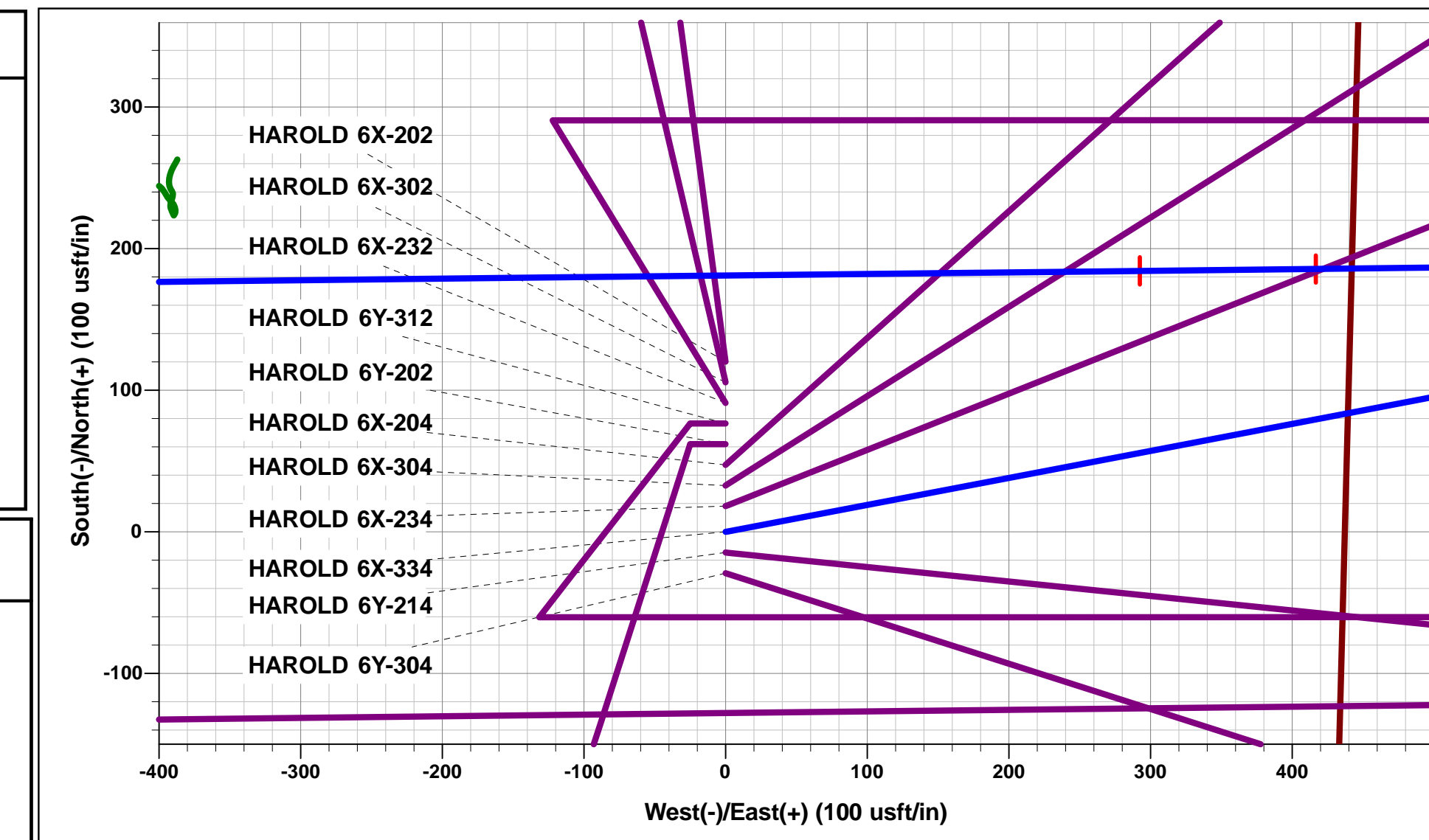




Project: WELD COUNTY, COLORADO
Site: SE SE SEC. 6 T4N R64W 6th P.M.
Well: HAROLD 6X-334
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Dep	Annotation	
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 517ft FSL & 437ft FEL of Sec 6	
700.0	700.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
1295.5	1299.8	12.00	79.21	11.7	61.5	-61.0	62.6	EOB TO 12° INC	
5538.3	5637.4	12.00	79.21	180.5	947.1	-940.7	964.2	END OF TANGENT	
6133.8	6237.3	0.00	0.00	192.2	1008.6	-1001.7	1026.7	EOD TO VERTICAL	
6213.8	6317.3	0.00	0.00	192.2	1008.6	-1001.7	1026.7	KOP (8°/100ft BUR)	
6919.1	7317.3	80.00	269.37	185.7	416.8	-410.5	1618.6	80° INC: 697ft FSL & 25ft FEL of Sec 6	
6930.0	7442.3	90.00	269.36	184.3	292.5	-286.3	1742.9	HZ LP *NEW*: 697ft FSL & 149.3ft FEL of Sec 6	
6930.0	11849.9	90.00	269.36	135.1	-4114.9	4117.1	6150.5	BHL: 697ft FSL & 500ft FWL of Sec 6	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - HAROLD 6X-334	6213.8	192.2	1008.6	40.336017	-104.581872
80° INC - HAROLD 6X-334	6919.1	185.7	416.8	40.336000	-104.583995
BHL - HAROLD 6X-334 (P2)	6930.0	135.1	-4114.9	40.335860	-104.600250
HZ LP *NEW* - HAROLD 6X-334	6930.0	184.3	292.5	40.335996	-104.584441



PROPOSED LOCAL COORDINATES:

