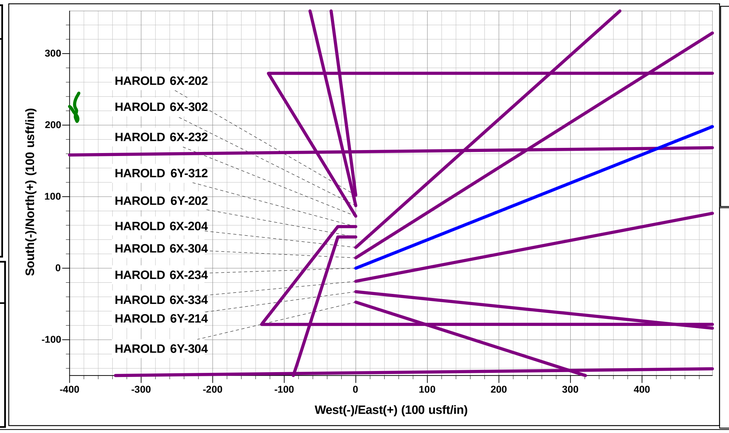
Project: WELD COUNTY, COLORADO
Site: SE SE SEC. 6 T4N R64W 6th P.M.
Well: HAROLD 6X-234
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

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: 532ft FSL & 437ft FEL of Sec 6
600.0	600.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1225.4	1230.5	12.61	68.34	25.5	64.2	-61.9	69.1	EOB TO 12.61° INC
5488.4	5598.8	12.61	68.34	377.5	950.6	-915.6	1022.8	END OF TANGENT
6113.8	6229.3	0.00	0.00	403.0	1014.8	-977.4	1091.9	EOD TO VERTICAL
6143.8	6259.3	0.00	0.00	403.0	1014.8	-977.4	1091.9	KOP (8°/100ft BUR)
6849.1	7259.3	80.00	269.37	396.5	423.0	-388.2	1683.7	80° INC: 926ft FSL & 25ft FEL of Sec 6
6860.0	7384.3	90.00	269.37	395.1	298.7	-264.5	1808.1	HZ LP *NEW*: 926ft FSL & 149.3ft FEL of Sec 6
6860.0	11798.1	90.00	269.37	346.4	-4114.8	4129.4	6221.8	BHL: 926ft FSL & 500ft FWL of Sec 6

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - HAROLD 6X-234	6143.8	403.0	1014.8	40.336646	-104.581850
80° INC - HAROLD 6X-234	6849.1	396.5	423.0	40.336628	-104.583973
BHL - HAROLD 6X-234 (P2)	6860.0	346.4	-4114.8	40.336490	-104.600250
HZ LP *NEW* - HAROLD 6X-234	6860.0	395.1	298.7	40.336624	-104.584419



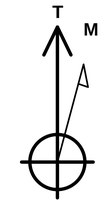
PROPOSED LOCAL COORDINATES:

SHL: 532ft FSL & 437ft FEL of Sec 6

80° INC: 926ft FSL & 25ft FEL of Sec 6

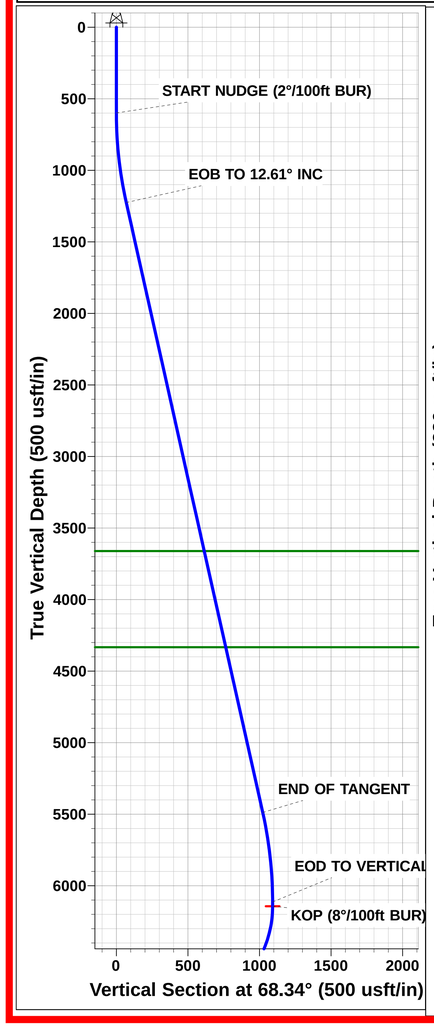
HZ LP *NEW*: 926ft FSL & 149.3ft FEL of Sec 6

