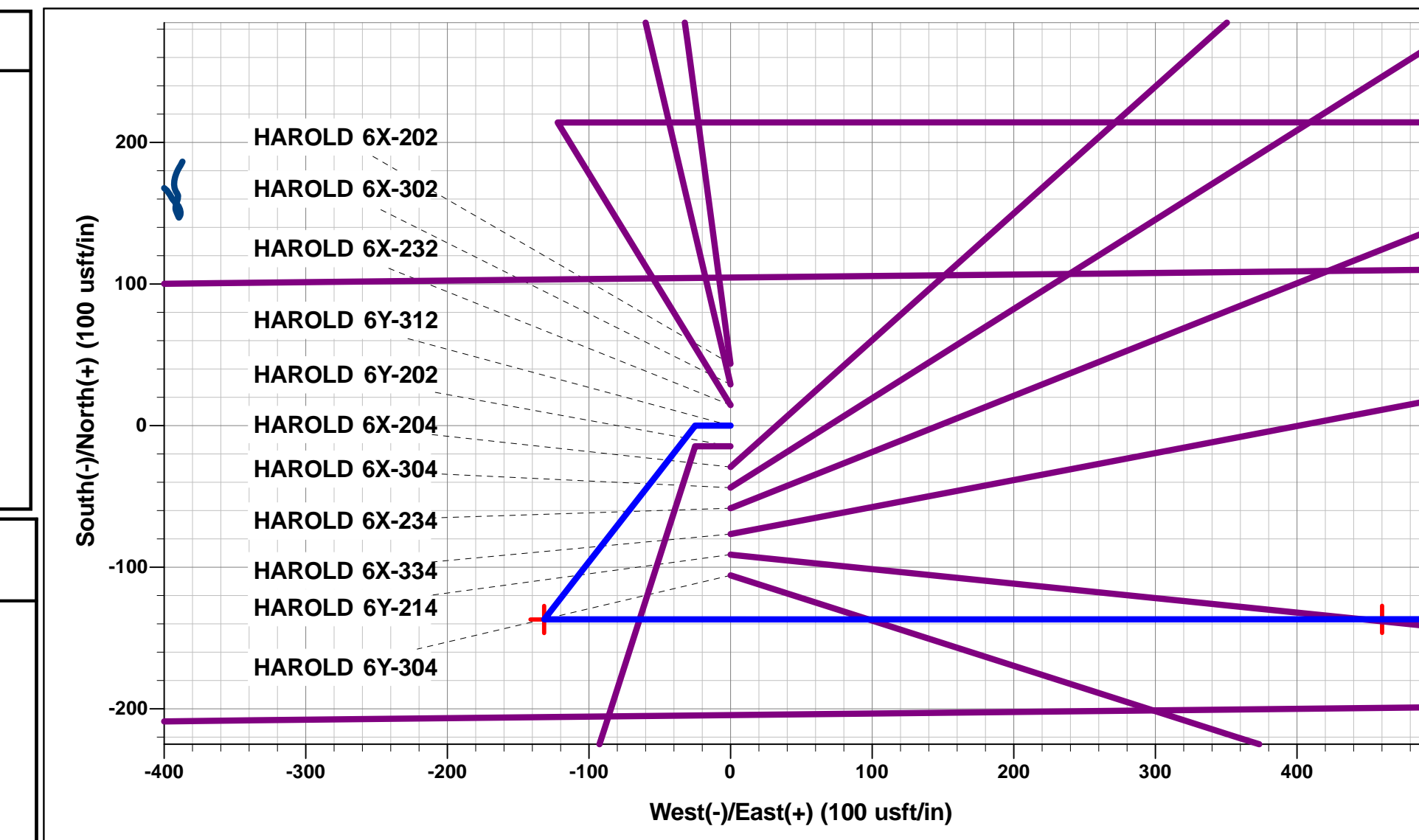




Project: WELD COUNTY, COLORADO  
Site: SE SE SEC. 6 T4N R64W 6th P.M.  