SHL: 517ft FSL & 437ft FEL of Sec 6

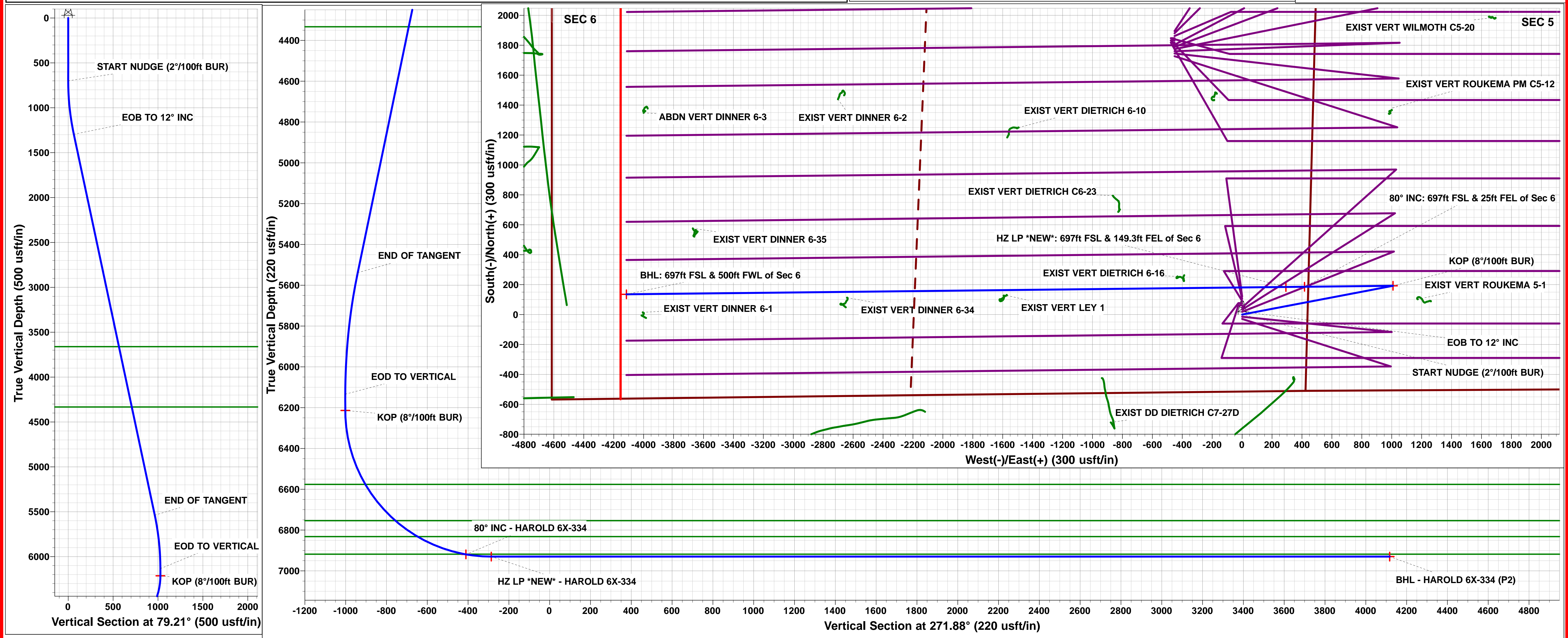
80° INC: 697ft FSL & 25ft FEL of Sec 6

HZ LP *NEW*: 697ft FSL & 149.3ft FEL of Sec 6

BHL: 697ft FSL & 500ft FWL of Sec 6

Azimuths to True North
Magnetic North: 8.13°

Magnetic Field
Strength: 52401.0snT
Dip Angle: 66.84°
Date: 04/04/2017
Model: IGRF2015



PDC ENERGY

**WELD COUNTY, COLORADO
SE SE SEC. 6 T4N R64W 6th P.M.
HAROLD 6X-334**

**ORIGINAL WELLBORE
PROPOSAL #2**

Anticollision Report

26 June, 2017



Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HAROLD 6X-334
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Reference Site:	SE SE SEC. 6 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	HAROLD 6X-334	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 #2	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL #2		
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 us	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 26/06/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	11,849.9	PROPOSAL #2 (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	11,693.8	7,000.0	1,240.1	1,107.6	9.362	CC
ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1	11,700.0	7,000.0	1,240.1	1,107.4	9.350	ES
ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1	11,849.9	7,000.0	1,249.8	1,113.1	9.138	SF
ABDN VERT KUIS C5-7 - Wellbore #1 - Wellbore #1	6,208.3	5,982.3	3,858.6	3,838.9	195.949	CC
ABDN VERT KUIS C5-7 - Wellbore #1 - Wellbore #1	6,237.3	6,015.6	3,858.7	3,835.7	168.056	ES
ABDN VERT KUIS C5-7 - Wellbore #1 - Wellbore #1	11,849.9	6,763.3	8,398.0	8,261.3	61.461	SF
ABDN VERT LEY 2 - Wellbore #1 - Wellbore #1	7,893.6	6,900.0	1,300.3	1,266.7	38.716	CC
ABDN VERT LEY 2 - Wellbore #1 - Wellbore #1	7,900.0	6,900.0	1,300.3	1,266.6	38.579	ES
ABDN VERT LEY 2 - Wellbore #1 - Wellbore #1	9,400.0	6,900.0	1,990.0	1,920.0	28.440	SF
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #1	6,225.6	5,983.5	8,110.2	8,093.4	483.332	CC
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #1	6,237.3	5,993.8	8,110.3	8,084.6	316.558	ES
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #1	8,600.0	6,752.9	9,968.6	9,918.9	200.654	SF
ABDN VERT NIKOLORIC C5-5 - Wellbore #1 - Wellbore #1	6,350.5	6,199.2	2,601.4	2,576.5	104.088	CC, ES
