

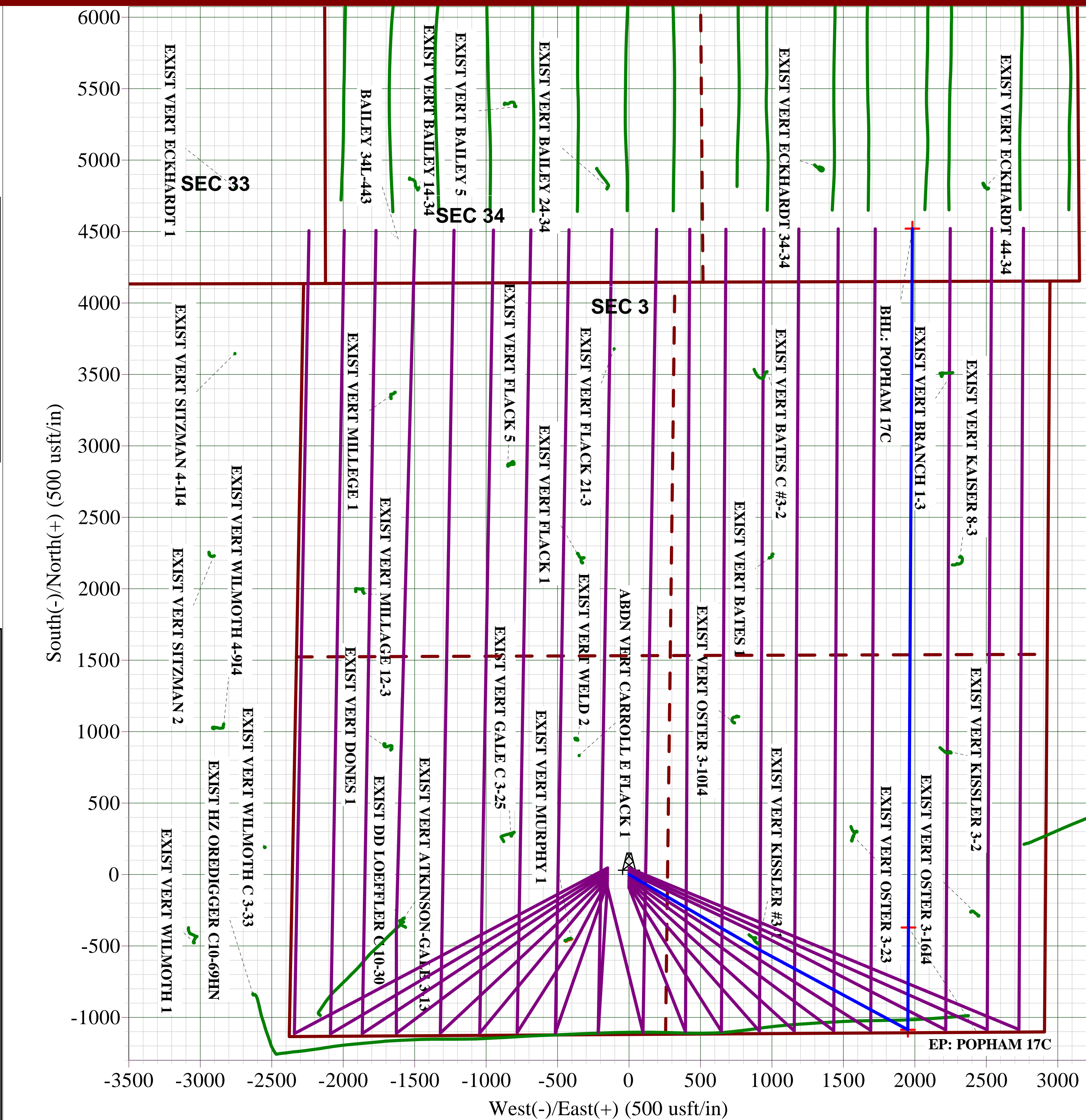
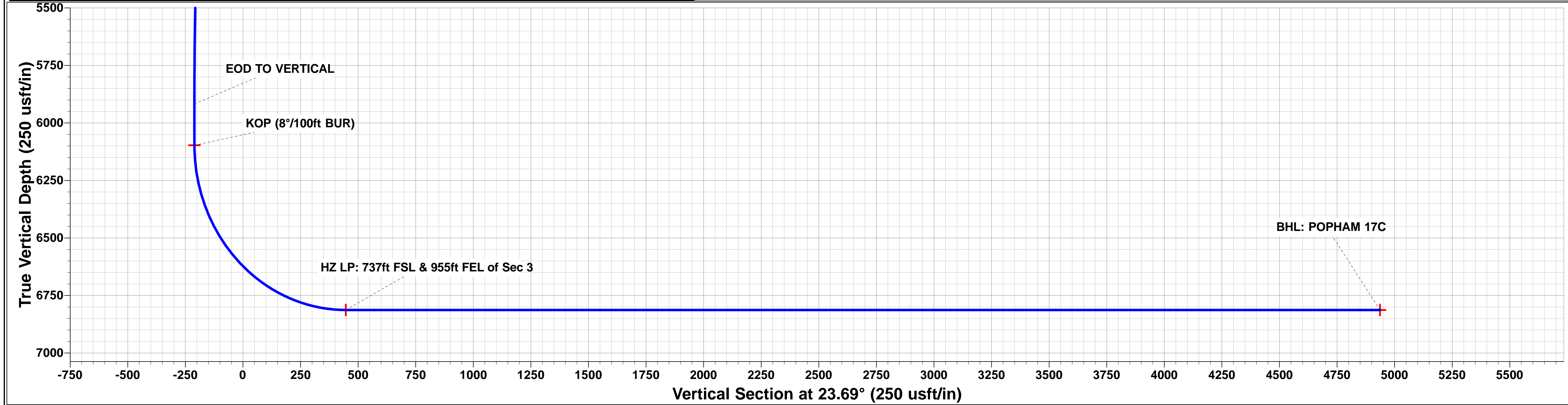
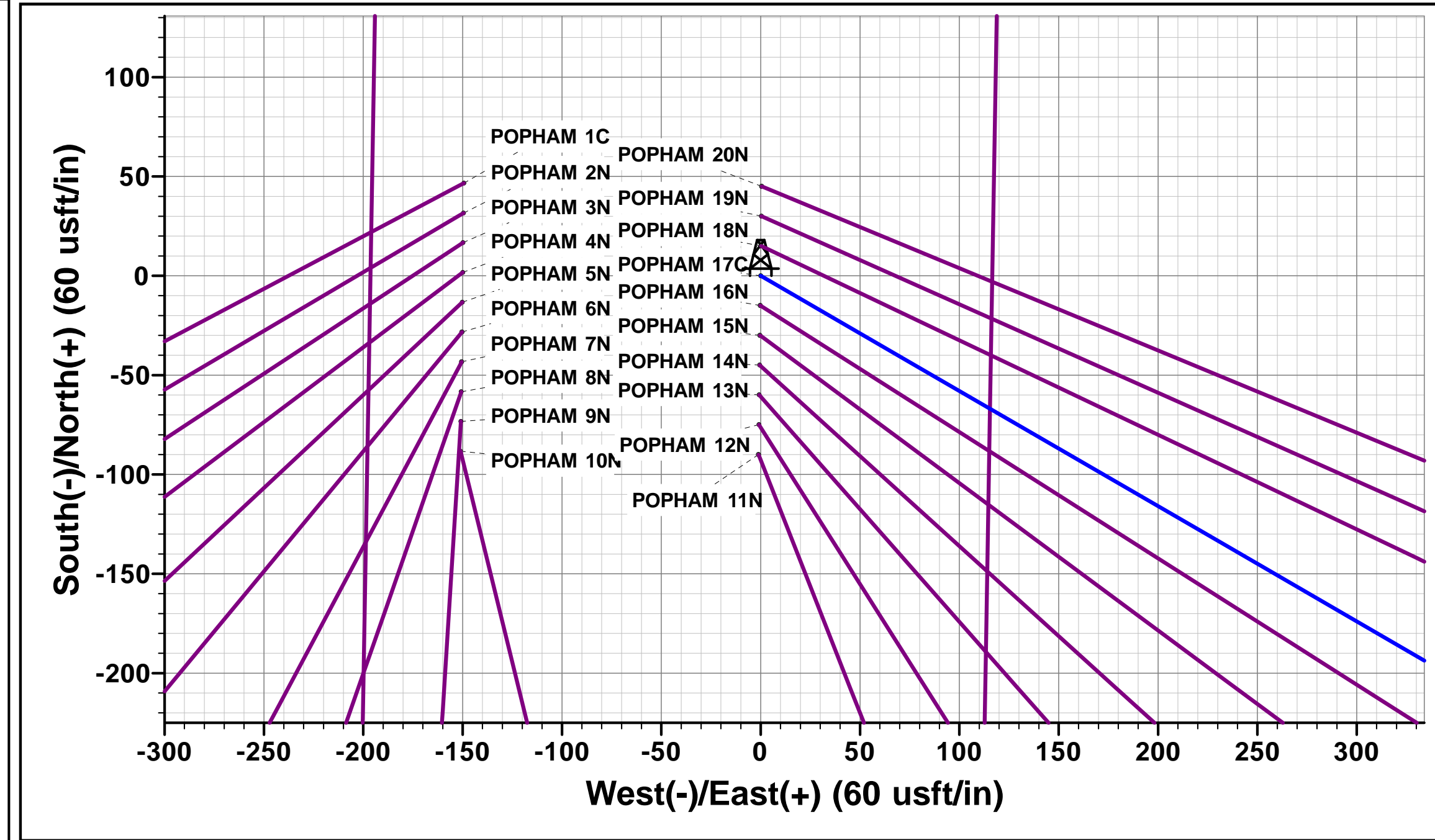
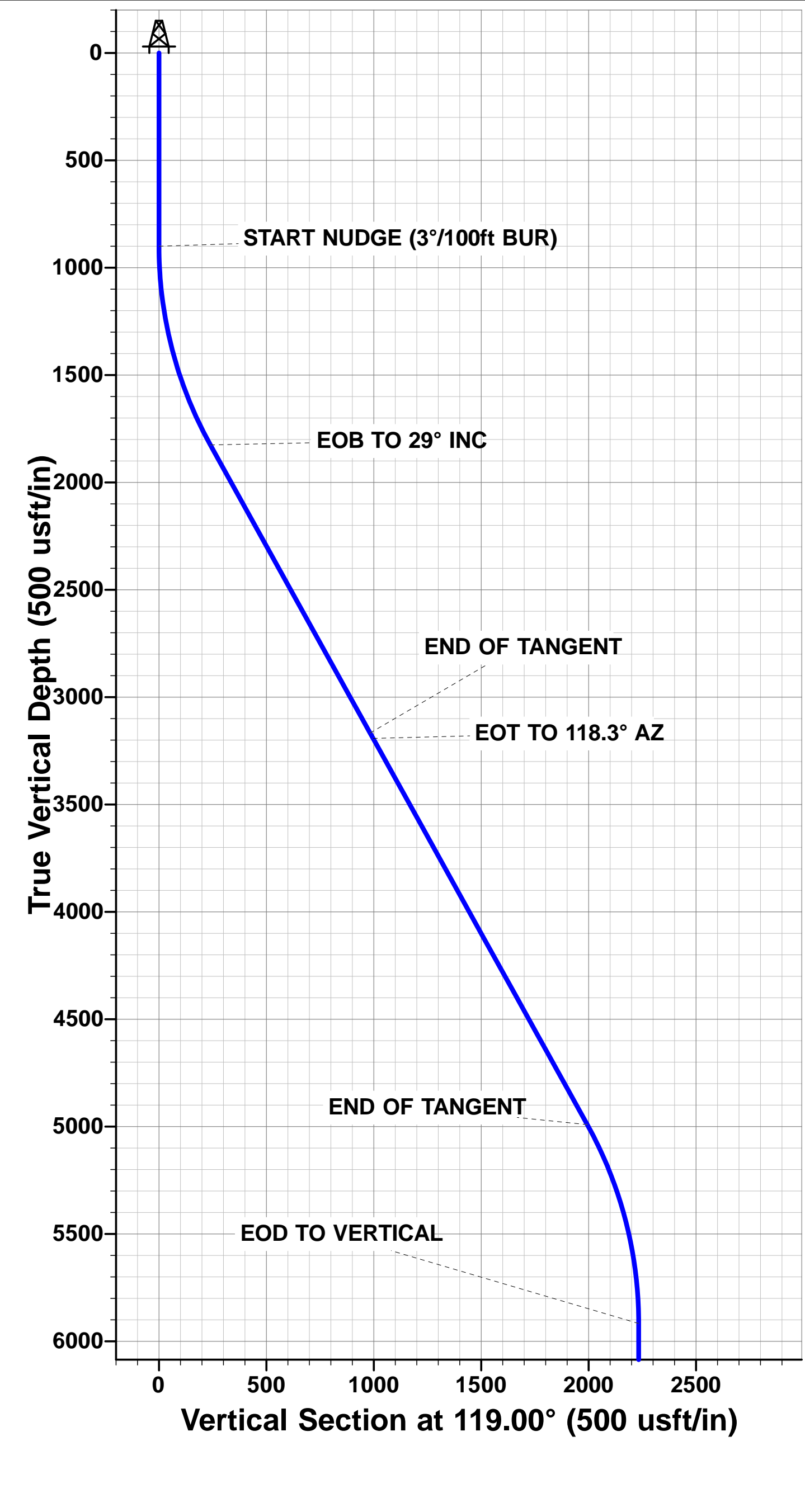


Project: WELD COUNTY, COLORADO  
Site: SE SW SEC. 3 T4N R64W 6th P.M.  
Well: POPHAM 17C  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation	
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 1119ft FSL & 2356ft FWL of Sec 3	
900.0	900.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (3°/100ft BUR)	
1825.9	1866.7	29.00	120.10	-120.1	207.2	-26.8	239.5	EOB TO 29° INC	
3167.0	3400.0	29.00	120.10	-492.9	850.3	-109.8	982.8	END OF TANGENT	
