PDC ENERGY

Project: WELD COUNTY, COLORADO
Site: SE NW SEC. 6 T3N R65W 6th P.M.
Well: VEGA 4N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 2359ft FNL & 2596ft FWL of Sec 6
600.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)
1568.79	1588.27	19.77	239.20	-86.43	-144.97	-57.22	168.78	EOB TO 19.77° INC
5488.01	5752.86	19.77	239.20	-807.61	-1354.65	-534.70	1577.12	END OF TANGENT
6456.80	6741.13	0.00	0.00	-894.04	-1499.62	-591.93	1745.90	EOD TO VERTICAL
6556.80	6841.13	0.00	0.00	-894.04	-1499.62	-591.93	1745.90	KOP (8°/100ft BUR)
7273.00	7966.14	90.00	0.29	-177.84	-1496.00	110.46	2462.10	EP: 2530ft FNL & 1100ft FWL of Sec 6
7272.97	11150.00	90.00	0.29	3005.98	-1479.90	3232.89	5645.97	END OF TANGENT
7272.97	11316.68	90.00	5.29	3172.41	-1471.79	3394.72	5812.64	EOT TO 5.29° AZ
7272.97	11326.68	90.00	5.29	3182.36	-1470.87	3404.32	5822.64	END OF TANGENT
7272.97	11493.34	90.00	0.29	3348.78	-1462.76	3566.14	5989.31	EOT TO 0.29° AZ
7272.97	11658.01	90.00	355.35	3513.28	-1469.02	3728.82	6153.98	EOT TO 355.35° AZ
7272.97	11668.01	90.00	355.35	3523.24	-1469.83	3738.75	6163.98	END OF TANGENT
7272.97	11832.83	90.00	0.29	3687.89	-1476.09	3901.58	6328.80	EOT TO 0.29° AZ
7273.00	15648.91	90.00	0.29	7503.92	-1456.47	7643.96	10144.87	BHL: 150ft FNL & 1100ft FWL of Sec 31

PROPOSED LOCAL COORDINATES:

