

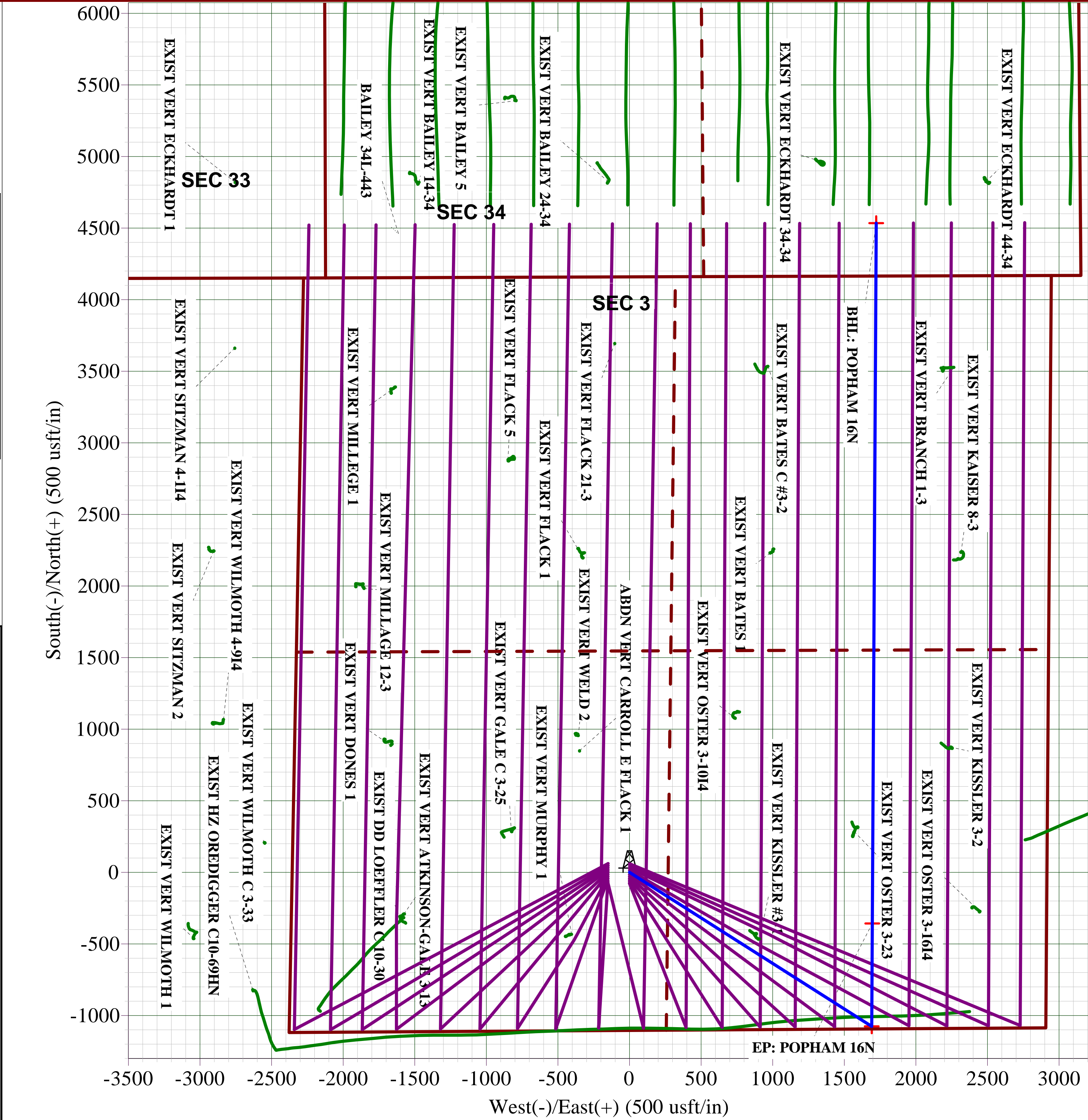