ABDN VERT NIKOLORIC C5-5 - Wellbore #1 - Wellbore #1	11,849.9	6,863.0	5,902.9	5,766.3	43.219	SF
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	9,647.8	7,100.0	3,161.4	3,067.2	33.566	CC
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	9,700.0	7,100.0	3,161.8	3,066.2	33.081	ES
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	11,849.9	7,056.6	3,852.5	3,698.1	24.965	SF
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	11,000.4	7,029.4	2,037.2	1,907.2	15.675	CC
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	11,100.0	7,025.0	2,039.6	1,906.9	15.371	ES
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	11,849.9	6,994.0	2,206.9	2,053.6	14.394	SF
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	9,685.2	7,077.3	1,968.7	1,873.9	20.765	CC
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	9,700.0	7,076.5	1,968.8	1,873.6	20.680	ES
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	10,800.0	7,018.0	2,261.7	2,136.7	18.105	SF
EXIST DD BURMAN C4-32D - Wellbore #1 - Wellbore #1	2,715.2	1,645.1	4,825.7	4,816.0	500.193	CC, ES
EXIST DD BURMAN C4-32D - Wellbore #1 - Wellbore #1	11,600.0	7,166.0	9,916.4	9,764.4	65.218	SF
EXIST DD BURMAN C4-33D - Wellbore #1 - Wellbore #1	3,237.8	2,165.1	4,851.6	4,838.3	366.847	CC
EXIST DD BURMAN C4-33D - Wellbore #1 - Wellbore #1	6,317.3	6,308.0	4,864.8	4,819.5	107.478	ES
EXIST DD BURMAN C4-33D - Wellbore #1 - Wellbore #1	11,849.9	6,962.0	9,973.9	9,816.7	63.444	SF
EXIST DD BURMAN C5-17D - Wellbore #1 - Wellbore #1	5,797.7	5,487.0	4,585.7	4,535.4	91.230	CC
EXIST DD BURMAN C5-17D - Wellbore #1 - Wellbore #1	5,800.0	5,487.0	4,585.7	4,535.4	91.217	ES
EXIST DD BURMAN C5-17D - Wellbore #1 - Wellbore #1	11,849.9	7,211.2	9,114.7	8,958.3	58.307	SF
EXIST DD BURMAN C5-21D - Wellbore #1 - Wellbore #1	6,323.1	6,523.8	3,029.7	2,976.2	56.610	CC, ES
EXIST DD BURMAN C5-21D - Wellbore #1 - Wellbore #1	11,849.9	7,137.8	7,651.5	7,483.8	45.628	SF
EXIST DD BURMAN C5-22D - Wellbore #1 - Wellbore #1	6,222.7	6,208.9	3,892.1	3,852.1	97.409	CC, ES
EXIST DD BURMAN C5-22D - Wellbore #1 - Wellbore #1	11,849.9	6,938.8	8,683.1	8,530.5	56.917	SF
EXIST DD BURMAN C5-23D - Wellbore #1 - Wellbore #1	6,227.2	6,119.1	3,456.2	3,426.1	114.739	CC
EXIST DD BURMAN C5-23D - Wellbore #1 - Wellbore #1	6,237.3	6,132.0	3,456.3	3,417.6	89.435	ES

