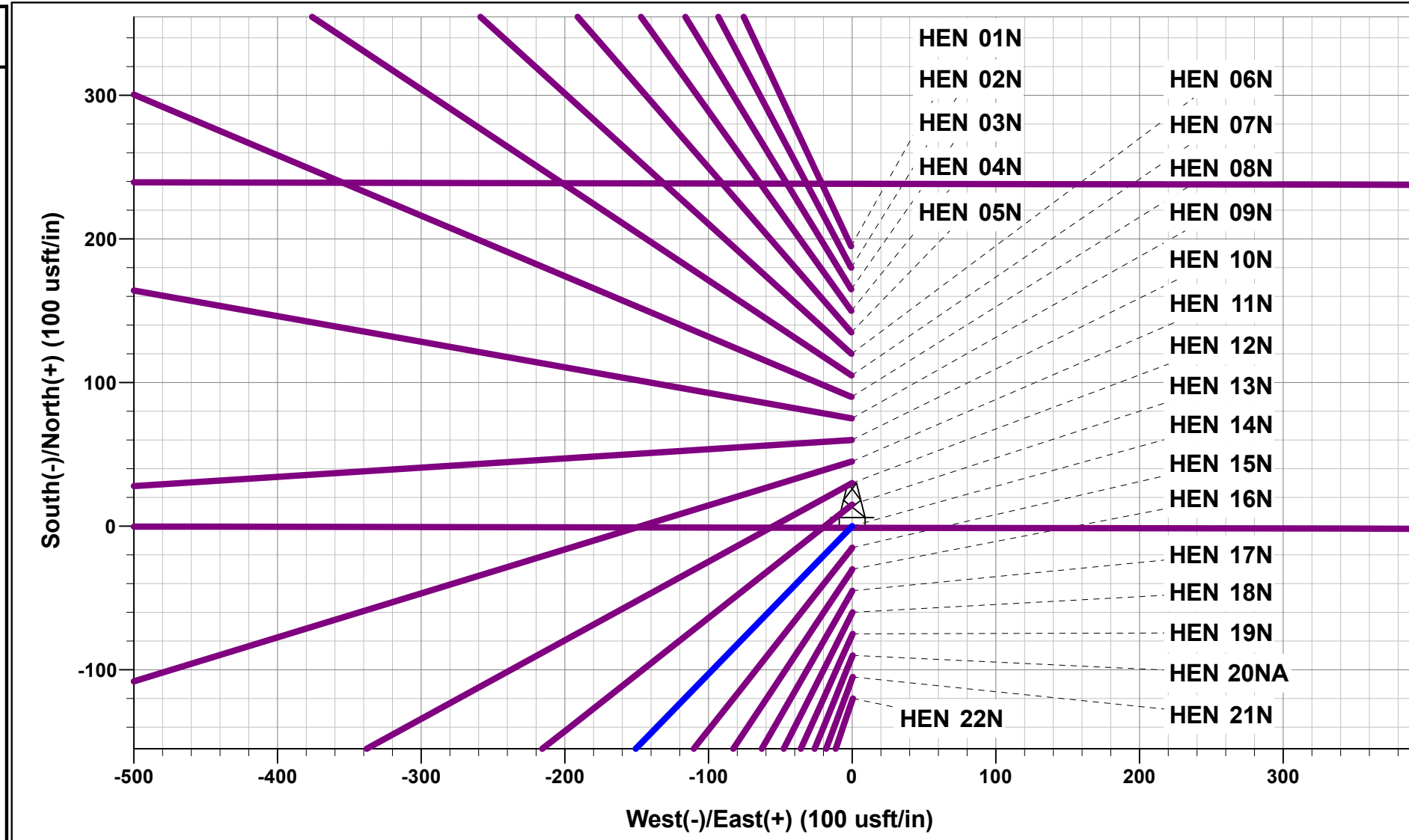




Project: WELD COUNTY, COLORADO (TRUE)
 Site: SW NE SEC. 8 T4N R64W 6th P.M. (HEN)
 Well: HEN 14N
 Wellbore: ORIGINAL WELLBORE
 Design: PROPOSAL #2

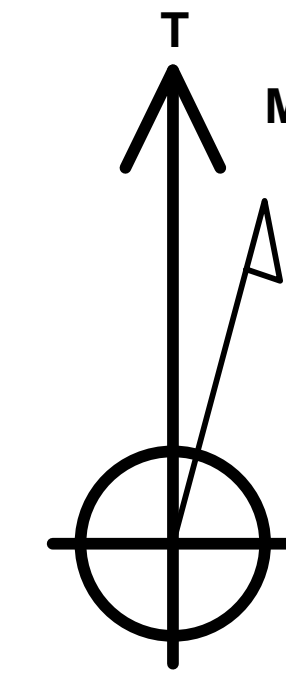
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 2279ft FNL & 2043ft FEL of Sec 8
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	START NUDDGE (2°/100ft BUR)
1992.01	17.84	224.18	1977.67	-98.80	-95.99	-81.74	137.75	EOB TO 17.84° INC
5454.01	17.84	224.18	5273.20	-859.49	-835.10	-711.11	1198.38	END OF TANGENT
6346.02	0.00	0.00	6150.86	-958.29	-931.09	-792.86	1336.13	EOD TO VERTICAL
6446.02	0.00	0.00	6250.86	-958.29	-931.09	-792.86	1336.13	KOP (8°/100ft BUR)
7383.53	75.00	90.10	6942.67	-959.22	-400.26	-266.78	1866.96	EP: 2038ft FSL & 2440ft FEL of Sec 8
7581.80	90.86	90.10	6967.00	-959.56	-204.12	-72.40	2063.10	HZ LANDING POINT
14908.23	90.86	90.10	6857.03	-972.40	7121.47	7187.55	9388.70	BHL: 2038ft FSL & 200ft FEL of Sec 9



PROPOSED LOCAL COORDINATES:

SHL: 2279ft FNL & 2043ft FEL of Sec 8
 EP: 2038ft FSL & 2440ft FEL of Sec 8
 BHL: 2038ft FSL & 200ft FEL of Sec 9