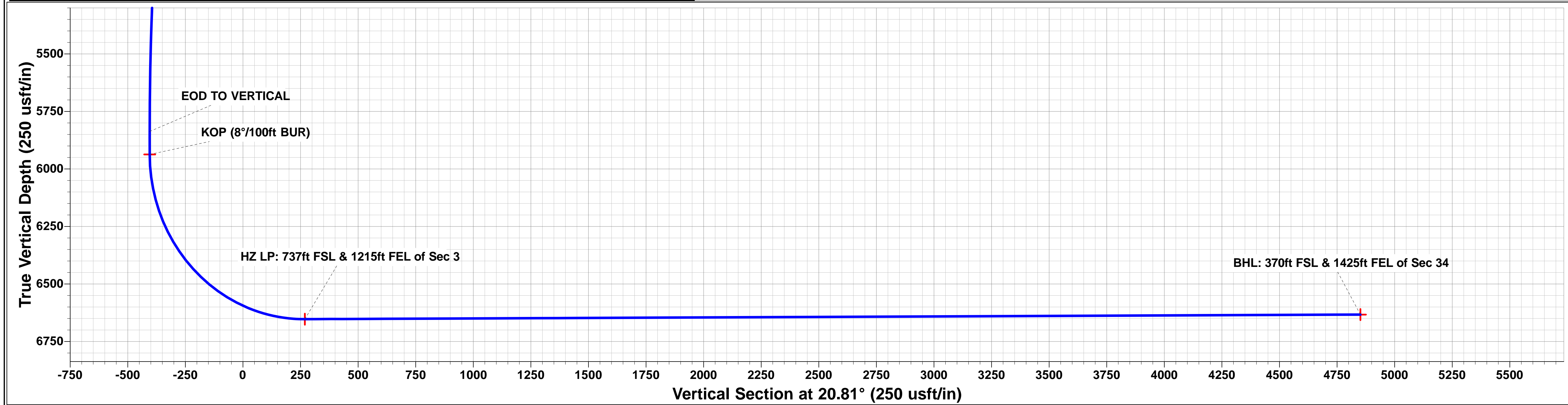
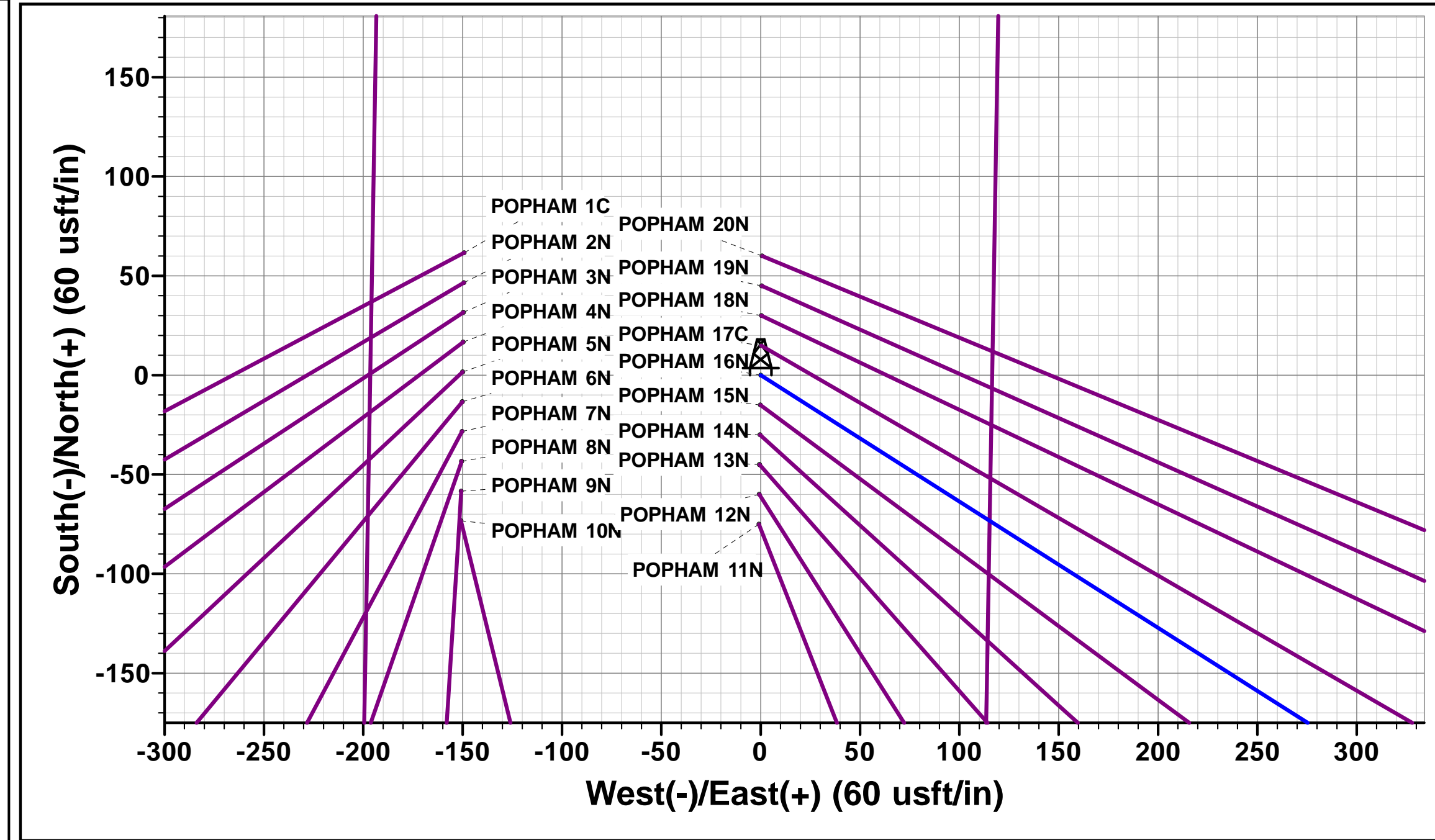