Well: HAROLD 6Y-312  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

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: 592ft FSL & 439ft FEL of Sec 6	
300.0	300.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE #1 (2°/100ft BUR)	
549.7	550.0	5.00	270.00	0.0	-10.9	-10.9	10.9	EOB TO 5° INC	
586.3	586.8	5.00	270.00	0.0	-14.1	-14.1	14.1	END OF TANGENT	
836.0	836.8	0.00	0.00	0.0	-25.0	-25.0	25.0	EOD TO VERTICAL	
1700.0	1700.8	0.00	0.00	0.0	-25.0	-25.0	25.0	START NUDGE #2 (2°/100ft BUR)	
2295.6	2300.8	12.00	217.92	-49.4	-63.5	-62.9	87.6	EOB TO 12° INC	
2522.5	2532.7	12.00	217.92	-87.4	-93.1	-92.0	135.8	END OF TANGENT	
3118.1	3132.7	0.00	0.00	-136.8	-131.6	-129.9	198.4	EOD TO VERTICAL	
6224.8	6239.4	0.00	0.00	-136.8	-131.6	-129.9	198.4	KOP (8°/100ft BUR)	
6930.1	7239.4	80.00	89.99	-136.7	460.2	461.9	790.2	80° INC: 450ft FSL & 25ft FWL of Sec 5	
6941.0	7367.8	90.27	89.99	-136.7	588.0	589.6	918.0	HZ LP *NEW*: 450ft FSL & 152.8ft FWL of Sec 5	
6891.0	17687.9	90.28	89.99	-134.5	10908.0	10908.8	11238.0	BHL: 450ft FSL & 100ft FEL of Sec 4	

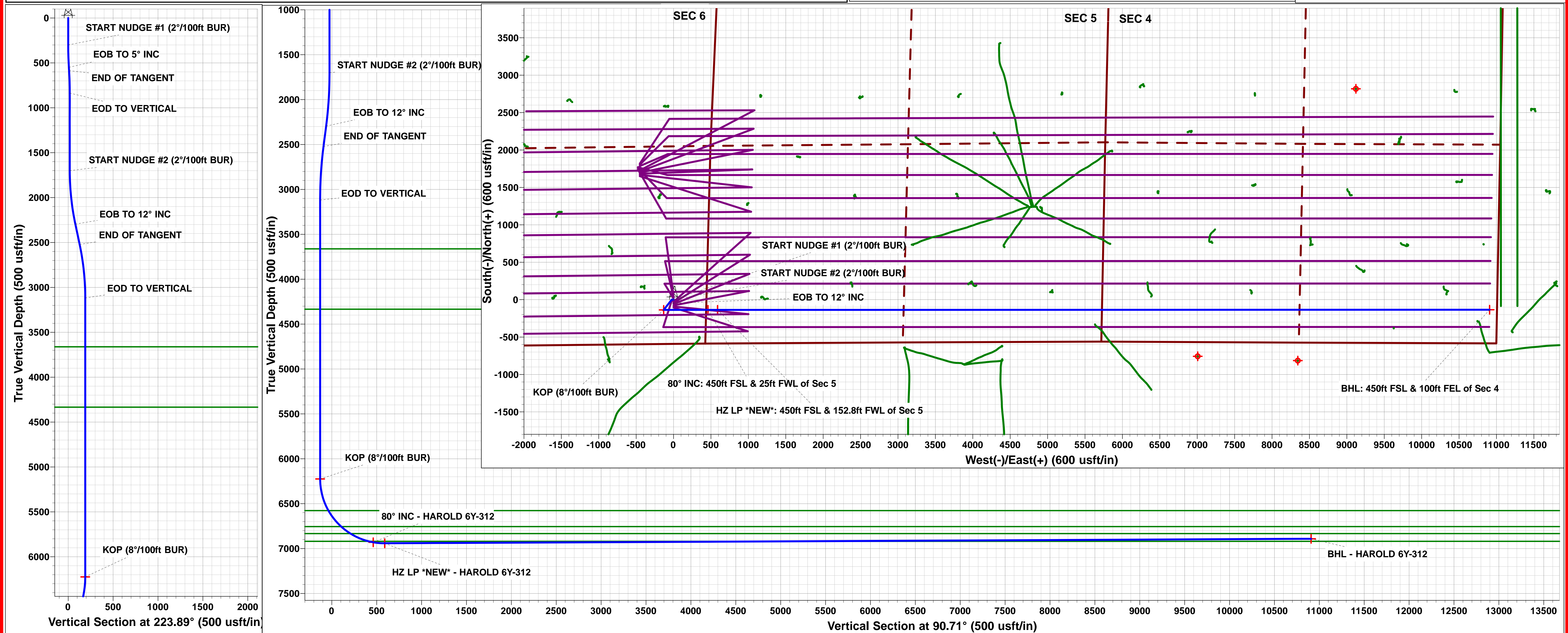
WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - HAROLD 6Y-312	6224.8	-136.8	-131.6	40.335324	-104.585962
80° INC - HAROLD 6Y-312	6930.1	-136.7	460.2	40.335325	-104.583839
BHL - HAROLD 6Y-312	6891.0	-134.5	10908.0	40.335324	-104.546364
HZ LP *NEW* - HAROLD 6Y-312	6941.0	-136.7	588.0	40.335325	-104.583381



PROPOSED LOCAL COORDINATES:  
SHL: 592ft FSL & 439ft FEL of Sec 6  
80° INC: 450ft FSL & 25ft FWL of Sec 5  
HZ LP \*NEW\*: 450ft FSL & 152.8ft FWL of Sec 5  
BHL: 450ft FSL & 100ft FEL of Sec 4

Azimuths to True North  
Magnetic North: 8.13°

Magnetic Field  
Strength: 52401.1snT  
Dip Angle: 66.84°  
Date: 04/04/2017  
Model: IGRF2015



## Anticollision Report



<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well HAROLD 6Y-312
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4811.0usft
<b>Reference Site:</b>	SE SE SEC. 6 T4N R64W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4811.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HAROLD 6Y-312	<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>	17/04/2017		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	17,687.9	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
NE SE SEC. 6 T4N R64W 6th P.M.						
ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1	3,041.0	3,031.4	4,113.5	4,105.5	509.362	CC
ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1	6,244.0	6,300.0	4,114.2	4,098.9	269.148	ES
ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1	12,700.0	7,000.0	9,996.5	9,827.7	59.219	SF
ABDN VERT KUIS C5-7 - Wellbore #1 - Wellbore #1	10,620.7	6,800.0	2,886.3	2,775.7	26.097	CC
ABDN VERT KUIS C5-7 - Wellbore #1 - Wellbore #1	10,700.0	6,800.0	2,887.4	2,774.6	25.596	ES
ABDN VERT KUIS C5-7 - Wellbore #1 - Wellbore #1	12,700.0	6,800.0	3,557.3	3,388.7	21.091	SF
ABDN VERT LEY 2 - Wellbore #1 - Wellbore #1	826.3	818.0	1,365.2	1,363.0	636.114	CC
ABDN VERT LEY 2 - Wellbore #1 - Wellbore #1	1,300.0	1,289.2	1,365.6	1,362.4	415.720	ES
ABDN VERT LEY 2 - Wellbore #1 - Wellbore #1	16,400.0	6,807.8	9,913.1	9,641.5	36.495	SF
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #1	15,787.5	6,800.3	1,611.3	1,355.8	6.306	CC
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #1	15,800.0	6,800.4	1,611.4	1,355.5	6.298	ES
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #1	16,100.0	6,801.9	1,641.4	1,377.1	6.210	SF
ABDN VERT NIKOLORIC C5-5 - Wellbore #1 - Wellbore #1	7,938.9	6,887.7	2,847.7	2,810.1	75.898	CC
ABDN VERT NIKOLORIC C5-5 - Wellbore #1 - Wellbore #1	8,000.0	6,887.8	2,848.3	2,809.2	72.897	ES
ABDN VERT NIKOLORIC C5-5 - Wellbore #1 - Wellbore #1	14,400.0	6,906.2	7,060.7	6,844.5	32.658	SF
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	1,535.4	1,558.9	3,656.9	3,650.6	586.624	CC
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	1,600.0	1,597.1	3,657.1	3,650.6	562.614	ES
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	14,200.0	7,203.2	9,958.5	9,730.2	43.612	SF
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	822.8	826.2	3,666.0	3,663.1	1,275.106	CC
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	836.8	840.3	3,666.0	3,663.1	1,260.212	ES
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	13,200.0	7,322.8	9,956.6	9,758.1	50.148	SF
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	6,239.4	6,377.0	2,883.0	2,850.0	87.359	ES
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	6,253.8	6,392.0	2,882.9	2,855.0	103.230	CC
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	14,500.0	7,357.3	9,928.9	9,693.6	42.198	SF
EXIST DD BURMAN C4-32D - Wellbore #1 - Wellbore #1	12,645.4	7,025.4	2,118.0	1,928.5	11.178	CC
EXIST DD BURMAN C4-32D - Wellbore #1 - Wellbore #1	12,700.0	7,024.4	2,118.7	1,927.7	11.093	ES
EXIST DD BURMAN C4-32D - Wellbore #1 - Wellbore #1	13,300.0	7,013.3	2,216.8	2,009.0	10.669	SF
EXIST DD BURMAN C4-33D - Wellbore #1 - Wellbore #1	12,615.4	7,007.6	880.2	692.4	4.687	CC, ES
EXIST DD BURMAN C4-33D - Wellbore #1 - Wellbore #1	12,700.0	7,007.5	884.3	694.1	4.650	SF
EXIST DD BURMAN C5-17D - Wellbore #1 - Wellbore #1	11,137.1	7,305.8	3,559.5	3,414.7	24.583	CC
EXIST DD BURMAN C5-17D - Wellbore #1 - Wellbore #1	11,200.0	7,306.3	3,560.1	3,413.5	24.293	ES
EXIST DD BURMAN C5-17D - Wellbore #1 - Wellbore #1	13,600.0	7,328.2	4,328.4	4,114.8	20.257	SF
EXIST DD BURMAN C5-21D - Wellbore #1 - Wellbore #1	10,018.4	7,194.4	2,312.4	2,187.3	18.480	CC
EXIST DD BURMAN C5-21D - Wellbore #1 - Wellbore #1	10,100.0	7,194.7	2,313.9	2,186.5	18.163	ES
EXIST DD BURMAN C5-21D - Wellbore #1 - Wellbore #1	11,200.0	7,198.4	2,596.8	2,438.8	16.435	SF
EXIST DD BURMAN C5-22D - Wellbore #1 - Wellbore #1	11,078.6	7,057.4	2,346.0	2,206.5	16.818	CC
EXIST DD BURMAN C5-22D - Wellbore #1 - Wellbore #1	11,100.0	7,057.6	2,346.1	2,206.0	16.747	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 HAROLD 6Y-312
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4811.0usft
<b>Reference Site:</b>	SE SE SEC. 6 T4N R64W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4811.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HAROLD 6Y-312	<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						
NE SE SEC. 6 T4N R64W 6th P.M.						