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 HAROLD 6X-334
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Reference Site:	SE SE SEC. 6 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	HAROLD 6X-334	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 #2	Offset TVD Reference:	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
NE SE SEC. 6 T4N R64W 6th P.M.						
EXIST DD BURMAN C5-23D - Wellbore #1 - Wellbore #	11,849.9	6,800.0	8,560.0	8,413.5	58.443	SF
EXIST DD BURMAN C5-24D - Wellbore #1 - Wellbore #	6,317.3	6,449.4	2,260.8	2,203.9	39.682	ES, SF
EXIST DD BURMAN C5-24D - Wellbore #1 - Wellbore #	6,317.5	6,449.7	2,260.8	2,228.9	70.796	CC
EXIST DD DIETRICH C7-27 - Wellbore #1 - Wellbore #1	8,679.2	6,944.4	595.3	543.6	11.528	CC
EXIST DD DIETRICH C7-27 - Wellbore #1 - Wellbore #1	8,700.0	6,944.4	595.6	543.5	11.421	ES
EXIST DD DIETRICH C7-27 - Wellbore #1 - Wellbore #1	8,900.0	6,944.2	634.9	577.7	11.100	SF
EXIST DD DIETRICH C8-30D - Wellbore #1 - Wellbore #	7,396.2	7,309.7	604.5	551.5	11.405	CC
EXIST DD DIETRICH C8-30D - Wellbore #1 - Wellbore #	7,400.0	7,309.9	604.5	551.4	11.397	ES
EXIST DD DIETRICH C8-30D - Wellbore #1 - Wellbore #	7,500.0	7,310.8	613.2	559.1	11.322	SF
EXIST DD RUFF C8-27D - Wellbore #1 - Wellbore #1	6,206.4	6,085.5	3,458.7	3,428.7	115.463	CC
EXIST DD RUFF C8-27D - Wellbore #1 - Wellbore #1	6,237.3	6,116.8	3,458.9	3,422.0	93.912	ES
EXIST DD RUFF C8-27D - Wellbore #1 - Wellbore #1	11,849.9	6,837.0	8,536.4	8,386.9	57.094	SF
EXIST DD SLEDGE C9-30D - Wellbore #1 - Wellbore #1	6,317.3	6,429.4	4,659.3	4,615.8	107.045	ES
EXIST DD SLEDGE C9-30D - Wellbore #1 - Wellbore #1	6,337.5	6,458.0	4,659.1	4,623.5	131.008	CC
EXIST DD SLEDGE C9-30D - Wellbore #1 - Wellbore #1	11,849.9	7,129.3	9,756.3	9,603.8	63.943	SF
EXIST DD WRIGHT-GOIN C7-28D - Wellbore #1 - Wellb	9,879.2	7,284.2	798.2	678.1	6.649	CC
EXIST DD WRIGHT-GOIN C7-28D - Wellbore #1 - Wellb	9,900.0	7,283.0	798.4	677.9	6.621	ES
EXIST DD WRIGHT-GOIN C7-28D - Wellbore #1 - Wellb	10,000.0	7,277.3	807.2	684.0	6.550	SF
EXIST HZ COALVIEW G2-63-1HN - Wellbore #1 - Wellb	11,849.9	6,646.0	846.6	743.7	8.226	CC, ES, SF
EXIST HZ COALVIEW G2-64-1HN - Wellbore #1 - Wellb	11,849.9	6,684.3	1,238.9	1,096.0	8.668	CC, ES, SF
EXIST HZ COALVIEW G2-65-1HN - Wellbore #1 - Wellb	11,849.9	6,739.0	1,732.7	1,585.1	11.740	CC, ES, SF
EXIST HZ COALVIEW G2-66-1HN - Wellbore #1 - Wellb	11,849.9	6,743.0	2,360.6	2,212.1	15.895	CC, ES, SF
EXIST HZ LOWER LATHAM PC G12-69HN - Wellbore #	11,849.9	12,060.0	772.4	483.0	2.669	CC, ES, SF
EXIST HZ NORTHRUP C8-73HN - Wellbore #1 - Wellbo	6,317.3	6,306.3	3,504.1	3,466.6	93.521	ES
EXIST HZ NORTHRUP C8-73HN - Wellbore #1 - Wellbo	6,329.7	6,309.2	3,504.0	3,474.0	116.810	CC
EXIST HZ NORTHRUP C8-73HN - Wellbore #1 - Wellbo	11,849.9	6,547.0	8,552.6	8,412.4	60.994	SF
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbo	6,217.4	6,163.8	2,215.7	2,185.1	72.436	CC
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbo	6,237.3	6,185.1	2,215.7	2,174.9	54.246	ES
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbo	11,849.9	6,556.0	7,256.8	7,120.2	53.138	SF
EXIST HZ SCHMIDT PC C6-79HN - Wellbore #1 - Wellb	11,849.9	12,499.3	427.1	320.6	4.010	CC, ES, SF
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	10,266.5	6,900.0	2,607.1	2,514.0	28.002	CC
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	10,300.0	6,900.0	2,607.3	2,513.3	27.733	ES
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	11,849.9	6,835.4	3,049.5	2,913.0	22.335	SF
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	11,619.4	6,920.1	2,776.7	2,646.3	21.293	CC
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	11,700.0	6,918.8	2,777.8	2,645.2	20.944	ES
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	11,849.9	6,916.4	2,786.2	2,649.4	20.371	SF
EXIST VERT CONNELL C4-20 - Wellbore #1 - Wellbore #	6,227.7	6,006.5	6,239.1	6,221.9	363.133	CC
EXIST VERT CONNELL C4-20 - Wellbore #1 - Wellbore #	6,317.3	6,123.0	6,239.2	6,214.0	247.444	ES
EXIST VERT CONNELL C4-20 - Wellbore #1 - Wellbore #	10,600.0	6,800.0	9,975.7	9,873.4	97.465	SF
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #	6,236.3	6,080.7	5,327.3	5,310.4	315.113	CC
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #	6,317.3	6,161.6	5,327.4	5,301.4	204.683	ES
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #	11,300.0	6,800.0	9,901.5	9,820.8	122.721	SF
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	6,217.3	6,006.1	5,624.0	5,607.4	338.275	CC
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	6,237.3	6,033.5	5,624.1	5,598.9	222.916	ES
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	11,100.0	6,842.8	9,936.6	9,820.8	85.756	SF
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	6,317.3	6,239.9	6,710.5	6,685.2	265.320	ES
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	6,327.2	6,249.1	6,710.5	6,693.4	392.645	CC
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	10,000.0	6,800.0	9,973.5	9,906.6	148.911	SF
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #	6,219.1	5,989.8	5,891.8	5,874.0	330.185	CC
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #	6,237.3	6,000.0	5,891.9	5,867.2	238.568	ES
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #	11,100.0	6,800.0	9,994.4	9,878.5	86.220	SF
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore	6,317.3	6,123.5	6,873.6	6,848.3	271.110	ES
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore	6,317.7	6,123.8	6,873.6	6,856.9	409.968	CC