3192.4	3429.1	29.00	118.30	-499.8	862.6	-111.1	996.9	EOT TO 118.3° AZ	
4991.0	5485.6	29.00	118.30	-972.5	1740.6	-191.4	1994.1	END OF TANGENT	
5917.1	6452.4	0.00	0.00	-1086.1	1951.5	-210.6	2233.6	EOD TO VERTICAL	
6097.0	6632.3	0.00	0.00	-1086.1	1951.5	-210.6	2233.6	KOP (8°/100ft BUR)	
6813.0	7757.0	90.00	0.34	-370.1	1955.7	446.7	2949.6	HZ LP: 737ft FSL & 955ft FEL of Sec 3	
6813.0	12647.9	90.00	0.31	4520.7	1983.2	4936.6	7840.5	BHL: 370ft FSL & 1165ft FEL of Sec 34	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP: POPHAM 17C	6096.8	-1086.3	1951.7	40.334217	-104.530508
EP: POPHAM 17C	6813.0	-370.1	1955.7	40.336182	-104.530494
BHL: POPHAM 17C	6813.0	4520.7	1983.2	40.349607	-104.530394

PROPOSED LOCAL COORDINATES:  
SHL: 1119ft FSL & 2356ft FWL of Sec 3  
HZ LP: 737ft FSL & 955ft FEL of Sec 3  
BHL: 370ft FSL & 1165ft FEL of Sec 34



# **PDC ENERGY**

**WELD COUNTY, COLORADO  
SE SW SEC. 3 T4N R64W 6th P.M.  
POPHAM 17C**

**ORIGINAL WELLBORE  
PROPOSAL #1**

## **Anticollision Report**

**19 September, 2017**



<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well POPHAM 17C
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Reference Site:</b>	SE SW SEC. 3 T4N R64W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	POPHAM 17C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	PROPOSAL #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PROPOSAL #1		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD + Stations Interval 100.0usft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0 usft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	19/09/2017		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	12,647.3	PROPOSAL #1 (ORIGINAL WELLBORE)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SE SW SEC. 3 T4N R64W 6th P.M.						
