



Project: WELD COUNTY, COLORADO  
Site: SW SE SEC. 26 T5N R65W 6th P.M.  
Well: BUNTING 26Q-214  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

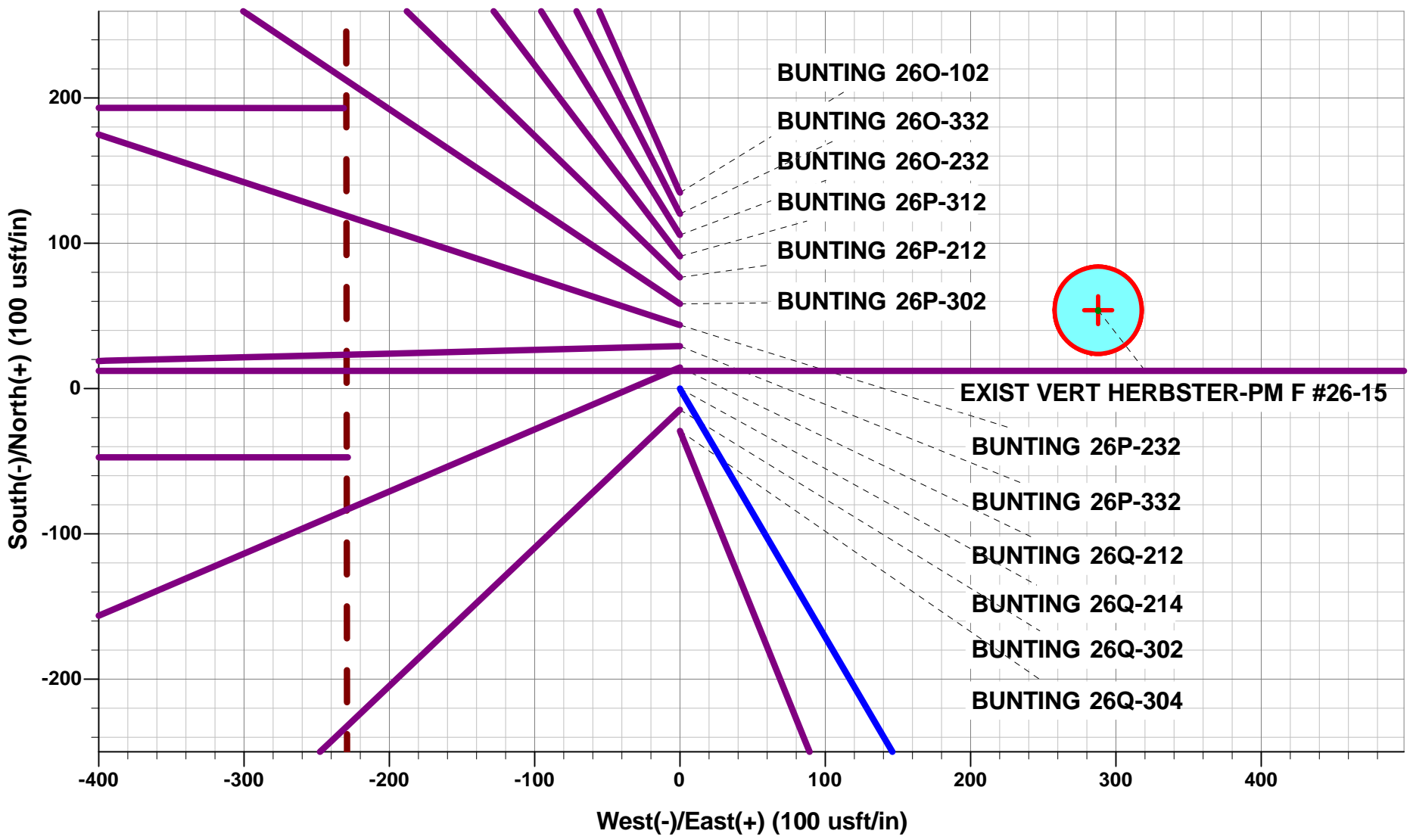


ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 760ft FSL & 2405ft FEL of Sec 26
500.0	500.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1095.6	1100.0	12.00	149.68	-54.0	31.6	-28.9	62.6	EOB TO 12° INC
2703.1	2743.4	12.00	149.68	-349.0	204.1	-186.5	404.3	END OF TANGENT
3298.7	3343.4	0.00	0.00	-403.0	235.7	-215.4	466.9	EOD TO VERTICAL
6343.7	6388.4	0.00	0.00	-403.0	235.7	-215.4	466.9	KOP (8°/100ft BUR)
6541.1	6588.4	16.00	270.00	-403.0	208.0	-187.7	494.6	START 12°/100ft BUR
6887.0	7209.0	90.48	270.00	-403.0	-255.0	274.7	957.6	HZ LP *NEW*: 354.6ft FSL & 2611ft FWL of Sec 26
6822.0	15052.4	90.47	270.00	-403.0	-8098.1	8108.2	8800.7	BHL: 335ft FSL & 50ft FWL of Sec 27