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

Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HAROLD 6X-334
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Reference Site:	SE SE SEC. 6 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	HAROLD 6X-334	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 #2	Offset TVD Reference:	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
NE SE SEC. 6 T4N R64W 6th P.M.						
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore	9,800.0	6,800.0	9,903.6	9,823.2	123.037	SF
EXIST VERT CONNELL C4-25 - Wellbore #1 - Wellbore	6,117.3	5,678.3	6,227.3	6,210.8	378.471	CC
EXIST VERT CONNELL C4-25 - Wellbore #1 - Wellbore	6,237.3	5,753.9	6,230.1	6,204.7	245.137	ES
EXIST VERT CONNELL C4-25 - Wellbore #1 - Wellbore	10,400.0	6,200.0	9,929.1	9,851.5	127.857	SF
EXIST VERT DIETRICH 6-10 - Wellbore #1 - Wellbore #	9,293.7	6,950.0	1,019.8	952.7	15.187	CC
EXIST VERT DIETRICH 6-10 - Wellbore #1 - Wellbore #	9,300.0	6,950.0	1,019.8	952.5	15.151	ES
EXIST VERT DIETRICH 6-10 - Wellbore #1 - Wellbore #	9,700.0	6,950.0	1,097.8	1,019.8	14.087	SF
EXIST VERT DIETRICH 6-16 - Wellbore #1 - Wellbore #	8,120.8	6,700.0	226.7	201.3	8.908	CC, ES, SF
EXIST VERT DIETRICH C6-23 - Wellbore #1 - Wellbore	8,545.3	6,933.6	530.2	482.0	10.989	CC, ES
EXIST VERT DIETRICH C6-23 - Wellbore #1 - Wellbore	8,700.0	6,932.8	552.3	500.3	10.610	SF
EXIST VERT DINNER 6-1 - Wellbore #1 - Wellbore #1	11,721.6	6,953.4	159.0	25.6	1.192	Level 2, CC, ES, SF
EXIST VERT DINNER 6-2 - Wellbore #1 - Wellbore #1	10,380.3	6,986.2	1,314.9	1,218.5	13.634	CC
EXIST VERT DINNER 6-2 - Wellbore #1 - Wellbore #1	10,400.0	6,986.7	1,315.0	1,218.1	13.560	ES
EXIST VERT DINNER 6-2 - Wellbore #1 - Wellbore #1	10,900.0	6,998.2	1,413.8	1,303.2	12.782	SF
EXIST VERT DINNER 6-34 - Wellbore #1 - Wellbore #1	10,384.8	6,949.5	103.1	6.5	1.068	Level 2, CC, ES, SF
EXIST VERT DINNER 6-35 - Wellbore #1 - Wellbore #1	11,379.2	6,975.4	415.0	291.3	3.357	CC
EXIST VERT DINNER 6-35 - Wellbore #1 - Wellbore #1	11,400.0	6,975.1	415.5	291.3	3.345	ES, SF
EXIST VERT EHRLICH 1 - Wellbore #1 - Wellbore #1	6,227.5	6,000.0	7,256.7	7,239.7	425.717	CC
EXIST VERT EHRLICH 1 - Wellbore #1 - Wellbore #1	6,237.3	6,000.0	7,256.7	7,231.5	287.511	ES
EXIST VERT EHRLICH 1 - Wellbore #1 - Wellbore #1	9,600.0	6,800.0	9,997.9	9,922.5	132.686	SF
EXIST VERT HINKLE 23-5 - Wellbore #1 - Wellbore #1	6,317.3	6,166.0	1,901.0	1,877.6	81.104	ES
EXIST VERT HINKLE 23-5 - Wellbore #1 - Wellbore #1	6,320.3	6,168.8	1,901.0	1,881.2	96.031	CC
EXIST VERT HINKLE 23-5 - Wellbore #1 - Wellbore #1	11,849.9	6,734.6	6,686.6	6,550.4	49.096	SF
EXIST VERT HINKLE 24-5 - Wellbore #1 - Wellbore #1	6,232.7	6,085.1	1,382.4	1,365.6	82.170	CC
EXIST VERT HINKLE 24-5 - Wellbore #1 - Wellbore #1	6,237.3	6,089.7	1,382.4	1,357.2	54.847	ES
EXIST VERT HINKLE 24-5 - Wellbore #1 - Wellbore #1	6,317.3	6,169.9	1,382.5	1,357.2	54.615	SF
EXIST VERT LEVI C5-15 - Wellbore #1 - Wellbore #1	6,203.6	6,028.7	3,029.7	3,012.5	175.997	CC
EXIST VERT LEVI C5-15 - Wellbore #1 - Wellbore #1	6,237.3	6,065.0	3,029.9	3,004.8	120.668	ES
EXIST VERT LEVI C5-15 - Wellbore #1 - Wellbore #1	9,600.0	6,837.5	5,913.7	5,860.5	111.225	SF
EXIST VERT LEY 1 - Wellbore #1 - Wellbore #1	9,323.4	6,946.8	43.2	-24.7	0.637	Level 1, CC, ES, SF
EXIST VERT MCCLINTOCK C4-15 - Wellbore #1 - Wellb	6,317.3	6,221.6	8,129.1	8,103.8	320.896	ES
EXIST VERT MCCLINTOCK C4-15 - Wellbore #1 - Wellb	6,326.7	6,231.8	8,129.1	8,111.7	467.949	CC
EXIST VERT MCCLINTOCK C4-15 - Wellbore #1 - Wellb	8,600.0	6,700.0	9,997.0	9,950.4	214.340	SF
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	6,222.6	6,041.9	3,058.2	3,040.9	177.106	CC
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	6,237.3	6,054.5	3,058.2	3,033.0	121.430	ES
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	11,849.9	6,600.0	8,034.6	7,900.0	59.693	SF
EXIST VERT REISTAD 5-1 - Wellbore #1 - Wellbore #1	6,208.9	6,015.6	4,049.9	4,032.8	236.454	CC
EXIST VERT REISTAD 5-1 - Wellbore #1 - Wellbore #1	6,237.3	6,040.6	4,050.1	4,024.9	161.050	ES
EXIST VERT REISTAD 5-1 - Wellbore #1 - Wellbore #1	11,849.9	6,850.0	9,178.0	9,070.6	85.475	SF
EXIST VERT REISTAD C5-9 - Wellbore #1 - Wellbore #1	6,317.3	6,200.0	4,052.9	4,027.0	156.570	ES
EXIST VERT REISTAD C5-9 - Wellbore #1 - Wellbore #1	6,324.4	6,200.0	4,052.9	4,035.9	239.644	CC
EXIST VERT REISTAD C5-9 - Wellbore #1 - Wellbore #1	11,849.9	6,777.9	9,107.0	8,970.2	66.567	SF
EXIST VERT ROUKEMA 5-1 - Wellbore #1 - Wellbore #1	6,180.0	6,028.4	264.2	244.5	13.390	CC
EXIST VERT ROUKEMA 5-1 - Wellbore #1 - Wellbore #1	6,237.3	6,084.8	264.8	241.5	11.393	ES
EXIST VERT ROUKEMA 5-1 - Wellbore #1 - Wellbore #1	6,317.3	6,166.8	266.2	242.8	11.384	SF
EXIST VERT ROUKEMA PM C5-12 - Wellbore #1 - Well	6,581.1	6,440.3	1,150.6	1,125.6	45.922	CC, ES
EXIST VERT ROUKEMA PM C5-12 - Wellbore #1 - Well	11,849.9	6,900.0	5,236.4	5,099.8	38.316	SF
EXIST VERT SITZMAN 4-714 - Wellbore #1 - Design #1	6,317.3	6,109.8	8,550.4	8,406.2	59.300	CC, ES
EXIST VERT SITZMAN 4-714 - Wellbore #1 - Design #1	8,200.0	6,826.0	9,964.1	9,790.9	57.545	SF
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	6,315.1	6,100.0	8,926.5	8,901.1	351.492	CC
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	6,317.3	6,100.0	8,926.5	8,901.1	351.455	ES
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	7,800.0	6,750.0	9,976.3	9,944.5	314.219	SF
EXIST VERT SLEDGE C9-28 - Wellbore #1 - Design #1	6,317.3	6,141.8	7,394.5	7,250.5	51.345	CC, ES

