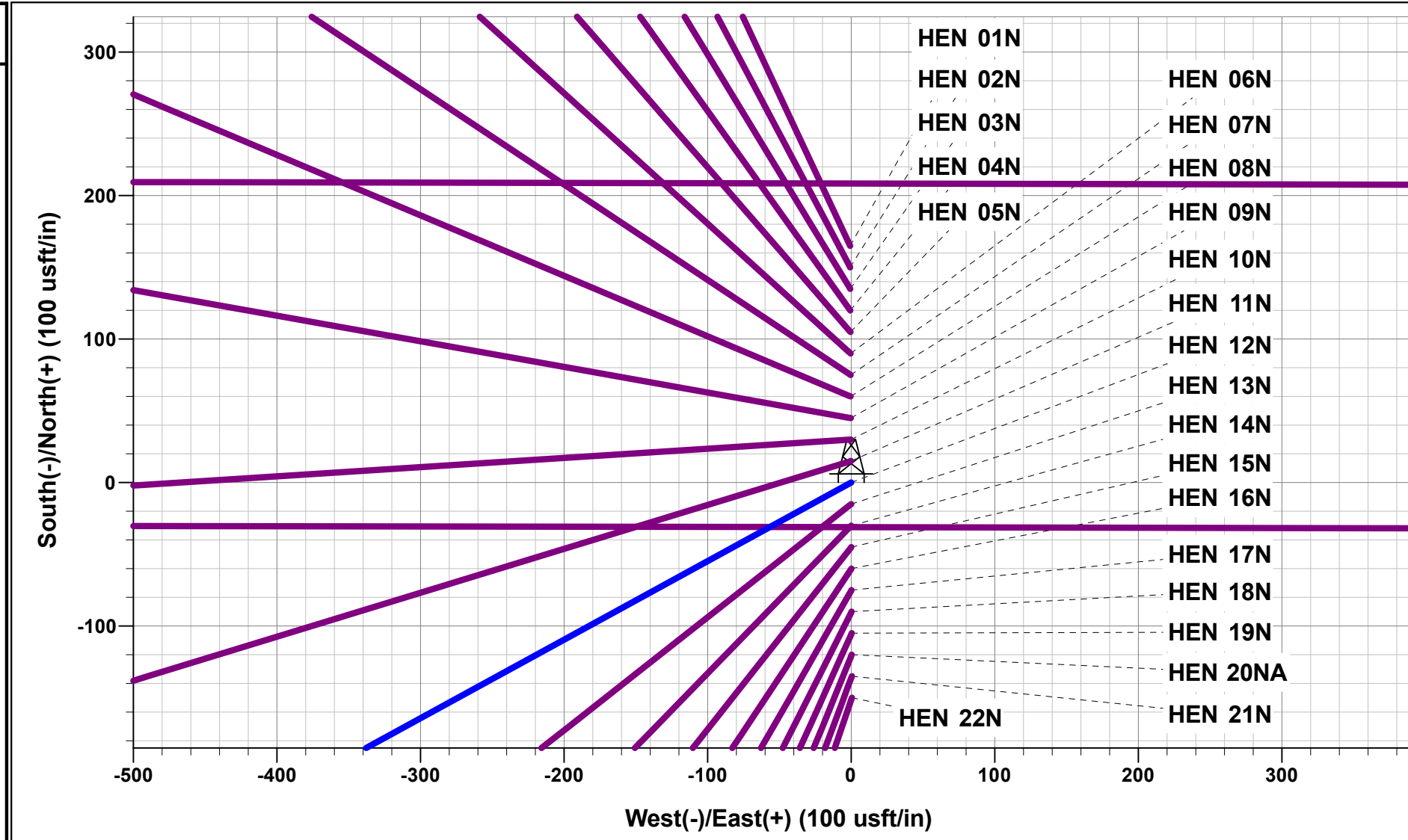




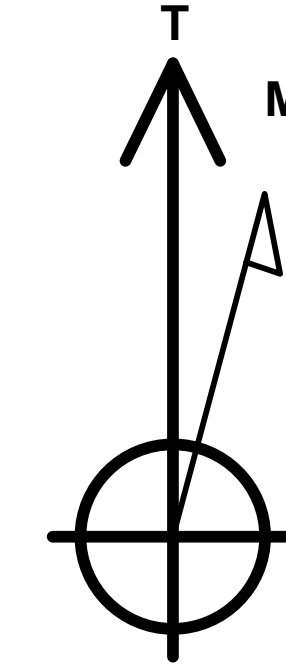
Project: WELD COUNTY, COLORADO (TRUE)  
 Site: SW NE SEC. 8 T4N R64W 6th P.M. (HEN)  
 Well: HEN 12N  
 Wellbore: ORIGINAL WELLBORE  
 Design: PROPOSAL #2

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: 2249ft FNL & 2043ft FEL of Sec 8
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	START NUDDGE (2°/100ft BUR)
2019.85	14.40	241.29	2012.30	-43.22	-78.91	-75.53	89.97	EOB TO 14.4° INC
5557.20	14.40	241.29	5438.56	-465.70	-850.30	-813.90	969.48	END OF TANGENT
6277.05	0.00	0.00	6150.86	-508.92	-929.21	-889.43	1059.45	EOD TO VERTICAL
6377.05	0.00	0.00	6250.86	-508.92	-929.21	-889.43	1059.45	KOP (8°/100ft BUR)
7314.56	75.00	90.10	6942.67	-509.85	-398.38	-359.96	1590.28	EP: 2517ft FSL & 2440ft FEL of Sec 8
7512.83	90.86	90.10	6967.00	-510.19	-202.24	-164.32	1786.42	HZ LANDING POINT
14839.84	90.86	90.10	6857.02	-523.03	7123.93	7143.10	9112.60	BHL: 2517ft FSL & 200ft FEL of Sec 9



PROPOSED LOCAL COORDINATES:  
 SHL: 2249ft FNL & 2043ft FEL of Sec 8  
 EP: 2517ft FSL & 2440ft FEL of Sec 8  
 BHL: 2517ft FSL & 200ft FEL of Sec 9