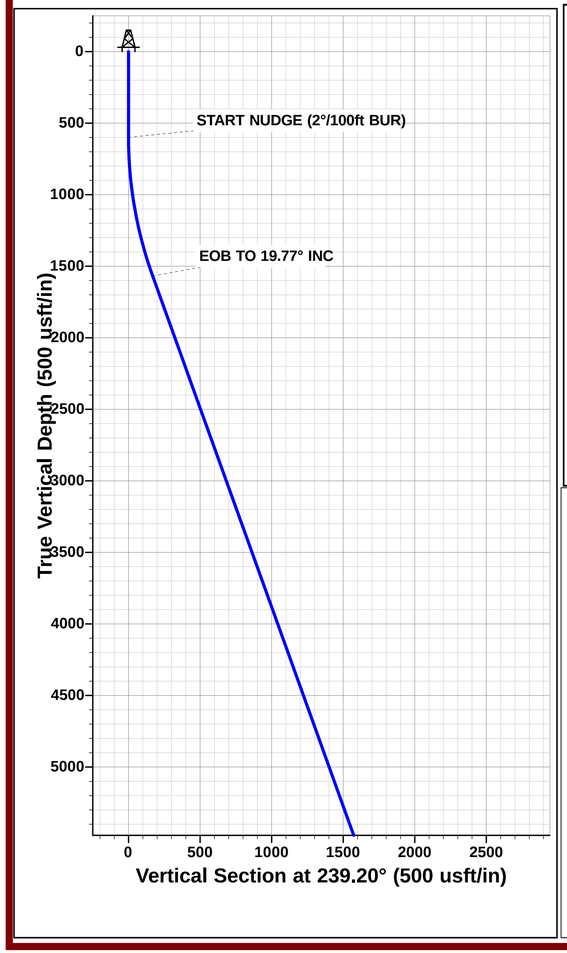
SHL: 2359ft FNL & 2596ft FWL of Sec 6

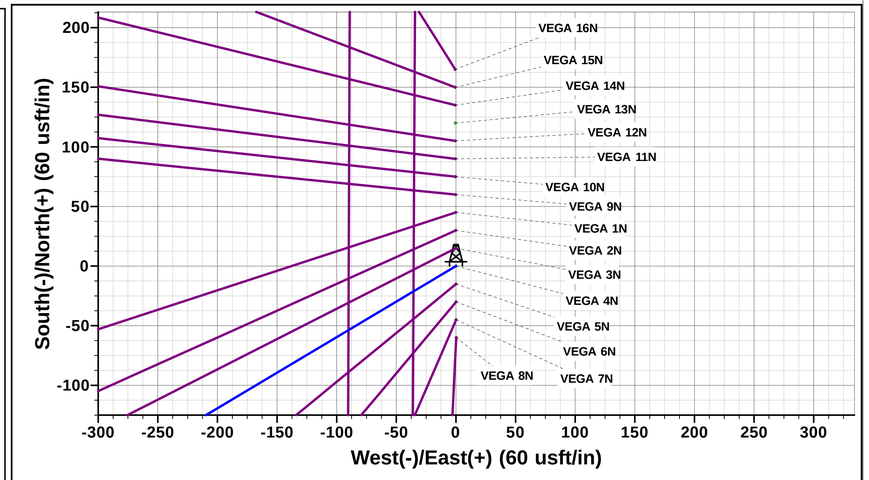
EP: 2530ft FNL & 1100ft FWL of Sec 6

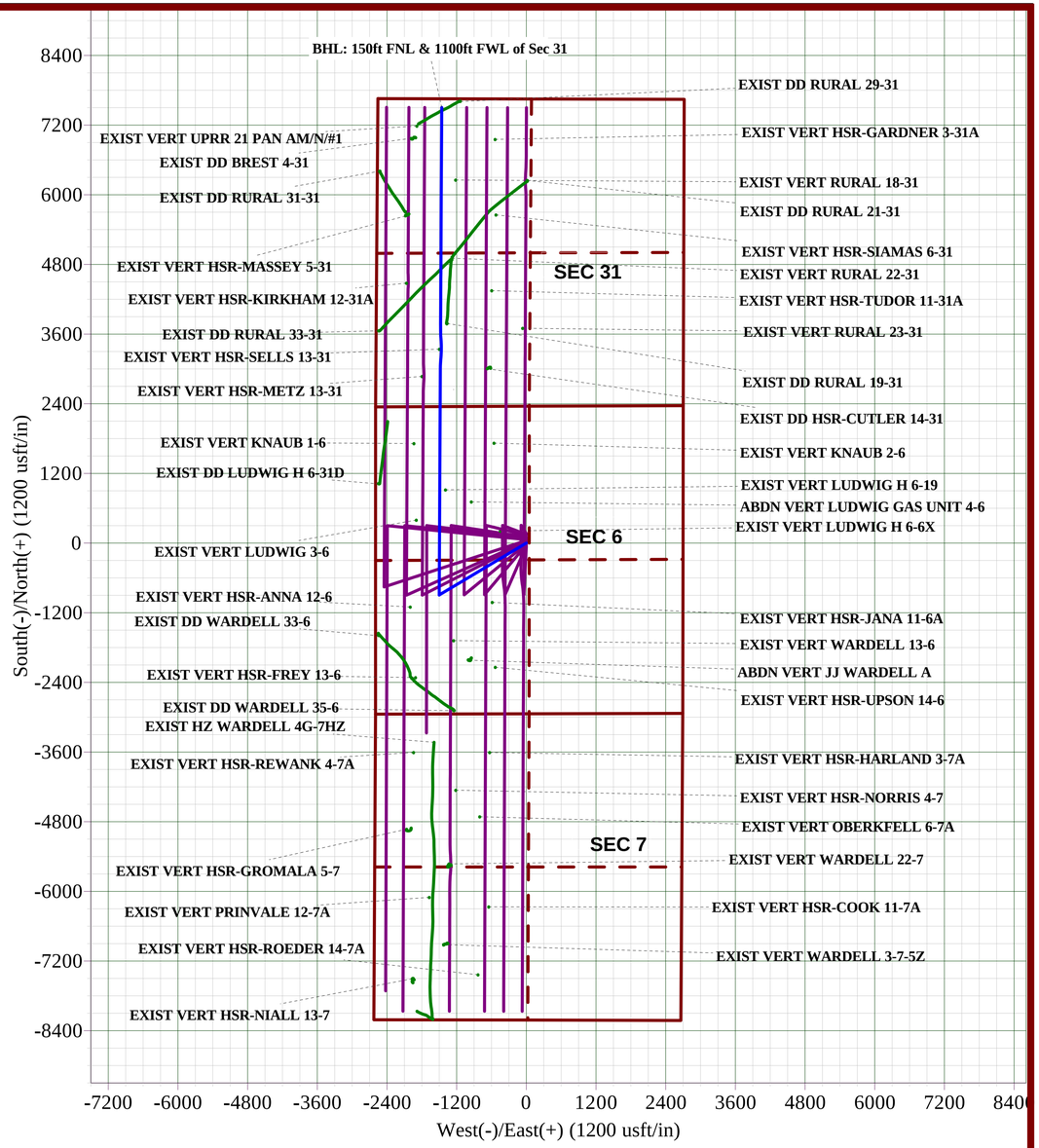
BHL: 150ft FNL & 1100ft FWL of Sec 31

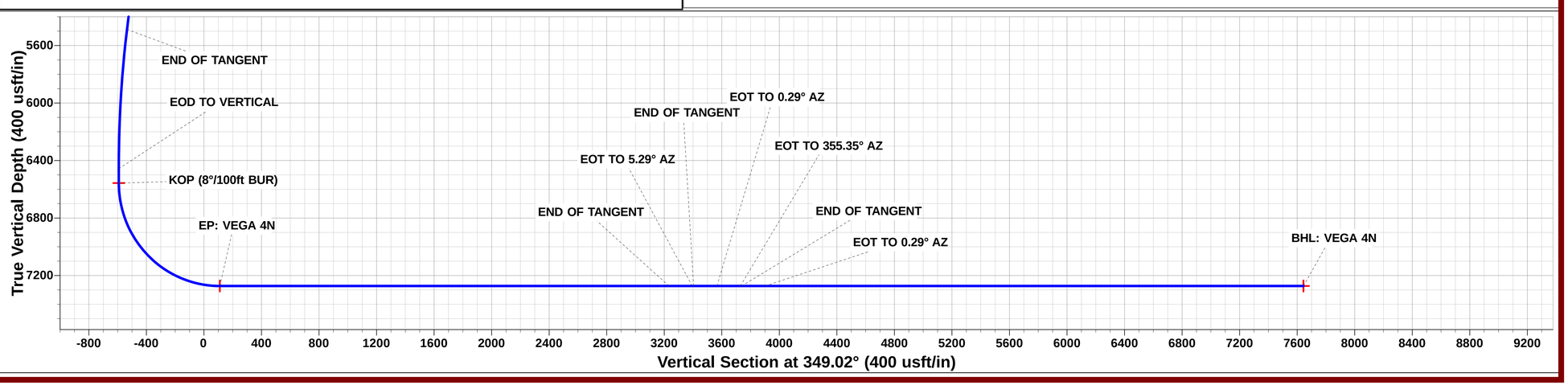
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP: VEGA 4N	6556.80	-894.04	-1499.62	40.252746	-104.711728
EP: VEGA 4N	7273.00	-177.84	-1496.00	40.254712	-104.711715
BHL: VEGA 4N	7273.00	7503.92	-1456.47	40.275798	-104.711575









PDC ENERGY

WELD COUNTY, COLORADO
SE NW SEC. 6 T3N R65W 6th P.M.
VEGA 4N

ORIGINAL WELLBORE
PROPOSAL #1

Anticollision Report

24 January, 2018

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well VEGA 4N
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	WELL @ 4998.00usft (Original Well Elev)
Reference Site:	SE NW SEC. 6 T3N R65W 6th P.M.	**MD Reference:**	WELL @ 4998.00usft (Original Well Elev)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	VEGA 4N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	**Offset TVD Reference:**	Offset Datum