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

Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HAROLD 6X-334
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Reference Site:	SE SE SEC. 6 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	HAROLD 6X-334	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 #2	Offset TVD Reference:	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 C9-28 - Wellbore #1 - Design #1	9,300.0	6,858.0	9,950.5	9,749.7	49.552	SF
EXIST VERT SLEDGE C9-29 - Wellbore #1 - Design #1	6,317.3	6,160.8	6,060.6	5,916.5	42.050	CC, ES
EXIST VERT SLEDGE C9-29 - Wellbore #1 - Design #1	10,600.0	6,877.0	9,906.0	9,670.0	41.975	SF
EXIST VERT SMITH-REEVES 42-5 - Wellbore #1 - Well	6,317.3	6,157.4	4,954.9	4,930.5	203.083	ES
EXIST VERT SMITH-REEVES 42-5 - Wellbore #1 - Well	6,319.8	6,159.3	4,954.9	4,936.6	270.631	CC
EXIST VERT SMITH-REEVES 42-5 - Wellbore #1 - Well	11,849.9	6,550.0	9,697.9	9,561.9	71.308	SF
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	9,060.2	6,900.0	2,550.3	2,489.3	41.789	CC
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	9,100.0	6,900.0	2,550.6	2,488.6	41.102	ES
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	11,600.0	11,600.0	3,599.3	3,469.1	27.653	SF
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #	7,780.9	6,950.0	2,471.0	2,439.7	78.922	CC
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #	7,800.0	6,950.0	2,471.1	2,439.5	78.109	ES
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #	11,849.9	6,950.0	4,760.5	4,624.0	34.868	SF
EXIST VERT WILMOTH C4-23 - Wellbore #1 - Wellbore	6,317.3	6,226.7	8,747.0	8,721.7	345.318	ES
EXIST VERT WILMOTH C4-23 - Wellbore #1 - Wellbore	6,329.1	6,255.3	8,746.9	8,730.0	515.243	CC
EXIST VERT WILMOTH C4-23 - Wellbore #1 - Wellbore	7,900.0	6,800.0	9,907.6	9,874.0	294.817	SF
EXIST VERT WILMOTH C4-24 - Wellbore #1 - Wellbore	6,244.4	6,047.7	7,530.5	7,505.1	296.855	CC, ES
EXIST VERT WILMOTH C4-24 - Wellbore #1 - Wellbore	9,100.0	6,696.8	9,909.7	9,848.3	161.293	SF
EXIST VERT WILMOTH C5-20 - Wellbore #1 - Wellbore	6,175.3	5,992.6	1,911.2	1,888.0	82.225	CC, ES
EXIST VERT WILMOTH C5-20 - Wellbore #1 - Wellbore	11,849.9	6,850.0	6,095.2	5,958.6	44.640	SF
EXIST VERT WILMOTH C5-6 - Wellbore #1 - Wellbore #	6,190.7	5,977.3	3,009.0	2,986.9	136.150	CC
EXIST VERT WILMOTH C5-6 - Wellbore #1 - Wellbore #	6,200.0	5,987.0	3,009.0	2,986.9	136.076	ES
EXIST VERT WILMOTH C5-6 - Wellbore #1 - Wellbore #	11,849.9	6,831.2	7,153.5	7,016.9	52.359	SF
EXIST VERT WILMOTH C9-27 - Wellbore #1 - Wellbore	6,317.3	6,112.7	8,630.8	8,606.0	347.705	ES
EXIST VERT WILMOTH C9-27 - Wellbore #1 - Wellbore	6,318.2	6,113.4	8,630.8	8,613.7	504.604	CC
EXIST VERT WILMOTH C9-27 - Wellbore #1 - Wellbore	8,000.0	6,800.0	9,902.3	9,866.9	280.000	SF
JUDY 6D-212 - ORIGINAL WELLBORE - PROPOSAL #	6,600.0	7,642.4	1,290.1	1,230.7	21.713	SF
JUDY 6D-212 - ORIGINAL WELLBORE - PROPOSAL #	6,950.0	7,433.6	1,246.5	1,193.1	23.325	ES
JUDY 6D-212 - ORIGINAL WELLBORE - PROPOSAL #	7,036.6	7,363.1	1,245.4	1,193.7	24.077	CC
JUDY 6D-312 - ORIGINAL WELLBORE - PROPOSAL #	6,700.0	7,695.8	1,023.3	964.9	17.521	SF
JUDY 6D-312 - ORIGINAL WELLBORE - PROPOSAL #	7,100.0	7,407.3	973.7	922.9	19.177	ES
JUDY 6D-312 - ORIGINAL WELLBORE - PROPOSAL #	7,184.6	7,327.2	972.9	923.7	19.774	CC
JUDY 6S-202 - ORIGINAL WELLBORE - PROPOSAL #1	6,950.0	7,401.5	1,834.9	1,781.7	34.456	ES
JUDY 6S-202 - ORIGINAL WELLBORE - PROPOSAL #1	7,020.8	7,344.3	1,834.4	1,782.4	35.290	CC
JUDY 6S-202 - ORIGINAL WELLBORE - PROPOSAL #1	10,400.0	6,350.0	3,274.3	3,168.6	30.977	SF
JUDY 6S-204 - ORIGINAL WELLBORE - PROPOSAL #2	1,627.7	1,658.0	1,830.1	1,820.8	195.766	CC
JUDY 6S-204 - ORIGINAL WELLBORE - PROPOSAL #2	11,849.9	11,976.9	1,888.1	1,616.4	6.949	ES, SF
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	263.8	271.8	1,947.5	1,946.6	2,100.310	CC
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	300.0	300.0	1,947.5	1,946.4	1,816.481	ES
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	11,500.0	6,350.0	4,454.3	4,317.3	32.496	SF
JUDY 6S-214 - ORIGINAL WELLBORE - PROPOSAL #2	363.8	371.8	1,859.0	1,857.6	1,350.268	CC
JUDY 6S-214 - ORIGINAL WELLBORE - PROPOSAL #2	500.0	500.0	1,859.4	1,857.5	946.172	ES
JUDY 6S-214 - ORIGINAL WELLBORE - PROPOSAL #2	11,849.9	12,041.6	2,449.1	2,177.7	9.023	SF
JUDY 6S-234 - ORIGINAL WELLBORE - PROPOSAL #2	6,861.1	7,003.9	1,384.6	1,331.0	25.835	CC
JUDY 6S-234 - ORIGINAL WELLBORE - PROPOSAL #2	11,849.9	11,957.3	1,387.5	1,115.9	5.110	ES, SF
JUDY 6S-302 - ORIGINAL WELLBORE - PROPOSAL #1	363.8	371.8	1,933.3	1,931.9	1,404.236	CC
JUDY 6S-302 - ORIGINAL WELLBORE - PROPOSAL #1	400.0	400.0	1,933.3	1,931.8	1,270.536	ES
JUDY 6S-302 - ORIGINAL WELLBORE - PROPOSAL #1	11,100.0	6,400.0	3,976.3	3,850.2	31.540	SF
JUDY 6S-314 - ORIGINAL WELLBORE - PROPOSAL #2	463.8	471.8	1,844.9	1,843.1	1,010.171	CC
JUDY 6S-314 - ORIGINAL WELLBORE - PROPOSAL #2	600.0	600.0	1,845.1	1,842.7	764.650	ES
JUDY 6S-314 - ORIGINAL WELLBORE - PROPOSAL #2	11,849.9	12,096.0	2,200.4	1,928.9	8.104	SF
JUDY 6S-332 - ORIGINAL WELLBORE - PROPOSAL #1	6,550.0	7,706.7	1,618.3	1,558.5	27.064	SF
JUDY 6S-332 - ORIGINAL WELLBORE - PROPOSAL #1	7,050.0	7,398.3	1,555.6	1,504.0	30.155	ES
JUDY 6S-332 - ORIGINAL WELLBORE - PROPOSAL #1	7,157.4	7,299.0	1,554.7	1,505.1	31.321	CC