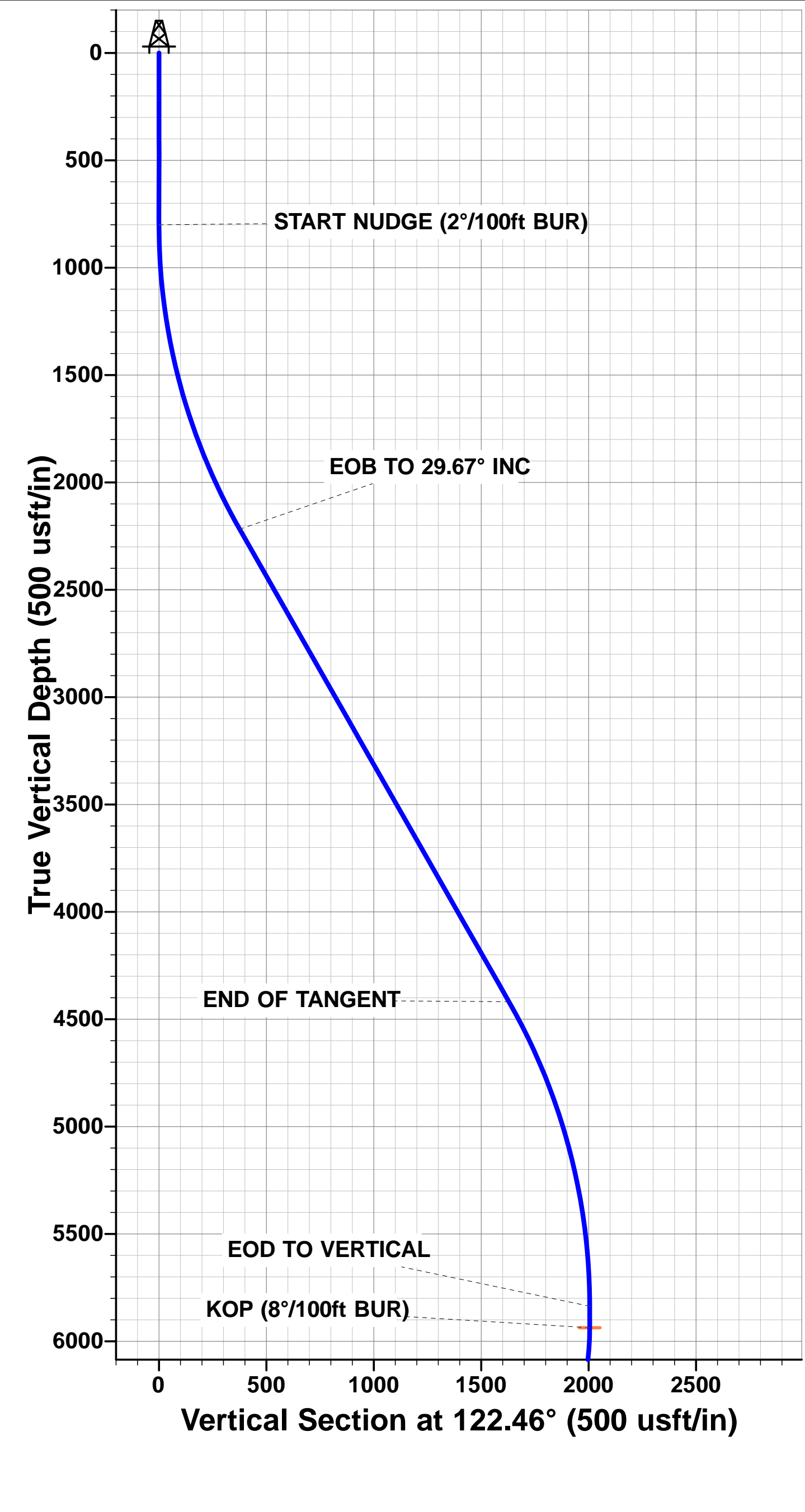