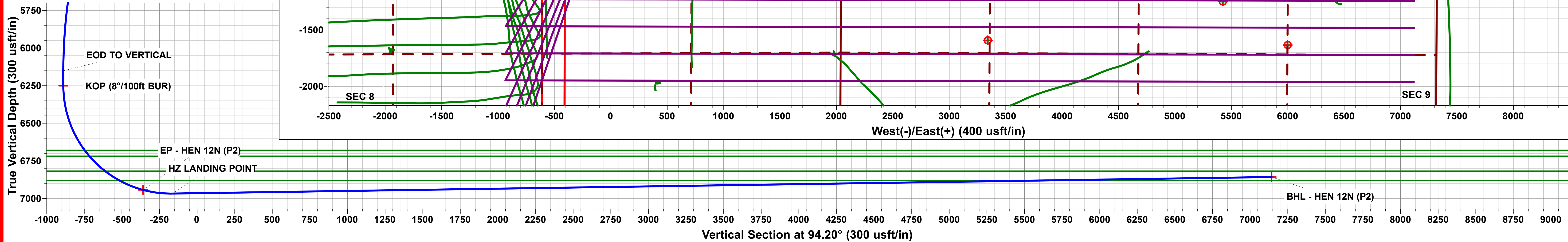
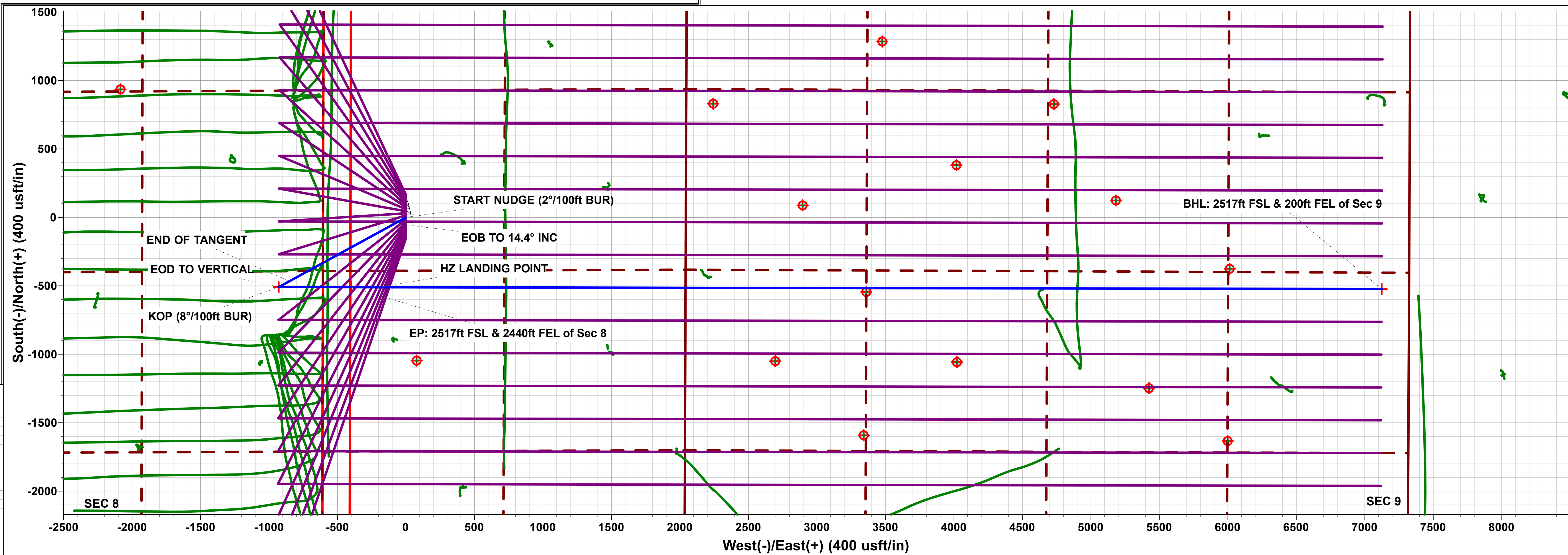
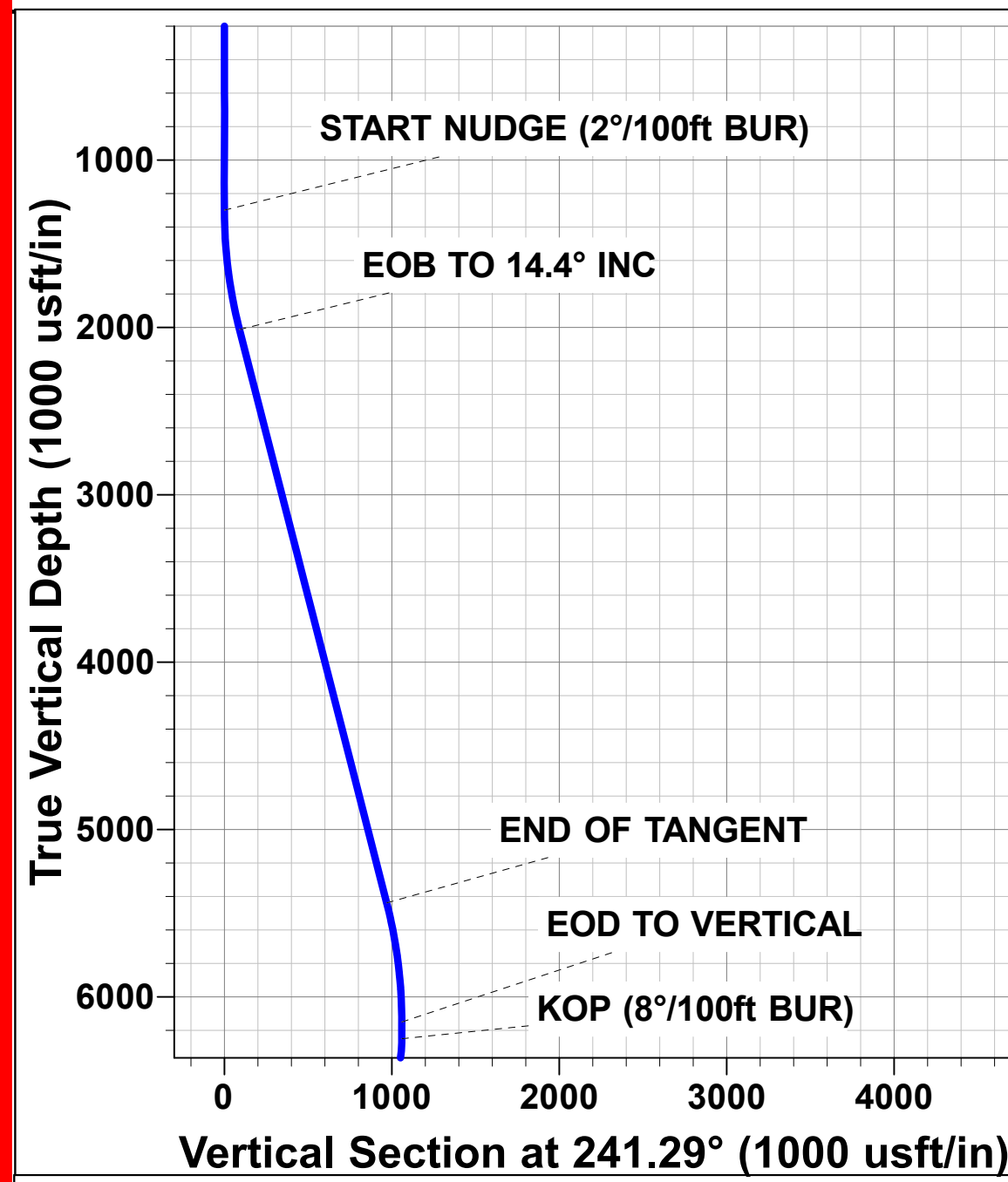


Azimuths to True North  
 Magnetic North: 7.76°

Magnetic Field  
 Strength: 51952.4nT  
 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 12N (P2)	6857.00	-523.31	7123.92	1363221.89	3265760.55	40.326524	-104.546793
EP - HEN 12N (P2)	6942.67	-509.85	-398.38	1363156.66	3258238.83	40.326564	-104.573772
KOP - HEN 12N (P2)	6250.86	-508.92	-929.21	1363152.04	3257708.04	40.326566	-104.575676