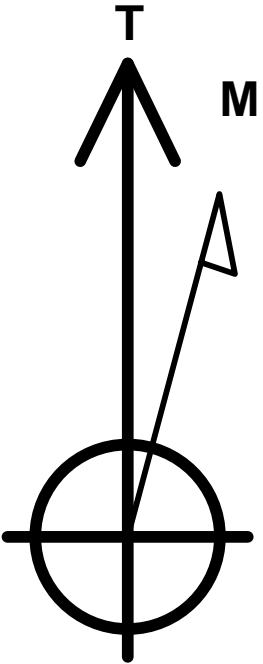
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - BUNTING 26Q-214	6343.7	-403.0	235.7	40.363994	-104.628774
BHL - BUNTING 26Q-214	6822.0	-403.0	-8098.1	40.363990	-104.658680
HZ LP *NEW*- BUNTING 26Q-214	6887.0	-403.0	-255.0	40.363994	-104.630535



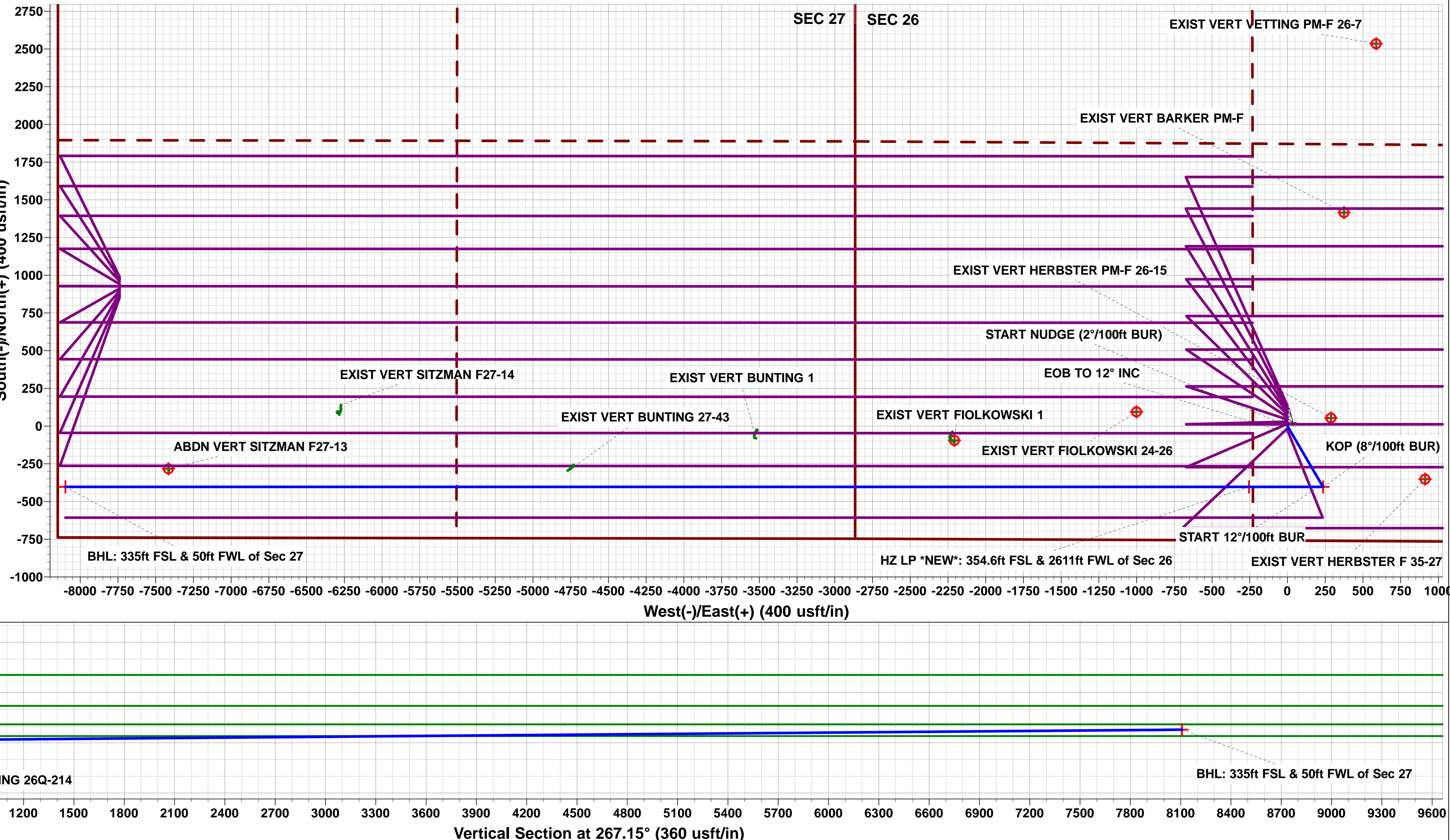
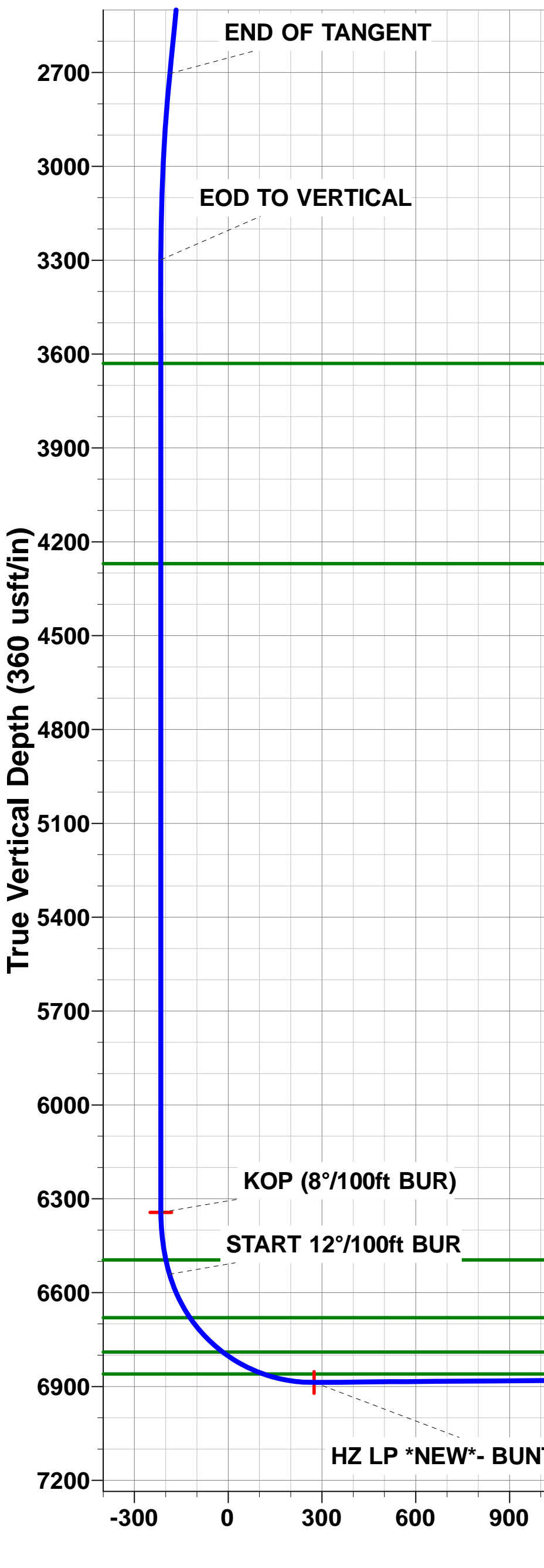
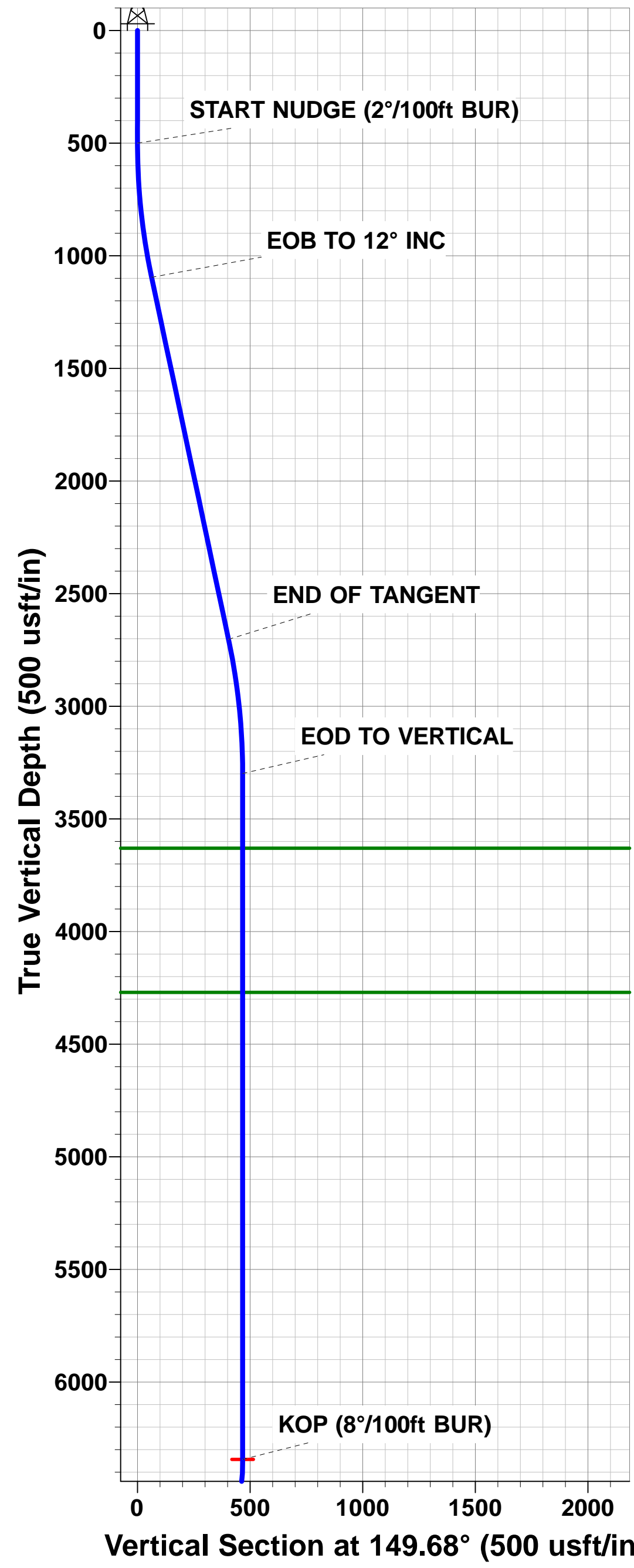
PROPOSED LOCAL COORDINATES:

SHL: 760ft FSL & 2405ft FEL of Sec 26  
HZ LP \*NEW\*: 354.6ft FSL & 2611ft FWL of Sec 26  
BHL: 335ft FSL & 50ft FWL of Sec 27



Azimuths to True North  
Magnetic North: 8.22°

Magnetic Field  
Strength: 52482.8snT  
Dip Angle: 66.87°  
Date: 23/08/2016  
Model: IGRF2015



# **PDC ENERGY**

**WELD COUNTY, COLORADO  
SW SE SEC. 26 T5N R65W 6th P.M.  
BUNTING 26Q-214**

**ORIGINAL WELLBORE  
PROPOSAL #1**

## **Anticollision Report**

**23 August, 2016**



# Anticollision Report



<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well BUNTING 26Q-214
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4672.0usft (Original Well Elev)
<b>Reference Site:</b>	SW SE SEC. 26 T5N R65W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4672.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BUNTING 26Q-214	<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 us	<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> 23/08/2016			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	15,052.4	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
Offet Well - Wellbore - Design						
NW SW SEC. 27 T5N R65W 6th P.M.						
ABDN VERT SITZMAN F27-13 - Wellbore #1 - Wellbore	14,400.5	2,700.0	4,123.0	4,063.3	69.101	CC, ES
ABDN VERT SITZMAN F27-13 - Wellbore #1 - Wellbore	15,052.4	2,700.0	4,174.2	4,109.8	64.779	SF
BOULTER FARMS 27G-202 - ORIGINAL WELLBORE -	9,052.6	12,678.0	2,192.9	1,965.2	9.630	CC
BOULTER FARMS 27G-202 - ORIGINAL WELLBORE -	14,800.0	6,960.4	2,196.2	1,955.4	9.122	ES
BOULTER FARMS 27G-202 - ORIGINAL WELLBORE -	15,052.4	6,800.0	2,208.4	1,961.8	8.954	SF
BOULTER FARMS 27G-232 - ORIGINAL WELLBORE -	9,011.2	12,737.3	1,795.5	1,567.6	7.877	CC
BOULTER FARMS 27G-232 - ORIGINAL WELLBORE -	14,800.0	6,953.6	1,797.9	1,557.7	7.486	ES
BOULTER FARMS 27G-232 - ORIGINAL WELLBORE -	15,052.4	6,789.9	1,810.0	1,564.0	7.359	SF
BOULTER FARMS 27G-332 - ORIGINAL WELLBORE -	7,184.9	14,613.0	1,991.4	1,757.0	8.497	CC
BOULTER FARMS 27G-332 - ORIGINAL WELLBORE -	14,900.0	6,911.4	1,995.6	1,752.8	8.218	ES
BOULTER FARMS 27G-332 - ORIGINAL WELLBORE -	15,052.4	6,820.0	2,003.0	1,756.5	8.123	SF
BOULTER FARMS 27H-202 - ORIGINAL WELLBORE -	11,532.5	10,182.7	845.4	618.2	3.721	CC
BOULTER FARMS 27H-202 - ORIGINAL WELLBORE -	14,700.0	7,019.3	846.9	609.6	3.569	ES
BOULTER FARMS 27H-202 - ORIGINAL WELLBORE -	14,800.0	6,938.0	850.3	611.4	3.560	SF
BOULTER FARMS 27H-212 - ORIGINAL WELLBORE -	9,453.4	12,275.1	1,329.2	1,101.3	5.832	CC
BOULTER FARMS 27H-212 - ORIGINAL WELLBORE -	14,800.0	6,933.4	1,331.8	1,091.9	5.552	ES
BOULTER FARMS 27H-212 - ORIGINAL WELLBORE -	15,052.4	6,769.7	1,348.1	1,103.1	5.503	SF
BOULTER FARMS 27H-232 - ORIGINAL WELLBORE -	9,882.5	11,887.5	356.6	129.7	1.572	CC
BOULTER FARMS 27H-232 - ORIGINAL WELLBORE -	14,611.4	7,153.9	358.0	121.7	1.515	ES, SF
BOULTER FARMS 27H-302 - ORIGINAL WELLBORE -	7,184.7	14,584.2	1,088.0	853.6	4.640	CC
BOULTER FARMS 27H-302 - ORIGINAL WELLBORE -	14,800.0	6,956.3	1,090.6	850.9	4.550	ES
BOULTER FARMS 27H-302 - ORIGINAL WELLBORE -	15,000.0	6,820.3	1,101.2	857.5	4.519	SF
BOULTER FARMS 27H-312 - ORIGINAL WELLBORE -	7,184.9	14,589.5	1,576.1	1,341.4	6.716	CC
BOULTER FARMS 27H-312 - ORIGINAL WELLBORE -	14,900.0	6,884.7	1,580.6	1,338.3	6.522	ES
BOULTER FARMS 27H-312 - ORIGINAL WELLBORE -	15,052.4	6,793.3	1,589.8	1,343.9	6.466	SF
BOULTER FARMS 27H-332 - ORIGINAL WELLBORE -	8,678.4	13,126.7	596.6	368.9	2.620	CC