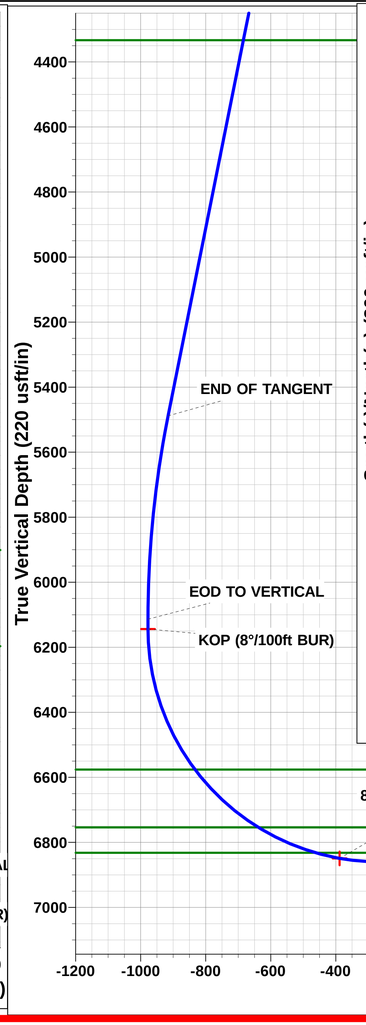
BHL: 926ft FSL & 500ft FWL of Sec 6

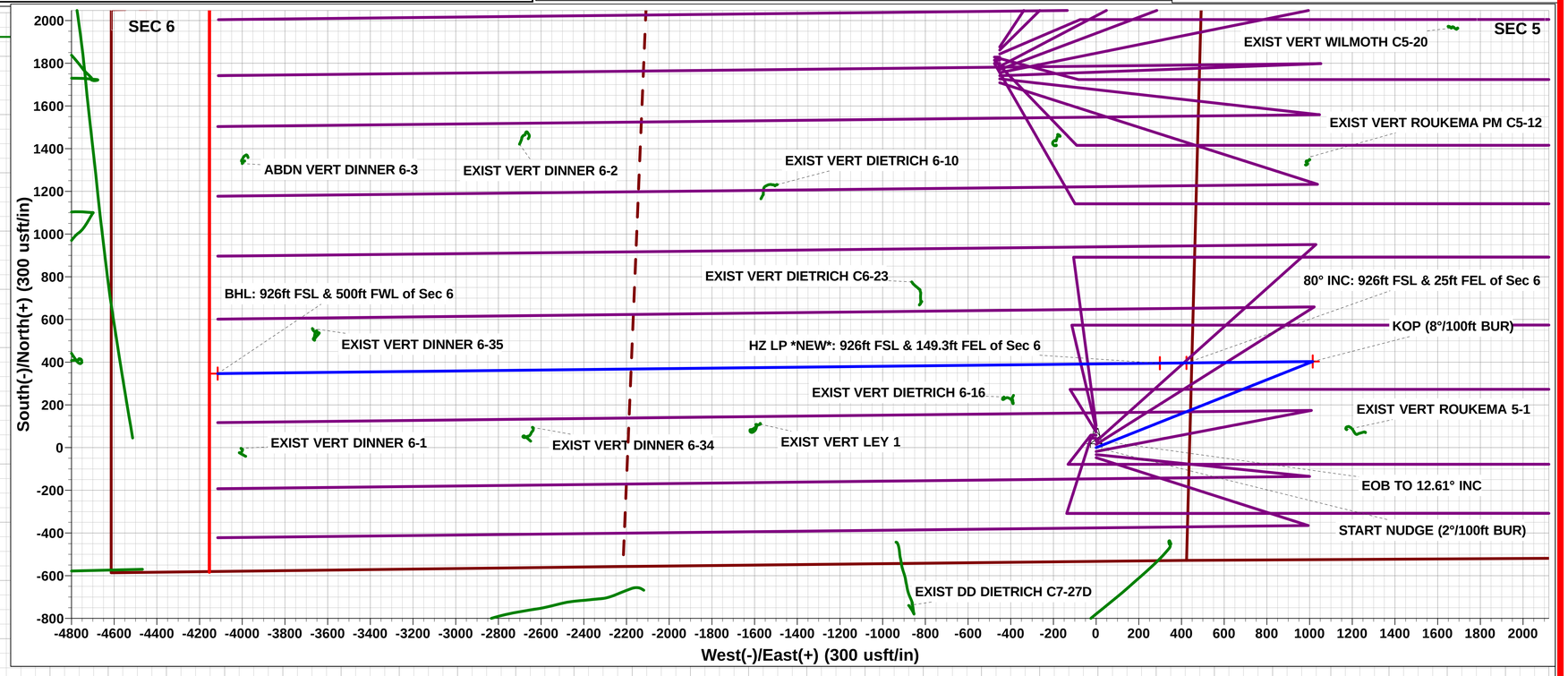


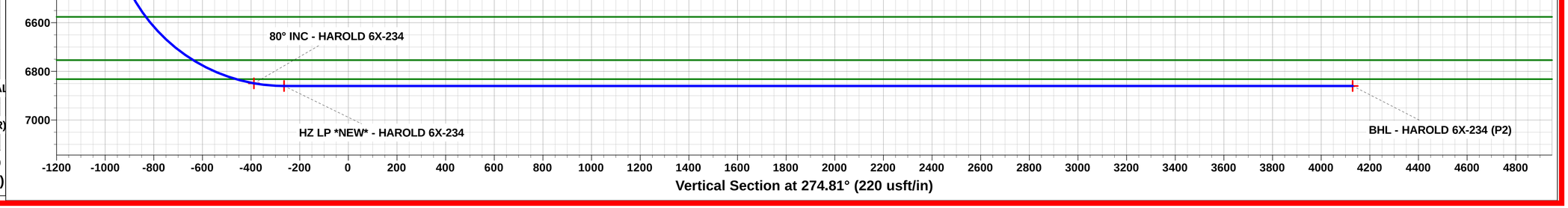
Azimuths to True North
Magnetic North: 8.13°

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-234

ORIGINAL WELLBORE
PROPOSAL #2

Anticollision Report

26 June, 2017

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well HAROLD 6X-234
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-234	**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	11,798.1	PROPOSAL #2 (ORIGINAL WELLBORE)	MWD	MWD - Standard