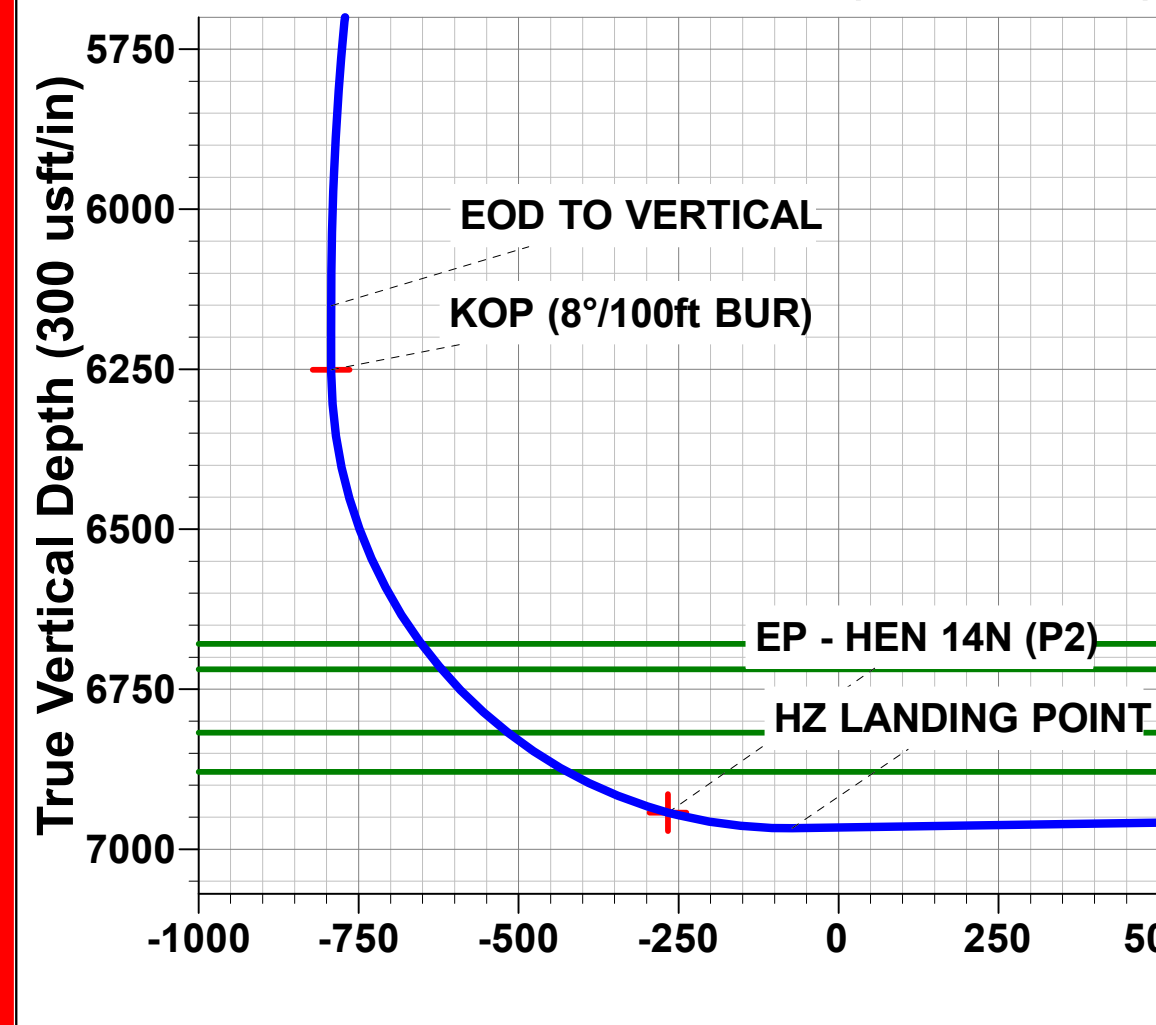
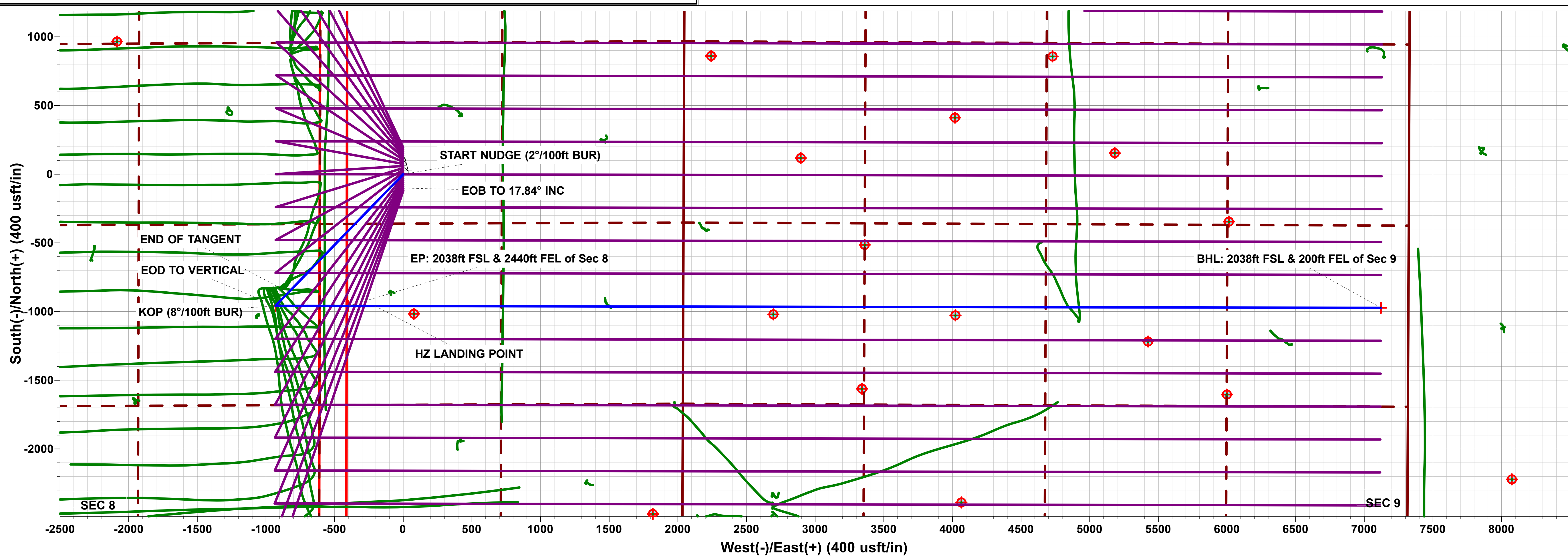
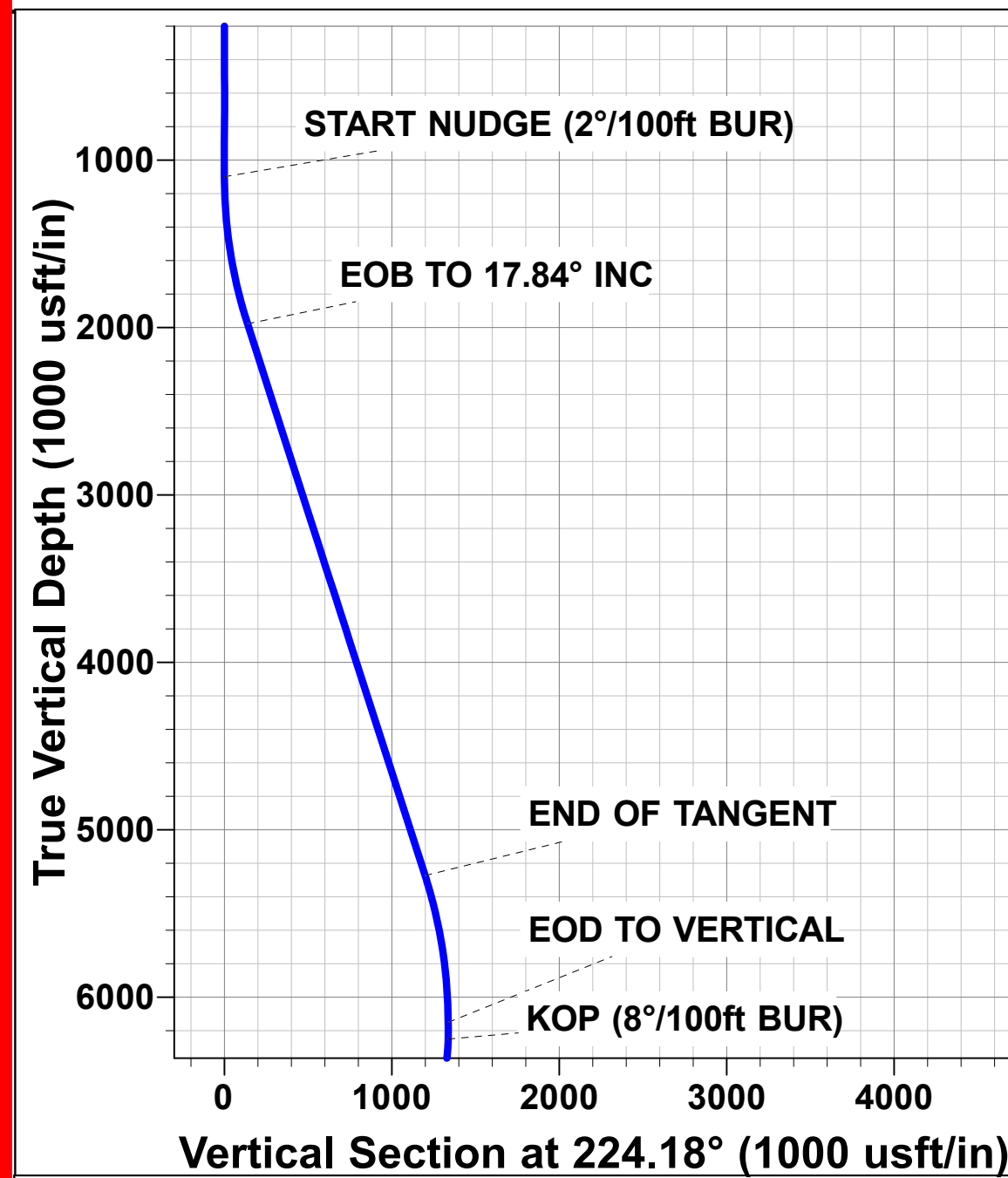