BOULTER FARMS 27H-332 - ORIGINAL WELLBORE -	14,800.0	6,991.5	599.0	359.4	2.500	ES, SF
BOULTER FARMS 27I-312 - ORIGINAL WELLBORE - P	7,200.5	14,676.6	137.4	-96.1	0.588	Level 1, CC
BOULTER FARMS 27I-312 - ORIGINAL WELLBORE - P	14,748.2	7,109.3	139.5	-100.0	0.582	Level 1, ES, SF
EXIST VERT BARKER -PM F #26-10 - Wellbore #1 - De	500.0	479.0	1,464.1	1,454.3	149.513	CC
EXIST VERT BARKER -PM F #26-10 - Wellbore #1 - De	600.0	579.0	1,465.3	1,453.3	121.983	ES
EXIST VERT BARKER -PM F #26-10 - Wellbore #1 - De	7,025.0	6,832.4	1,873.1	1,721.1	12.320	SF
EXIST VERT BUNTING 1 - Wellbore #1 - Wellbore #1	10,477.1	6,856.5	365.8	261.1	3.493	CC, ES
EXIST VERT BUNTING 1 - Wellbore #1 - Wellbore #1	10,500.0	6,857.0	366.5	261.2	3.479	SF
EXIST VERT BUNTING 27-43 - Wellbore #1 - Wellbore #	11,685.1	6,830.3	140.5	2.4	1.018	Level 2, CC, ES, SF
EXIST VERT FOLKOWSKI 1 - Wellbore #1 - Wellbore #	9,183.4	6,800.0	346.4	278.3	5.086	CC
EXIST VERT FOLKOWSKI 1 - Wellbore #1 - Wellbore #	9,200.0	6,800.0	346.8	278.3	5.058	ES, 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 BUNTING 26Q-214
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4672.0usft (Original Well Elev)
<b>Reference Site:</b>	SW SE SEC. 26 T5N R65W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4672.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BUNTING 26Q-214	<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)	Between Ellipses (usft)	Separation Factor	Warning
NW SW SEC. 27 T5N R65W 6th P.M.						
EXIST VERT FIOBKOWSKI 24-26 - Wellbore #1 - Desig	7,954.4	6,865.7	497.7	326.2	2.902	CC, ES
EXIST VERT FIOBKOWSKI 24-26 - Wellbore #1 - Desig	8,000.0	6,865.3	499.8	327.2	2.895	SF
EXIST VERT FORD PM-F #26-16 - Wellbore #1 - Wellbc	3,224.7	3,144.5	1,593.0	1,581.4	137.086	CC, ES
EXIST VERT FORD PM-F #26-16 - Wellbore #1 - Wellbc	10,100.0	6,798.6	4,991.5	4,919.8	69.692	SF
EXIST VERT HERBSTER F #35-27 - Wellbore #1 - Desi	6,388.4	6,334.7	678.1	537.4	4.822	CC
EXIST VERT HERBSTER F #35-27 - Wellbore #1 - Desi	6,400.0	6,346.3	678.2	535.9	4.769	ES
EXIST VERT HERBSTER F #35-27 - Wellbore #1 - Desi	6,450.0	6,396.3	680.7	537.9	4.768	SF
EXIST VERT HERBSTER PM F #26-15 - Wellbore #1 - L	1,274.0	1,248.9	275.7	248.2	10.030	CC
EXIST VERT HERBSTER PM F #26-15 - Wellbore #1 - L	1,400.0	1,372.1	276.9	246.5	9.084	ES
EXIST VERT HERBSTER PM F #26-15 - Wellbore #1 - L	6,600.0	6,535.3	464.4	319.1	3.195	SF
EXIST VERT KEATON #8-26 - Wellbore #1 - Design #1	500.0	481.0	2,887.6	2,877.8	294.256	CC
EXIST VERT KEATON #8-26 - Wellbore #1 - Design #1	700.0	680.8	2,890.3	2,876.1	202.993	ES
EXIST VERT KEATON #8-26 - Wellbore #1 - Design #1	6,588.4	6,522.1	3,110.4	2,965.7	21.493	SF
EXIST VERT MINERAL-FUELCO #1 - Wellbore #1 - Des	500.0	485.0	2,134.1	2,124.2	216.528	CC
EXIST VERT MINERAL-FUELCO #1 - Wellbore #1 - Des	6,400.0	6,340.3	2,190.7	2,048.1	15.371	ES
EXIST VERT MINERAL-FUELCO #1 - Wellbore #1 - Des	6,500.0	6,439.9	2,196.9	2,053.1	15.282	SF
EXIST VERT SITZMAN F27-14 - Wellbore #1 - Wellbore	13,237.4	6,829.0	479.1	297.2	2.633	CC, ES
EXIST VERT SITZMAN F27-14 - Wellbore #1 - Wellbore	13,300.0	6,828.2	483.2	299.5	2.630	SF
EXIST VERT VETTING PM F-#26-7 - Wellbore #1 - Desi	500.0	480.0	2,602.1	2,592.3	265.445	CC
EXIST VERT VETTING PM F-#26-7 - Wellbore #1 - Desi	600.0	580.0	2,603.4	2,591.3	216.541	ES
EXIST VERT VETTING PM F-#26-7 - Wellbore #1 - Desi	8,000.0	6,860.3	3,361.5	3,188.9	19.474	SF