Project: WELD COUNTY, COLORADO
Site: SE SW SEC. 3 T4N R64W 6th P.M.
Well: POPHAM 16N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

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: 1104ft FSL & 2356ft FWL of Sec 3
800.0	800.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2"/100ft BUR)
2218.2	2283.6	29.67	122.45	-201.6	317.0	-75.8	375.7	EOB TO 29.67° INC
4418.6	4816.1	29.67	122.45	-874.3	1374.9	-328.9	1629.4	END OF TANGENT
5836.8	6299.8	0.00	0.00	-1075.9	1691.9	-404.7	2005.0	EOD TO VERTICAL
5936.8	6399.8	0.00	0.00	-1075.9	1691.9	-404.7	2005.0	KOP (8"/100ft BUR)
6653.0	7527.6	90.23	0.32	-356.8	1695.9	268.9	2724.1	HZ LP: 737ft FSL & 1215ft FEL of Sec 3
6633.0	12419.5	90.24	0.32	4534.9	1723.4	4851.4	7615.9	BHL: 370ft FSL & 1425ft FEL of Sec 34

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP: POPHAM 16N	5936.8	-1075.9	1691.9	40.334204	-104.531441
EP: POPHAM 16N	6653.0	-356.8	1695.9	40.336178	-104.531426
BHL: POPHAM 16N	6633.0	4534.9	1723.4	40.349605	-104.531326

PROPOSED LOCAL COORDINATES:
SHL: 1104ft FSL & 2356ft FWL of Sec 3
HZ LP: 737ft FSL & 1215ft FEL of Sec 3
BHL: 370ft FSL & 1425ft FEL of Sec 34