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.						
ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1	11,645.5	6,940.4	1,012.9	880.4	7.644	CC
ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1	11,700.0	6,939.7	1,014.3	880.3	7.569	ES
ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1	11,798.1	6,938.4	1,024.3	887.6	7.491	SF
ABDN VERT KUIS C5-7 - Wellbore #1 - Wellbore #1	6,191.4	5,940.2	3,701.3	3,683.1	203.900	CC
ABDN VERT KUIS C5-7 - Wellbore #1 - Wellbore #1	6,229.3	5,995.1	3,701.4	3,676.2	146.734	ES
ABDN VERT KUIS C5-7 - Wellbore #1 - Wellbore #1	11,798.1	6,690.0	8,326.6	8,190.0	60.942	SF
ABDN VERT LEY 2 - Wellbore #1 - Wellbore #1	7,844.3	6,848.1	1,070.7	1,037.1	31.831	CC, ES
ABDN VERT LEY 2 - Wellbore #1 - Wellbore #1	8,800.0	6,853.4	1,435.2	1,379.5	25.752	SF
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #	6,219.3	5,970.6	8,069.0	8,051.4	459.652	CC
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #	6,229.3	5,979.4	8,069.0	8,042.9	308.822	ES
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #	8,600.0	6,700.0	9,990.4	9,939.4	195.926	SF
ABDN VERT NIKOLORIC C5-5 - Wellbore #1 - Wellbore	6,267.2	6,097.2	2,372.6	2,347.8	95.430	CC, ES
ABDN VERT NIKOLORIC C5-5 - Wellbore #1 - Wellbore	11,798.1	6,822.1	5,803.4	5,666.8	42.496	SF
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	9,600.4	7,037.4	2,933.1	2,838.9	31.145	CC
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	9,700.0	7,035.3	2,934.8	2,837.9	30.305	ES
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	11,798.1	6,989.0	3,664.8	3,510.6	23.766	SF
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	10,954.3	6,958.8	1,807.6	1,677.6	13.900	CC
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	11,000.0	6,957.0	1,808.2	1,676.9	13.772	ES
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	11,600.0	6,934.0	1,919.4	1,771.6	12.986	SF
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	9,640.2	6,999.1	1,740.5	1,645.6	18.354	CC
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	9,700.0	6,996.0	1,741.5	1,645.1	18.061	ES
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	10,500.0	6,955.7	1,940.8	1,822.8	16.445	SF
EXIST DD BURMAN C4-32D - Wellbore #1 - Wellbore #1	2,808.9	1,690.0	4,784.3	4,774.2	471.499	CC, ES
EXIST DD BURMAN C4-32D - Wellbore #1 - Wellbore #1	11,600.0	7,137.3	9,926.4	9,773.4	64.866	SF
EXIST DD BURMAN C4-33D - Wellbore #1 - Wellbore #1	3,328.3	2,221.0	4,810.9	4,797.0	346.842	CC
EXIST DD BURMAN C4-33D - Wellbore #1 - Wellbore #1	6,259.3	6,267.2	4,834.6	4,788.8	105.486	ES
EXIST DD BURMAN C4-33D - Wellbore #1 - Wellbore #1	11,798.1	6,909.6	9,960.3	9,803.4	63.493	SF
EXIST DD BURMAN C5-17D - Wellbore #1 - Wellbore #1	5,815.2	5,487.0	4,432.8	4,383.4	89.715	CC, ES
EXIST DD BURMAN C5-17D - Wellbore #1 - Wellbore #1	11,798.1	7,157.0	9,031.4	8,875.1	57.789	SF
EXIST DD BURMAN C5-21D - Wellbore #1 - Wellbore #1	6,269.8	6,473.0	2,875.5	2,824.2	56.074	CC, ES
EXIST DD BURMAN C5-21D - Wellbore #1 - Wellbore #1	11,798.1	7,071.5	7,590.5	7,422.8	45.273	SF
EXIST DD BURMAN C5-22D - Wellbore #1 - Wellbore #1	6,213.6	6,185.7	3,767.9	3,729.1	96.963	CC, ES
EXIST DD BURMAN C5-22D - Wellbore #1 - Wellbore #1	11,798.1	6,882.0	8,628.3	8,475.8	56.576	SF
EXIST DD BURMAN C5-23D - Wellbore #1 - Wellbore #1	6,207.1	6,073.6	3,417.8	3,386.6	109.601	CC
EXIST DD BURMAN C5-23D - Wellbore #1 - Wellbore #1	6,229.3	6,102.2	3,417.8	3,379.1	88.161	ES
EXIST DD BURMAN C5-23D - Wellbore #1 - Wellbore #1	11,798.1	6,738.4	8,544.5	8,403.5	60.598	SF
EXIST DD BURMAN C5-24D - Wellbore #1 - Wellbore #1	6,259.3	6,391.0	2,203.2	2,145.8	38.429	ES, SF