Azimuths to True North
 Magnetic North: 7.76°

Magnetic Field
 Strength: 51952.3nT
 Dip Angle: 66.63°
 Date: 2021-04-21
 Model: IGRF2020

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL - HEN 14N (P2)	6857.00	-972.58	7121.47	1362742.63	3265763.19	40.325208	-104.546802
EP - HEN 14N (P2)	6942.67	-959.22	-400.26	1362677.30	3258242.05	40.325248	-104.573778
KOP - HEN 14N (P2)	6250.86	-958.29	-931.09	1362672.68	3257711.26	40.325250	-104.575682





PDC ENERGY

**WELD COUNTY, COLORADO (TRUE)
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)
HEN 14N**

**ORIGINAL WELLBORE
PROPOSAL #2**

Anticollision Summary Report

19 June, 2022



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HEN 14N
Project:	WELD COUNTY, COLORADO (TRUE)	TVD Reference:	KB 23ft @ 4802.00usft
Reference Site:	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	MD Reference:	KB 23ft @ 4802.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HEN 14N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	Database 1
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 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 3,280.83usft	Error Surface:	Ellipsoid Separation
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	2022-06-19		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	14,908.23	PROPOSAL #2 (ORIGINAL WELLBORE)	MWD	MWD - Standard

Summary						
Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (usft)	Measured Depth (usft)	Between Centres (usft)	Between Ellipses (usft)		
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
ABDN DD ALTER C 16-28D - Wellbore #1 - Wellbore #1	12,340.82	7,307.55	2,032.76	1,847.15	10.952	CC
ABDN DD ALTER C 16-28D - Wellbore #1 - Wellbore #1	12,400.00	7,307.43	2,033.62	1,845.95	10.836	ES
ABDN DD ALTER C 16-28D - Wellbore #1 - Wellbore #1	12,700.00	7,306.85	2,064.25	1,868.70	10.556	SF
ABDN DD ALTER C 16-29D - ORIGINAL WELLBORE - W	11,192.88	7,031.37	2,094.56	1,961.47	15.738	CC
ABDN DD ALTER C 16-29D - ORIGINAL WELLBORE - W	11,300.00	7,006.00	2,097.55	1,960.97	15.357	ES
ABDN DD ALTER C 16-29D - ORIGINAL WELLBORE - W	11,700.00	7,006.00	2,155.18	2,008.83	14.726	SF
ABDN DD ALTER C 16-29D - SIDETRACK - SIDETRAC	10,910.26	7,011.26	1,827.95	1,706.20	15.014	CC
ABDN DD ALTER C 16-29D - SIDETRACK - SIDETRAC	11,000.00	7,014.51	1,830.15	1,705.68	14.703	ES
ABDN DD ALTER C 16-29D - SIDETRACK - SIDETRAC	11,300.00	7,025.56	1,868.99	1,737.49	14.213	SF
ABDN HZ FRANKLIN C08-62HNX - ORIGINAL WELLBO	8,625.26	10,756.00	1,434.10	1,268.89	8.680	CC, ES
ABDN HZ FRANKLIN C08-62HNX - ORIGINAL WELLBO	8,800.00	10,756.00	1,444.71	1,276.57	8.592	SF
ABDN HZ FRANKLIN C08-62HNX - SIDETRACK - SIDE	8,634.82	10,803.00	1,321.17	1,155.59	7.979	CC, ES
ABDN HZ FRANKLIN C08-62HNX - SIDETRACK - SIDE	8,700.00	10,803.00	1,322.78	1,156.03	7.933	SF
ABDN VERT CONQUEST SWD 1-8 - Wellbore #1 - Des	9,607.13	6,849.60	1,510.03	1,301.74	7.250	CC, ES
ABDN VERT CONQUEST SWD 1-8 - Wellbore #1 - Des	9,800.00	6,846.70	1,522.29	1,308.92	7.134	SF
ABDN VERT COX 8-1 - Wellbore #1 - Wellbore #1	751.29	717.30	2,040.73	2,038.78	1,045.863	CC
ABDN VERT COX 8-1 - Wellbore #1 - Wellbore #1	800.00	762.69	2,040.77	2,038.71	990.249	ES
ABDN VERT COX 8-1 - Wellbore #1 - Wellbore #1	8,400.00	7,118.17	3,225.03	3,188.11	87.341	SF
ABDN VERT COX PM C 8-4 - Wellbore #1 - Wellbore #1	3,957.64	3,915.74	2,978.81	2,960.86	165.906	CC
ABDN VERT COX PM C 8-4 - Wellbore #1 - Wellbore #1	4,300.00	4,246.50	2,979.97	2,959.82	147.886	ES
ABDN VERT COX PM C 8-4 - Wellbore #1 - Wellbore #1	6,550.00	6,473.26	3,044.73	3,014.80	101.713	SF
ABDN VERT COX PM C 8-5 - Wellbore #1 - Wellbore #1	6,455.64	6,276.94	2,288.12	2,257.70	75.229	CC, ES
ABDN VERT COX PM C 8-5 - Wellbore #1 - Wellbore #1	6,500.00	6,323.80	2,289.15	2,258.71	75.195	SF
ABDN VERT GEHRING 8-1514 - Wellbore #1 - Wellbore	8,208.38	6,888.87	983.17	945.46	26.073	CC, ES
ABDN VERT GEHRING 8-1514 - Wellbore #1 - Wellbore	8,600.00	6,891.45	1,058.29	1,013.27	23.507	SF
ABDN VERT GEHRING C 8-10X - Wellbore #1 - Wellbor	7,718.88	6,930.15	96.11	68.09	3.430	CC, ES, SF
ABDN VERT HAGEN 9-16 - Wellbore #1 - Design #1	14,244.15	6,735.00	1,567.07	1,233.03	4.691	CC
ABDN VERT HAGEN 9-16 - Wellbore #1 - Design #1	14,300.00	6,734.16	1,568.06	1,232.36	4.671	ES
ABDN VERT HAGEN 9-16 - Wellbore #1 - Design #1	14,400.00	6,732.66	1,574.80	1,236.85	4.660	SF
ABDN VERT HEISER 1 - Wellbore #1 - Design #1	7,863.54	6,918.77	56.29	-101.33	0.357	Level 3, CC, ES, SF
ABDN VERT LEVI C 5-15 - Wellbore #1 - Wellbore #1	100.00	67.75	3,065.17	3,065.02	10,000.000	CC
ABDN VERT LEVI C 5-15 - Wellbore #1 - Wellbore #1	200.00	162.20	3,065.36	3,064.87	6,257.328	ES
ABDN VERT LEVI C 5-15 - Wellbore #1 - Wellbore #1	2,200.00	2,109.09	3,264.87	3,258.62	521.742	SF
ABDN VERT REINICK 1 - Wellbore #1 - Wellbore #1	14,014.73	6,732.38	1,592.71	1,398.54	8.203	CC, ES
ABDN VERT REINICK 1 - Wellbore #1 - Wellbore #1	14,200.00	6,728.96	1,603.44	1,406.43	8.139	SF
ABDN VERT REINICK 2 - Wellbore #1 - Wellbore #1	13,092.07	6,747.37	2,536.40	2,367.74	15.039	CC
ABDN VERT REINICK 2 - Wellbore #1 - Wellbore #1	13,200.00	6,746.73	2,538.69	2,367.49	14.829	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 HEN 14N
Project:	WELD COUNTY, COLORADO (TRUE)	TVD Reference:	KB 23ft @ 4802.00usft