## **PDC ENERGY**

**WELD COUNTY, COLORADO (TRUE)  
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)  
HEN 12N**

**ORIGINAL WELLBORE  
PROPOSAL #2**

# **Anticollision Summary Report**

**19 June, 2022**



<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well HEN 12N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PROPOSAL #2		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD + Stations Interval 100.00usft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum centre distance of 3,280.83usft	<b>Error Surface:</b>	Ellipsoid Separation
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	2022-06-19		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	14,839.84	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	12,270.86	7,322.28	2,511.91	2,325.96	13.508	CC
ABDN DD ALTER C 16-28D - Wellbore #1 - Wellbore #1	12,300.00	7,322.20	2,512.08	2,325.17	13.440	ES
ABDN DD ALTER C 16-28D - Wellbore #1 - Wellbore #1	12,800.00	7,320.85	2,567.04	2,367.92	12.892	SF
ABDN DD ALTER C 16-29D - ORIGINAL WELLBORE - W	11,122.65	7,039.63	2,573.65	2,440.23	19.290	CC
ABDN DD ALTER C 16-29D - ORIGINAL WELLBORE - W	11,200.00	7,038.30	2,574.81	2,439.02	18.962	ES
ABDN DD ALTER C 16-29D - ORIGINAL WELLBORE - W	11,900.00	7,006.00	2,688.63	2,537.06	17.739	SF
ABDN DD ALTER C 16-29D - SIDETRACK - SIDETRAC	10,841.46	7,045.61	2,306.24	2,184.06	18.876	CC
ABDN DD ALTER C 16-29D - SIDETRACK - SIDETRAC	10,900.00	7,047.54	2,306.98	2,183.10	18.623	ES
ABDN DD ALTER C 16-29D - SIDETRACK - SIDETRAC	11,500.00	7,067.34	2,398.32	2,261.58	17.539	SF
ABDN HZ FRANKLIN C08-62HNX - ORIGINAL WELLBO	8,555.33	10,756.00	1,911.42	1,745.79	11.540	CC
ABDN HZ FRANKLIN C08-62HNX - ORIGINAL WELLBO	8,600.00	10,756.00	1,911.94	1,745.33	11.475	ES
ABDN HZ FRANKLIN C08-62HNX - ORIGINAL WELLBO	8,800.00	10,756.00	1,927.02	1,757.00	11.334	SF
ABDN HZ FRANKLIN C08-62HNX - SIDETRACK - SIDE	8,564.89	10,803.00	1,799.98	1,634.20	10.858	CC
ABDN HZ FRANKLIN C08-62HNX - SIDETRACK - SIDE	8,600.00	10,803.00	1,800.32	1,633.83	10.813	ES
ABDN HZ FRANKLIN C08-62HNX - SIDETRACK - SIDE	8,800.00	10,803.00	1,815.27	1,645.82	10.712	SF
ABDN VERT CONQUEST SWD 1-8 - Wellbore #1 - Des	9,537.20	6,849.61	1,989.42	1,780.91	9.541	CC
ABDN VERT CONQUEST SWD 1-8 - Wellbore #1 - Des	9,600.00	6,848.67	1,990.41	1,780.22	9.469	ES
ABDN VERT CONQUEST SWD 1-8 - Wellbore #1 - Des	9,900.00	6,844.17	2,022.22	1,804.97	9.308	SF
ABDN VERT COX 8-1 - Wellbore #1 - Wellbore #1	2,885.92	2,802.95	1,992.10	1,982.61	209.956	CC
ABDN VERT COX 8-1 - Wellbore #1 - Wellbore #1	3,000.00	2,911.89	1,992.34	1,982.25	197.447	ES
ABDN VERT COX 8-1 - Wellbore #1 - Wellbore #1	8,600.00	7,096.77	3,039.02	3,002.52	83.258	SF
ABDN VERT COX PM C 8-4 - Wellbore #1 - Wellbore #1	6,426.14	6,387.68	2,639.35	2,613.08	100.498	CC, ES
ABDN VERT COX PM C 8-4 - Wellbore #1 - Wellbore #1	6,450.00	6,414.91	2,639.56	2,613.29	100.453	SF
ABDN VERT COX PM C 8-5 - Wellbore #1 - Wellbore #1	6,385.65	6,273.38	2,020.55	1,996.72	84.774	CC, ES
ABDN VERT COX PM C 8-5 - Wellbore #1 - Wellbore #1	6,450.00	6,340.31	2,023.03	1,999.15	84.696	SF
ABDN VERT GEHRING 8-1514 - Wellbore #1 - Wellbore	8,138.46	6,890.31	1,462.56	1,424.72	38.659	CC
ABDN VERT GEHRING 8-1514 - Wellbore #1 - Wellbore	8,200.00	6,890.71	1,463.85	1,424.69	37.381	ES
ABDN VERT GEHRING 8-1514 - Wellbore #1 - Wellbore	8,800.00	6,894.91	1,605.21	1,555.20	32.100	SF
ABDN VERT GEHRING C 8-10X - Wellbore #1 - Wellbor	7,648.96	6,927.88	383.28	355.10	13.602	CC, ES
ABDN VERT GEHRING C 8-10X - Wellbore #1 - Wellbor	7,700.00	6,927.71	386.66	358.23	13.598	SF
ABDN VERT HAGEN 9-16 - Wellbore #1 - Design #1	14,174.23	6,735.02	2,046.46	1,712.14	6.121	CC
ABDN VERT HAGEN 9-16 - Wellbore #1 - Design #1	14,200.00	6,734.63	2,046.62	1,711.57	6.108	ES
ABDN VERT HAGEN 9-16 - Wellbore #1 - Design #1	14,400.00	6,731.63	2,058.87	1,719.29	6.063	SF
ABDN VERT HEISER 1 - Wellbore #1 - Design #1	7,793.62	6,918.78	535.68	368.06	3.196	CC
ABDN VERT HEISER 1 - Wellbore #1 - Design #1	7,800.00	6,918.69	535.72	368.02	3.195	ES, SF
ABDN VERT LEVI C 5-15 - Wellbore #1 - Wellbore #1	100.00	67.80	3,035.28	3,035.13	10,000.000	CC
ABDN VERT LEVI C 5-15 - Wellbore #1 - Wellbore #1	200.00	162.32	3,035.47	3,034.98	6,194.339	ES