PDC ENERGY

**WELD COUNTY, COLORADO
SE SW SEC. 3 T4N R64W 6th P.M.
POPHAM 16N**

**ORIGINAL WELLBORE
PROPOSAL #1**

Anticollision Report

19 September, 2017



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well POPHAM 16N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Reference Site:	SE SW SEC. 3 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	POPHAM 16N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program	Date	19/09/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,419.5	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	167.7	166.8	181.579	CC
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	400.0	400.7	168.1	166.6	112.181	ES
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	12,419.5	12,092.8	1,529.9	1,341.7	8.128	SF
POPHAM 11N - ORIGINAL WELLBORE - PROPOSAL #	300.0	299.0	75.0	73.9	70.116	CC, ES
POPHAM 11N - ORIGINAL WELLBORE - PROPOSAL #	12,419.5	12,141.3	1,299.8	1,103.8	6.629	SF
POPHAM 12N - ORIGINAL WELLBORE - PROPOSAL #	400.0	400.0	60.0	58.4	39.410	CC, ES
POPHAM 12N - ORIGINAL WELLBORE - PROPOSAL #	12,419.5	12,105.2	1,044.8	852.4	5.431	SF
POPHAM 13N - ORIGINAL WELLBORE - PROPOSAL #	500.0	499.0	45.0	43.0	22.852	CC, ES
POPHAM 13N - ORIGINAL WELLBORE - PROPOSAL #	12,419.5	12,220.4	782.0	589.8	4.068	SF
POPHAM 14N - ORIGINAL WELLBORE - PROPOSAL #	600.0	599.0	30.0	27.6	12.398	CC, ES
POPHAM 14N - ORIGINAL WELLBORE - PROPOSAL #	12,419.5	12,216.2	534.9	347.1	2.848	SF
POPHAM 15N - ORIGINAL WELLBORE - PROPOSAL #	700.0	700.0	15.0	12.1	5.230	CC, ES
POPHAM 15N - ORIGINAL WELLBORE - PROPOSAL #	12,419.5	12,363.3	265.8	75.5	1.397	Level 3, SF
POPHAM 17C - ORIGINAL WELLBORE - PROPOSAL #	800.0	800.0	14.9	11.6	4.500	CC
POPHAM 17C - ORIGINAL WELLBORE - PROPOSAL #	1,433.4	1,435.9	16.1	9.5	2.459	ES
POPHAM 17C - ORIGINAL WELLBORE - PROPOSAL #	4,816.1	4,809.6	107.4	37.0	1.525	SF
POPHAM 18N - ORIGINAL WELLBORE - PROPOSAL #	800.0	800.0	30.0	26.7	9.032	CC, ES
POPHAM 18N - ORIGINAL WELLBORE - PROPOSAL #	12,419.5	12,653.8	525.0	328.4	2.670	SF
POPHAM 19N - ORIGINAL WELLBORE - PROPOSAL #	800.0	800.0	45.0	41.6	13.543	CC, ES
POPHAM 19N - ORIGINAL WELLBORE - PROPOSAL #	12,419.5	12,828.3	816.4	624.7	4.258	SF
POPHAM 1C - ORIGINAL WELLBORE - PROPOSAL #1	800.0	802.0	161.4	158.1	48.559	CC, ES
POPHAM 1C - ORIGINAL WELLBORE - PROPOSAL #1	12,419.5	12,832.6	3,966.9	3,786.2	21.953	SF
POPHAM 20N - ORIGINAL WELLBORE - PROPOSAL #	800.0	800.0	60.0	56.6	18.058	CC, ES
POPHAM 20N - ORIGINAL WELLBORE - PROPOSAL #	12,419.5	12,932.0	1,036.8	843.7	5.369	SF
POPHAM 2N - ORIGINAL WELLBORE - PROPOSAL #1	800.0	802.0	156.5	153.1	47.065	CC, ES
POPHAM 2N - ORIGINAL WELLBORE - PROPOSAL #1	12,419.5	12,551.9	3,715.4	3,527.4	19.765	SF
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	800.0	802.0	152.9	149.6	45.995	CC, ES
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	12,419.5	12,502.5	3,494.1	3,305.7	18.538	SF
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	800.0	802.0	150.7	147.3	45.320	CC, ES
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	12,419.5	12,369.5	3,220.5	3,032.5	17.129	SF
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	766.0	768.0	150.0	146.8	47.287	CC
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	800.0	801.9	150.0	146.6	45.120	ES
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	12,419.5	12,319.8	2,948.4	2,759.3	15.588	SF
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	666.0	668.0	150.7	148.0	55.373	CC
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	700.0	701.9	150.7	147.8	52.439	ES
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	12,419.5	12,189.4	2,671.6	2,485.3	14.334	SF
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	566.0	568.0	152.9	150.7	67.305	CC