Reference Site:	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	MD Reference:	KB 23ft @ 4802.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HEN 14N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	Database 1
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
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
ABDN VERT REINICK 2 - Wellbore #1 - Wellbore #1	13,500.00	6,745.00	2,568.99	2,392.49	14.555	SF
ABDN VERT REINICK 9-7 - Wellbore #1 - Design #1	12,967.19	6,787.17	1,122.62	823.17	3.749	CC
ABDN VERT REINICK 9-7 - Wellbore #1 - Design #1	13,000.00	6,786.67	1,123.10	823.04	3.743	ES, SF
ABDN VERT RICHARDSON 10-12 - Wellbore #1 - Wellb	14,908.23	6,707.91	911.23	878.38	27.733	CC, ES, SF
ABDN VERT RUFF 1 - Wellbore #1 - Design #1	100.00	70.33	1,625.50	1,624.57	1,749.193	CC
ABDN VERT RUFF 1 - Wellbore #1 - Design #1	1,200.00	1,170.38	1,626.85	1,601.15	63.317	ES
ABDN VERT RUFF 1 - Wellbore #1 - Design #1	8,600.00	6,922.12	2,670.09	2,487.80	14.648	SF
ABDN VERT RYANN STATE C 16-27 - Wellbore #1 - We	13,689.21	6,765.74	2,244.97	2,059.73	12.119	CC
ABDN VERT RYANN STATE C 16-27 - Wellbore #1 - We	13,800.00	6,771.21	2,247.69	2,059.29	11.930	ES
ABDN VERT RYANN STATE C 16-27 - Wellbore #1 - We	14,100.00	6,786.01	2,282.15	2,087.69	11.735	SF
ABDN VERT RYDGREN 8-1 - Wellbore #1 - Wellbore #1	6,452.18	6,286.10	1,703.77	1,678.83	68.315	CC, ES
ABDN VERT RYDGREN 8-1 - Wellbore #1 - Wellbore #1	6,500.00	6,330.26	1,705.41	1,680.42	68.244	SF
ABDN VERT SLEDGE C 9-28 - Wellbore #1 - Design #1	12,460.22	6,825.78	3,001.10	2,714.96	10.488	CC
ABDN VERT SLEDGE C 9-28 - Wellbore #1 - Design #1	12,500.00	6,825.18	3,001.36	2,714.23	10.453	ES
ABDN VERT SLEDGE C 9-28 - Wellbore #1 - Design #1	13,000.00	6,817.67	3,049.24	2,752.07	10.261	SF
ABDN VERT SLEDGE C 9-29 - Wellbore #1 - Design #1	11,121.74	6,866.87	3,056.83	2,806.94	12.233	CC
ABDN VERT SLEDGE C 9-29 - Wellbore #1 - Design #1	11,200.00	6,865.69	3,057.83	2,805.99	12.142	ES
ABDN VERT SLEDGE C 9-29 - Wellbore #1 - Design #1	11,700.00	6,858.19	3,111.03	2,848.68	11.858	SF
ABDN VERT SMITH 1 - Wellbore #1 - Design #1	10,481.35	6,879.48	2,571.10	2,338.54	11.056	CC
ABDN VERT SMITH 1 - Wellbore #1 - Design #1	10,500.00	6,879.20	2,571.16	2,338.15	11.034	ES
ABDN VERT SMITH 1 - Wellbore #1 - Design #1	11,000.00	6,871.69	2,622.88	2,379.47	10.776	SF
ABDN VERT SMITH 2 - Wellbore #1 - Design #1	11,814.22	6,846.47	2,540.83	2,272.21	9.459	CC
ABDN VERT SMITH 2 - Wellbore #1 - Design #1	11,900.00	6,845.18	2,542.27	2,271.59	9.392	ES
ABDN VERT SMITH 2 - Wellbore #1 - Design #1	12,200.00	6,840.68	2,569.94	2,293.32	9.291	SF
ABDN VERT SMITH 3 - Wellbore #1 - Design #1	11,802.51	6,833.94	1,378.66	1,110.63	5.144	CC, ES
ABDN VERT SMITH 3 - Wellbore #1 - Design #1	11,900.00	6,832.47	1,382.10	1,112.21	5.121	SF
ABDN VERT STATE 16-214 - Wellbore #1 - Wellbore #1	12,847.43	6,755.17	2,929.34	2,766.97	18.041	CC
ABDN VERT STATE 16-214 - Wellbore #1 - Wellbore #1	12,900.00	6,754.27	2,929.81	2,765.88	17.872	ES
ABDN VERT STATE 16-214 - Wellbore #1 - Wellbore #1	13,600.00	6,742.78	3,024.44	2,845.29	16.881	SF
ABDN VERT THEA C 09-32 - Wellbore #1 - Wellbore #1	9,940.20	6,868.25	609.58	527.95	7.467	CC, ES
ABDN VERT THEA C 09-32 - Wellbore #1 - Wellbore #1	10,000.00	6,866.45	612.51	530.09	7.432	SF
EXIST DD ALTER C 09-24D - Wellbore #1 - Wellbore #1	12,549.92	7,334.02	693.82	498.22	3.547	CC, ES, SF
EXIST DD ALTER C 09-33D - Wellbore #1 - Wellbore #1	9,763.18	6,991.19	698.07	603.64	7.392	CC
EXIST DD ALTER C 09-33D - Wellbore #1 - Wellbore #1	9,800.00	6,990.55	699.04	603.03	7.281	ES
EXIST DD ALTER C 09-33D - Wellbore #1 - Wellbore #1	9,900.00	6,988.80	711.35	612.23	7.177	SF
EXIST DD BURMAN C 04-33D - Wellbore #1 - Wellbore						Out of range
EXIST DD BURMAN C 05-23D - Wellbore #1 - Wellbore						Out of range
EXIST DD BURMAN C05-24D - Wellbore #1 - Wellbore #						Out of range
EXIST DD NGL C1C - Wellbore #1 - Wellbore #1	100.00	21.89	3,204.56	3,204.45	10,000.000	CC
EXIST DD NGL C1C - Wellbore #1 - Wellbore #1	900.00	801.40	3,205.26	3,202.43	1,132.375	ES
EXIST DD NGL C1C - Wellbore #1 - Wellbore #1	2,000.00	1,317.00	3,280.14	3,273.04	462.093	SF
EXIST DD RUFF C 08-27D - Wellbore #1 - Wellbore #1	700.00	673.00	2,005.27	2,003.09	919.619	CC
EXIST DD RUFF C 08-27D - Wellbore #1 - Wellbore #1	1,000.00	965.00	2,006.35	2,002.92	585.201	ES
EXIST DD RUFF C 08-27D - Wellbore #1 - Wellbore #1	9,300.00	6,952.00	3,275.42	3,198.31	42.476	SF
EXIST DD SLEDGE C 9-30D - Wellbore #1 - Wellbore #1	700.00	655.00	3,179.27	3,177.11	1,471.691	CC
EXIST DD SLEDGE C 9-30D - Wellbore #1 - Wellbore #1	1,109.03	1,073.73	3,180.06	3,176.13	809.127	ES
EXIST DD SLEDGE C 9-30D - Wellbore #1 - Wellbore #1	1,800.00	1,768.01	3,258.19	3,251.19	465.255	SF
EXIST HZ CHALLENGER 1N - ORIGINAL WELLBORE -	0.00	0.00	1,252.71			
EXIST HZ CHALLENGER 1N - ORIGINAL WELLBORE -	200.00	188.00	1,252.88	1,252.38	2,518.934	ES
EXIST HZ CHALLENGER 1N - ORIGINAL WELLBORE -	7,700.00	6,600.36	3,263.55	3,220.06	75.035	SF
EXIST HZ CHALLENGER 1N - SIDETRACK - SIDETRA	0.00	0.00	1,252.71			
EXIST HZ CHALLENGER 1N - SIDETRACK - SIDETRA	200.00	188.00	1,252.88	1,252.38	2,518.934	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 HEN 14N
Project:	WELD COUNTY, COLORADO (TRUE)	TVD Reference:	KB 23ft @ 4802.00usft