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

<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well HEN 12N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
ABDN VERT LEVI C 5-15 - Wellbore #1 - Wellbore #1	3,000.00	2,951.70	3,278.83	3,269.39	347.231	SF
ABDN VERT REINICK 1 - Wellbore #1 - Wellbore #1	13,944.60	6,742.49	1,113.45	919.00	5.726	CC, ES
ABDN VERT REINICK 1 - Wellbore #1 - Wellbore #1	14,000.00	6,741.47	1,114.83	919.32	5.702	SF
ABDN VERT REINICK 2 - Wellbore #1 - Wellbore #1	13,022.07	6,756.50	2,057.12	1,888.18	12.177	CC
ABDN VERT REINICK 2 - Wellbore #1 - Wellbore #1	13,100.00	6,755.96	2,058.59	1,887.77	12.051	ES
ABDN VERT REINICK 2 - Wellbore #1 - Wellbore #1	13,300.00	6,754.59	2,075.81	1,901.34	11.898	SF
ABDN VERT REINICK 9-7 - Wellbore #1 - Design #1	12,897.26	6,787.18	643.23	343.52	2.146	CC
ABDN VERT REINICK 9-7 - Wellbore #1 - Design #1	12,900.00	6,787.14	643.24	343.47	2.146	ES, SF
ABDN VERT RICHARDSON 10-12 - Wellbore #1 - Wellb	14,839.84	6,690.01	1,102.77	990.73	9.843	CC, ES, SF
ABDN VERT RUFF 1 - Wellbore #1 - Design #1	100.00	70.33	1,595.59	1,594.66	1,716.979	CC
ABDN VERT RUFF 1 - Wellbore #1 - Design #1	1,400.00	1,370.38	1,596.55	1,566.38	52.914	ES
ABDN VERT RUFF 1 - Wellbore #1 - Design #1	8,300.00	6,925.58	2,149.95	1,972.17	12.094	SF
ABDN VERT RYANN STATE C 16-27 - Wellbore #1 - We	13,619.41	6,768.28	2,724.35	2,538.84	14.686	CC
ABDN VERT RYANN STATE C 16-27 - Wellbore #1 - We	13,700.00	6,772.25	2,725.54	2,537.78	14.516	ES
ABDN VERT RYANN STATE C 16-27 - Wellbore #1 - We	14,200.00	6,796.92	2,785.38	2,587.68	14.089	SF
ABDN VERT RYDGREN 8-1 - Wellbore #1 - Wellbore #1	6,383.33	6,286.56	1,789.07	1,771.64	102.643	CC, ES
ABDN VERT RYDGREN 8-1 - Wellbore #1 - Wellbore #1	6,500.00	6,391.32	1,798.46	1,780.85	102.121	SF
ABDN VERT SLEDGE C 9-28 - Wellbore #1 - Design #1	12,390.29	6,825.79	2,521.71	2,235.32	8.805	CC
ABDN VERT SLEDGE C 9-28 - Wellbore #1 - Design #1	12,500.00	6,824.14	2,524.09	2,234.97	8.730	ES
ABDN VERT SLEDGE C 9-28 - Wellbore #1 - Design #1	12,800.00	6,819.64	2,554.77	2,259.80	8.661	SF
ABDN VERT SLEDGE C 9-29 - Wellbore #1 - Design #1	11,051.82	6,866.88	2,577.43	2,327.31	10.305	CC
ABDN VERT SLEDGE C 9-29 - Wellbore #1 - Design #1	11,100.00	6,866.16	2,577.89	2,326.51	10.255	ES
ABDN VERT SLEDGE C 9-29 - Wellbore #1 - Design #1	11,500.00	6,860.15	2,616.10	2,356.11	10.062	SF
ABDN VERT SMITH 1 - Wellbore #1 - Design #1	10,411.42	6,879.49	2,091.71	1,858.92	8.986	CC
ABDN VERT SMITH 1 - Wellbore #1 - Design #1	10,500.00	6,878.16	2,093.58	1,858.59	8.909	ES
ABDN VERT SMITH 1 - Wellbore #1 - Design #1	10,700.00	6,875.16	2,111.51	1,872.24	8.825	SF
ABDN VERT SMITH 2 - Wellbore #1 - Design #1	11,744.30	6,846.49	2,061.43	1,792.57	7.667	CC
ABDN VERT SMITH 2 - Wellbore #1 - Design #1	11,800.00	6,845.65	2,062.19	1,791.93	7.630	ES
ABDN VERT SMITH 2 - Wellbore #1 - Design #1	12,000.00	6,842.65	2,077.23	1,802.83	7.570	SF
ABDN VERT SMITH 3 - Wellbore #1 - Design #1	11,732.58	6,833.95	899.27	630.99	3.352	CC, ES
ABDN VERT SMITH 3 - Wellbore #1 - Design #1	11,800.00	6,832.94	901.79	632.33	3.347	SF
ABDN VERT STATE 16-214 - Wellbore #1 - Wellbore #1						Out of range
ABDN VERT THEA C 09-32 - Wellbore #1 - Wellbore #1	9,870.28	6,867.99	130.19	48.35	1.591	CC, ES, SF
EXIST DD ALTER C 09-24D - Wellbore #1 - Wellbore #1	12,480.01	7,337.19	1,173.20	977.34	5.990	CC
EXIST DD ALTER C 09-24D - Wellbore #1 - Wellbore #1	12,500.00	7,337.26	1,173.37	977.18	5.981	ES, SF
EXIST DD ALTER C 09-33D - Wellbore #1 - Wellbore #1	9,693.11	6,999.00	1,177.39	1,082.65	12.427	CC
EXIST DD ALTER C 09-33D - Wellbore #1 - Wellbore #1	9,700.00	6,998.88	1,177.41	1,082.42	12.395	ES
EXIST DD ALTER C 09-33D - Wellbore #1 - Wellbore #1	10,000.00	6,993.71	1,216.72	1,113.94	11.838	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	3,229.34	3,229.23	10,000.000	CC
EXIST DD NGL C1C - Wellbore #1 - Wellbore #1	900.00	801.13	3,230.05	3,227.22	1,141.391	ES
EXIST DD NGL C1C - Wellbore #1 - Wellbore #1	1,600.00	1,128.00	3,273.72	3,268.63	642.601	SF
EXIST DD RUFF C 08-27D - Wellbore #1 - Wellbore #1	700.00	673.00	1,975.48	1,973.30	905.959	CC
EXIST DD RUFF C 08-27D - Wellbore #1 - Wellbore #1	1,000.00	965.00	1,976.56	1,973.13	576.514	ES
EXIST DD RUFF C 08-27D - Wellbore #1 - Wellbore #1	9,800.00	6,952.00	3,021.76	2,935.68	35.103	SF
EXIST DD SLEDGE C 9-30D - Wellbore #1 - Wellbore #1	9,681.70	6,951.85	2,996.89	2,901.75	31.500	CC
EXIST DD SLEDGE C 9-30D - Wellbore #1 - Wellbore #1	9,700.00	6,951.38	2,996.95	2,901.39	31.363	ES
EXIST DD SLEDGE C 9-30D - Wellbore #1 - Wellbore #1	10,800.00	6,924.34	3,198.60	3,083.76	27.852	SF
EXIST HZ CHALLENGER 1N - ORIGINAL WELLBORE -	0.00	0.00	1,230.05			
EXIST HZ CHALLENGER 1N - ORIGINAL WELLBORE -	200.00	188.00	1,230.22	1,229.72	2,473.369	ES