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

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well POPHAM 16N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Reference Site:	SE SW SEC. 3 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	POPHAM 16N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

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 7N - ORIGINAL WELLBORE - PROPOSAL #1	600.0	601.9	152.9	150.5	63.079	ES
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	12,419.5	12,204.0	2,410.7	2,220.6	12.678	SF
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	466.0	468.0	156.6	154.8	85.921	CC
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	500.0	501.9	156.6	154.6	79.297	ES
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	12,419.5	12,123.9	2,142.7	1,949.9	11.113	SF
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	366.3	367.3	161.6	160.2	117.728	CC
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	400.0	400.0	161.6	160.1	106.194	ES
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	12,419.5	12,138.8	1,844.1	1,650.5	9.522	SF

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well POPHAM 16N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Reference Site:	SE SW SEC. 3 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4683.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	POPHAM 16N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

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. (OFFSETS FOR POPHAM)						
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	4,853.4	4,395.0	1,002.6	964.6	26.372	CC
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	4,900.0	4,434.8	1,002.9	964.4	26.047	ES
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	5,500.0	4,980.2	1,039.7	997.6	24.674	SF
EXIST DD HOFFMAN C 02-33D - Wellbore #1 - Wellbore	8,119.6	7,448.0	1,072.1	1,016.3	19.194	CC, ES
EXIST DD HOFFMAN C 02-33D - Wellbore #1 - Wellbore	8,300.0	7,442.7	1,087.2	1,029.9	18.983	SF
EXIST HZ SUDEN 34M-223 - Wellbore #1 - Wellbore #1	12,419.5	11,092.0	766.8	589.3	4.320	CC, ES, SF
EXIST HZ SUDEN 34M-423 - Wellbore #1 - Wellbore #1	12,419.5	11,065.0	1,030.9	858.3	5.972	CC, ES, SF
EXIST HZ SUDEN 34R-203 - Wellbore #1 - Wellbore #1	12,419.5	11,081.0	138.5	-36.8	0.790	Level 1, CC, ES, SF
EXIST HZ SUDEN 34R-323 - Wellbore #1 - Wellbore #1	12,419.5	11,162.0	538.1	361.1	3.041	CC, ES, SF
EXIST HZ SUDEN 34R-343 - Wellbore #1 - Wellbore #1	12,419.5	11,135.0	336.7	162.1	1.928	CC, ES, SF
EXIST HZ SUDEN 34R-423 - Wellbore #1 - Wellbore #1	12,419.5	11,245.0	414.5	254.4	2.589	CC, ES, SF
EXIST HZ SUDEN 34U-243 - Wellbore #1 - Wellbore #1	12,419.5	11,118.0	1,022.8	843.3	5.698	CC, ES, SF
EXIST HZ SUDEN 34U-403 - Wellbore #1 - Wellbore #1	12,419.5	11,309.0	1,371.7	1,194.1	7.724	CC, ES, SF
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	10,138.8	6,625.1	702.6	646.9	12.618	CC, ES
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	10,300.0	6,624.5	720.8	662.3	12.317	SF
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	11,419.9	6,600.0	837.9	758.7	10.578	CC, ES