Reference Site:	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	MD Reference:	KB 23ft @ 4802.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HEN 14N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	Database 1
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 NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST HZ CHALLENGER 1N - SIDETRACK - SIDETRA	7,700.00	6,600.36	3,263.55	3,220.06	75.035	SF
EXIST HZ CHALLENGER 2N - Wellbore #1 - Wellbore #	311.29	302.76	1,240.19	1,239.16	1,200.352	CC
EXIST HZ CHALLENGER 2N - Wellbore #1 - Wellbore #	400.00	377.58	1,240.50	1,239.12	895.987	ES
EXIST HZ CHALLENGER 2N - Wellbore #1 - Wellbore #	8,500.00	6,566.00	3,263.03	3,206.74	57.968	SF
EXIST HZ CHALLENGER 3N - Wellbore #1 - Wellbore #	213.10	204.30	1,229.53	1,228.94	2,066.798	CC
EXIST HZ CHALLENGER 3N - Wellbore #1 - Wellbore #	500.00	481.18	1,229.84	1,228.02	676.276	ES
EXIST HZ CHALLENGER 3N - Wellbore #1 - Wellbore #	8,900.00	6,376.00	3,238.57	3,179.55	54.875	SF
EXIST HZ CHALLENGER 4N - Wellbore #1 - Wellbore #	0.00	0.00	1,218.77			
EXIST HZ CHALLENGER 4N - Wellbore #1 - Wellbore #	100.00	87.25	1,218.89	1,218.72	7,126.105	ES
EXIST HZ CHALLENGER 4N - Wellbore #1 - Wellbore #	8,900.00	6,470.00	2,982.42	2,925.16	52.081	SF
EXIST HZ CHALLENGER 5N - Wellbore #1 - Wellbore #	391.31	382.55	1,206.14	1,204.76	874.205	CC
EXIST HZ CHALLENGER 5N - Wellbore #1 - Wellbore #	1,300.00	1,290.75	1,206.55	1,201.30	230.042	ES
EXIST HZ CHALLENGER 5N - Wellbore #1 - Wellbore #	8,700.00	6,411.98	2,701.35	2,648.52	51.133	SF
EXIST HZ CHALLENGER 6N - Wellbore #1 - Wellbore #	790.04	781.63	1,195.20	1,192.08	383.967	CC
EXIST HZ CHALLENGER 6N - Wellbore #1 - Wellbore #	1,000.00	985.72	1,195.79	1,191.76	296.855	ES
EXIST HZ CHALLENGER 6N - Wellbore #1 - Wellbore #	8,300.00	6,469.00	2,302.18	2,255.67	49.508	SF
EXIST HZ CHALLENGER 7N - Wellbore #1 - Wellbore #	3,244.69	3,349.91	1,111.22	1,092.91	60.687	CC
EXIST HZ CHALLENGER 7N - Wellbore #1 - Wellbore #	3,300.00	3,397.50	1,111.46	1,092.76	59.440	ES
EXIST HZ CHALLENGER 7N - Wellbore #1 - Wellbore #	6,900.00	6,747.93	1,615.33	1,578.11	43.401	SF
EXIST HZ CHALLENGER 8N - Wellbore #1 - Wellbore #	3,906.89	3,906.17	982.75	960.48	44.137	CC
EXIST HZ CHALLENGER 8N - Wellbore #1 - Wellbore #	3,900.00	4,003.48	983.34	960.40	42.859	ES
EXIST HZ CHALLENGER 8N - Wellbore #1 - Wellbore #	6,900.00	6,673.87	1,333.75	1,297.64	36.936	SF
EXIST HZ CHALLENGER 9N - Wellbore #1 - Wellbore #	3,987.83	4,074.13	788.24	764.15	32.708	CC
EXIST HZ CHALLENGER 9N - Wellbore #1 - Wellbore #	4,000.00	4,083.38	788.27	764.10	32.609	ES
EXIST HZ CHALLENGER 9N - Wellbore #1 - Wellbore #	6,900.00	6,687.21	1,103.97	1,066.60	29.544	SF
EXIST HZ FRANKLIN C17-69HN - Wellbore #1 - Wellbor	8,049.64	10,197.00	1,946.63	1,811.08	14.361	CC
EXIST HZ FRANKLIN C17-69HN - Wellbore #1 - Wellbor	8,800.00	10,846.00	1,958.94	1,787.77	11.445	ES
EXIST HZ FRANKLIN C17-69HN - Wellbore #1 - Wellbor	9,000.00	10,846.00	1,979.43	1,804.15	11.293	SF
EXIST HZ HAROLD 6X-232 - Wellbore #1 - Wellbore #1						Out of range
EXIST HZ HAROLD 6X-302 - Wellbore #1 - Wellbore #1						Out of range
EXIST HZ HAROLD 6Y-202 - Wellbore #1 - Wellbore #1						Out of range
EXIST HZ HAROLD 6Y-312 - Wellbore #1 - Wellbore #1						Out of range
EXIST HZ JAGGED 10N - Wellbore #1 - Wellbore #1	4,895.17	4,619.18	1,086.69	1,056.46	35.956	CC
EXIST HZ JAGGED 10N - Wellbore #1 - Wellbore #1	4,900.00	4,622.48	1,086.69	1,056.43	35.916	ES
EXIST HZ JAGGED 10N - Wellbore #1 - Wellbore #1	6,300.00	6,116.83	1,213.51	1,172.24	29.406	SF
EXIST HZ JAGGED 11N - Wellbore #1 - Wellbore #1	4,141.02	3,808.84	1,169.11	1,145.13	48.746	CC
EXIST HZ JAGGED 11N - Wellbore #1 - Wellbore #1	4,400.00	4,066.76	1,170.56	1,144.57	45.044	ES
EXIST HZ JAGGED 11N - Wellbore #1 - Wellbore #1	6,000.00	5,601.90	1,304.62	1,265.61	33.443	SF
EXIST HZ JAGGED 12N - Wellbore #1 - Wellbore #1	0.00	0.00	1,314.93			
EXIST HZ JAGGED 12N - Wellbore #1 - Wellbore #1	2,937.28	2,582.72	1,315.08	1,299.36	83.627	ES
EXIST HZ JAGGED 12N - Wellbore #1 - Wellbore #1	8,600.00	6,365.00	2,340.84	2,275.98	36.090	SF
EXIST HZ JAGGED 1N - Wellbore #1 - Wellbore #1	3,715.45	3,644.57	256.12	229.37	9.576	CC, ES
EXIST HZ JAGGED 1N - Wellbore #1 - Wellbore #1	3,800.00	3,719.89	258.90	231.55	9.465	SF
EXIST HZ JAGGED 2N - Wellbore #1 - Wellbore #1	3,964.97	3,877.21	179.76	151.86	6.443	CC, ES
EXIST HZ JAGGED 2N - Wellbore #1 - Wellbore #1	4,000.00	3,908.39	180.46	152.27	6.400	SF
EXIST HZ JAGGED 3N - Wellbore #1 - Wellbore #1	4,206.24	4,108.84	28.89	-0.18	0.994	Level 3, CC, ES, SF
EXIST HZ JAGGED 4N - Wellbore #1 - Wellbore #1	6,788.84	6,658.52	81.76	44.86	2.216	CC
EXIST HZ JAGGED 4N - Wellbore #1 - Wellbore #1	6,800.00	6,662.59	82.42	44.58	2.178	ES, SF
EXIST HZ JAGGED 5N - Wellbore #1 - Wellbore #1	6,800.00	6,674.56	154.75	117.64	4.170	SF
EXIST HZ JAGGED 5N - Wellbore #1 - Wellbore #1	6,826.43	6,683.11	152.69	116.49	4.218	CC, ES
EXIST HZ JAGGED 6N - Wellbore #1 - Wellbore #1	6,750.00	6,646.36	392.90	354.18	10.149	SF
EXIST HZ JAGGED 6N - Wellbore #1 - Wellbore #1	6,835.18	6,690.47	385.61	348.44	10.375	CC, 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 HEN 14N
Project:	WELD COUNTY, COLORADO (TRUE)	TVD Reference:	KB 23ft @ 4802.00usft