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

<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well HEN 12N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST HZ CHALLENGER 1N - ORIGINAL WELLBORE -	8,800.00	6,491.00	3,250.29	3,186.41	50.882	SF
EXIST HZ CHALLENGER 1N - SIDETRACK - SIDETRA	0.00	0.00	1,230.05			
EXIST HZ CHALLENGER 1N - SIDETRACK - SIDETRA	200.00	188.00	1,230.22	1,229.72	2,473.369	ES
EXIST HZ CHALLENGER 1N - SIDETRACK - SIDETRA	8,800.00	6,491.00	3,250.29	3,186.41	50.882	SF
EXIST HZ CHALLENGER 2N - Wellbore #1 - Wellbore #	306.24	297.69	1,217.72	1,216.71	1,203.874	CC
EXIST HZ CHALLENGER 2N - Wellbore #1 - Wellbore #	400.00	377.74	1,218.05	1,216.66	879.566	ES
EXIST HZ CHALLENGER 2N - Wellbore #1 - Wellbore #	9,000.00	6,471.00	3,161.72	3,097.91	49.551	SF
EXIST HZ CHALLENGER 3N - Wellbore #1 - Wellbore #	208.04	199.25	1,207.22	1,206.65	2,107.563	CC
EXIST HZ CHALLENGER 3N - Wellbore #1 - Wellbore #	449.60	441.24	1,207.41	1,205.78	742.935	ES
EXIST HZ CHALLENGER 3N - Wellbore #1 - Wellbore #	8,700.00	6,376.00	2,786.81	2,731.51	50.398	SF
EXIST HZ CHALLENGER 4N - Wellbore #1 - Wellbore #	0.00	0.00	1,196.60			
EXIST HZ CHALLENGER 4N - Wellbore #1 - Wellbore #	100.00	87.24	1,196.73	1,196.55	6,996.535	ES
EXIST HZ CHALLENGER 4N - Wellbore #1 - Wellbore #	8,300.00	6,509.79	2,298.87	2,250.10	47.137	SF
EXIST HZ CHALLENGER 5N - Wellbore #1 - Wellbore #	2,272.41	2,230.95	1,157.64	1,147.40	113.054	CC
EXIST HZ CHALLENGER 5N - Wellbore #1 - Wellbore #	2,300.00	2,255.26	1,157.70	1,147.28	111.033	ES
EXIST HZ CHALLENGER 5N - Wellbore #1 - Wellbore #	8,000.00	6,500.11	1,976.29	1,932.80	45.439	SF
EXIST HZ CHALLENGER 6N - Wellbore #1 - Wellbore #	3,088.06	3,062.09	1,131.49	1,115.69	71.580	CC
EXIST HZ CHALLENGER 6N - Wellbore #1 - Wellbore #	3,100.00	3,072.58	1,131.51	1,115.61	71.203	ES
EXIST HZ CHALLENGER 6N - Wellbore #1 - Wellbore #	6,850.00	6,682.55	1,398.45	1,362.33	38.709	SF
EXIST HZ CHALLENGER 7N - Wellbore #1 - Wellbore #	3,765.01	3,782.41	873.51	852.53	41.630	CC, ES
EXIST HZ CHALLENGER 7N - Wellbore #1 - Wellbore #	6,800.00	6,746.69	1,135.52	1,098.82	30.940	SF
EXIST HZ CHALLENGER 8N - Wellbore #1 - Wellbore #	4,233.77	4,261.92	684.78	660.36	28.047	CC, ES
EXIST HZ CHALLENGER 8N - Wellbore #1 - Wellbore #	6,800.00	6,687.64	854.39	818.47	23.780	SF
EXIST HZ CHALLENGER 9N - Wellbore #1 - Wellbore #	4,291.85	4,308.72	483.66	458.42	19.166	CC
EXIST HZ CHALLENGER 9N - Wellbore #1 - Wellbore #	4,300.00	4,314.70	483.68	458.40	19.130	ES
EXIST HZ CHALLENGER 9N - Wellbore #1 - Wellbore #	6,750.00	6,675.50	619.38	582.53	16.811	SF
EXIST HZ FRANKLIN C17-69HN - Wellbore #1 - Wellbor	7,980.03	10,197.00	2,425.76	2,290.16	17.889	CC
EXIST HZ FRANKLIN C17-69HN - Wellbore #1 - Wellbor	8,700.00	10,846.00	2,436.36	2,265.85	14.289	ES
EXIST HZ FRANKLIN C17-69HN - Wellbore #1 - Wellbor	9,100.00	10,846.00	2,480.56	2,301.98	13.891	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	7,014.10	9,686.39	2,954.77	2,848.16	27.715	CC
EXIST HZ HAROLD 6Y-202 - Wellbore #1 - Wellbore #1	14,839.84	17,436.96	2,995.78	2,476.63	5.771	ES, SF
EXIST HZ HAROLD 6Y-312 - Wellbore #1 - Wellbore #1	9,166.74	11,888.95	3,179.65	2,974.15	15.473	CC
EXIST HZ HAROLD 6Y-312 - Wellbore #1 - Wellbore #1	14,839.84	17,595.26	3,195.42	2,673.51	6.122	ES, SF
EXIST HZ JAGGED 10N - Wellbore #1 - Wellbore #1	0.00	0.00	1,311.13			
EXIST HZ JAGGED 10N - Wellbore #1 - Wellbore #1	100.00	93.27	1,311.28	1,311.11	7,443.204	ES
EXIST HZ JAGGED 10N - Wellbore #1 - Wellbore #1	8,500.00	6,365.00	2,341.99	2,283.12	39.782	SF
EXIST HZ JAGGED 11N - Wellbore #1 - Wellbore #1	394.78	372.13	1,322.51	1,321.13	962.049	CC
EXIST HZ JAGGED 11N - Wellbore #1 - Wellbore #1	400.00	375.56	1,322.51	1,321.12	949.020	ES
EXIST HZ JAGGED 11N - Wellbore #1 - Wellbore #1	8,700.00	6,461.00	2,636.44	2,570.33	39.882	SF
EXIST HZ JAGGED 12N - Wellbore #1 - Wellbore #1	0.00	0.00	1,333.99			
EXIST HZ JAGGED 12N - Wellbore #1 - Wellbore #1	8,900.00	6,365.00	2,907.40	2,836.66	41.096	SF
EXIST HZ JAGGED 1N - Wellbore #1 - Wellbore #1	4,335.26	4,299.17	86.26	57.06	2.953	CC, ES, SF
EXIST HZ JAGGED 2N - Wellbore #1 - Wellbore #1	4,569.91	4,519.76	19.95	-9.61	0.675	Level 3, CC, ES, SF
EXIST HZ JAGGED 3N - Wellbore #1 - Wellbore #1	6,731.34	6,677.10	87.74	51.38	2.413	CC, ES, SF
EXIST HZ JAGGED 4N - Wellbore #1 - Wellbore #1	6,650.00	6,575.78	396.48	359.25	10.652	SF
EXIST HZ JAGGED 4N - Wellbore #1 - Wellbore #1	6,694.04	6,597.93	394.75	358.00	10.741	CC, ES
EXIST HZ JAGGED 5N - Wellbore #1 - Wellbore #1	6,700.00	6,669.03	634.51	597.83	17.296	SF
EXIST HZ JAGGED 5N - Wellbore #1 - Wellbore #1	6,750.00	6,688.13	632.09	595.71	17.371	ES
EXIST HZ JAGGED 5N - Wellbore #1 - Wellbore #1	6,759.14	6,690.92	632.03	595.71	17.400	CC
EXIST HZ JAGGED 6N - Wellbore #1 - Wellbore #1	5,189.85	5,021.95	817.73	787.01	26.617	CC
EXIST HZ JAGGED 6N - Wellbore #1 - Wellbore #1	5,400.00	5,235.21	818.73	786.21	25.175	ES