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	266.0	268.0	174.9	174.0	189.391	CC
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	300.0	302.0	174.9	173.9	162.579	ES
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	12,647.9	12,092.8	1,798.9	1,611.6	9.604	SF
POPHAM 11N - ORIGINAL WELLBORE - PROPOSAL #	300.0	299.0	90.0	88.9	84.078	CC, ES
POPHAM 11N - ORIGINAL WELLBORE - PROPOSAL #	12,647.9	12,141.3	1,561.8	1,366.3	7.988	SF
POPHAM 12N - ORIGINAL WELLBORE - PROPOSAL #	400.0	400.0	74.9	73.4	49.227	CC, ES
POPHAM 12N - ORIGINAL WELLBORE - PROPOSAL #	12,647.9	12,105.2	1,317.1	1,126.8	6.921	SF
POPHAM 13N - ORIGINAL WELLBORE - PROPOSAL #	500.0	499.0	59.9	58.0	30.439	CC, ES
POPHAM 13N - ORIGINAL WELLBORE - PROPOSAL #	12,647.9	12,220.4	1,044.6	853.9	5.477	SF
POPHAM 14N - ORIGINAL WELLBORE - PROPOSAL #	600.0	599.0	44.9	42.5	18.575	CC, ES
POPHAM 14N - ORIGINAL WELLBORE - PROPOSAL #	12,647.9	12,216.2	815.0	632.5	4.467	SF
POPHAM 15N - ORIGINAL WELLBORE - PROPOSAL #	700.0	700.0	29.9	27.1	10.434	CC, ES
POPHAM 15N - ORIGINAL WELLBORE - PROPOSAL #	12,647.9	12,363.3	532.6	346.9	2.868	SF
POPHAM 16N - ORIGINAL WELLBORE - PROPOSAL #	800.0	800.0	14.9	11.6	4.500	CC
POPHAM 16N - ORIGINAL WELLBORE - PROPOSAL #	1,500.0	1,497.3	16.6	9.5	2.344	ES
POPHAM 16N - ORIGINAL WELLBORE - PROPOSAL #	4,800.0	4,803.3	107.0	36.9	1.527	SF
POPHAM 18N - ORIGINAL WELLBORE - PROPOSAL #	900.0	900.0	15.0	11.3	3.992	CC, ES
POPHAM 18N - ORIGINAL WELLBORE - PROPOSAL #	12,647.9	12,655.3	326.0	148.2	1.834	SF
POPHAM 19N - ORIGINAL WELLBORE - PROPOSAL #	900.0	900.0	30.0	26.3	7.965	CC, ES
POPHAM 19N - ORIGINAL WELLBORE - PROPOSAL #	12,647.9	12,829.7	569.9	376.6	2.949	SF
POPHAM 1C - ORIGINAL WELLBORE - PROPOSAL #1	900.0	902.0	156.5	152.7	41.475	CC, ES
POPHAM 1C - ORIGINAL WELLBORE - PROPOSAL #1	12,647.9	12,832.6	4,222.3	4,040.7	23.251	SF
POPHAM 20N - ORIGINAL WELLBORE - PROPOSAL #	900.0	900.0	45.0	41.3	11.943	CC, ES
POPHAM 20N - ORIGINAL WELLBORE - PROPOSAL #	2,800.0	2,846.9	134.1	101.5	4.107	SF
POPHAM 2N - ORIGINAL WELLBORE - PROPOSAL #1	900.0	902.0	152.9	149.1	40.508	CC, ES
POPHAM 2N - ORIGINAL WELLBORE - PROPOSAL #1	12,647.9	12,551.9	3,979.4	3,791.0	21.117	SF
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	900.0	902.0	150.7	146.9	39.937	CC, ES
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	12,647.9	12,502.5	3,755.0	3,566.0	19.862	SF
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	866.0	868.0	149.9	146.3	41.409	CC
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	900.0	900.0	150.0	146.2	39.782	ES
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	12,647.9	12,369.5	3,485.1	3,296.8	18.504	SF
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	766.0	768.0	150.7	147.6	47.531	CC
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	800.0	800.0	150.8	147.4	45.410	ES
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	12,647.9	12,319.8	3,209.4	3,019.9	16.930	SF
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	666.0	668.0	153.0	150.2	56.197	CC
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	700.0	700.0	153.0	150.1	53.296	ES
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	12,647.9	12,189.4	2,937.1	2,750.6	15.750	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



## Anticollision Report



<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well POPHAM 17C
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Reference Site:</b>	SE SW SEC. 3 T4N R64W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	POPHAM 17C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	PROPOSAL #1	<b>Offset TVD Reference:</b>	Offset Datum

## Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SE SW SEC. 3 T4N R64W 6th P.M.						