Reference Site:	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	MD Reference:	KB 23ft @ 4802.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HEN 14N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	Database 1
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
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST HZ JAGGED 7N - Wellbore #1 - Wellbore #1	5,433.83	5,200.99	597.44	562.44	17.068	CC
EXIST HZ JAGGED 7N - Wellbore #1 - Wellbore #1	5,500.00	5,269.16	597.81	562.03	16.710	ES
EXIST HZ JAGGED 7N - Wellbore #1 - Wellbore #1	6,200.00	6,003.88	628.64	587.59	15.315	SF
EXIST HZ JAGGED 8N - Wellbore #1 - Wellbore #1	5,529.73	5,294.83	720.78	685.22	20.269	CC, ES
EXIST HZ JAGGED 8N - Wellbore #1 - Wellbore #1	6,300.00	6,101.55	774.13	733.22	18.924	SF
EXIST HZ JAGGED 9N - Wellbore #1 - Wellbore #1	5,312.53	5,052.30	912.94	879.31	27.143	CC, ES
EXIST HZ JAGGED 9N - Wellbore #1 - Wellbore #1	6,000.00	5,748.56	959.65	920.33	24.409	SF
EXIST HZ MARK ALTER C16-79HN - Wellbore #1 - Well	9,959.30	6,300.00	1,678.82	1,588.15	18.517	CC
EXIST HZ MARK ALTER C16-79HN - Wellbore #1 - Well	10,000.00	6,300.00	1,679.31	1,587.52	18.295	ES
EXIST HZ MARK ALTER C16-79HN - Wellbore #1 - Well	10,400.00	6,300.00	1,735.70	1,635.38	17.303	SF
EXIST HZ NORTHRUP C 08-73HN - Wellbore #1 - Wellb	8,513.71	9,588.28	68.59	30.13	1.784	CC, ES, SF
EXIST HZ NORTHRUP C 08-75HN - Wellbore #1 - Wellb	7,208.12	9,909.07	27.02	-7.29	0.787	Level 3, CC, SF
EXIST HZ NORTHRUP C 08-75HN - Wellbore #1 - Wellb	7,250.00	9,908.82	50.50	-13.08	0.794	Level 3, ES
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	14,908.23	6,475.00	3,159.31	2,929.07	13.722	CC, ES, SF
EXIST HZ SANDY HILLS PC C17-67HN - Wellbore #1 -						Out of range
EXIST HZ STOCKLEY C15-79HN - Wellbore #1 - Wellbo	14,908.23	13,352.94	302.84	154.44	2.041	CC, ES, SF
EXIST HZ ZANE ALTER C 09-21 - Wellbore #1 - Wellbor	12,709.34	6,874.92	100.71	-50.90	0.664	Level 3, CC, ES, SF
EXIST VERT ALTER C 9-23 - Wellbore #1 - Design #1	13,786.89	6,756.96	633.17	311.49	1.968	CC
EXIST VERT ALTER C 9-23 - Wellbore #1 - Design #1	13,800.00	6,756.77	633.31	311.14	1.966	ES, SF
EXIST VERT ALTER C 9-25 - Wellbore #1 - Design #1	11,128.91	6,819.38	596.07	346.98	2.393	CC, ES
EXIST VERT ALTER C 9-25 - Wellbore #1 - Design #1	11,200.00	6,818.31	600.29	349.42	2.393	SF
EXIST VERT AMANDA ALTER C 9-20 - Wellbore #1 - De	11,146.46	6,834.35	451.34	201.53	1.807	CC, ES, SF
EXIST VERT BARTON C 15-29 - Wellbore #1 - Design #	14,908.23	6,711.42	2,276.94	1,985.80	7.821	CC, ES, SF
EXIST VERT BENNER 1 - Wellbore #1 - Wellbore #1	9,266.52	6,851.64	1,236.09	1,172.57	19.458	CC
EXIST VERT BENNER 1 - Wellbore #1 - Wellbore #1	9,300.00	6,850.62	1,236.55	1,172.27	19.237	ES
EXIST VERT BENNER 1 - Wellbore #1 - Wellbore #1	9,500.00	6,844.62	1,257.93	1,190.10	18.545	SF
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #						Out of range
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT CONNELL C 4-25 - Wellbore #1 - Wellbore						Out of range
EXIST VERT COX 8-19D - Wellbore #1 - Design #1	4,024.57	3,900.49	2,167.76	2,072.52	22.761	CC
EXIST VERT COX 8-19D - Wellbore #1 - Design #1	4,600.00	4,448.25	2,174.92	2,065.06	19.798	ES
EXIST VERT COX 8-19D - Wellbore #1 - Design #1	6,750.00	6,533.80	2,276.33	2,117.32	14.316	SF
EXIST VERT COX PM C 8-6 - Wellbore #1 - Wellbore #1	3,635.23	3,553.02	1,233.45	1,217.57	77.647	CC
EXIST VERT COX PM C 8-6 - Wellbore #1 - Wellbore #1	3,700.00	3,614.76	1,233.61	1,217.32	75.731	ES
EXIST VERT COX PM C 8-6 - Wellbore #1 - Wellbore #1	6,500.00	6,255.31	1,452.69	1,425.13	52.700	SF
EXIST VERT CPC HARLESS 17-1 - Wellbore #1 - Wellb	9,067.40	6,785.96	2,609.43	2,551.00	44.658	CC
EXIST VERT CPC HARLESS 17-1 - Wellbore #1 - Wellb	9,100.00	6,785.50	2,609.63	2,550.32	44.002	ES
EXIST VERT CPC HARLESS 17-1 - Wellbore #1 - Wellb	10,400.00	6,769.57	2,929.95	2,843.23	33.788	SF
EXIST VERT EMBRICK C 10-19 - Wellbore #1 - Wellbor	14,908.23	6,757.63	2,317.41	2,137.92	12.911	CC, ES, SF
EXIST VERT ENGLAND 8-3-17 - Wellbore #1 - Wellbore	6,452.20	6,269.83	1,384.05	1,356.18	49.656	CC, ES
EXIST VERT ENGLAND 8-3-17 - Wellbore #1 - Wellbore	6,500.00	6,319.10	1,385.56	1,357.65	49.643	SF
EXIST VERT ENGLAND 8-35 - Wellbore #1 - Wellbore #	6,449.11	6,253.07	1,234.71	1,216.19	66.654	CC
EXIST VERT ENGLAND 8-35 - Wellbore #1 - Wellbore #	6,450.00	6,253.95	1,234.71	1,216.19	66.649	ES
EXIST VERT ENGLAND 8-35 - Wellbore #1 - Wellbore #	6,550.00	6,349.80	1,240.72	1,222.02	66.337	SF
EXIST VERT GEHRING 1 - Wellbore #1 - Wellbore #1	9,126.93	6,867.51	1,267.28	1,207.37	21.153	CC, ES
EXIST VERT GEHRING 1 - Wellbore #1 - Wellbore #1	9,500.00	6,866.56	1,321.05	1,252.86	19.371	SF
EXIST VERT GEHRING 8-9I4 - Wellbore #1 - Wellbore #	9,256.56	6,893.12	57.50	-5.12	0.918	Level 3, CC, ES, SF
EXIST VERT HAGEN 9-10 - Wellbore #1 - Design #1	13,211.93	6,774.05	248.51	-56.95	0.814	Level 3, CC, ES, SF
EXIST VERT HAGEN 9-15 - Wellbore #1 - Design #1	12,937.33	6,768.01	1,568.21	1,269.97	5.258	CC
EXIST VERT HAGEN 9-15 - Wellbore #1 - Design #1	13,000.00	6,767.06	1,569.46	1,269.36	5.230	ES
EXIST VERT HAGEN 9-15 - Wellbore #1 - Design #1	13,100.00	6,765.56	1,576.62	1,274.16	5.213	SF
EXIST VERT HAGEN 9-9 - Wellbore #1 - Wellbore #1	14,118.79	6,766.27	186.03	-4.19	0.978	Level 3, CC, ES, SF