EXIST DD BURMAN C5-22D - Wellbore #1 - Wellbore #	12,200.0	7,066.8	2,600.2	2,429.4	15.223	SF
EXIST DD BURMAN C5-23D - Wellbore #1 - Wellbore #	11,201.3	6,937.1	842.4	701.6	5.981	CC, ES
EXIST DD BURMAN C5-23D - Wellbore #1 - Wellbore #	11,300.0	6,937.8	848.2	704.6	5.907	SF
EXIST DD BURMAN C5-24D - Wellbore #1 - Wellbore #	9,971.4	7,165.8	871.7	748.4	7.066	CC
EXIST DD BURMAN C5-24D - Wellbore #1 - Wellbore #	10,000.0	7,166.1	872.2	748.0	7.024	ES
EXIST DD BURMAN C5-24D - Wellbore #1 - Wellbore #	10,100.0	7,167.1	881.2	754.2	6.942	SF
EXIST DD DIETRICH C7-27 - Wellbore #1 - Wellbore #1	6,239.4	6,242.1	880.5	864.9	56.614	ES
EXIST DD DIETRICH C7-27 - Wellbore #1 - Wellbore #1	6,240.5	6,243.1	880.5	865.4	58.245	CC
EXIST DD DIETRICH C7-27 - Wellbore #1 - Wellbore #1	15,800.0	6,854.4	9,964.4	9,717.8	40.405	SF
EXIST DD DIETRICH C8-30D - Wellbore #1 - Wellbore #	7,117.9	7,282.9	359.0	312.5	7.716	CC, ES
EXIST DD DIETRICH C8-30D - Wellbore #1 - Wellbore #	7,150.0	7,293.0	360.3	313.4	7.674	SF
EXIST DD RUFF C8-27D - Wellbore #1 - Wellbore #1	11,174.2	6,943.1	487.1	346.5	3.466	CC
EXIST DD RUFF C8-27D - Wellbore #1 - Wellbore #1	11,200.0	6,943.0	487.7	346.5	3.453	ES, SF
EXIST DD SLEDGE C9-30D - Wellbore #1 - Wellbore #1	12,414.4	7,014.6	198.8	19.7	1.110	Level 2, CC, ES, SF
EXIST DD WRIGHT-GOIN C7-28D - Wellbore #1 - Wellb	6,239.4	6,870.1	2,136.5	2,083.6	40.339	ES, SF
EXIST DD WRIGHT-GOIN C7-28D - Wellbore #1 - Wellb	6,323.6	6,920.0	2,131.1	2,098.5	65.304	CC
EXIST HZ COALVIEW G2-63-1HN - Wellbore #1 - Wellb	4,961.7	4,991.3	4,644.2	4,622.6	214.310	CC, ES
EXIST HZ COALVIEW G2-63-1HN - Wellbore #1 - Wellb	11,900.0	6,409.0	9,915.4	9,810.8	94.767	SF
EXIST HZ COALVIEW G2-64-1HN - Wellbore #1 - Wellb	6,239.4	6,281.0	4,716.3	4,689.7	177.273	CC
EXIST HZ COALVIEW G2-64-1HN - Wellbore #1 - Wellb	6,250.0	6,281.0	4,716.4	4,688.3	167.967	ES
EXIST HZ COALVIEW G2-64-1HN - Wellbore #1 - Wellb	11,900.0	6,375.0	9,911.7	9,771.0	70.417	SF
EXIST HZ COALVIEW G2-65-1HN - Wellbore #1 - Wellb	6,239.4	6,428.5	4,891.5	4,863.6	175.077	ES
EXIST HZ COALVIEW G2-65-1HN - Wellbore #1 - Wellb	6,261.3	6,454.0	4,891.3	4,864.0	179.734	CC
EXIST HZ COALVIEW G2-65-1HN - Wellbore #1 - Wellb	11,900.0	6,549.0	9,970.2	9,816.6	64.909	SF
EXIST HZ COALVIEW G2-66-1HN - Wellbore #1 - Wellb	6,248.7	6,366.0	5,158.5	5,130.1	181.427	CC
EXIST HZ COALVIEW G2-66-1HN - Wellbore #1 - Wellb	6,250.0	6,366.0	5,158.5	5,130.1	181.412	ES
EXIST HZ COALVIEW G2-66-1HN - Wellbore #1 - Wellb	11,700.0	6,460.0	9,913.0	9,763.6	66.356	SF
EXIST HZ LOWER LATHAM PC G12-69HN - Wellbore #	6,239.4	12,060.0	4,422.4	4,255.8	26.543	ES, SF
EXIST HZ LOWER LATHAM PC G12-69HN - Wellbore #	6,340.6	12,060.0	4,414.1	4,372.5	106.001	CC
EXIST HZ NORTHRUP C8-73HN - Wellbore #1 - Wellbo	11,156.6	6,515.0	866.5	745.2	7.145	CC, ES
EXIST HZ NORTHRUP C8-73HN - Wellbore #1 - Wellbo	11,300.0	6,515.0	878.3	753.5	7.041	SF
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbo	9,884.3	6,698.7	656.0	559.7	6.809	CC
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbo	9,900.0	6,699.6	656.2	559.4	6.779	ES
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbo	10,000.0	6,705.5	666.1	566.4	6.682	SF
EXIST HZ SCHMIDT PC C6-79HN - Wellbore #1 - Wellb	6,300.0	12,505.0	4,455.2	4,346.4	40.953	SF
EXIST HZ SCHMIDT PC C6-79HN - Wellbore #1 - Wellb	6,350.0	12,505.0	4,452.7	4,344.4	41.106	ES
EXIST HZ SCHMIDT PC C6-79HN - Wellbore #1 - Wellb	6,356.6	12,505.0	4,452.6	4,344.4	41.141	CC
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	5,529.3	5,518.5	3,711.0	3,697.7	279.244	CC
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	5,600.0	5,587.4	3,711.0	3,697.6	275.655	ES
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	13,800.0	7,158.7	9,981.2	9,782.1	50.130	SF
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	2,299.9	2,286.9	4,801.1	4,795.2	812.082	CC
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	2,400.0	2,362.6	4,801.4	4,795.2	768.795	ES
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	12,400.0	7,055.6	9,987.4	9,827.0	62.269	SF
EXIST VERT CONNELL C4-20 - Wellbore #1 - Wellbore #	13,653.6	6,800.0	2,371.4	2,176.0	12.133	CC
EXIST VERT CONNELL C4-20 - Wellbore #1 - Wellbore #	13,700.0	6,800.0	2,371.9	2,175.1	12.055	ES
EXIST VERT CONNELL C4-20 - Wellbore #1 - Wellbore #	14,500.0	6,800.0	2,517.9	2,298.7	11.488	SF
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #	13,115.0	6,800.0	371.6	192.5	2.076	CC, ES, SF
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	13,258.9	6,849.1	1,557.5	1,373.3	8.455	CC
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	13,300.0	6,849.1	1,558.0	1,372.7	8.406	ES
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	13,600.0	6,848.4	1,594.4	1,400.6	8.229	SF
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	14,488.2	6,800.0	266.6	49.6	1.228	Level 2, CC
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	14,500.0	6,800.0	266.9	49.5	1.228	Level 2, ES, SF
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #	13,018.7	6,800.0	2,971.4	2,793.9	16.738	CC

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 HAROLD 6Y-312
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4811.0usft
<b>Reference Site:</b>	SE SE SEC. 6 T4N R64W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4811.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HAROLD 6Y-312	<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
NE SE SEC. 6 T4N R64W 6th P.M.						