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

Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HAROLD 6X-334
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Reference Site:	SE SE SEC. 6 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	HAROLD 6X-334	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 #2	Offset TVD Reference:	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.						
JUDY 6S-334 - ORIGINAL WELLBORE - PROPOSAL #2	7,438.9	7,660.6	1,623.9	1,566.3	28.194	CC
JUDY 6S-334 - ORIGINAL WELLBORE - PROPOSAL #2	11,849.9	12,050.7	1,624.8	1,352.9	5.975	ES, SF
JUDY 6X-314 - ORIGINAL WELLBORE - PROPOSAL #2	7,387.5	7,557.7	1,058.7	1,002.5	18.825	CC
JUDY 6X-314 - ORIGINAL WELLBORE - PROPOSAL #2	11,849.9	12,008.3	1,060.1	788.7	3.905	ES, SF
SE SE SEC. 6 T4N R64W 6th P.M.						
HAROLD 6X-202 - ORIGINAL WELLBORE - PROPOSAL #2	266.3	267.3	120.2	119.3	130.247	CC
HAROLD 6X-202 - ORIGINAL WELLBORE - PROPOSAL #2	300.0	300.0	120.2	119.2	112.137	ES
HAROLD 6X-202 - ORIGINAL WELLBORE - PROPOSAL #2	6,800.0	7,571.2	741.1	691.4	14.938	SF
HAROLD 6X-204 - ORIGINAL WELLBORE - PROPOSAL #2	366.3	367.3	47.4	46.0	34.508	CC
HAROLD 6X-204 - ORIGINAL WELLBORE - PROPOSAL #2	400.0	401.0	47.4	45.8	31.082	ES
HAROLD 6X-204 - ORIGINAL WELLBORE - PROPOSAL #2	11,849.9	11,897.9	781.2	511.0	2.891	SF
HAROLD 6X-232 - ORIGINAL WELLBORE - PROPOSAL #2	466.3	467.3	91.1	89.3	49.985	CC
HAROLD 6X-232 - ORIGINAL WELLBORE - PROPOSAL #2	7,074.7	7,319.9	102.6	56.6	2.229	ES, SF
HAROLD 6X-234 - ORIGINAL WELLBORE - PROPOSAL #2	600.0	600.0	18.2	15.8	7.525	CC
HAROLD 6X-234 - ORIGINAL WELLBORE - PROPOSAL #2	11,849.9	11,798.1	240.0	-19.7	0.924	Level 1, ES, SF
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSAL #2	366.3	367.3	105.6	104.3	76.973	CC
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSAL #2	400.0	400.0	105.7	104.1	69.433	ES
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSAL #2	7,100.0	7,387.8	408.3	363.3	9.085	SF
HAROLD 6X-304 - ORIGINAL WELLBORE - PROPOSAL #2	466.3	467.3	32.8	31.0	17.997	CC
HAROLD 6X-304 - ORIGINAL WELLBORE - PROPOSAL #2	500.0	501.0	32.8	30.8	16.617	ES
HAROLD 6X-304 - ORIGINAL WELLBORE - PROPOSAL #2	11,849.9	11,897.9	484.5	214.6	1.795	SF
HAROLD 6Y-202 - ORIGINAL WELLBORE - PROPOSAL #2	266.5	267.5	61.9	61.0	67.042	CC
HAROLD 6Y-202 - ORIGINAL WELLBORE - PROPOSAL #2	500.0	500.7	62.3	60.4	31.875	ES
HAROLD 6Y-202 - ORIGINAL WELLBORE - PROPOSAL #2	6,900.0	7,491.5	491.2	442.7	10.125	SF
HAROLD 6Y-214 - ORIGINAL WELLBORE - PROPOSAL #2	400.0	400.0	14.6	13.0	9.574	CC
HAROLD 6Y-214 - ORIGINAL WELLBORE - PROPOSAL #2	500.0	499.9	14.8	12.9	7.583	ES
HAROLD 6Y-214 - ORIGINAL WELLBORE - PROPOSAL #2	11,849.9	11,775.4	319.8	58.1	1.222	Level 2, SF
HAROLD 6Y-304 - ORIGINAL WELLBORE - PROPOSAL #2	300.0	300.0	29.1	28.1	27.184	CC, ES
HAROLD 6Y-304 - ORIGINAL WELLBORE - PROPOSAL #2	11,849.9	11,851.0	539.2	269.7	2.001	SF
HAROLD 6Y-312 - ORIGINAL WELLBORE - PROPOSAL #2	266.5	267.5	76.5	75.6	82.816	CC
HAROLD 6Y-312 - ORIGINAL WELLBORE - PROPOSAL #2	500.0	500.7	76.8	74.9	39.288	ES
HAROLD 6Y-312 - ORIGINAL WELLBORE - PROPOSAL #2	7,250.0	7,257.7	248.2	204.9	5.733	SF

Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HAROLD 6X-334
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Reference Site:	SE SE SEC. 6 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	HAROLD 6X-334	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 #2	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.						
BAILEY 34I-223 - ORIGINAL WELLBORE - PROPOSAL						Out of range
BAILEY 34I-303 - ORIGINAL WELLBORE - PROPOSAL						Out of range
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore						Out of range
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	6,206.8	5,937.0	9,933.9	9,904.5	337.811	CC
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	6,237.3	5,937.0	9,934.1	9,898.5	278.633	ES
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	6,317.3	5,937.0	9,935.5	9,899.8	277.942	SF
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We						Out of range
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	6,317.3	6,110.3	9,800.4	9,775.1	387.397	ES, SF
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	6,318.4	6,111.8	9,800.4	9,783.4	578.547	CC
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	6,317.3	6,125.6	9,285.7	9,260.4	366.632	ES, SF
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	6,319.5	6,128.1	9,285.7	9,268.5	539.382	CC
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	6,207.2	5,888.4	9,575.2	9,558.3	566.402	CC
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	6,237.3	5,915.0	9,575.4	9,550.0	377.385	ES
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	6,317.3	5,994.9	9,576.3	9,550.8	375.993	SF
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	6,230.3	5,980.7	9,840.1	9,823.7	600.433	CC
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	6,237.3	6,000.0	9,840.1	9,815.3	395.729	ES
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	6,317.3	6,081.2	9,840.3	9,815.3	394.199	SF

Offset Design												NE SE SEC. 6 T4N R64W 6th P.M. - ABDN VERT DINNER 6-3 - 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					
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	Warning				
0.0	0.0	51.5	51.5	0.0	0.0	-71.37	1,348.3	-4,000.3	4,221.4								
100.0	100.0	152.3	152.3	0.1	0.0	-71.37	1,348.3	-4,000.1	4,221.2	4,221.2	0.09	N/A					
200.0	200.0	249.6	249.6	0.3	0.0	-71.37	1,348.5	-4,000.0	4,221.2	4,220.8	0.33	N/A					
296.5	296.5	342.5	342.5	0.5	0.1	-71.37	1,348.7	-3,999.8	4,221.1	4,220.4	0.64	6,576.171					
300.0	300.0	345.6	345.6	0.5	0.1	-71.37	1,348.7	-3,999.8	4,221.1	4,220.4	0.65	6,446.120					
400.0	400.0	443.0	443.0	0.8	0.2	-71.36	1,349.1	-3,999.8	4,221.2	4,220.2	1.00	4,204.889					
500.0	500.0	543.9	543.9	1.0	0.3	-71.35	1,349.5	-3,999.6	4,221.2	4,219.9	1.31	3,218.376					
600.0	600.0	640.3	640.3	1.2	0.4	-71.35	1,350.0	-3,999.6	4,221.3	4,219.7	1.60	2,634.852					
700.0	700.0	742.4	742.4	1.4	0.5	-71.34	1,350.5	-3,999.6	4,221.4	4,219.5	1.89	2,234.443					
800.0	800.0	842.1	842.1	1.6	0.5	-150.54	1,351.1	-3,999.4	4,223.0	4,220.9	2.13	1,979.290					
900.0	899.8	943.0	943.0	1.9	0.6	-150.52	1,351.6	-3,999.4	4,227.7	4,225.3	2.40	1,763.608					
1,000.0	999.5	1,046.9	1,046.9	2.1	0.6	-150.50	1,352.1	-3,999.2	4,235.3	4,232.6	2.67	1,586.874					
1,100.0	1,098.7	1,153.6	1,153.6	2.3	0.7	-150.48	1,352.7	-3,998.9	4,245.8	4,242.8	2.95	1,439.354					
1,200.0	1,197.5	1,261.2	1,261.2	2.6	0.7	-150.44	1,353.3	-3,998.3	4,259.1	4,255.9	3.24	1,313.701					
1,299.8	1,295.5	1,364.4	1,364.4	3.0	0.8	-150.40	1,354.0	-3,997.6	4,275.3	4,271.7	3.55	1,204.707					
1,300.0	1,295.6	1,364.6	1,364.5	3.0	0.8	-150.40	1,354.0	-3,997.6	4,275.3	4,271.8	3.55	1,204.561					
1,400.0	1,393.4	1,465.8	1,465.8	3.3	0.8	-150.53	1,354.8	-3,996.7	4,292.9	4,289.1	3.85	1,116.453					
1,500.0	1,491.3	1,559.9	1,559.9	3.7	0.8	-150.64	1,355.8	-3,995.8	4,310.5	4,306.4	4.15	1,039.068					
1,600.0	1,589.1	1,659.3	1,659.2	4.1	0.9	-150.76	1,356.8	-3,994.9	4,328.3	4,323.8	4.46	970.579					
1,700.0	1,686.9	1,753.8	1,753.8	4.6	0.9	-150.88	1,357.7	-3,994.1	4,345.9	4,341.2	4.77	910.396					
1,800.0	1,784.7	1,860.8	1,860.8	5.0	1.0	-151.00	1,358.9	-3,993.2	4,363.7	4,358.7	5.09	856.784					
1,900.0	1,882.5	1,973.2	1,973.1	5.4	1.0	-151.14	1,359.7	-3,991.8	4,381.1	4,375.7	5.41	809.104					
2,000.0	1,980.3	2,068.9	2,068.8	5.8	1.0	-151.26	1,360.1	-3,990.7	4,398.4	4,392.7	5.74	766.605					
2,100.0	2,078.2	2,157.8	2,157.7	6.3	1.1	-151.37	1,360.3	-3,989.8	4,415.9	4,409.8	6.06	728.364					
2,200.0	2,176.0	2,244.5	2,244.4	6.7	1.1	-151.48	1,360.4	-3,989.2	4,433.6	4,427.2	6.39	693.832					

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