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 HEN 14N
Project:	WELD COUNTY, COLORADO (TRUE)	TVD Reference:	KB 23ft @ 4802.00usft
Reference Site:	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	MD Reference:	KB 23ft @ 4802.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HEN 14N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	Database 1
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
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST VERT HARLESS PM C 17-2 - Wellbore #1 - Desi	7,823.04	6,899.48	2,881.56	2,715.07	17.308	CC
EXIST VERT HARLESS PM C 17-2 - Wellbore #1 - Desi	7,900.00	6,898.32	2,882.58	2,714.84	17.185	ES
EXIST VERT HARLESS PM C 17-2 - Wellbore #1 - Desi	8,900.00	6,883.31	3,076.19	2,887.53	16.306	SF
EXIST VERT JOHNSON 9-11 - Wellbore #1 - Design #1	11,808.61	6,807.09	60.34	-205.07	0.227	Level 3, CC, ES, SF
EXIST VERT JOHNSON 9-13 - Wellbore #1 - Wellbore #	10,521.82	6,873.43	1,359.51	1,262.15	13.964	CC
EXIST VERT JOHNSON 9-13 - Wellbore #1 - Wellbore #	10,600.00	6,872.85	1,361.75	1,262.10	13.665	ES
EXIST VERT JOHNSON 9-13 - Wellbore #1 - Wellbore #	10,800.00	6,871.35	1,387.67	1,283.69	13.345	SF
EXIST VERT MCCLINTOCK C 4-15 - Wellbore #1 - Well						Out of range
EXIST VERT NGL C1A - Wellbore #1 - Design #1	9,512.00	6,855.03	1,799.10	1,593.23	8.739	CC
EXIST VERT NGL C1A - Wellbore #1 - Design #1	9,600.00	6,853.71	1,801.25	1,592.94	8.647	ES
EXIST VERT NGL C1A - Wellbore #1 - Design #1	9,800.00	6,850.70	1,822.00	1,608.73	8.543	SF
EXIST VERT NGL C1B - Wellbore #1 - Design #1	9,406.79	6,862.61	1,606.93	1,403.73	7.908	CC, ES
EXIST VERT NGL C1B - Wellbore #1 - Design #1	9,700.00	6,858.21	1,633.46	1,422.89	7.757	SF
EXIST VERT REINICK 10-5 - Wellbore #1 - Wellbore #1	14,908.23	6,733.29	1,349.37	1,168.16	7.446	CC, ES, SF
EXIST VERT REINICK 1-10-4-64 - Wellbore #1 - Wellbo	14,908.23	6,751.51	2,810.00	2,600.21	13.394	CC, ES, SF
EXIST VERT REINICK 3 - Wellbore #1 - Wellbore #1	14,397.46	6,754.83	2,512.15	2,307.21	12.258	CC
EXIST VERT REINICK 3 - Wellbore #1 - Wellbore #1	14,500.00	6,754.71	2,514.25	2,306.91	12.127	ES
EXIST VERT REINICK 3 - Wellbore #1 - Wellbore #1	14,800.00	6,754.32	2,544.20	2,332.05	11.993	SF
EXIST VERT REINICK C 10-31 - Wellbore #1 - Wellbore	14,803.36	6,778.77	1,868.54	1,652.22	8.638	CC, ES
EXIST VERT REINICK C 10-31 - Wellbore #1 - Wellbore	14,908.23	6,778.34	1,871.66	1,653.19	8.567	SF
EXIST VERT REINICK C 9-18 - Wellbore #1 - Design #1	12,512.97	6,816.25	1,825.58	1,538.21	6.353	CC, ES
EXIST VERT REINICK C 9-18 - Wellbore #1 - Design #1	12,700.00	6,813.45	1,835.13	1,544.15	6.307	SF
EXIST VERT REINICK C 9-22 - Wellbore #1 - Design #1	13,799.15	6,766.68	625.17	302.98	1.940	CC
EXIST VERT REINICK C 9-22 - Wellbore #1 - Design #1	13,800.00	6,766.67	625.17	302.97	1.940	ES, SF
EXIST VERT REISTAD 1 - Wellbore #1 - Wellbore #1	100.00	53.32	3,248.69	3,248.55	10,000.000	CC, ES
EXIST VERT REISTAD 1 - Wellbore #1 - Wellbore #1	1,400.00	1,356.68	3,269.76	3,266.06	885.181	SF
EXIST VERT RICHARDSON 10-13 - Wellbore #1 - Desig	14,908.23	6,710.00	1,570.82	1,273.40	5.281	CC, ES, SF
EXIST VERT ROHR 15-414 - Wellbore #1 - Wellbore #1	14,908.23	6,710.66	2,718.55	2,513.90	13.284	CC, ES, SF
EXIST VERT ROHR C 15-19 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT RUFF 8-114 - Wellbore #1 - Wellbore #1	1,138.98	1,124.66	1,668.62	1,665.53	539.467	CC, ES
EXIST VERT RUFF 8-114 - Wellbore #1 - Wellbore #1	9,800.00	6,891.14	2,476.50	2,406.19	35.222	SF
EXIST VERT RUFF 8-714 - Wellbore #1 - Wellbore #1	348.56	326.49	553.31	552.36	584.033	CC
EXIST VERT RUFF 8-714 - Wellbore #1 - Wellbore #1	500.00	475.54	553.62	552.25	403.977	ES
EXIST VERT RUFF 8-714 - Wellbore #1 - Wellbore #1	8,800.00	6,872.34	1,510.62	1,462.93	31.678	SF
EXIST VERT RUFF C 8-1 - Wellbore #1 - Design #1	1,100.00	1,071.00	2,459.32	2,435.83	104.691	CC
EXIST VERT RUFF C 8-1 - Wellbore #1 - Design #1	1,200.00	1,170.98	2,461.07	2,435.36	95.741	ES
EXIST VERT RUFF C 8-1 - Wellbore #1 - Design #1	10,100.00	6,900.20	2,835.98	2,616.52	12.923	SF
EXIST VERT RYANN STATE C 16-1 - Wellbore #1 - Wel	14,235.59	6,592.98	2,764.33	2,563.85	13.789	CC
EXIST VERT RYANN STATE C 16-1 - Wellbore #1 - Wel	14,300.00	6,589.76	2,765.08	2,562.69	13.662	ES
EXIST VERT RYANN STATE C 16-1 - Wellbore #1 - Wel	14,800.00	6,564.48	2,821.28	2,608.20	13.240	SF
EXIST VERT RYDGREN 8-31 - Wellbore #1 - Wellbore #	6,327.05	6,097.33	160.31	141.85	8.683	CC, ES
EXIST VERT RYDGREN 8-31 - Wellbore #1 - Wellbore #	6,450.00	6,220.82	160.80	142.22	8.656	SF
EXIST VERT SLEDGE C 9-31 - Wellbore #1 - Design #1	10,025.72	6,876.95	1,824.52	1,604.41	8.289	CC
EXIST VERT SLEDGE C 9-31 - Wellbore #1 - Design #1	10,100.00	6,875.83	1,826.03	1,604.20	8.232	ES
EXIST VERT SLEDGE C 9-31 - Wellbore #1 - Design #1	10,300.00	6,872.83	1,845.01	1,619.26	8.173	SF
EXIST VERT SMITH 9-5 - Wellbore #1 - Design #1	10,680.15	6,856.74	1,082.91	845.38	4.559	CC
EXIST VERT SMITH 9-5 - Wellbore #1 - Design #1	10,700.00	6,856.45	1,083.09	845.14	4.552	ES
EXIST VERT SMITH 9-5 - Wellbore #1 - Design #1	10,800.00	6,854.95	1,089.52	850.02	4.549	SF
EXIST VERT SMITH C 9-19 - Wellbore #1 - Design #1	11,259.84	6,862.79	2,281.11	2,027.50	8.995	CC
EXIST VERT SMITH C 9-19 - Wellbore #1 - Design #1	11,300.00	6,862.19	2,281.46	2,026.88	8.962	ES
EXIST VERT SMITH C 9-19 - Wellbore #1 - Design #1	11,600.00	6,857.69	2,306.33	2,045.69	8.849	SF
EXIST VERT STATE 16-314 - Wellbore #1 - Design #1	11,795.14	6,793.02	2,491.75	2,224.74	9.332	CC
EXIST VERT STATE 16-314 - Wellbore #1 - Design #1	11,900.00	6,791.44	2,493.96	2,223.94	9.236	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 HEN 14N
Project:	WELD COUNTY, COLORADO (TRUE)	TVD Reference:	KB 23ft @ 4802.00usft