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #	13,100.0	6,800.0	2,972.5	2,792.7	16.532	ES
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #	14,400.0	6,800.0	3,276.8	3,060.5	15.154	SF
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore	14,512.7	6,800.0	1,662.5	1,443.1	7.578	CC
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore	14,600.0	6,800.0	1,664.8	1,443.0	7.505	ES
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore	14,900.0	6,800.0	1,707.0	1,476.8	7.414	SF
EXIST VERT CONNELL C4-25 - Wellbore #1 - Wellbore	14,018.2	6,783.8	1,074.8	869.1	5.226	CC, ES
EXIST VERT CONNELL C4-25 - Wellbore #1 - Wellbore	14,200.0	6,789.8	1,090.0	879.2	5.171	SF
EXIST VERT DIETRICH 6-10 - Wellbore #1 - Wellbore #	806.9	792.7	1,882.4	1,880.4	936.671	CC, ES
EXIST VERT DIETRICH 6-10 - Wellbore #1 - Wellbore #	15,100.0	6,778.5	9,966.6	9,732.5	42.569	SF
EXIST VERT DIETRICH 6-16 - Wellbore #1 - Wellbore #	4,795.3	4,758.9	383.5	371.9	33.172	CC
EXIST VERT DIETRICH 6-16 - Wellbore #1 - Wellbore #	4,800.0	4,763.4	383.5	371.9	33.141	ES
EXIST VERT DIETRICH 6-16 - Wellbore #1 - Wellbore #	6,300.0	6,252.6	405.7	390.3	26.256	SF
EXIST VERT DIETRICH C6-23 - Wellbore #1 - Wellbore	5,149.0	5,139.4	1,020.8	1,008.3	81.717	CC, ES
EXIST VERT DIETRICH C6-23 - Wellbore #1 - Wellbore	15,900.0	15,900.0	9,965.6	9,707.3	38.585	SF
EXIST VERT DINNER 6-1 - Wellbore #1 - Wellbore #1	6,259.0	6,373.3	3,868.9	3,853.7	254.480	CC, ES
EXIST VERT DINNER 6-1 - Wellbore #1 - Wellbore #1	12,700.0	7,000.0	9,904.4	9,742.5	61.165	SF
EXIST VERT DINNER 6-2 - Wellbore #1 - Wellbore #1	6,264.4	6,342.8	2,964.5	2,949.1	192.643	CC, ES
EXIST VERT DINNER 6-2 - Wellbore #1 - Wellbore #1	14,000.0	6,800.0	9,995.1	9,790.7	48.889	SF
EXIST VERT DINNER 6-34 - Wellbore #1 - Wellbore #1	3,058.4	3,024.1	2,516.8	2,509.0	319.427	CC, ES
EXIST VERT DINNER 6-34 - Wellbore #1 - Wellbore #1	14,100.0	6,950.0	9,969.5	9,766.0	48.976	SF
EXIST VERT DINNER 6-35 - Wellbore #1 - Wellbore #1	2,993.1	2,928.5	3,576.8	3,568.9	452.150	CC
EXIST VERT DINNER 6-35 - Wellbore #1 - Wellbore #1	6,250.0	6,315.3	3,577.7	3,562.4	234.632	ES
EXIST VERT DINNER 6-35 - Wellbore #1 - Wellbore #1	13,100.0	7,000.0	9,987.6	9,807.7	55.529	SF
EXIST VERT EHRlich 1 - Wellbore #1 - Wellbore #1	14,550.8	6,786.1	2,886.6	2,665.9	13.082	CC
EXIST VERT EHRlich 1 - Wellbore #1 - Wellbore #1	14,600.0	6,786.0	2,887.0	2,664.9	13.003	ES
EXIST VERT EHRlich 1 - Wellbore #1 - Wellbore #1	15,600.0	6,782.9	3,071.3	2,821.2	12.282	SF
EXIST VERT HINKLE 23-5 - Wellbore #1 - Wellbore #1	9,224.8	6,850.0	1,498.9	1,426.9	20.806	CC
EXIST VERT HINKLE 23-5 - Wellbore #1 - Wellbore #1	9,300.0	6,850.0	1,500.8	1,426.7	20.252	ES
EXIST VERT HINKLE 23-5 - Wellbore #1 - Wellbore #1	10,100.0	6,850.0	1,735.7	1,639.5	18.044	SF
EXIST VERT HINKLE 24-5 - Wellbore #1 - Wellbore #1	9,170.7	6,600.0	424.3	367.5	7.465	CC, ES
EXIST VERT HINKLE 24-5 - Wellbore #1 - Wellbore #1	9,200.0	6,600.0	425.3	367.9	7.405	SF
EXIST VERT LEVI C5-15 - Wellbore #1 - Wellbore #1	10,827.5	6,850.0	328.2	212.4	2.834	CC, ES, SF
EXIST VERT LEY 1 - Wellbore #1 - Wellbore #1	3,954.1	3,952.5	1,470.3	1,460.5	149.618	CC
EXIST VERT LEY 1 - Wellbore #1 - Wellbore #1	4,000.0	3,995.0	1,470.4	1,460.5	147.989	ES
EXIST VERT LEY 1 - Wellbore #1 - Wellbore #1	15,100.0	6,950.0	9,909.8	9,674.8	42.165	SF
EXIST VERT MCCLINTOCK C4-15 - Wellbore #1 - Wellb	15,905.1	6,700.0	595.6	340.1	2.331	CC, ES, SF
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	10,591.7	6,600.0	1,511.8	1,403.0	13.895	CC