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well HAROLD 6X-234
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-234	**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 DD BURMAN C5-24D - Wellbore #1 - Wellbore #1	6,262.3	6,391.0	2,203.2	2,170.5	67.458	CC
EXIST DD DIETRICH C7-27 - Wellbore #1 - Wellbore #1	8,629.6	6,877.3	824.2	772.5	15.941	CC, ES
EXIST DD DIETRICH C7-27 - Wellbore #1 - Wellbore #1	9,000.0	6,879.2	903.6	842.5	14.787	SF
EXIST DD DIETRICH C8-30D - Wellbore #1 - Wellbore #	7,347.3	7,239.9	832.6	779.6	15.710	CC
EXIST DD DIETRICH C8-30D - Wellbore #1 - Wellbore #	7,350.0	7,240.0	832.6	779.6	15.702	ES
EXIST DD DIETRICH C8-30D - Wellbore #1 - Wellbore #	7,500.0	7,240.3	846.4	791.6	15.452	SF
EXIST DD RUFF C8-27D - Wellbore #1 - Wellbore #1	6,193.0	6,059.2	3,508.6	3,476.0	107.405	CC
EXIST DD RUFF C8-27D - Wellbore #1 - Wellbore #1	6,229.3	6,096.9	3,508.8	3,473.2	98.441	ES
EXIST DD RUFF C8-27D - Wellbore #1 - Wellbore #1	11,798.1	6,789.3	8,556.9	8,406.6	56.939	SF
EXIST DD SLEDGE C9-30D - Wellbore #1 - Wellbore #1	6,259.3	6,389.9	4,683.6	4,640.2	108.038	ES
EXIST DD SLEDGE C9-30D - Wellbore #1 - Wellbore #1	6,281.7	6,403.6	4,683.2	4,646.2	126.461	CC
EXIST DD SLEDGE C9-30D - Wellbore #1 - Wellbore #1	11,798.1	7,098.0	9,769.1	9,616.1	63.859	SF
EXIST DD WRIGHT-GOIN C7-28D - Wellbore #1 - Wellb	9,834.2	7,215.6	1,026.0	905.9	8.541	CC, ES
EXIST DD WRIGHT-GOIN C7-28D - Wellbore #1 - Wellb	10,100.0	7,200.0	1,059.8	932.6	8.331	SF
EXIST HZ COALVIEW G2-63-1HN - Wellbore #1 - Wellb	11,798.1	6,646.0	769.8	712.1	13.360	CC, ES, SF
EXIST HZ COALVIEW G2-64-1HN - Wellbore #1 - Wellb	11,798.1	6,659.0	1,045.6	903.8	7.373	CC, ES, SF
EXIST HZ COALVIEW G2-65-1HN - Wellbore #1 - Wellb	11,798.1	6,723.8	1,511.4	1,363.5	10.217	CC, ES, SF
EXIST HZ COALVIEW G2-66-1HN - Wellbore #1 - Wellb	11,798.1	6,701.8	2,132.5	1,984.0	14.354	CC, ES, SF
EXIST HZ LOWER LATHAM PC G12-69HN - Wellbore #	11,798.1	12,060.0	985.5	697.1	3.417	CC, ES, SF
EXIST HZ NORTHRUP C8-73HN - Wellbore #1 - Wellbo	6,259.3	6,261.0	3,567.0	3,530.8	98.698	ES
EXIST HZ NORTHRUP C8-73HN - Wellbore #1 - Wellbo	6,277.2	6,269.9	3,566.7	3,534.1	109.266	CC
EXIST HZ NORTHRUP C8-73HN - Wellbore #1 - Wellbo	11,798.1	6,531.0	8,577.9	8,433.2	59.274	SF
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbo	6,201.4	6,133.6	2,298.1	2,264.3	68.035	CC
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbo	6,229.3	6,163.0	2,298.2	2,259.1	58.826	ES
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbo	11,798.1	6,524.0	7,279.0	7,135.0	50.562	SF
EXIST HZ SCHMIDT PC C6-79HN - Wellbore #1 - Wellb	11,798.1	12,273.5	488.1	391.5	5.053	CC, ES, SF
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	10,220.3	6,843.5	2,377.0	2,283.7	25.488	CC
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	10,300.0	6,839.9	2,378.3	2,282.9	24.923	ES
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	11,798.1	6,769.1	2,852.0	2,715.5	20.887	SF
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	11,571.4	6,855.6	2,546.2	2,415.7	19.510	CC
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	11,600.0	6,855.2	2,546.4	2,415.1	19.394	ES
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	11,798.1	6,852.3	2,556.3	2,419.5	18.690	SF
EXIST VERT CONNEL C4-20 - Wellbore #1 - Wellbore #	6,219.2	5,984.8	6,159.0	6,141.9	361.503	CC
EXIST VERT CONNEL C4-20 - Wellbore #1 - Wellbore #	6,229.3	5,994.3	6,159.0	6,132.8	234.995	ES
EXIST VERT CONNEL C4-20 - Wellbore #1 - Wellbore #	10,600.0	6,790.9	9,979.4	9,875.7	96.195	SF