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	11,600.0	6,606.7	857.0	774.4	10.371	SF
EXIST VERT BRANCH 1-3 - Wellbore #1 - Wellbore #1	11,399.4	6,600.2	473.8	395.2	6.024	CC
EXIST VERT BRANCH 1-3 - Wellbore #1 - Wellbore #1	11,400.0	6,600.2	473.8	395.2	6.023	ES
EXIST VERT BRANCH 1-3 - Wellbore #1 - Wellbore #1	11,500.0	6,596.9	484.4	403.8	6.011	SF
EXIST VERT ECKHARDT 34-34 - Wellbore #1 - Wellbor	12,419.5	6,475.0	626.4	531.8	6.623	CC, ES, SF
EXIST VERT ECKHARDT 44-34 - Wellbore #1 - Wellbor	12,419.5	6,300.0	864.5	768.3	8.979	CC, ES, SF
EXIST VERT FLACK 1 - Wellbore #1 - Wellbore #1	10,134.9	6,632.0	2,071.7	2,016.2	37.314	CC
EXIST VERT FLACK 1 - Wellbore #1 - Wellbore #1	10,200.0	6,631.5	2,072.8	2,016.1	36.578	ES
EXIST VERT FLACK 1 - Wellbore #1 - Wellbore #1	11,600.0	6,621.9	2,537.5	2,455.2	30.844	SF
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	10,743.6	6,600.0	2,561.0	2,494.7	38.625	CC
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	10,800.0	6,600.0	2,561.6	2,494.3	38.044	ES
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	12,419.5	6,600.0	3,060.6	2,963.0	31.349	SF
EXIST VERT GALE C 3-25 - Wellbore #1 - Wellbore #1	806.5	795.4	870.3	868.1	388.123	CC, ES
EXIST VERT GALE C 3-25 - Wellbore #1 - Wellbore #1	12,419.5	6,518.3	5,013.0	4,915.7	51.524	SF
EXIST VERT KAISER 8-3 - Wellbore #1 - Wellbore #1	10,069.9	6,656.4	560.0	506.1	10.385	CC, ES
EXIST VERT KAISER 8-3 - Wellbore #1 - Wellbore #1	10,200.0	6,656.1	574.9	518.7	10.227	SF
EXIST VERT KISSLER #3-1 - Wellbore #1 - Wellbore #1	3,473.2	3,218.7	102.5	79.6	4.488	CC, ES
EXIST VERT KISSLER #3-1 - Wellbore #1 - Wellbore #1	3,500.0	3,241.7	103.4	80.3	4.482	SF
EXIST VERT KISSLER 3-2 - Wellbore #1 - Wellbore #1	8,782.7	6,631.9	482.7	448.9	14.267	CC, ES
EXIST VERT KISSLER 3-2 - Wellbore #1 - Wellbore #1	8,900.0	6,635.7	496.7	461.4	14.048	SF
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	100.0	76.5	592.5	592.3	3,526.451	CC, ES
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	12,419.5	6,500.0	5,435.8	5,338.4	55.806	SF
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	8,999.2	6,628.6	936.8	899.9	25.358	CC
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	9,000.0	6,628.6	936.8	899.9	25.350	ES
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	9,400.0	6,631.3	1,019.0	975.9	23.646	SF
EXIST VERT OSTER 3-1614 - Wellbore #1 - Wellbore #1	6,650.0	6,156.4	1,054.4	1,011.1	24.359	SF
EXIST VERT OSTER 3-1614 - Wellbore #1 - Wellbore #1	7,640.1	6,591.8	696.3	670.5	27.068	CC, ES
EXIST VERT OSTER 3-23 - Wellbore #1 - Wellbore #1	8,235.3	6,500.0	188.8	166.2	8.349	CC, ES, SF
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	100.0	113.8	1,019.9	1,019.7	4,880.014	CC, ES
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	11,500.0	6,669.8	3,371.0	3,290.6	41.937	SF

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well POPHAM 16N
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Site Error:	0.0 usft	North Reference:	True
Reference Well:	POPHAM 16N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