Reference	PROPOSAL #1		
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 center-center distance of 9,999.98 usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 23/01/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	15,648.91	PROPOSAL #1 (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
SE NW SEC. 6 T3N R65W 6th P.M.						
ABDN VERT JJ WARDELL A - Wellbore #1 - Wellbore #1	6,531.03	6,218.39	1,226.39	1,188.14	32.064	CC
ABDN VERT JJ WARDELL A - Wellbore #1 - Wellbore #1	6,741.13	6,438.17	1,226.51	1,187.94	31.804	ES
ABDN VERT JJ WARDELL A - Wellbore #1 - Wellbore #1	6,841.13	6,532.96	1,226.87	1,188.21	31.738	SF
ABDN VERT LUDWIG GAS UNIT 4-6 - Wellbore #1 - De	8,857.00	7,250.99	544.09	500.76	12.557	CC, ES
ABDN VERT LUDWIG GAS UNIT 4-6 - Wellbore #1 - De	8,900.00	7,250.99	545.79	501.95	12.452	SF
EXIST DD BREST 4-31 - Wellbore #1 - Wellbore #1	15,114.84	7,106.31	523.58	384.78	3.772	CC, ES, SF
EXIST DD HSR-CUTLER 14-31 - Wellbore #1 - Wellbore	11,153.37	7,243.24	809.86	743.75	12.251	CC, ES
EXIST DD HSR-CUTLER 14-31 - Wellbore #1 - Wellbore	11,400.00	7,242.90	834.33	765.30	12.087	SF
EXIST DD LUDWIG H 6-31D - Wellbore #1 - Wellbore #1	9,158.50	7,376.55	1,050.03	994.96	19.067	CC, ES
EXIST DD LUDWIG H 6-31D - Wellbore #1 - Wellbore #1	9,500.00	7,374.65	1,104.17	1,044.07	18.373	SF
EXIST DD RURAL 19-31 - Wellbore #1 - Wellbore #1	11,928.42	7,313.35	114.66	13.64	1.135	Level 2, CC, ES, SF
EXIST DD RURAL 21-31 - Wellbore #1 - Wellbore #1	14,399.52	7,523.02	1,478.17	1,325.41	9.677	CC
EXIST DD RURAL 21-31 - Wellbore #1 - Wellbore #1	14,400.00	7,523.02	1,478.17	1,325.41	9.676	ES
EXIST DD RURAL 21-31 - Wellbore #1 - Wellbore #1	14,700.00	7,524.63	1,508.40	1,349.95	9.520	SF
EXIST DD RURAL 29-31 - Wellbore #1 - Wellbore #1	15,648.91	7,326.40	335.09	171.85	2.053	CC, ES, SF
EXIST DD RURAL 31-31 - Wellbore #1 - Wellbore #1	14,545.45	7,337.28	1,059.92	915.45	7.337	CC, ES
EXIST DD RURAL 31-31 - Wellbore #1 - Wellbore #1	14,700.00	7,338.65	1,071.13	923.74	7.267	SF
EXIST DD RURAL 33-31 - Wellbore #1 - Wellbore #1	11,809.88	7,473.66	1,064.10	960.96	10.317	CC, ES
EXIST DD RURAL 33-31 - Wellbore #1 - Wellbore #1	12,000.00	7,472.04	1,083.06	976.59	10.172	SF
EXIST DD WARDELL 33-6 - Wellbore #1 - Wellbore #1	6,700.22	6,493.54	1,243.14	1,204.32	32.021	CC, ES
EXIST DD WARDELL 33-6 - Wellbore #1 - Wellbore #1	6,841.13	6,636.33	1,244.76	1,205.64	31.816	SF
EXIST DD WARDELL 35-6 - Wellbore #1 - Wellbore #1	6,198.89	5,815.29	1,982.81	1,933.84	40.491	CC
EXIST DD WARDELL 35-6 - Wellbore #1 - Wellbore #1	6,200.00	5,816.53	1,982.81	1,933.83	40.483	ES
EXIST DD WARDELL 35-6 - Wellbore #1 - Wellbore #1	6,841.13	6,562.63	2,003.97	1,951.72	38.354	SF
EXIST HZ WARDELL 4G-7HZ - Wellbore #1 - Wellbore #	7,058.92	12,143.00	2,695.86	2,645.15	53.166	CC, ES
EXIST HZ WARDELL 4G-7HZ - Wellbore #1 - Wellbore #	11,658.01	12,143.00	6,952.92	6,808.09	48.007	SF
EXIST VERT HSR-ANNA 12-6 - Wellbore #1 - Design #1	6,841.13	6,534.80	540.41	506.98	16.163	CC