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #	6,240.9	6,077.7	5,321.6	5,295.7	205.650	CC
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #	6,259.3	6,100.0	5,321.6	5,295.7	205.424	ES
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #	11,300.0	6,800.0	9,951.8	9,828.1	80.497	SF
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	6,208.5	5,984.6	5,569.0	5,551.9	325.956	CC
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	6,229.3	6,006.7	5,569.1	5,543.1	214.667	ES
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	11,100.0	6,778.7	9,959.3	9,842.0	84.904	SF
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	6,259.3	6,174.2	6,709.1	6,683.9	266.623	ES
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	6,269.8	6,185.3	6,709.0	6,690.4	361.110	CC
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	9,900.0	6,800.0	9,926.6	9,841.9	117.096	SF
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #	6,213.3	5,974.0	5,783.7	5,766.6	338.066	CC
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #	6,229.3	5,986.7	5,783.8	5,757.6	220.704	ES
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #	11,100.0	6,800.0	9,983.4	9,866.1	85.095	SF
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore	6,259.3	6,052.4	6,824.1	6,798.2	263.188	ES
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore	6,259.6	6,052.6	6,824.1	6,806.9	395.724	CC
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore	9,800.0	6,800.0	9,924.2	9,842.4	121.278	SF
EXIST VERT CONNELL C4-25 - Wellbore #1 - Wellbore	6,110.0	5,671.9	6,196.3	6,178.8	354.241	CC
EXIST VERT CONNELL C4-25 - Wellbore #1 - Wellbore	6,229.3	5,750.0	6,199.0	6,173.2	240.671	ES
EXIST VERT CONNELL C4-25 - Wellbore #1 - Wellbore	10,400.0	6,146.3	9,959.5	9,890.7	144.641	SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well HAROLD 6X-234
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-234	**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 DIETRICH 6-10 - Wellbore #1 - Wellbore #	9,243.7	6,888.9	792.7	725.5	11.805	CC, ES
EXIST VERT DIETRICH 6-10 - Wellbore #1 - Wellbore #	9,500.0	6,893.6	833.1	759.1	11.271	SF
EXIST VERT DIETRICH 6-16 - Wellbore #1 - Wellbore #	8,071.6	6,700.0	199.8	167.8	6.243	CC, ES
EXIST VERT DIETRICH 6-16 - Wellbore #1 - Wellbore #	8,100.0	6,700.0	201.8	169.3	6.217	SF
EXIST VERT DIETRICH C6-23 - Wellbore #1 - Wellbore	8,496.4	6,866.2	301.0	252.7	6.230	CC
EXIST VERT DIETRICH C6-23 - Wellbore #1 - Wellbore	8,500.0	6,866.2	301.0	252.6	6.220	ES, SF
EXIST VERT DINNER 6-1 - Wellbore #1 - Wellbore #1	11,673.3	6,881.8	388.0	254.5	2.907	CC, ES
EXIST VERT DINNER 6-1 - Wellbore #1 - Wellbore #1	11,700.0	6,881.4	388.9	254.7	2.897	SF
EXIST VERT DINNER 6-2 - Wellbore #1 - Wellbore #1	10,329.4	6,905.7	1,088.3	991.9	11.282	CC, ES
EXIST VERT DINNER 6-2 - Wellbore #1 - Wellbore #1	10,700.0	6,914.2	1,149.7	1,043.1	10.790	SF
EXIST VERT DINNER 6-34 - Wellbore #1 - Wellbore #1	10,336.8	6,874.8	331.9	235.2	3.434	CC, ES, SF
EXIST VERT DINNER 6-35 - Wellbore #1 - Wellbore #1	11,330.9	6,900.0	187.4	63.7	1.515	CC, ES, SF
EXIST VERT EHRLICH 1 - Wellbore #1 - Wellbore #1	6,215.9	5,972.3	7,170.7	7,153.9	427.370	CC
EXIST VERT EHRLICH 1 - Wellbore #1 - Wellbore #1	6,229.3	6,000.0	7,170.8	7,144.4	271.367	ES
EXIST VERT EHRLICH 1 - Wellbore #1 - Wellbore #1	9,600.0	6,752.6	9,989.3	9,912.6	130.191	SF
EXIST VERT HINKLE 23-5 - Wellbore #1 - Wellbore #1	6,259.3	6,098.1	1,752.8	1,727.0	67.938	ES