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

<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well HEN 12N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST HZ JAGGED 6N - Wellbore #1 - Wellbore #1	6,650.00	6,606.70	869.63	832.24	23.258	SF
EXIST HZ JAGGED 7N - Wellbore #1 - Wellbore #1	4,926.01	4,744.00	1,010.94	982.03	34.979	CC, ES
EXIST HZ JAGGED 7N - Wellbore #1 - Wellbore #1	6,277.05	6,109.82	1,083.46	1,045.69	28.688	SF
EXIST HZ JAGGED 8N - Wellbore #1 - Wellbore #1	4,320.91	4,111.44	1,111.58	1,087.34	45.868	CC, ES
EXIST HZ JAGGED 8N - Wellbore #1 - Wellbore #1	6,277.05	6,103.68	1,235.16	1,197.22	32.556	SF
EXIST HZ JAGGED 9N - Wellbore #1 - Wellbore #1	3,842.92	3,618.92	1,246.33	1,225.05	58.558	CC, ES
EXIST HZ JAGGED 9N - Wellbore #1 - Wellbore #1	6,000.00	5,738.78	1,424.25	1,387.18	38.424	SF
EXIST HZ MARK ALTER C16-79HN - Wellbore #1 - Well	9,884.74	6,253.00	2,131.01	2,038.98	23.157	CC
EXIST HZ MARK ALTER C16-79HN - Wellbore #1 - Well	9,900.00	6,253.00	2,131.06	2,038.63	23.055	ES
EXIST HZ MARK ALTER C16-79HN - Wellbore #1 - Well	10,500.00	6,273.03	2,217.65	2,112.40	21.068	SF
EXIST HZ NORTHRUP C 08-73HN - Wellbore #1 - Wellb	8,447.96	9,110.94	63.63	29.15	1.845	CC, ES
EXIST HZ NORTHRUP C 08-73HN - Wellbore #1 - Wellb	8,500.00	9,111.27	82.20	36.89	1.814	SF
EXIST HZ NORTHRUP C 08-75HN - Wellbore #1 - Wellb	7,139.44	9,429.55	22.16	-8.24	0.729	Level 3, CC
EXIST HZ NORTHRUP C 08-75HN - Wellbore #1 - Wellb	7,150.00	9,429.62	24.61	-11.75	0.677	Level 3, ES, SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	14,839.84	6,475.00	2,685.48	2,455.99	11.702	CC, ES, SF
EXIST HZ SANDY HILLS PC C17-67HN - Wellbore #1 -						Out of range
EXIST HZ STOCKLEY C15-79HN - Wellbore #1 - Wellbo	14,839.84	13,772.00	285.48	131.91	1.859	CC, ES, SF
EXIST HZ ZANE ALTER C 09-21 - Wellbore #1 - Wellbor	12,642.78	7,037.18	572.08	409.74	3.524	CC, ES, SF
EXIST VERT ALTER C 9-23 - Wellbore #1 - Design #1	13,716.96	6,756.98	1,112.56	790.59	3.455	CC, ES
EXIST VERT ALTER C 9-23 - Wellbore #1 - Design #1	13,800.00	6,755.73	1,115.66	791.73	3.444	SF
EXIST VERT ALTER C 9-25 - Wellbore #1 - Design #1	11,058.99	6,819.39	1,075.46	826.10	4.313	CC
EXIST VERT ALTER C 9-25 - Wellbore #1 - Design #1	11,100.00	6,818.78	1,076.24	825.74	4.296	ES
EXIST VERT ALTER C 9-25 - Wellbore #1 - Design #1	11,200.00	6,817.28	1,084.67	832.14	4.295	SF
EXIST VERT AMANDA ALTER C 9-20 - Wellbore #1 - De	11,076.53	6,834.37	28.05	-221.42	0.112	Level 3, CC, ES, SF
EXIST VERT BARTON C 15-29 - Wellbore #1 - Design #	14,839.84	6,711.42	2,657.92	2,347.11	8.552	CC, ES, SF
EXIST VERT BENNER 1 - Wellbore #1 - Wellbore #1	9,196.17	6,864.98	756.89	693.14	11.872	CC
EXIST VERT BENNER 1 - Wellbore #1 - Wellbore #1	9,200.00	6,864.86	756.90	693.06	11.856	ES
EXIST VERT BENNER 1 - Wellbore #1 - Wellbore #1	9,300.00	6,861.75	763.97	698.34	11.641	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	6,377.05	6,238.86	1,849.42	1,700.02	12.379	CC
EXIST VERT COX 8-19D - Wellbore #1 - Design #1	6,400.00	6,261.81	1,849.65	1,699.77	12.340	ES
EXIST VERT COX 8-19D - Wellbore #1 - Design #1	6,600.00	6,458.23	1,871.16	1,717.45	12.173	SF
EXIST VERT COX PM C 8-6 - Wellbore #1 - Wellbore #1	5,303.43	5,174.37	954.01	931.24	41.900	CC
EXIST VERT COX PM C 8-6 - Wellbore #1 - Wellbore #1	5,400.00	5,264.42	954.48	931.19	40.982	ES
EXIST VERT COX PM C 8-6 - Wellbore #1 - Wellbore #1	6,400.00	6,234.46	994.58	968.56	38.224	SF
EXIST VERT CPC HARLESS 17-1 - Wellbore #1 - Wellb	8,997.66	6,773.88	3,088.61	3,030.03	52.721	CC
EXIST VERT CPC HARLESS 17-1 - Wellbore #1 - Wellb	9,100.00	6,772.62	3,090.31	3,029.05	50.444	ES
EXIST VERT CPC HARLESS 17-1 - Wellbore #1 - Wellb	10,100.00	6,761.54	3,279.40	3,195.52	39.096	SF
EXIST VERT EMBRICK C 10-19 - Wellbore #1 - Wellbor	14,839.84	6,744.26	1,946.97	1,791.35	12.511	CC, ES, SF
EXIST VERT ENGLAND 8-3-17 - Wellbore #1 - Wellbore	6,382.93	6,269.01	1,351.31	1,332.80	72.995	CC, ES
EXIST VERT ENGLAND 8-3-17 - Wellbore #1 - Wellbore	6,450.00	6,336.76	1,354.39	1,335.78	72.789	SF
EXIST VERT ENGLAND 8-35 - Wellbore #1 - Wellbore #	6,273.92	6,140.80	1,553.48	1,535.60	86.878	CC
EXIST VERT ENGLAND 8-35 - Wellbore #1 - Wellbore #	6,377.05	6,243.71	1,553.58	1,535.51	85.961	ES
EXIST VERT ENGLAND 8-35 - Wellbore #1 - Wellbore #	6,450.00	6,314.94	1,556.15	1,537.98	85.658	SF
EXIST VERT GEHRING 1 - Wellbore #1 - Wellbore #1	9,057.00	6,870.15	1,746.67	1,686.55	29.056	CC
EXIST VERT GEHRING 1 - Wellbore #1 - Wellbore #1	9,100.00	6,870.05	1,747.19	1,685.95	28.529	ES
EXIST VERT GEHRING 1 - Wellbore #1 - Wellbore #1	9,700.00	6,868.51	1,861.26	1,788.03	25.418	SF
EXIST VERT GEHRING 8-914 - Wellbore #1 - Wellbore #	9,186.51	6,900.05	421.84	358.28	6.637	CC
EXIST VERT GEHRING 8-914 - Wellbore #1 - Wellbore #	9,200.00	6,900.00	422.05	358.13	6.603	ES, SF
EXIST VERT HAGEN 9-10 - Wellbore #1 - Design #1	13,142.00	6,774.07	727.90	421.63	2.377	CC, ES