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						
SW SW SEC. 34 T5N R64W 6th P.M.						
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	800.0	796.0	918.5	901.9	55.343	CC
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	900.0	896.0	919.9	901.1	48.913	ES
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	9,100.0	6,642.6	2,085.7	1,916.5	12.323	SF
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore	849.3	879.5	1,630.9	1,628.1	565.449	CC, ES
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore	12,419.5	6,711.4	6,735.5	6,621.6	59.147	SF
EXIST HZ CHESNUT 27G-203 - Wellbore #1 - Wellbore	12,419.5	13,769.0	3,743.6	3,507.8	15.876	CC, ES, SF
EXIST HZ CHESNUT 27G-423 - Wellbore #1 - Wellbore	12,419.5	13,972.0	3,384.3	3,147.3	14.278	CC, ES, SF
EXIST HZ CHESNUT 27K-203 - Wellbore #1 - Wellbore	12,419.5	13,900.0	2,697.2	2,461.8	11.458	CC, ES, SF
EXIST HZ CHESNUT 27K-323 - Wellbore #1 - Wellbore	12,419.5	14,120.0	2,089.1	1,864.8	9.315	CC, ES, SF
EXIST HZ CHESNUT 27K-343 - Wellbore #1 - Wellbore	12,419.5	13,920.0	3,056.4	2,820.0	12.927	CC, ES, SF
EXIST HZ CHESNUT 27K-403 - Wellbore #1 - Wellbore	12,419.5	14,160.0	2,402.7	2,178.8	10.728	CC, ES, SF
EXIST HZ CHESNUT 27O-243 - Wellbore #1 - Wellbore	12,419.5	14,066.0	1,740.6	1,516.1	7.751	CC, ES, SF
EXIST HZ CHESNUT 27O-303 - Wellbore #1 - Wellbore	12,419.5	14,196.0	1,419.8	1,194.0	6.287	CC, ES, SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	6,950.0	10,565.9	232.1	118.8	2.049	ES, SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	6,983.6	10,567.4	228.9	120.3	2.108	CC
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	508.0	500.0	1,599.0	1,597.6	1,124.833	CC
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	600.0	584.9	1,599.2	1,597.6	971.262	ES
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	12,419.5	6,657.2	5,889.8	5,792.0	60.249	SF
EXIST VERT BAILEY 14-34 - Wellbore #1 - Wellbore #1	12,419.5	6,525.0	3,279.3	3,181.6	33.564	CC, ES, SF
EXIST VERT BAILEY 24-34 - Wellbore #1 - Wellbore #1	12,419.5	6,500.0	1,997.5	1,900.2	20.523	CC, ES, SF
EXIST VERT BAILEY 5 - Wellbore #1 - Wellbore #1	12,419.5	6,613.3	2,737.5	2,639.2	27.860	CC, ES, SF
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	800.0	799.5	1,887.8	1,885.5	841.933	ES
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	807.0	806.6	1,887.8	1,885.6	846.073	CC
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	12,419.5	6,678.0	4,978.8	4,881.0	50.920	SF
EXIST VERT ECKHARDT 1 - Wellbore #1 - Design #1	12,419.5	6,633.0	4,486.5	4,258.2	19.648	CC, ES, SF
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	11,569.3	6,628.5	1,821.9	1,609.7	8.583	CC
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	11,600.0	6,628.4	1,822.2	1,609.3	8.561	ES
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	11,900.0	6,627.2	1,851.7	1,633.3	8.476	SF
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	0.0	12.6	2,714.5			
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	12,419.5	6,605.5	4,434.7	4,337.0	45.406	SF
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	11,212.3	6,638.5	3,380.6	3,305.6	45.091	CC
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	11,300.0	6,638.1	3,381.7	3,305.1	44.147	ES
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	12,419.5	6,632.0	3,589.7	3,492.0	36.757	SF
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	800.0	810.7	3,670.3	3,668.1	1,661.311	ES
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	802.0	812.7	3,670.3	3,668.1	1,668.562	CC
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	12,419.5	6,525.0	5,189.7	5,092.2	53.218	SF
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	11,521.7	6,651.7	4,475.3	4,263.7	21.147	CC
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	11,600.0	6,651.4	4,476.0	4,262.9	21.005	ES
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	12,419.5	6,648.0	4,564.5	4,336.0	19.977	SF
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	0.0	6.9	3,076.6			
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	12,419.5	6,760.0	6,858.0	6,760.0	69.997	SF
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	0.0	0.0	3,029.9			
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	820.8	850.3	3,030.5	3,028.2	1,336.578	ES
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	12,419.5	6,700.0	5,788.1	5,690.1	59.103	SF
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	827.4	851.0	2,557.5	2,555.3	1,130.146	CC, ES
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	12,419.5	6,652.2	6,080.3	5,983.0	62.463	SF