EXIST VERT HINKLE 23-5 - Wellbore #1 - Wellbore #1	6,262.8	6,100.0	1,752.8	1,734.9	97.967	CC
EXIST VERT HINKLE 23-5 - Wellbore #1 - Wellbore #1	11,798.1	6,676.0	6,644.0	6,507.9	48.820	SF
EXIST VERT HINKLE 24-5 - Wellbore #1 - Wellbore #1	6,216.8	6,054.0	1,384.5	1,365.3	71.851	CC
EXIST VERT HINKLE 24-5 - Wellbore #1 - Wellbore #1	6,229.3	6,066.8	1,384.6	1,360.1	56.542	ES
EXIST VERT HINKLE 24-5 - Wellbore #1 - Wellbore #1	6,259.3	6,097.5	1,384.7	1,360.1	56.455	SF
EXIST VERT LEVI C5-15 - Wellbore #1 - Wellbore #1	6,192.4	6,005.2	3,026.9	3,007.8	159.071	CC
EXIST VERT LEVI C5-15 - Wellbore #1 - Wellbore #1	6,229.3	6,044.8	3,027.1	3,002.2	121.667	ES
EXIST VERT LEVI C5-15 - Wellbore #1 - Wellbore #1	11,798.1	6,708.8	8,161.9	8,041.4	67.703	SF
EXIST VERT LEY 1 - Wellbore #1 - Wellbore #1	9,275.7	6,883.8	273.9	205.9	4.029	CC, ES
EXIST VERT LEY 1 - Wellbore #1 - Wellbore #1	9,300.0	6,883.0	274.9	206.3	4.007	SF
EXIST VERT MCCLINTOCK C4-15 - Wellbore #1 - Wellb	6,259.3	6,156.0	8,117.9	8,092.5	320.080	ES, SF
EXIST VERT MCCLINTOCK C4-15 - Wellbore #1 - Wellb	6,269.1	6,165.3	8,117.8	8,099.1	435.471	CC
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	6,217.4	6,027.5	2,967.0	2,950.2	176.687	CC
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	6,229.3	6,037.8	2,967.0	2,940.5	111.949	ES
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	11,798.1	6,600.0	7,998.8	7,863.7	59.210	SF
EXIST VERT REISTAD 5-1 - Wellbore #1 - Wellbore #1	6,201.6	6,000.0	4,049.6	4,030.7	214.604	CC
EXIST VERT REISTAD 5-1 - Wellbore #1 - Wellbore #1	6,229.3	6,025.6	4,049.7	4,024.7	162.115	ES
EXIST VERT REISTAD 5-1 - Wellbore #1 - Wellbore #1	11,798.1	6,828.1	9,179.0	9,042.4	67.196	SF
EXIST VERT REISTAD C5-9 - Wellbore #1 - Wellbore #1	6,259.3	6,133.4	3,993.8	3,967.3	150.281	ES
EXIST VERT REISTAD C5-9 - Wellbore #1 - Wellbore #1	6,268.0	6,139.8	3,993.8	3,976.6	232.366	CC
EXIST VERT REISTAD C5-9 - Wellbore #1 - Wellbore #1	11,798.1	6,725.2	9,081.1	8,944.3	66.378	SF
EXIST VERT ROUKEMA 5-1 - Wellbore #1 - Wellbore #1	6,134.5	5,972.0	406.8	381.1	15.857	CC, ES
EXIST VERT ROUKEMA 5-1 - Wellbore #1 - Wellbore #1	6,200.0	6,036.9	407.0	381.2	15.804	SF
EXIST VERT ROUKEMA PM C5-12 - Wellbore #1 - Well	6,300.0	6,145.5	923.5	898.0	36.190	SF
EXIST VERT ROUKEMA PM C5-12 - Wellbore #1 - Well	6,500.0	6,344.6	922.5	897.4	36.660	ES
EXIST VERT ROUKEMA PM C5-12 - Wellbore #1 - Well	6,527.0	6,371.6	922.5	897.4	36.812	CC
EXIST VERT SITZMAN 4-7I4 - Wellbore #1 - Design #1	6,259.3	6,039.8	8,474.9	8,331.2	58.956	CC, ES
EXIST VERT SITZMAN 4-7I4 - Wellbore #1 - Design #1	8,200.0	6,756.0	9,954.3	9,781.3	57.566	SF
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	6,259.3	6,060.8	8,871.2	8,845.1	340.279	ES
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	6,261.6	6,062.5	8,871.2	8,854.0	516.791	CC
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	7,800.0	6,750.0	9,982.6	9,949.9	305.446	SF
EXIST VERT SLEDGE C9-28 - Wellbore #1 - Design #1	6,259.3	6,071.8	7,420.7	7,278.6	52.217	CC, ES
EXIST VERT SLEDGE C9-28 - Wellbore #1 - Design #1	9,200.0	6,788.0	9,926.0	9,727.8	50.096	SF
EXIST VERT SLEDGE C9-29 - Wellbore #1 - Design #1	6,259.3	6,090.8	6,091.7	5,949.6	42.863	CC, ES
EXIST VERT SLEDGE C9-29 - Wellbore #1 - Design #1	10,600.0	6,807.0	9,979.2	9,743.2	42.283	SF
EXIST VERT SMITH-REEVES 42-5 - Wellbore #1 - Well	6,259.3	6,100.0	4,831.3	4,805.3	185.173	ES
EXIST VERT SMITH-REEVES 42-5 - Wellbore #1 - Well	6,263.3	6,100.0	4,831.3	4,814.2	281.625	CC