# Anticollision Report



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<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4672.0usft (Original Well Elev)
<b>Reference Site:</b>	SW SE SEC. 26 T5N R65W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4672.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BUNTING 26Q-214	<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 SE SEC. 26 T5N R65W 6th P.M.						
BUNTING 26O-102 - ORIGINAL WELLBORE - PROPOS	300.0	300.0	134.8	133.7	125.733	CC, ES
BUNTING 26O-102 - ORIGINAL WELLBORE - PROPOS	10,200.0	6,600.0	3,347.6	3,234.1	29.493	SF
BUNTING 26O-232 - ORIGINAL WELLBORE - PROPOS	500.0	500.0	105.6	103.7	53.597	CC, ES
BUNTING 26O-232 - ORIGINAL WELLBORE - PROPOS	9,200.0	6,612.3	2,293.8	2,208.4	26.862	SF
BUNTING 26O-332 - ORIGINAL WELLBORE - PROPOS	400.0	400.0	120.2	118.7	79.007	CC, ES
BUNTING 26O-332 - ORIGINAL WELLBORE - PROPOS	9,800.0	6,700.0	2,882.4	2,779.0	27.868	SF
BUNTING 26P-212 - ORIGINAL WELLBORE - PROPOS	500.0	500.0	76.5	74.5	38.811	CC, ES
BUNTING 26P-212 - ORIGINAL WELLBORE - PROPOS	8,300.0	6,650.0	1,387.7	1,327.4	23.026	SF
BUNTING 26P-232 - ORIGINAL WELLBORE - PROPOS	500.0	500.0	43.7	41.7	22.178	CC, ES
BUNTING 26P-232 - ORIGINAL WELLBORE - PROPOS	7,700.0	6,780.0	731.2	686.7	16.422	SF
BUNTING 26P-302 - ORIGINAL WELLBORE - PROPOS	500.0	500.0	58.3	56.3	29.571	CC, ES
BUNTING 26P-302 - ORIGINAL WELLBORE - PROPOS	8,000.0	6,732.3	1,040.0	987.2	19.692	SF
BUNTING 26P-312 - ORIGINAL WELLBORE - PROPOS	500.0	500.0	91.1	89.1	46.204	CC, ES
BUNTING 26P-312 - ORIGINAL WELLBORE - PROPOS	8,700.0	6,682.7	1,790.6	1,718.3	24.766	SF
BUNTING 26P-332 - ORIGINAL WELLBORE - PROPOS	500.0	500.0	29.1	27.2	14.785	CC, ES
BUNTING 26P-332 - ORIGINAL WELLBORE - PROPOS	7,500.0	6,912.8	433.2	392.5	10.629	SF
BUNTING 26Q-212 - ORIGINAL WELLBORE - PROPOS	500.0	500.0	14.6	12.6	7.393	CC, ES
BUNTING 26Q-212 - ORIGINAL WELLBORE - PROPOS	6,925.0	7,355.1	131.0	93.8	3.521	SF
BUNTING 26Q-302 - ORIGINAL WELLBORE - PROPOS	400.0	400.0	14.6	13.1	9.577	CC, ES
BUNTING 26Q-302 - ORIGINAL WELLBORE - PROPOS	7,400.0	7,039.7	277.9	237.6	6.900	SF
BUNTING 26Q-304 - ORIGINAL WELLBORE - PROPOS	300.0	300.0	29.1	28.1	27.184	CC
BUNTING 26Q-304 - ORIGINAL WELLBORE - PROPOS	15,052.4	15,106.4	217.4	-217.3	0.500	Level 1, ES, SF
EXIST DD CONAGRA B30-32D - Wellbore #1 - Wellbore	6,108.0	6,200.1	7,894.1	7,862.7	250.707	CC
EXIST DD CONAGRA B30-32D - Wellbore #1 - Wellbore	6,400.0	6,453.9	7,895.2	7,862.1	238.878	ES
EXIST DD CONAGRA B30-32D - Wellbore #1 - Wellbore	8,800.0	7,059.1	9,913.2	9,838.9	133.482	SF
EXIST DD CONAGRA B30-33D - Wellbore #1 - Wellbore	5,783.6	5,852.9	7,659.4	7,644.1	500.624	CC
EXIST DD CONAGRA B30-33D - Wellbore #1 - Wellbore	5,800.0	5,860.4	7,659.4	7,644.1	499.479	ES
EXIST DD CONAGRA B30-33D - Wellbore #1 - Wellbore	9,000.0	6,935.9	9,938.7	9,875.1	156.316	SF
EXIST DD THISTLE DOWN B31-30D - Wellbore #1 - We	6,409.0	6,753.9	7,297.8	7,280.2	415.109	CC, ES
EXIST DD THISTLE DOWN B31-30D - Wellbore #1 - We	9,400.0	7,262.5	9,962.8	9,892.1	141.047	SF
EXIST HZ LASALLE 25G-402 - Wellbore #1 - Wellbore #	6,215.4	6,249.0	3,353.0	3,319.6	100.169	CC, ES
EXIST HZ LASALLE 25G-402 - Wellbore #1 - Wellbore #	14,100.0	6,281.0	9,958.4	9,747.7	47.278	SF
EXIST HZ THISTLE DOWN STATE PC F36-69HN - Well	6,388.4	11,126.0	2,812.8	2,684.6	21.942	ES, SF
EXIST HZ THISTLE DOWN STATE PC F36-69HN - Well	6,497.7	11,126.0	2,802.4	2,748.9	52.348	CC
EXIST VERT HAMILTON 25-10B - Wellbore #1 - Wellboi	3,324.0	3,300.0	5,852.2	5,840.1	481.886	CC, ES
EXIST VERT HAMILTON 25-10B - Wellbore #1 - Wellboi	10,900.0	6,500.0	9,983.4	9,871.2	88.946	SF
EXIST VERT HAMILTON 25-11B - Wellbore #1 - Wellboi	5,637.6	5,600.0	4,154.9	4,140.9	297.199	CC
EXIST VERT HAMILTON 25-11B - Wellbore #1 - Wellboi	5,700.0	5,646.4	4,155.0	4,140.9	294.191	ES
EXIST VERT HAMILTON 25-11B - Wellbore #1 - Wellboi	12,600.0	6,850.2	9,911.3	9,747.3	60.456	SF
EXIST VERT HAMILTON 25-12B - Wellbore #1 - Wellboi	5,564.6	5,514.0	3,256.4	3,242.9	240.563	CC
EXIST VERT HAMILTON 25-12B - Wellbore #1 - Wellboi	5,600.0	5,541.2	3,256.5	3,242.9	239.266	ES
EXIST VERT HAMILTON 25-12B - Wellbore #1 - Wellboi	13,600.0	6,900.0	9,925.7	9,734.0	51.777	SF
EXIST VERT HAMILTON 25-13B - Wellbore #1 - Wellboi	5,935.2	5,916.5	2,949.1	2,934.0	195.418	CC, ES
EXIST VERT HAMILTON 25-13B - Wellbore #1 - Wellboi	13,700.0	6,500.0	9,950.2	9,890.3	166.073	SF
EXIST VERT HAMILTON 25-14B - Wellbore #1 - Wellboi	3,288.7	3,235.1	4,203.1	4,191.6	368.269	CC
EXIST VERT HAMILTON 25-14B - Wellbore #1 - Wellboi	3,300.0	3,243.8	4,203.1	4,191.6	367.684	ES
EXIST VERT HAMILTON 25-14B - Wellbore #1 - Wellboi	12,400.0	6,840.5	9,959.8	9,836.3	80.657	SF
EXIST VERT HAMILTON 25-15B - Wellbore #1 - Wellboi	5,205.2	5,200.0	5,171.1	5,157.5	379.540	CC, ES
EXIST VERT HAMILTON 25-15B - Wellbore #1 - Wellboi	11,500.0	6,834.6	9,984.9	9,937.0	208.601	SF
EXIST VERT HAMILTON 25-16B - Wellbore #1 - Wellboi	6,402.5	6,548.5	6,647.2	6,630.1	387.632	CC, ES
EXIST VERT HAMILTON 25-16B - Wellbore #1 - Wellboi	10,000.0	6,908.2	9,919.6	9,829.5	110.073	SF
EXIST VERT HAMILTON 25-9B - Wellbore #1 - Wellbore	4,899.6	4,878.4	6,997.7	6,985.3	564.572	CC
EXIST VERT HAMILTON 25-9B - Wellbore #1 - Wellbore	5,000.0	4,963.4	6,997.8	6,985.2	555.655	ES