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	566.0	568.0	156.6	154.3	68.910	CC
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	600.0	601.9	156.6	154.2	64.583	ES
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	12,647.9	12,204.0	2,671.9	2,481.5	14.035	SF
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	466.0	468.0	161.6	159.8	88.642	CC
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	500.0	501.9	161.6	159.6	81.809	ES
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	12,647.9	12,123.9	2,409.4	2,216.9	12.513	SF
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	366.3	367.3	167.7	166.4	122.209	CC
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	400.0	400.0	167.7	166.2	110.236	ES
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	12,647.9	12,138.8	2,105.7	1,912.1	10.877	SF
SE SW SEC. 3 T4N R64W 6th P.M. (OFFSETS FOR POPHAM)						
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	4,652.2	4,210.9	1,100.5	1,063.7	29.919	CC
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	4,700.0	4,250.2	1,100.8	1,063.5	29.489	ES
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	5,485.6	4,919.4	1,181.6	1,136.6	26.295	SF
EXIST DD HOFFMAN C 02-33D - Wellbore #1 - Wellbore	8,344.9	7,595.4	807.5	749.3	13.887	CC, ES
EXIST DD HOFFMAN C 02-33D - Wellbore #1 - Wellbore	8,400.0	7,595.0	809.3	750.8	13.824	SF
EXIST HZ SUDEN 34M-223 - Wellbore #1 - Wellbore #1	12,647.9	11,092.0	1,039.3	864.3	5.939	CC, ES, SF
EXIST HZ SUDEN 34M-423 - Wellbore #1 - Wellbore #1	12,647.9	11,065.0	1,262.0	1,086.6	7.197	CC, ES, SF
EXIST HZ SUDEN 34R-203 - Wellbore #1 - Wellbore #1	12,647.9	11,081.0	375.0	217.8	2.386	CC, ES, SF
EXIST HZ SUDEN 34R-323 - Wellbore #1 - Wellbore #1	12,647.9	11,162.0	306.4	133.9	1.777	CC, ES, SF
EXIST HZ SUDEN 34R-343 - Wellbore #1 - Wellbore #1	12,647.9	11,135.0	585.2	410.9	3.358	CC, ES, SF
EXIST HZ SUDEN 34R-423 - Wellbore #1 - Wellbore #1	12,647.9	11,245.0	158.4	-21.2	0.882	Level 1, CC, ES, SF
EXIST HZ SUDEN 34U-243 - Wellbore #1 - Wellbore #1	12,647.9	11,118.0	785.4	606.8	4.397	CC, ES, SF
EXIST HZ SUDEN 34U-403 - Wellbore #1 - Wellbore #1	12,647.9	11,309.0	1,102.5	921.9	6.105	CC, ES, SF
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	10,365.2	6,700.0	966.6	910.0	17.099	CC, ES
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	10,700.0	6,700.0	1,022.9	960.6	16.409	SF
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	11,654.6	6,764.6	1,102.0	1,021.6	13.696	CC, ES
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	11,900.0	6,779.6	1,128.9	1,043.9	13.269	SF