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	10,600.0	6,600.0	1,511.9	1,402.8	13.866	ES
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	11,200.0	6,600.0	1,629.6	1,504.1	12.983	SF
EXIST VERT REISTAD 5-1 - Wellbore #1 - Wellbore #1	11,842.7	6,850.0	265.8	121.3	1.839	CC, ES, SF
EXIST VERT REISTAD C5-9 - Wellbore #1 - Wellbore #1	11,704.4	6,850.0	1,305.5	1,164.2	9.239	CC, ES
EXIST VERT REISTAD C5-9 - Wellbore #1 - Wellbore #1	12,000.0	6,850.0	1,338.5	1,189.0	8.950	SF
EXIST VERT ROUKEMA 5-1 - Wellbore #1 - Wellbore #1	8,041.5	6,894.8	148.7	108.5	3.699	CC, ES, SF
EXIST VERT ROUKEMA PM C5-12 - Wellbore #1 - Wellb	7,760.7	6,882.8	1,402.4	1,369.2	42.273	CC
EXIST VERT ROUKEMA PM C5-12 - Wellbore #1 - Wellb	7,800.0	6,882.5	1,402.9	1,368.8	41.100	ES
EXIST VERT ROUKEMA PM C5-12 - Wellbore #1 - Wellb	9,500.0	6,866.9	2,234.2	2,154.7	28.084	SF
EXIST VERT SITZMAN 4-714 - Wellbore #1 - Design #1	15,901.4	6,794.8	2,952.7	2,561.7	7.552	CC
EXIST VERT SITZMAN 4-714 - Wellbore #1 - Design #1	16,000.0	6,794.4	2,954.4	2,560.6	7.503	ES
EXIST VERT SITZMAN 4-714 - Wellbore #1 - Design #1	16,500.0	6,791.9	3,012.8	2,605.1	7.389	SF
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	16,479.7	6,750.0	2,283.0	2,008.4	8.315	CC
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	16,500.0	6,750.0	2,283.1	2,007.9	8.298	ES
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	17,000.0	6,750.0	2,341.5	2,052.3	8.097	SF
EXIST VERT SLEDGE C9-28 - Wellbore #1 - Design #1	15,124.1	6,830.7	679.5	309.9	1.839	CC, 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 HAROLD 6Y-312
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4811.0usft
<b>Reference Site:</b>	SE SE SEC. 6 T4N R64W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4811.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HAROLD 6Y-312	<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
NE SE SEC. 6 T4N R64W 6th P.M.						
EXIST VERT SLEDGE C9-29 - Wellbore #1 - Design #1	13,785.8	6,856.2	621.3	288.9	1.869	CC
EXIST VERT SLEDGE C9-29 - Wellbore #1 - Design #1	13,800.0	6,856.1	621.5	288.7	1.868	ES, SF
EXIST VERT SMITH-REEVES 42-5 - Wellbore #1 - Wellbore #1	11,972.9	6,550.0	2,921.3	2,773.6	19.781	CC
EXIST VERT SMITH-REEVES 42-5 - Wellbore #1 - Wellbore #1	12,100.0	6,550.0	2,924.1	2,772.9	19.336	ES
EXIST VERT SMITH-REEVES 42-5 - Wellbore #1 - Wellbore #1	13,600.0	6,550.0	3,343.9	3,150.8	17.324	SF
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	826.6	782.9	2,999.9	2,997.7	1,392.801	CC
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	1,500.0	1,451.9	3,000.9	2,997.1	793.747	ES
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	15,000.0	6,900.0	9,968.1	9,735.0	42.756	SF
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #1	487.9	447.9	2,585.2	2,584.0	2,301.046	CC
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #1	1,712.1	1,687.2	2,586.0	2,581.7	604.032	ES
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #1	16,300.0	6,812.7	9,968.2	9,698.9	37.011	SF
EXIST VERT WILMOTH C4-23 - Wellbore #1 - Wellbore #1	16,502.2	6,745.1	889.3	614.3	3.234	CC, ES
EXIST VERT WILMOTH C4-23 - Wellbore #1 - Wellbore #1	16,600.0	6,742.8	894.7	616.9	3.221	SF
EXIST VERT WILMOTH C4-24 - Wellbore #1 - Wellbore #1	15,297.8	6,792.6	960.0	718.4	3.974	CC
EXIST VERT WILMOTH C4-24 - Wellbore #1 - Wellbore #1	15,300.0	6,792.6	960.0	718.4	3.973	ES
EXIST VERT WILMOTH C4-24 - Wellbore #1 - Wellbore #1	15,400.0	6,793.5	965.4	721.0	3.950	SF
EXIST VERT WILMOTH C5-20 - Wellbore #1 - Wellbore #1	8,474.2	6,850.0	2,041.5	1,990.0	39.656	CC