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 BUNTING 26Q-214
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4672.0usft (Original Well Elev)
<b>Reference Site:</b>	SW SE SEC. 26 T5N R65W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4672.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	BUNTING 26Q-214	<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	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SW SE SEC. 26 T5N R65W 6th P.M.						
EXIST VERT HAMILTON 25-9B - Wellbore #1 - Wellbore	9,700.0	6,800.0	9,927.8	9,845.1	120.153	SF
EXIST VERT HAMILTON F 25-23 - Wellbore #1 - Wellbo	3,333.2	3,321.1	5,865.6	5,853.7	493.416	CC, ES
EXIST VERT HAMILTON F 25-23 - Wellbore #1 - Wellbo	10,800.0	6,850.0	9,943.2	9,831.2	88.827	SF
EXIST VERT HAMILTON F 25-25 - Wellbore #1 - Wellbo	5,555.0	5,530.3	3,596.1	3,582.2	259.436	CC
EXIST VERT HAMILTON F 25-25 - Wellbore #1 - Wellbo	5,600.0	5,561.1	3,596.2	3,582.2	257.602	ES
EXIST VERT HAMILTON F 25-25 - Wellbore #1 - Wellbo	13,100.0	6,500.0	9,966.1	9,812.6	64.930	SF
EXIST VERT HAMILTON F 25-33 - Wellbore #1 - Wellbo	3,300.0	3,259.3	2,478.1	2,465.9	203.743	ES
EXIST VERT HAMILTON F 25-33 - Wellbore #1 - Wellbo	3,346.1	3,300.0	2,478.0	2,469.0	275.951	CC
EXIST VERT HAMILTON F 25-33 - Wellbore #1 - Wellbo	14,300.0	6,799.5	9,989.3	9,779.9	47.709	SF
EXIST VERT HAMILTON F25-20 - Wellbore #1 - Wellbor	5,352.2	5,281.6	4,004.3	3,991.2	307.038	CC
EXIST VERT HAMILTON F25-20 - Wellbore #1 - Wellbor	5,400.0	5,315.5	4,004.3	3,991.2	304.604	ES
EXIST VERT HAMILTON F25-20 - Wellbore #1 - Wellbor	13,000.0	6,839.1	9,910.6	9,735.7	56.672	SF
EXIST VERT HAMILTON F25-21 - Wellbore #1 - Wellbor	3,333.2	3,300.0	5,287.0	5,274.4	420.274	CC, ES
EXIST VERT HAMILTON F25-21 - Wellbore #1 - Wellbor	11,600.0	6,900.0	9,972.3	9,836.4	73.361	SF
EXIST VERT HAMILTON F25-24 - Wellbore #1 - Wellbor	5,156.3	5,136.5	4,825.8	4,812.9	372.146	CC
EXIST VERT HAMILTON F25-24 - Wellbore #1 - Wellbor	5,200.0	5,166.1	4,825.9	4,812.8	369.505	ES
EXIST VERT HAMILTON F25-24 - Wellbore #1 - Wellbor	11,900.0	6,849.9	9,975.1	9,831.6	69.519	SF