EXIST VERT BRANCH 1-3 - Wellbore #1 - Wellbore #1	11,623.3	6,700.0	228.5	148.5	2.858	CC, ES, SF
EXIST VERT ECKHARDT 34-34 - Wellbore #1 - Wellbor	12,647.9	6,475.0	867.4	776.2	9.508	CC, ES, SF
EXIST VERT ECKHARDT 44-34 - Wellbore #1 - Wellbor	12,647.9	6,300.0	746.0	659.4	8.614	CC, ES, SF
EXIST VERT FLACK 1 - Wellbore #1 - Wellbore #1	910.0	918.2	2,206.4	2,203.9	886.722	CC, ES
EXIST VERT FLACK 1 - Wellbore #1 - Wellbore #1	12,200.0	6,650.0	2,974.5	2,884.8	33.169	SF
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	10,970.5	6,700.0	2,824.5	2,756.9	41.828	CC
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	11,000.0	6,700.0	2,824.6	2,756.6	41.507	ES
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	12,600.0	6,700.0	3,260.7	3,163.4	33.500	SF
EXIST VERT GALE C 3-25 - Wellbore #1 - Wellbore #1	900.3	887.4	865.6	863.1	348.195	CC, ES
EXIST VERT GALE C 3-25 - Wellbore #1 - Wellbore #1	12,600.0	6,700.0	5,116.5	5,019.3	52.598	SF
EXIST VERT KAISER 8-3 - Wellbore #1 - Wellbore #1	10,296.2	6,750.0	294.9	237.6	5.153	CC
EXIST VERT KAISER 8-3 - Wellbore #1 - Wellbore #1	10,300.0	6,750.0	294.9	237.6	5.148	ES, SF
EXIST VERT KISSLER #3-1 - Wellbore #1 - Wellbore #1	3,390.4	3,126.7	48.2	25.0	2.078	CC, ES, SF
EXIST VERT KISSLER 3-2 - Wellbore #1 - Wellbore #1	9,016.3	6,792.6	214.2	178.3	5.972	CC, ES, SF
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	100.0	76.5	603.6	603.4	3,593.574	CC, ES
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	12,600.0	6,500.0	5,508.9	5,412.4	57.057	SF
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	9,226.3	6,700.0	1,198.7	1,160.3	31.200	CC, ES
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	9,800.0	6,700.0	1,328.9	1,281.8	28.178	SF
EXIST VERT OSTER 3-1614 - Wellbore #1 - Wellbore #1	7,866.2	6,700.0	441.0	412.5	15.485	CC, ES, SF
EXIST VERT OSTER 3-23 - Wellbore #1 - Wellbore #1	8,461.0	6,500.0	494.9	470.4	20.253	CC, ES
EXIST VERT OSTER 3-23 - Wellbore #1 - Wellbore #1	8,500.0	6,500.0	496.4	471.7	20.071	SF
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	100.0	113.8	1,006.0	1,005.8	4,812.670	CC, ES
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	12,200.0	6,700.0	3,907.4	3,817.6	43.542	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well POPHAM 17C
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Reference Site:</b>	SE SW SEC. 3 T4N R64W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	POPHAM 17C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	PROPOSAL #1	<b>Offset TVD Reference:</b>	Offset Datum

## Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW SW SEC. 34 T5N R64W 6th P.M.						