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

<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well HEN 12N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST VERT HAGEN 9-10 - Wellbore #1 - Design #1	13,200.00	6,773.20	730.21	422.72	2.375	SF
EXIST VERT HAGEN 9-15 - Wellbore #1 - Design #1	12,867.40	6,768.02	2,047.60	1,749.09	6.859	CC
EXIST VERT HAGEN 9-15 - Wellbore #1 - Design #1	12,900.00	6,767.53	2,047.86	1,748.42	6.839	ES
EXIST VERT HAGEN 9-15 - Wellbore #1 - Design #1	13,100.00	6,764.53	2,060.76	1,756.63	6.776	SF
EXIST VERT HAGEN 9-9 - Wellbore #1 - Wellbore #1	14,046.52	6,797.75	664.44	467.56	3.375	CC, ES
EXIST VERT HAGEN 9-9 - Wellbore #1 - Wellbore #1	14,100.00	6,793.58	666.58	468.67	3.368	SF
EXIST VERT HARLESS PM C 17-2 - Wellbore #1 - Desi						Out of range
EXIST VERT JOHNSON 9-11 - Wellbore #1 - Design #1	11,738.68	6,807.10	539.73	271.83	2.015	CC, ES, SF
EXIST VERT JOHNSON 9-13 - Wellbore #1 - Wellbore #	10,451.79	6,887.29	1,838.70	1,741.06	18.831	CC
EXIST VERT JOHNSON 9-13 - Wellbore #1 - Wellbore #	10,500.00	6,886.93	1,839.33	1,740.34	18.580	ES
EXIST VERT JOHNSON 9-13 - Wellbore #1 - Wellbore #	10,900.00	6,883.94	1,892.54	1,785.09	17.614	SF
EXIST VERT MCCLINTOCK C 4-15 - Wellbore #1 - Well						Out of range
EXIST VERT NGL C1A - Wellbore #1 - Design #1	9,442.07	6,855.04	2,278.49	2,072.41	11.056	CC
EXIST VERT NGL C1A - Wellbore #1 - Design #1	9,500.00	6,854.17	2,279.22	2,071.60	10.977	ES
EXIST VERT NGL C1A - Wellbore #1 - Design #1	9,900.00	6,848.17	2,324.04	2,106.93	10.705	SF
EXIST VERT NGL C1B - Wellbore #1 - Design #1	9,336.87	6,862.62	2,086.33	1,882.91	10.256	CC
EXIST VERT NGL C1B - Wellbore #1 - Design #1	9,400.00	6,861.67	2,087.28	1,882.19	10.177	ES
EXIST VERT NGL C1B - Wellbore #1 - Design #1	9,800.00	6,855.67	2,137.10	1,922.80	9.973	SF
EXIST VERT REINICK 10-5 - Wellbore #1 - Wellbore #1	14,839.84	6,718.41	985.80	853.84	7.470	CC, ES, SF
EXIST VERT REINICK 1-10-4-64 - Wellbore #1 - Wellbo	14,839.84	6,751.75	2,359.22	2,155.40	11.575	CC, ES, SF
EXIST VERT REINICK 3 - Wellbore #1 - Wellbore #1	14,327.53	6,756.61	2,032.77	1,827.55	9.905	CC
EXIST VERT REINICK 3 - Wellbore #1 - Wellbore #1	14,400.00	6,756.53	2,034.06	1,827.09	9.828	ES
EXIST VERT REINICK 3 - Wellbore #1 - Wellbore #1	14,600.00	6,756.28	2,050.95	1,840.68	9.754	SF
EXIST VERT REINICK C 10-31 - Wellbore #1 - Wellbore	14,733.45	6,773.10	1,389.19	1,172.62	6.414	CC, ES
EXIST VERT REINICK C 10-31 - Wellbore #1 - Wellbore	14,839.84	6,772.65	1,393.54	1,175.02	6.377	SF
EXIST VERT REINICK C 9-18 - Wellbore #1 - Design #1	12,443.05	6,816.27	1,346.19	1,058.56	4.680	CC
EXIST VERT REINICK C 9-18 - Wellbore #1 - Design #1	12,500.00	6,815.41	1,347.39	1,058.49	4.664	ES, SF
EXIST VERT REINICK C 9-22 - Wellbore #1 - Design #1	13,729.18	6,766.70	145.78	-176.51	0.452	Level 3, CC, ES, SF
EXIST VERT REISTAD 1 - Wellbore #1 - Wellbore #1	100.00	53.38	3,221.52	3,221.38	10,000.000	CC, ES
EXIST VERT REISTAD 1 - Wellbore #1 - Wellbore #1	1,900.00	1,859.97	3,278.96	3,274.02	662.734	SF
EXIST VERT RICHARDSON 10-13 - Wellbore #1 - Desig	14,839.84	6,710.00	1,972.12	1,651.45	6.150	CC, ES, SF
EXIST VERT ROHR 15-414 - Wellbore #1 - Wellbore #1	14,839.84	6,711.03	3,175.57	2,965.83	15.140	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	1,340.97	1,325.96	1,642.90	1,639.27	453.148	CC, ES
EXIST VERT RUFF 8-114 - Wellbore #1 - Wellbore #1	9,400.00	6,899.09	1,909.19	1,844.50	29.512	SF
EXIST VERT RUFF 8-714 - Wellbore #1 - Wellbore #1	346.65	324.57	526.98	526.04	559.517	CC
EXIST VERT RUFF 8-714 - Wellbore #1 - Wellbore #1	400.00	377.20	527.02	525.93	483.455	ES
EXIST VERT RUFF 8-714 - Wellbore #1 - Wellbore #1	8,400.00	6,900.00	948.54	906.24	22.426	SF
EXIST VERT RUFF C 8-1 - Wellbore #1 - Design #1	9,387.76	6,909.86	2,282.90	2,077.17	11.096	CC
EXIST VERT RUFF C 8-1 - Wellbore #1 - Design #1	9,400.00	6,909.67	2,282.94	2,076.89	11.080	ES
EXIST VERT RUFF C 8-1 - Wellbore #1 - Design #1	9,900.00	6,902.17	2,339.66	2,122.73	10.785	SF
EXIST VERT RYANN STATE C 16-1 - Wellbore #1 - Wel	14,167.10	6,543.61	3,242.99	3,042.33	16.162	CC
EXIST VERT RYANN STATE C 16-1 - Wellbore #1 - Wel	14,300.00	6,535.82	3,245.70	3,041.38	15.885	ES
EXIST VERT RYANN STATE C 16-1 - Wellbore #1 - Wel	14,600.00	6,518.04	3,271.70	3,060.46	15.488	SF
EXIST VERT RYDGREN 8-31 - Wellbore #1 - Wellbore #	6,223.72	6,056.73	577.15	555.15	26.241	CC, ES
EXIST VERT RYDGREN 8-31 - Wellbore #1 - Wellbore #	6,400.00	6,232.16	579.27	556.99	25.995	SF
EXIST VERT SLEDGE C 9-31 - Wellbore #1 - Design #1	9,955.79	6,876.96	1,345.12	1,124.80	6.105	CC
EXIST VERT SLEDGE C 9-31 - Wellbore #1 - Design #1	10,000.00	6,876.30	1,345.85	1,124.46	6.079	ES
EXIST VERT SLEDGE C 9-31 - Wellbore #1 - Design #1	10,100.00	6,874.80	1,352.83	1,129.38	6.054	SF
EXIST VERT SMITH 9-5 - Wellbore #1 - Design #1	10,610.22	6,856.76	603.52	365.75	2.538	CC, ES, SF
EXIST VERT SMITH C 9-19 - Wellbore #1 - Design #1	11,189.91	6,862.81	1,801.72	1,547.87	7.097	CC
EXIST VERT SMITH C 9-19 - Wellbore #1 - Design #1	11,200.00	6,862.66	1,801.75	1,547.64	7.090	ES