## Offset Design

NW SW SEC. 27 T5N R65W 6th P.M. - ABDN VERT SITZMAN F27-13 - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 usft	
Survey Program: 100-GYD_CT												Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis				Distance				Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor
0.0	0.0	0.0	0.0	0.0	0.0	-92.19	-283.0	-7,415.4	7,420.8				
100.0	100.0	78.7	78.7	0.1	0.0	-92.19	-283.2	-7,415.4	7,420.9	7,420.7	0.11	N/A	
200.0	200.0	196.6	196.6	0.3	0.2	-92.19	-283.7	-7,415.6	7,421.0	7,420.5	0.51	N/A	
300.0	300.0	300.0	300.0	0.5	0.2	-92.19	-283.9	-7,415.5	7,420.9	7,420.2	0.75	9,908.813	
337.5	337.5	331.5	331.5	0.6	0.2	-92.19	-283.9	-7,415.5	7,420.9	7,420.1	0.83	8,906.121	
400.0	400.0	382.5	382.5	0.8	0.2	-92.19	-284.0	-7,415.5	7,421.0	7,420.0	0.97	7,621.198	
500.0	500.0	500.0	500.0	1.0	0.2	-92.19	-284.2	-7,415.5	7,420.9	7,419.7	1.22	6,070.418	
511.4	511.4	520.8	520.8	1.0	0.2	118.13	-284.2	-7,415.4	7,420.9	7,419.7	1.25	5,958.823	
600.0	600.0	587.6	587.6	1.2	0.3	118.12	-284.2	-7,415.4	7,421.7	7,420.2	1.43	5,180.939	
700.0	699.8	700.0	700.0	1.4	0.3	118.12	-284.5	-7,415.4	7,424.1	7,422.4	1.67	4,441.927	
800.0	799.5	782.9	782.9	1.6	0.3	118.09	-284.6	-7,415.3	7,428.2	7,426.3	1.90	3,900.979	
900.0	898.7	911.5	911.5	1.8	0.3	118.10	-284.4	-7,415.3	7,433.9	7,431.8	2.18	3,411.581	
1,000.0	997.5	1,000.0	1,000.0	2.1	0.4	118.07	-284.1	-7,415.2	7,441.2	7,438.7	2.52	2,953.517	
1,100.0	1,095.6	1,090.3	1,090.3	2.5	0.4	118.03	-284.0	-7,415.2	7,450.3	7,447.5	2.87	2,599.553	
1,200.0	1,193.4	1,182.4	1,182.4	2.9	0.4	118.16	-283.9	-7,415.2	7,460.3	7,457.1	3.23	2,309.334	
1,300.0	1,291.3	1,289.1	1,289.1	3.3	0.4	118.31	-283.5	-7,415.3	7,470.4	7,466.7	3.65	2,045.788	
1,400.0	1,389.1	1,411.3	1,411.3	3.7	0.5	118.49	-282.9	-7,415.0	7,480.2	7,476.1	4.09	1,829.226	
1,500.0	1,486.9	1,500.0	1,500.0	4.2	0.5	118.61	-282.7	-7,414.7	7,490.0	7,485.5	4.52	1,655.675	
1,600.0	1,584.7	1,593.8	1,593.8	4.6	0.5	118.75	-282.6	-7,414.6	7,499.9	7,495.0	4.96	1,511.145	
1,700.0	1,682.5	1,700.0	1,700.0	5.0	0.6	118.89	-282.6	-7,414.3	7,509.9	7,504.5	5.39	1,393.271	
1,800.0	1,780.3	1,784.0	1,784.0	5.5	0.6	119.01	-283.0	-7,414.1	7,519.8	7,514.0	5.83	1,290.106	
1,900.0	1,878.1	1,898.8	1,898.8	5.9	0.6	119.16	-283.9	-7,413.8	7,529.9	7,523.6	6.28	1,199.082	
2,000.0	1,976.0	1,991.0	1,990.9	6.4	0.7	119.28	-285.0	-7,413.5	7,539.9	7,533.2	6.72	1,121.472	
2,100.0	2,073.8	2,086.1	2,086.0	6.8	0.7	119.40	-286.4	-7,413.2	7,550.0	7,542.9	7.17	1,053.258	
2,200.0	2,171.6	2,161.1	2,161.1	7.3	0.7	119.50	-287.6	-7,413.2	7,560.3	7,552.7	7.61	993.765	
2,300.0	2,269.4	2,266.7	2,266.7	7.8	0.8	119.63	-289.3	-7,413.3	7,570.9	7,562.8	8.05	940.076	

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