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	900.0	896.0	904.7	885.9	48.035	CC
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	1,000.0	996.0	906.8	885.8	43.109	ES
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	9,400.0	6,809.1	2,355.2	2,179.4	13.398	SF
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore	920.9	944.2	1,633.3	1,630.1	514.208	CC, ES
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore	12,647.9	6,877.3	6,890.0	6,775.2	60.036	SF
EXIST HZ CHESNUT 27G-203 - Wellbore #1 - Wellbore	12,647.9	13,766.2	4,006.8	3,770.9	16.985	CC, ES, SF
EXIST HZ CHESNUT 27G-423 - Wellbore #1 - Wellbore	12,647.9	13,972.0	3,637.6	3,399.9	15.304	CC, ES, SF
EXIST HZ CHESNUT 27K-203 - Wellbore #1 - Wellbore	12,647.9	13,900.0	2,962.6	2,727.5	12.602	CC, ES, SF
EXIST HZ CHESNUT 27K-323 - Wellbore #1 - Wellbore	12,647.9	14,120.0	2,350.2	2,126.1	10.486	CC, ES, SF
EXIST HZ CHESNUT 27K-343 - Wellbore #1 - Wellbore	12,647.9	13,920.0	3,317.4	3,080.9	14.025	CC, ES, SF
EXIST HZ CHESNUT 27K-403 - Wellbore #1 - Wellbore	12,647.9	14,160.0	2,655.3	2,430.7	11.822	CC, ES, SF
EXIST HZ CHESNUT 27O-243 - Wellbore #1 - Wellbore	12,647.9	14,066.0	2,009.1	1,785.7	8.991	CC, ES, SF
EXIST HZ CHESNUT 27O-303 - Wellbore #1 - Wellbore	12,647.9	14,196.0	1,682.8	1,457.9	7.484	CC, ES, SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	7,100.0	10,833.5	123.3	-10.3	0.923	Level 1, ES, SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	7,124.2	10,834.0	120.5	-9.8	0.925	Level 1, CC
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	508.0	500.0	1,602.0	1,600.6	1,127.396	CC
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	600.0	584.9	1,602.2	1,600.6	973.340	ES
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	12,647.9	6,791.9	6,039.5	5,941.2	61.420	SF
EXIST VERT BAILEY 14-34 - Wellbore #1 - Wellbore #1	12,647.9	6,525.0	3,547.1	3,449.3	36.269	CC, ES, SF
EXIST VERT BAILEY 24-34 - Wellbore #1 - Wellbore #1	12,647.9	6,500.0	2,267.8	2,170.8	23.380	CC, ES, SF
EXIST VERT BAILEY 5 - Wellbore #1 - Wellbore #1	12,647.9	6,801.3	2,984.0	2,885.1	30.175	CC, ES, SF
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	900.0	900.0	1,880.7	1,878.2	749.221	ES
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	906.1	907.2	1,880.7	1,878.2	754.191	CC
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	12,647.9	6,844.2	5,160.7	5,062.2	52.438	SF
EXIST VERT ECKHARDT 1 - Wellbore #1 - Design #1	12,647.9	6,813.0	4,745.9	4,513.4	20.407	CC, ES, SF
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	11,795.9	6,805.0	2,082.1	1,865.2	9.599	CC
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	11,800.0	6,805.0	2,082.1	1,865.1	9.595	ES
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	12,200.0	6,805.0	2,121.0	1,896.6	9.453	SF
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	0.0	12.6	2,703.7			
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	12,647.9	6,750.0	4,651.7	4,553.5	47.350	SF
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	11,438.9	6,750.0	3,642.5	3,566.4	47.878	CC
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	11,500.0	6,750.0	3,643.0	3,565.8	47.196	ES
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	12,647.9	6,750.0	3,837.8	3,739.7	39.096	SF
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	100.0	76.5	602.6	602.5	5,005.779	CC, ES
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	12,600.0	6,500.0	5,510.1	5,413.5	57.075	SF
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	860.3	868.3	3,661.4	3,659.0	1,546.922	CC
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	900.0	907.3	3,661.4	3,658.9	1,483.277	ES
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	12,647.9	6,525.0	5,431.6	5,333.8	55.539	SF
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	900.0	915.0	4,572.2	4,553.2	240.217	CC
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	11,800.0	6,828.0	4,735.8	4,518.6	21.801	ES
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	12,647.9	6,828.0	4,820.1	4,587.3	20.712	SF
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	0.0	6.9	3,079.0			
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	12,647.9	6,760.0	7,042.4	6,944.1	71.585	SF
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	914.7	945.6	3,024.6	3,022.1	1,203.450	CC, ES
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	12,647.9	6,800.0	5,997.2	5,898.8	60.912	SF
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	912.3	929.2	2,555.9	2,553.4	1,026.785	CC, ES
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	12,647.9	6,800.0	6,266.1	6,168.1	63.979	SF