Reference Site:	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	MD Reference:	KB 23ft @ 4802.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HEN 14N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	Database 1
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
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST VERT STATE 16-314 - Wellbore #1 - Design #1	12,200.00	6,786.94	2,524.42	2,247.20	9.106	SF
EXIST VERT STATE 16-414 - Wellbore #1 - Design #1	11,072.96	6,811.34	3,161.26	2,913.84	12.777	CC
EXIST VERT STATE 16-414 - Wellbore #1 - Design #1	11,200.00	6,809.43	3,163.81	2,912.80	12.604	ES
EXIST VERT STATE 16-414 - Wellbore #1 - Design #1	11,800.00	6,800.43	3,243.77	2,978.50	12.228	SF
EXIST VERT VERN JOHNSON 1-A - Wellbore #1 - Desi	11,854.16	6,796.36	1,422.03	1,153.33	5.292	CC
EXIST VERT VERN JOHNSON 1-A - Wellbore #1 - Desi	11,900.00	6,795.67	1,422.77	1,152.68	5.268	ES
EXIST VERT VERN JOHNSON 1-A - Wellbore #1 - Desi	12,000.00	6,794.17	1,429.49	1,156.90	5.244	SF
EXIST VERT VERN JOHNSON 2 - Wellbore #1 - Design	10,482.33	6,844.49	55.56	-173.12	0.243	Level 3, CC, ES, SF
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore						Out of range
EXIST VERT WILMOTH C 4-23 - Wellbore #1 - Wellbore						Out of range
EXIST VERT WILMOTH C 4-24 - Wellbore #1 - Wellbore						Out of range
EXIST VERT WILMOTH C 9-27 - Wellbore #1 - Wellbore						Out of range
HEN 01N - ORIGINAL WELLBORE - PROPOSAL #2	300.00	300.00	194.98	193.91	181.860	CC, ES
HEN 01N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	15,025.68	3,117.12	2,681.38	7.154	SF
HEN 02N - ORIGINAL WELLBORE - PROPOSAL #2	400.00	400.00	180.01	178.48	118.295	CC, ES
HEN 02N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	15,014.50	2,875.87	2,440.09	6.599	SF
HEN 03N - ORIGINAL WELLBORE - PROPOSAL #2	500.00	500.00	165.00	163.02	83.703	CC, ES
HEN 03N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,882.22	2,637.78	2,202.17	6.055	SF
HEN 04N - ORIGINAL WELLBORE - PROPOSAL #2	600.00	600.00	149.98	147.56	61.957	CC, ES
HEN 04N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,884.91	2,396.56	1,960.55	5.497	SF
HEN 05N - ORIGINAL WELLBORE - PROPOSAL #2	700.00	700.00	134.98	132.11	47.026	CC, ES
HEN 05N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,762.94	2,158.66	1,723.03	4.955	SF
HEN 06N - ORIGINAL WELLBORE - PROPOSAL #2	716.33	717.33	120.00	117.06	40.736	CC
HEN 06N - ORIGINAL WELLBORE - PROPOSAL #2	800.00	800.00	120.01	116.69	36.148	ES
HEN 06N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,795.01	1,917.30	1,481.45	4.399	SF
HEN 07N - ORIGINAL WELLBORE - PROPOSAL #2	900.00	900.00	104.99	101.22	27.855	CC, ES
HEN 07N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,689.65	1,679.65	1,244.40	3.859	SF
HEN 08N - ORIGINAL WELLBORE - PROPOSAL #2	1,000.00	1,000.00	90.02	85.80	21.338	CC, ES
HEN 08N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,741.46	1,437.93	1,002.14	3.300	SF
HEN 09N - ORIGINAL WELLBORE - PROPOSAL #2	1,100.00	1,100.00	75.01	70.34	16.068	CC, ES
HEN 09N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,690.84	1,200.88	767.03	2.768	SF
HEN 10N - ORIGINAL WELLBORE - PROPOSAL #2	1,100.00	1,100.00	60.00	55.33	12.853	CC, ES
HEN 10N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,782.56	958.58	522.71	2.199	SF
HEN 11N - ORIGINAL WELLBORE - PROPOSAL #2	1,100.00	1,100.00	45.03	40.36	9.645	CC, ES
HEN 11N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,735.72	722.83	292.29	1.679	SF
HEN 12N - ORIGINAL WELLBORE - PROPOSAL #2	1,100.00	1,100.00	30.02	25.35	6.430	CC, ES
HEN 12N - ORIGINAL WELLBORE - PROPOSAL #2	14,905.50	14,838.98	479.13	44.26	1.102	Level 3, SF
HEN 13N - ORIGINAL WELLBORE - PROPOSAL #2	1,100.00	1,100.00	15.01	10.34	3.215	CC
HEN 13N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,795.33	249.65	-48.95	0.836	Level 3, ES, SF
HEN 15N - ORIGINAL WELLBORE - PROPOSAL #2	1,000.00	1,000.00	14.97	10.75	3.549	CC
HEN 15N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,877.26	251.11	-43.52	0.852	Level 3, ES, SF
HEN 16N - ORIGINAL WELLBORE - PROPOSAL #2	900.00	900.00	29.95	26.18	7.945	CC, ES
HEN 16N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,965.04	479.31	46.60	1.108	Level 3, SF
HEN 17N - ORIGINAL WELLBORE - PROPOSAL #2	800.00	800.00	44.96	41.64	13.542	CC, ES
HEN 17N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	14,966.03	723.37	293.45	1.683	SF
HEN 18N - ORIGINAL WELLBORE - PROPOSAL #2	700.00	700.00	59.97	57.10	20.892	CC, ES
HEN 18N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	15,093.23	958.63	524.27	2.207	SF
HEN 19N - ORIGINAL WELLBORE - PROPOSAL #2	600.00	600.00	74.98	72.55	30.972	CC, ES
HEN 19N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	15,090.25	1,201.60	768.41	2.774	SF
HEN 20NA - ORIGINAL WELLBORE - PROPOSAL #2	500.00	499.00	89.95	87.98	45.683	CC, ES
HEN 20NA - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	15,111.10	1,444.19	1,011.64	3.339	SF

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 HEN 14N
Project:	WELD COUNTY, COLORADO (TRUE)	TVD Reference:	KB 23ft @ 4802.00usft
Reference Site:	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	MD Reference:	KB 23ft @ 4802.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	HEN 14N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	Database 1
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 NE SEC. 8 T4N R64W 6th P.M. (HEN)						
HEN 21N - ORIGINAL WELLBORE - PROPOSAL #2	400.00	399.00	104.96	103.44	69.078	CC, ES
HEN 21N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	15,320.70	1,677.54	1,243.40	3.864	SF
HEN 22N - ORIGINAL WELLBORE - PROPOSAL #2	300.00	298.00	119.97	118.90	112.367	CC, ES
HEN 22N - ORIGINAL WELLBORE - PROPOSAL #2	14,908.23	15,355.99	1,919.50	1,485.81	4.426	SF