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well HAROLD 6X-234
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-234	**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 SMITH-REEVES 42-5 - Wellbore #1 - Well	11,798.1	6,550.0	9,634.2	9,498.0	70.717	SF
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	9,011.3	6,900.0	2,322.4	2,261.3	38.042	CC
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	9,100.0	6,900.0	2,324.1	2,260.7	36.687	ES
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	11,500.0	6,796.4	3,403.0	3,274.5	26.491	SF
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #	7,731.2	6,900.0	2,244.1	2,212.8	71.638	CC
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #	7,800.0	6,900.0	2,245.2	2,212.6	68.948	ES
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #	11,798.1	6,950.0	4,644.6	4,508.2	34.059	SF
EXIST VERT WILMOTH C4-23 - Wellbore #1 - Wellbore	6,259.3	6,152.7	8,728.4	8,702.9	342.517	ES
EXIST VERT WILMOTH C4-23 - Wellbore #1 - Wellbore	6,269.4	6,161.5	8,728.3	8,710.2	482.670	CC
EXIST VERT WILMOTH C4-23 - Wellbore #1 - Wellbore	7,900.0	6,800.0	9,947.0	9,912.6	288.965	SF
EXIST VERT WILMOTH C4-24 - Wellbore #1 - Wellbore	6,259.4	6,050.9	7,506.4	7,480.8	292.602	CC, ES
EXIST VERT WILMOTH C4-24 - Wellbore #1 - Wellbore	9,100.0	6,581.9	9,945.9	9,885.7	165.001	SF
EXIST VERT WILMOTH C5-20 - Wellbore #1 - Wellbore	6,183.4	5,991.1	1,696.6	1,674.5	76.773	CC, ES
EXIST VERT WILMOTH C5-20 - Wellbore #1 - Wellbore	11,798.1	6,842.1	6,029.7	5,893.3	44.179	SF
EXIST VERT WILMOTH C5-6 - Wellbore #1 - Wellbore #	6,192.1	5,969.2	2,810.1	2,789.5	135.890	CC
EXIST VERT WILMOTH C5-6 - Wellbore #1 - Wellbore #	6,229.3	6,007.8	2,810.3	2,786.9	120.031	ES
EXIST VERT WILMOTH C5-6 - Wellbore #1 - Wellbore #	11,798.1	6,779.5	7,071.3	6,934.7	51.758	SF
EXIST VERT WILMOTH C9-27 - Wellbore #1 - Wellbore	6,259.3	6,041.8	8,640.9	8,616.4	351.865	ES
EXIST VERT WILMOTH C9-27 - Wellbore #1 - Wellbore	6,260.2	6,042.7	8,640.9	8,622.2	460.530	CC
EXIST VERT WILMOTH C9-27 - Wellbore #1 - Wellbore	8,000.0	6,797.2	9,967.7	9,931.2	272.673	SF
JUDY 6D-212 - ORIGINAL WELLBORE - PROPOSAL #1	6,600.0	7,624.3	1,077.5	1,019.2	18.484	SF
JUDY 6D-212 - ORIGINAL WELLBORE - PROPOSAL #1	7,050.0	7,306.8	1,018.5	968.0	20.175	ES
JUDY 6D-212 - ORIGINAL WELLBORE - PROPOSAL #1	7,124.4	7,236.6	1,017.9	968.7	20.695	CC
JUDY 6D-312 - ORIGINAL WELLBORE - PROPOSAL #1	6,800.0	7,607.0	789.9	735.0	14.390	SF
JUDY 6D-312 - ORIGINAL WELLBORE - PROPOSAL #1	7,250.0	7,204.8	745.9	698.5	15.755	ES
JUDY 6D-312 - ORIGINAL WELLBORE - PROPOSAL #1	7,291.9	7,165.8	745.6	698.7	15.883	CC
JUDY 6S-202 - ORIGINAL WELLBORE - PROPOSAL #1	6,450.0	7,647.6	1,679.7	1,620.0	28.130	SF
JUDY 6S-202 - ORIGINAL WELLBORE - PROPOSAL #1	7,000.0	7,319.6	1,607.5	1,556.2	31.355	ES
JUDY 6S-202 - ORIGINAL WELLBORE - PROPOSAL #1	7,097.3	7,229.0	1,606.7	1,557.2	32.401	CC
JUDY 6S-204 - ORIGINAL WELLBORE - PROPOSAL #2	7,364.7	7,564.5	1,656.6	1,599.4	28.965	CC
JUDY 6S-204 - ORIGINAL WELLBORE - PROPOSAL #2	11,798.1	11,976.9	1,657.6	1,385.9	6.100	ES, SF
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	263.8	271.8	1,929.8	1,928.9	2,081.206	CC
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	300.0	300.0	1,929.8	1,928.7	1,799.959	ES
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	11,000.0	6,350.0	3,945.6	3,820.2	31.473	SF
JUDY 6S-214 - ORIGINAL WELLBORE - PROPOSAL #2	363.8	371.8	1,841.3	1,840.0	1,337.437	CC
JUDY 6S-214 - ORIGINAL WELLBORE - PROPOSAL #2	500.0	500.0	1,841.8	1,839.8	937.283	ES
JUDY 6S-214 - ORIGINAL WELLBORE - PROPOSAL #2	11,798.1	12,041.6	2,218.6	1,947.2	8.173	SF
JUDY 6S-234 - ORIGINAL WELLBORE - PROPOSAL #2	7,377.2	7,549.2	1,155.9	1,098.9	20.280	CC
JUDY 6S-234 - ORIGINAL WELLBORE - PROPOSAL #2	11,798.1	11,957.3	1,157.2	885.6	4.260	ES, SF
JUDY 6S-302 - ORIGINAL WELLBORE - PROPOSAL #1	7,150.0	7,237.5	1,848.3	1,800.0	38.290	ES
JUDY 6S-302 - ORIGINAL WELLBORE - PROPOSAL #1	7,241.7	7,151.7	1,847.7	1,800.4	39.109	CC
JUDY 6S-302 - ORIGINAL WELLBORE - PROPOSAL #1	9,800.0	6,423.3	2,836.7	2,742.9	30.248	SF
JUDY 6S-314 - ORIGINAL WELLBORE - PROPOSAL #2	463.8	471.8	1,827.2	1,825.4	1,000.503	CC
JUDY 6S-314 - ORIGINAL WELLBORE - PROPOSAL #2	11,798.1	12,096.0	1,972.5	1,701.3	7.273	ES, SF
JUDY 6S-332 - ORIGINAL WELLBORE - PROPOSAL #1	6,550.0	7,692.3	1,406.1	1,347.4	23.944	SF