EXIST VERT WILMOTH C5-20 - Wellbore #1 - Wellbore #1	8,500.0	6,850.0	2,041.7	1,989.5	39.137	ES
EXIST VERT WILMOTH C5-20 - Wellbore #1 - Wellbore #1	10,800.0	6,850.0	3,094.7	2,979.2	26.803	SF
EXIST VERT WILMOTH C5-6 - Wellbore #1 - Wellbore #1	9,307.4	6,850.0	2,851.5	2,777.3	38.429	CC
EXIST VERT WILMOTH C5-6 - Wellbore #1 - Wellbore #1	9,400.0	6,850.0	2,853.0	2,776.3	37.175	ES
EXIST VERT WILMOTH C5-6 - Wellbore #1 - Wellbore #1	12,400.0	6,850.0	4,206.5	4,046.3	26.254	SF
EXIST VERT WILMOTH C9-27 - Wellbore #1 - Wellbore #1	16,405.2	6,783.3	244.5	-27.8	0.898	Level 1, CC, ES, SF
JUDY 6D-212 - ORIGINAL WELLBORE - PROPOSAL #1	6,118.7	6,165.8	1,494.5	1,466.3	52.918	CC
JUDY 6D-212 - ORIGINAL WELLBORE - PROPOSAL #1	17,687.9	17,593.4	1,499.2	882.6	2.431	ES, SF
JUDY 6D-312 - ORIGINAL WELLBORE - PROPOSAL #1	17,687.9	17,692.9	1,220.3	601.9	1.973	CC, ES, SF
JUDY 6S-202 - ORIGINAL WELLBORE - PROPOSAL #1	699.6	685.7	1,837.3	1,834.5	654.726	CC
JUDY 6S-202 - ORIGINAL WELLBORE - PROPOSAL #1	17,687.9	17,561.4	2,086.4	1,468.9	3.378	ES, SF
JUDY 6S-204 - ORIGINAL WELLBORE - PROPOSAL #1	1,278.8	1,291.7	1,748.5	1,742.9	311.526	CC
JUDY 6S-204 - ORIGINAL WELLBORE - PROPOSAL #1	1,400.0	1,408.2	1,748.8	1,742.4	275.951	ES
JUDY 6S-204 - ORIGINAL WELLBORE - PROPOSAL #1	10,000.0	6,600.0	3,113.4	2,993.3	25.924	SF
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	264.2	271.2	1,873.2	1,872.2	2,021.224	CC
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	300.0	300.0	1,873.2	1,872.1	1,747.144	ES
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	17,687.9	17,568.4	2,584.9	1,967.7	4.188	SF
JUDY 6S-214 - ORIGINAL WELLBORE - PROPOSAL #1	630.9	606.8	1,782.6	1,780.1	716.061	CC, ES
JUDY 6S-214 - ORIGINAL WELLBORE - PROPOSAL #1	11,000.0	6,600.0	4,178.7	4,029.7	28.055	SF
JUDY 6S-234 - ORIGINAL WELLBORE - PROPOSAL #1	6,998.6	7,624.8	1,628.8	1,579.4	32.971	CC
JUDY 6S-234 - ORIGINAL WELLBORE - PROPOSAL #1	7,050.0	7,579.1	1,629.1	1,579.4	32.832	ES
JUDY 6S-234 - ORIGINAL WELLBORE - PROPOSAL #1	8,900.0	6,679.6	2,048.5	1,958.9	22.861	SF
JUDY 6S-302 - ORIGINAL WELLBORE - PROPOSAL #1	543.4	512.5	1,858.0	1,856.0	892.564	CC
JUDY 6S-302 - ORIGINAL WELLBORE - PROPOSAL #1	17,687.9	17,631.2	2,350.2	1,732.2	3.803	ES, SF
JUDY 6S-314 - ORIGINAL WELLBORE - PROPOSAL #1	728.0	718.5	1,766.1	1,763.2	601.029	CC, ES
JUDY 6S-314 - ORIGINAL WELLBORE - PROPOSAL #1	10,500.0	6,650.0	3,639.0	3,503.6	26.878	SF
JUDY 6S-332 - ORIGINAL WELLBORE - PROPOSAL #1	7,432.8	7,385.2	1,802.2	1,749.4	34.161	CC
JUDY 6S-332 - ORIGINAL WELLBORE - PROPOSAL #1	17,687.9	17,640.2	1,802.2	1,183.4	2.913	ES, SF
JUDY 6S-334 - ORIGINAL WELLBORE - PROPOSAL #1	1,803.8	1,882.4	1,705.2	1,695.5	174.795	CC, ES
JUDY 6S-334 - ORIGINAL WELLBORE - PROPOSAL #1	9,400.0	6,700.0	2,510.7	2,406.3	24.052	SF
JUDY 6X-314 - ORIGINAL WELLBORE - PROPOSAL #1	7,103.5	7,577.2	1,304.2	1,254.3	26.132	CC
JUDY 6X-314 - ORIGINAL WELLBORE - PROPOSAL #1	7,250.0	7,437.7	1,305.3	1,253.7	25.305	ES
JUDY 6X-314 - ORIGINAL WELLBORE - PROPOSAL #1	8,500.0	6,800.0	1,566.2	1,487.1	19.791	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 HAROLD 6Y-312
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4811.0usft
<b>Reference Site:</b>	SE SE SEC. 6 T4N R64W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4811.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HAROLD 6Y-312	<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
<b>Offset Well - Wellbore - Design</b>						
SE SE SEC. 6 T4N R64W 6th P.M.						