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

<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well HEN 12N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST VERT SMITH C 9-19 - Wellbore #1 - Design #1	11,400.00	6,859.65	1,813.92	1,555.53	7.020	SF
EXIST VERT STATE 16-314 - Wellbore #1 - Design #1	11,725.21	6,793.03	2,971.14	2,703.88	11.117	CC
EXIST VERT STATE 16-314 - Wellbore #1 - Design #1	11,800.00	6,791.91	2,972.08	2,702.74	11.035	ES
EXIST VERT STATE 16-314 - Wellbore #1 - Design #1	12,300.00	6,784.41	3,026.22	2,745.35	10.775	SF
EXIST VERT STATE 16-414 - Wellbore #1 - Design #1						Out of range
EXIST VERT VERN JOHNSON 1-A - Wellbore #1 - Desi	11,784.24	6,796.38	1,901.43	1,632.46	7.069	CC
EXIST VERT VERN JOHNSON 1-A - Wellbore #1 - Desi	11,800.00	6,796.14	1,901.49	1,632.08	7.058	ES
EXIST VERT VERN JOHNSON 1-A - Wellbore #1 - Desi	12,000.00	6,793.14	1,913.63	1,639.33	6.976	SF
EXIST VERT VERN JOHNSON 2 - Wellbore #1 - Design	10,412.40	6,844.51	534.95	302.85	2.305	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	13,673.27	6,797.81	2,955.38	2,768.66	15.827	CC
EXIST VERT WILMOTH C 9-27 - Wellbore #1 - Wellbore	13,700.00	6,797.26	2,955.50	2,768.07	15.768	ES
EXIST VERT WILMOTH C 9-27 - Wellbore #1 - Wellbore	14,300.00	6,785.02	3,021.08	2,822.22	15.192	SF
HEN 01N - ORIGINAL WELLBORE - PROPOSAL #2	300.00	300.00	164.96	163.89	153.861	CC, ES
HEN 01N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	15,027.20	2,638.16	2,202.13	6.050	SF
HEN 02N - ORIGINAL WELLBORE - PROPOSAL #2	400.00	400.00	149.99	148.46	98.567	CC, ES
HEN 02N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	15,016.06	2,396.61	1,960.49	5.495	SF
HEN 03N - ORIGINAL WELLBORE - PROPOSAL #2	500.00	500.00	134.98	133.01	68.475	CC, ES
HEN 03N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,883.76	2,158.87	1,723.02	4.953	SF
HEN 04N - ORIGINAL WELLBORE - PROPOSAL #2	600.00	600.00	119.96	117.54	49.557	CC, ES
HEN 04N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,886.36	1,917.30	1,480.96	4.394	SF
HEN 05N - ORIGINAL WELLBORE - PROPOSAL #2	700.00	700.00	104.96	102.09	36.567	CC, ES
HEN 05N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,764.39	1,679.91	1,244.18	3.855	SF
HEN 06N - ORIGINAL WELLBORE - PROPOSAL #2	716.33	717.33	89.98	87.04	30.546	CC
HEN 06N - ORIGINAL WELLBORE - PROPOSAL #2	800.00	800.00	89.99	86.67	27.106	ES
HEN 06N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,796.47	1,438.07	1,001.89	3.297	SF
HEN 07N - ORIGINAL WELLBORE - PROPOSAL #2	900.00	900.00	74.97	71.21	19.891	CC, ES
HEN 07N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,691.09	1,201.22	766.37	2.762	SF
HEN 08N - ORIGINAL WELLBORE - PROPOSAL #2	1,000.00	1,000.00	60.00	55.78	14.222	CC, ES
HEN 08N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,742.94	958.69	522.57	2.198	SF
HEN 09N - ORIGINAL WELLBORE - PROPOSAL #2	1,100.00	1,100.00	44.99	40.32	9.638	CC
HEN 09N - ORIGINAL WELLBORE - PROPOSAL #2	1,200.00	1,199.68	45.34	40.23	8.878	ES
HEN 09N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,692.41	723.36	293.19	1.682	SF
HEN 10N - ORIGINAL WELLBORE - PROPOSAL #2	1,300.00	1,300.00	29.98	24.42	5.385	CC, ES
HEN 10N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,784.04	479.31	43.30	1.099	Level 3, SF
HEN 11N - ORIGINAL WELLBORE - PROPOSAL #2	1,300.00	1,300.00	15.01	9.44	2.696	CC
HEN 11N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,737.21	251.10	-42.25	0.856	Level 3, ES, SF
HEN 13N - ORIGINAL WELLBORE - PROPOSAL #2	1,200.00	1,200.00	15.01	9.89	2.933	CC
HEN 13N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,795.84	249.66	-49.15	0.836	Level 3, ES, SF
HEN 14N - ORIGINAL WELLBORE - PROPOSAL #2	1,100.00	1,100.00	30.02	25.35	6.430	CC, ES
HEN 14N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,908.23	479.29	44.61	1.103	Level 3, SF
HEN 15N - ORIGINAL WELLBORE - PROPOSAL #2	1,000.00	1,000.00	44.99	40.77	10.665	CC, ES
HEN 15N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,877.74	722.83	291.95	1.678	SF
HEN 16N - ORIGINAL WELLBORE - PROPOSAL #2	900.00	900.00	59.97	56.20	15.909	CC, ES
HEN 16N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,965.04	958.59	523.52	2.203	SF
HEN 17N - ORIGINAL WELLBORE - PROPOSAL #2	800.00	800.00	74.97	71.66	22.584	CC, ES
HEN 17N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	14,966.03	1,200.89	766.91	2.767	SF
HEN 18N - ORIGINAL WELLBORE - PROPOSAL #2	700.00	700.00	89.98	87.11	31.351	CC, ES
HEN 18N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	15,093.23	1,437.90	1,003.04	3.307	SF

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

<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well HEN 12N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 12N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
HEN 19N - ORIGINAL WELLBORE - PROPOSAL #2	600.00	600.00	104.99	102.57	43.373	CC, ES
HEN 19N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	15,090.25	1,679.92	1,245.64	3.868	SF
HEN 20NA - ORIGINAL WELLBORE - PROPOSAL #2	500.00	499.00	119.97	118.00	60.929	CC, ES
HEN 20NA - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	15,111.10	1,921.90	1,488.08	4.430	SF
HEN 21N - ORIGINAL WELLBORE - PROPOSAL #2	400.00	399.00	134.98	133.46	88.834	CC, ES
HEN 21N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	15,320.70	2,156.82	1,722.28	4.963	SF
HEN 22N - ORIGINAL WELLBORE - PROPOSAL #2	300.00	298.00	149.99	148.92	140.484	CC, ES
HEN 22N - ORIGINAL WELLBORE - PROPOSAL #2	14,839.84	15,355.99	2,398.32	1,964.12	5.524	SF