,828.18	-704.68	6,859.55	0.00	0.00	0.00
13,300.00	90.00	1.31	6,030.21	-1,130.01	6,928.15	-702.39	6,959.16	0.00	0.00	0.00
13,400.00	90.00	1.31	6,030.21	-1,130.01	7,028.12	-700.09	7,058.77	0.00	0.00	0.00
13,500.00	90.00	1.31	6,030.21	-1,130.01	7,128.10	-697.80	7,158.39	0.00	0.00	0.00
13,600.00	90.00	1.31	6,030.21	-1,130.01	7,228.07	-695.51	7,258.00	0.00	0.00	0.00
13,700.00	90.00	1.31	6,030.21	-1,130.01	7,328.04	-693.21	7,357.61	0.00	0.00	0.00
13,800.00	90.00	1.31	6,030.21	-1,130.01	7,428.02	-690.92	7,457.22	0.00	0.00	0.00
13,900.00	90.00	1.31	6,030.21	-1,130.01	7,527.99	-688.62	7,556.84	0.00	0.00	0.00
14,000.00	90.00	1.32	6,030.21	-1,130.01	7,627.97	-686.33	7,656.45	0.00	0.00	0.00
14,100.00	90.00	1.32	6,030.21	-1,130.01	7,727.94	-684.03	7,756.06	0.00	0.00	0.00
14,200.00	90.00	1.32	6,030.21	-1,130.01	7,827.91	-681.74	7,855.68	0.00	0.00	0.00
14,300.00	90.00	1.32	6,030.21	-1,130.01	7,927.89	-679.44	7,955.29	0.00	0.00	0.00
14,400.00	90.00	1.32	6,030.21	-1,130.01	8,027.86	-677.14	8,054.90	0.00	0.00	0.00
14,500.00	90.00	1.32	6,030.21	-1,130.01	8,127.83	-674.85	8,154.51	0.00	0.00	0.00
14,600.00	90.00	1.32	6,030.21	-1,130.01	8,227.81	-672.55	8,254.13	0.00	0.00	0.00
14,700.00	90.00	1.32	6,030.21	-1,130.01	8,327.78	-670.26	8,353.74	0.00	0.00	0.00
14,800.00	90.00	1.32	6,030.21	-1,130.01	8,427.75	-667.96	8,453.35	0.00	0.00	0.00
14,900.00	90.00	1.32	6,030.20	-1,130.00	8,527.73	-665.67	8,552.97	0.00	0.00	0.00
15,000.00	90.00	1.32	6,030.20	-1,130.00	8,627.70	-663.37	8,652.58	0.00	0.00	0.00
15,100.00	90.00	1.32	6,030.20	-1,130.00	8,727.68	-661.07	8,752.19	0.00	0.00	0.00
15,200.00	90.00	1.32	6,030.20	-1,130.00	8,827.65	-658.78	8,851.80	0.00	0.00	0.00
15,300.00	90.00	1.32	6,030.20	-1,130.00	8,927.62	-656.48	8,951.42	0.00	0.00	0.00
15,400.00	90.00	1.32	6,030.20	-1,130.00	9,027.60	-654.18	9,051.03	0.00	0.00	0.00
15,500.00	90.00	1.32	6,030.20	-1,130.00	9,127.57	-651.89	9,150.64	0.00	0.00	0.00
15,600.00	90.00	1.32	6,030.20	-1,130.00	9,227.54	-649.59	9,250.25	0.00	0.00	0.00
15,700.00	90.00	1.32	6,030.20	-1,130.00	9,327.52	-647.29	9,349.87	0.00	0.00	0.00
15,800.00	90.00	1.32	6,030.20	-1,130.00	9,427.49	-645.00	9,449.48	0.00	0.00	0.00
EPI: 600ft FNL & 2072ft FWL of Sec 1										
15,860.27	90.00	1.32	6,030.20	-1,130.00	9,487.75	-643.61	9,509.52	0.00	0.00	0.00
EOT TO 1.11° AZ										
15,867.05	90.00	1.11	6,030.20	-1,130.00	9,494.52	-643.47	9,516.27	3.00	0.00	-3.00
15,900.00	90.00	1.11	6,030.20	-1,130.00	9,527.47	-642.83	9,549.10	0.00	0.00	0.00
16,000.00	90.00	1.11	6,030.20	-1,130.00	9,627.45	-640.88	9,648.75	0.00	0.00	0.00
16,100.00	90.00	1.11	6,030.20	-1,130.00	9,727.43	-638.94	9,748.39	0.00	0.00	0.00
BHL: 300ft FNL & 2072ft FWL of Sec 1										
16,160.17	90.00	1.11	6,030.20	-1,130.00	9,787.59	-637.77	9,808.35	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CASTOR 7-59 12-1-5
Company:	MORNING GUN EXPLORATION	TVD Reference:	KB-EST @ 4900.20usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4900.20usft (Original Well Elev)
Site:	SW SE SEC. 12 T7N R59W 6th P.M.	North Reference:	True
Well:	CASTOR 7-59 12-1-5	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
411.20	411.20	PIERRE SHALE (BASE OF FOX HI				
3,247.38	3,185.20	PARKMAN				
4,049.02	3,965.20	SUSSEX				
4,988.08	4,880.20	SHANNON				
5,869.07	5,745.20	SHARON SPRINGS SHALE				
5,966.92	5,825.20	NIOBRARA FORMATION				
5,973.48	5,830.20	NIOBRARA A CHALK				
6,106.38	5,920.20	NIOBRARA B CHALK				
6,281.13	6,000.20	NIOBRARA C CHALK				
6,467.36	6,030.20	NIOBRARA C 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: 510ft FSL & 2310ft FEL of Sec 12
500.00	500.00	0.00	0.00	START NUDGE (2°/100ft BUR)
1,167.21	1,161.19	-37.03	-67.90	EOB TO 13.34° INC
4,800.15	4,696.05	-438.48	-804.04	END OF TANGENT
5,467.36	5,357.24	-475.51	-871.94	EOD TO VERTICAL
5,567.36	5,457.24	-475.51	-871.94	KOP (10°/100ft BUR)
6,467.36	6,030.20	97.30	-858.84	BPI: 600ft FSL & 2072ft FWL of Sec 12
15,860.27	6,030.20	9,487.75	-643.61	EPI: 600ft FNL & 2072ft FWL of Sec 1
15,867.05	6,030.20	9,494.52	-643.47	EOT TO 1.11° AZ
16,160.17	6,030.20	9,787.59	-637.77	BHL: 300ft FNL & 2072ft FWL of Sec 1