JUDY 6S-332 - ORIGINAL WELLBORE - PROPOSAL #1	7,150.0	7,247.6	1,328.2	1,279.6	27.332	ES
JUDY 6S-332 - ORIGINAL WELLBORE - PROPOSAL #1	7,254.2	7,148.0	1,327.3	1,280.0	28.066	CC
JUDY 6S-334 - ORIGINAL WELLBORE - PROPOSAL #2	6,209.5	6,323.4	1,395.5	1,339.7	24.978	CC
JUDY 6S-334 - ORIGINAL WELLBORE - PROPOSAL #2	11,798.1	12,050.7	1,397.6	1,126.1	5.149	ES, SF
JUDY 6X-314 - ORIGINAL WELLBORE - PROPOSAL #2	6,284.3	6,403.3	830.4	774.2	14.781	CC
JUDY 6X-314 - ORIGINAL WELLBORE - PROPOSAL #2	11,798.1	12,008.3	833.6	563.0	3.081	ES, SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well HAROLD 6X-234
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-234	**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
SE SE SEC. 6 T4N R64W 6th P.M.						
HAROLD 6X-202 - ORIGINAL WELLBORE - PROPOSA	266.3	267.3	102.0	101.1	110.513	CC
HAROLD 6X-202 - ORIGINAL WELLBORE - PROPOSA	300.0	300.0	102.0	100.9	95.148	ES
HAROLD 6X-202 - ORIGINAL WELLBORE - PROPOSA	7,000.0	7,383.4	499.0	453.6	10.988	SF
HAROLD 6X-204 - ORIGINAL WELLBORE - PROPOSA	366.3	367.3	29.1	27.8	21.237	CC
HAROLD 6X-204 - ORIGINAL WELLBORE - PROPOSA	400.0	401.0	29.1	27.6	19.128	ES
HAROLD 6X-204 - ORIGINAL WELLBORE - PROPOSA	11,798.1	11,897.9	550.5	280.2	2.037	SF
HAROLD 6X-232 - ORIGINAL WELLBORE - PROPOSA	466.3	467.3	72.9	71.0	39.988	CC
HAROLD 6X-232 - ORIGINAL WELLBORE - PROPOSA	500.0	500.0	72.9	70.9	36.967	ES
HAROLD 6X-232 - ORIGINAL WELLBORE - PROPOSA	7,150.0	7,203.2	126.0	81.7	2.847	SF
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSA	366.3	367.3	87.4	86.1	63.701	CC
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSA	400.0	400.0	87.4	85.9	57.463	ES
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSA	7,350.0	7,092.4	178.0	135.5	4.192	SF
HAROLD 6X-304 - ORIGINAL WELLBORE - PROPOSA	466.3	467.3	14.6	12.8	8.000	CC
HAROLD 6X-304 - ORIGINAL WELLBORE - PROPOSA	11,798.1	11,897.9	264.4	4.1	1.016	Level 2, ES, SF
HAROLD 6X-334 - ORIGINAL WELLBORE - PROPOSA	600.0	600.0	18.2	15.8	7.525	CC
HAROLD 6X-334 - ORIGINAL WELLBORE - PROPOSA	11,798.1	11,847.3	239.9	-19.7	0.924	Level 1, ES, SF
HAROLD 6Y-202 - ORIGINAL WELLBORE - PROPOSA	266.5	267.5	43.7	42.8	47.324	CC
HAROLD 6Y-202 - ORIGINAL WELLBORE - PROPOSA	400.0	401.0	43.8	42.2	28.916	ES
HAROLD 6Y-202 - ORIGINAL WELLBORE - PROPOSA	1,000.0	1,000.5	60.9	56.8	14.790	SF
HAROLD 6Y-214 - ORIGINAL WELLBORE - PROPOSA	400.0	400.0	32.8	31.3	21.545	CC
HAROLD 6Y-214 - ORIGINAL WELLBORE - PROPOSA	500.0	499.8	33.0	31.0	16.858	ES
HAROLD 6Y-214 - ORIGINAL WELLBORE - PROPOSA	11,798.1	11,773.0	539.2	269.6	2.000	SF
HAROLD 6Y-304 - ORIGINAL WELLBORE - PROPOSA	300.0	300.0	47.4	46.3	44.174	CC, ES
HAROLD 6Y-304 - ORIGINAL WELLBORE - PROPOSA	11,798.1	11,848.9	771.0	502.2	2.868	SF
HAROLD 6Y-312 - ORIGINAL WELLBORE - PROPOSA	266.5	267.5	58.3	57.4	63.098	CC
HAROLD 6Y-312 - ORIGINAL WELLBORE - PROPOSA	500.0	500.7	58.7	56.8	30.021	ES
HAROLD 6Y-312 - ORIGINAL WELLBORE - PROPOSA	7,050.0	7,401.5	502.1	457.3	11.207	SF
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	6,201.7	5,937.0	9,949.2	9,918.0	318.960	CC
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	6,229.3	5,937.0	9,949.3	9,913.9	280.714	ES
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	6,259.3	5,937.0	9,949.7	9,914.2	280.451	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 SITZMAN 2 - Wellbore #1 - Wellbore #1	6,259.3	6,045.6	9,734.5	9,708.4	372.683	ES, SF
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	6,260.8	6,046.9	9,734.5	9,717.5	571.652	CC
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	6,259.3	6,065.3	9,281.4	9,256.2	367.474	ES, SF
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	6,262.2	6,067.8	9,281.4	9,262.8	498.489	CC
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	6,200.9	5,876.4	9,536.8	9,519.1	538.373	CC
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	6,229.3	5,900.0	9,536.9	9,511.1	368.615	ES
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	6,259.3	5,928.0	9,537.3	9,511.4	368.138	SF
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	6,224.9	5,970.2	9,822.0	9,804.4	557.289	CC
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	6,229.3	5,972.9	9,822.0	9,797.0	391.764	ES
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	6,259.3	6,000.0	9,822.1	9,797.0	391.249	SF