HAROLD 6X-202 - ORIGINAL WELLBORE - PROPOSAL	300.0	300.0	43.7	42.6	40.776	CC, ES
HAROLD 6X-202 - ORIGINAL WELLBORE - PROPOSAL	17,687.9	17,625.6	975.9	366.1	1.600	SF
HAROLD 6X-204 - ORIGINAL WELLBORE - PROPOSAL	477.0	477.3	29.1	27.3	15.743	CC
HAROLD 6X-204 - ORIGINAL WELLBORE - PROPOSAL	500.0	500.3	29.2	27.2	14.954	ES
HAROLD 6X-204 - ORIGINAL WELLBORE - PROPOSAL	600.0	599.7	31.9	29.5	13.255	SF
HAROLD 6X-232 - ORIGINAL WELLBORE - PROPOSAL	300.0	300.0	14.6	13.5	13.592	CC
HAROLD 6X-232 - ORIGINAL WELLBORE - PROPOSAL	17,687.9	17,583.3	367.7	-219.3	0.626	Level 1, ES, SF
HAROLD 6X-234 - ORIGINAL WELLBORE - PROPOSAL	300.0	299.0	58.3	57.2	54.478	CC
HAROLD 6X-234 - ORIGINAL WELLBORE - PROPOSAL	500.0	498.8	58.7	56.7	30.082	ES
HAROLD 6X-234 - ORIGINAL WELLBORE - PROPOSAL	7,400.0	7,113.4	497.3	452.6	11.132	SF
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSAL	300.0	300.0	29.1	28.1	27.184	CC
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSAL	400.0	400.0	29.2	27.7	19.327	ES
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSAL	17,687.9	17,673.4	653.0	40.7	1.066	Level 2, SF
HAROLD 6X-304 - ORIGINAL WELLBORE - PROPOSAL	300.0	300.0	43.7	42.6	40.772	CC
HAROLD 6X-304 - ORIGINAL WELLBORE - PROPOSAL	400.0	400.0	43.7	42.2	28.960	ES
HAROLD 6X-304 - ORIGINAL WELLBORE - PROPOSAL	7,800.0	6,923.5	794.2	740.4	14.756	SF
HAROLD 6X-334 - ORIGINAL WELLBORE - PROPOSAL	300.0	299.0	76.5	75.4	71.507	CC
HAROLD 6X-334 - ORIGINAL WELLBORE - PROPOSAL	500.0	498.8	76.8	74.9	39.370	ES
HAROLD 6X-334 - ORIGINAL WELLBORE - PROPOSAL	7,250.0	7,270.3	247.5	204.1	5.712	SF
HAROLD 6Y-202 - ORIGINAL WELLBORE - PROPOSAL	300.0	300.0	14.6	13.5	13.592	CC
HAROLD 6Y-202 - ORIGINAL WELLBORE - PROPOSAL	17,687.9	17,610.5	243.5	-338.3	0.418	Level 1, ES, SF
HAROLD 6Y-214 - ORIGINAL WELLBORE - PROPOSAL	7,048.5	7,384.5	64.6	22.8	1.547	CC, ES, SF
HAROLD 6Y-304 - ORIGINAL WELLBORE - PROPOSAL	300.0	299.0	105.6	104.6	98.744	CC, ES
HAROLD 6Y-304 - ORIGINAL WELLBORE - PROPOSAL	7,367.8	7,165.0	296.6	252.0	6.644	SF
SW SW SEC. 34 T5N R64W 6th P.M.						
BAILEY 34I-223 - ORIGINAL WELLBORE - PROPOSAL	17,687.9	12,385.5	395.0	214.2	2.184	CC, ES, SF
BAILEY 34I-303 - ORIGINAL WELLBORE - PROPOSAL	17,687.9	12,476.9	171.8	-67.8	0.717	Level 1, CC, ES, SF
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore	17,687.9	6,854.8	432.0	107.8	1.333	Level 3, CC, ES, SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Wellbore	17,687.9	6,649.4	657.2	362.3	2.228	CC, ES, SF
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - Wellbore	17,687.9	6,743.5	956.1	647.5	3.098	CC, ES, SF
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	17,687.9	6,758.4	1,769.1	1,460.2	5.727	CC, ES, SF
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	17,687.9	6,750.0	2,720.9	2,412.3	8.818	CC, ES, SF
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	17,220.0	6,525.0	2,932.0	2,637.6	9.957	CC
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	17,300.0	6,525.0	2,933.1	2,636.4	9.886	ES
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	17,687.9	6,525.0	2,969.1	2,661.6	9.654	SF
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	17,074.4	6,760.0	311.4	20.3	1.070	Level 2, CC, ES, SF
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	17,265.2	6,800.0	1,709.1	1,412.4	5.760	CC
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	17,300.0	6,800.0	1,709.4	1,411.7	5.742	ES
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	17,500.0	6,800.0	1,725.2	1,421.8	5.688	SF
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	17,609.7	6,767.5	874.0	568.1	2.857	CC, ES
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	17,687.9	6,767.1	877.5	569.4	2.848	SF

<b>Offset Design</b> NE SE SEC. 6 T4N R64W 6th P.M. - ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 usft
Survey Program: 100-GYD_CT												<b>Offset Well Error:</b>	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	50.4	50.4	0.0	0.0	-72.36	1,271.8	-4,000.3	4,197.6				
100.0	100.0	151.5	151.5	0.1	0.0	-72.36	1,271.8	-4,000.1	4,197.4	4,197.3	0.09	N/A	
200.0	200.0	248.7	248.7	0.3	0.0	-72.36	1,272.0	-4,000.0	4,197.3	4,197.0	0.33	N/A	

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