EXIST VERT HSR-ANNA 12-6 - Wellbore #1 - Design #1	6,850.00	6,543.67	540.43	506.95	16.139	ES, SF
EXIST VERT HSR-COOK 11-7A - Wellbore #1 - Design #	6,841.13	6,534.80	5,438.53	5,388.82	109.406	CC, ES
EXIST VERT HSR-COOK 11-7A - Wellbore #1 - Design #	11,700.00	7,250.97	9,855.11	9,764.85	109.178	SF
EXIST VERT HSR-FREY 13-6 - Wellbore #1 - Design #1	6,841.13	6,534.80	1,480.38	1,437.16	34.250	CC, ES, SF
EXIST VERT HSR-GARDNER 3-31A - Wellbore #1 - Des	15,104.12	7,251.00	922.30	769.77	6.047	CC, ES
EXIST VERT HSR-GARDNER 3-31A - Wellbore #1 - Des	15,200.00	7,251.00	927.27	772.92	6.008	SF
EXIST VERT HSR-GROMALA 5-7 - Wellbore #1 - Wellbo	6,841.13	6,600.00	4,085.31	4,052.50	124.513	ES
EXIST VERT HSR-GROMALA 5-7 - Wellbore #1 - Wellbo	6,851.87	6,611.83	4,085.23	4,052.52	124.873	CC
EXIST VERT HSR-GROMALA 5-7 - Wellbore #1 - Wellbo	13,100.00	7,400.00	9,902.73	9,805.27	101.604	SF
EXIST VERT HSR-HARLAND 3-7A - Wellbore #1 - Desig	6,841.13	6,534.80	2,848.02	2,797.03	55.854	CC, 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 VEGA 4N
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	WELL @ 4998.00usft (Original Well Elev)
Reference Site:	SE NW SEC. 6 T3N R65W 6th P.M.	**MD Reference:**	WELL @ 4998.00usft (Original Well Elev)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	VEGA 4N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	**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 NW SEC. 6 T3N R65W 6th P.M.						
EXIST VERT HSR-JANA 11-6A - Wellbore #1 - Design #1	4,125.99	3,934.99	575.49	544.30	18.456	CC
EXIST VERT HSR-JANA 11-6A - Wellbore #1 - Design #1	4,200.00	4,004.64	576.03	544.17	18.080	ES
EXIST VERT HSR-JANA 11-6A - Wellbore #1 - Design #1	4,700.00	4,475.19	607.34	571.74	17.059	SF
EXIST VERT HSR-KIRKHAM 12-31A - Wellbore #1 - Des	12,619.12	7,250.97	591.49	485.85	5.599	CC, ES
EXIST VERT HSR-KIRKHAM 12-31A - Wellbore #1 - Des	12,700.00	7,250.97	597.00	489.84	5.571	SF
EXIST VERT HSR-MASSEY 5-31 - Wellbore #1 - Wellbo	13,776.32	7,139.07	613.82	500.50	5.417	CC, ES
EXIST VERT HSR-MASSEY 5-31 - Wellbore #1 - Wellbo	13,800.00	7,138.47	614.27	500.50	5.399	SF
EXIST VERT HSR-METZ 13-31 - Wellbore #1 - Design #	11,013.05	7,250.97	315.16	237.14	4.039	CC, ES, SF
EXIST VERT HSR-NIALL 13-7 - Wellbore #1 - Wellbore #	6,709.35	6,365.99	6,621.20	6,587.31	195.379	CC, ES
EXIST VERT HSR-NIALL 13-7 - Wellbore #1 - Wellbore #	10,600.00	7,222.95	9,972.85	9,916.03	175.527	SF
EXIST VERT HSR-NORRIS 4-7 - Wellbore #1 - Design #	6,841.13	6,534.80	3,375.31	3,326.42	69.039	CC, ES, SF
EXIST VERT HSR-REWANK 4-7A - Wellbore #1 - Desig	6,841.13	6,534.80	2,748.36	2,703.06	60.674	CC, ES, SF
EXIST VERT HSR-ROEDER 14-7A - Wellbore #1 - Desig	6,841.13	6,534.80	6,575.63	6,526.53	133.925	CC, ES, SF
EXIST VERT HSR-SELLS 13-31 - Wellbore #1 - Design	11,484.78	7,250.97	34.28	-51.32	0.400	Level 1, CC, ES, SF
EXIST VERT HSR-SIAMAS 6-31 - Wellbore #1 - Design	13,803.65	7,250.98	942.91	815.00	7.372	CC, ES
EXIST VERT HSR-SIAMAS 6-31 - Wellbore #1 - Design	13,900.00	7,250.98	947.82	818.09	7.306	SF
EXIST VERT HSR-TUDOR 11-31A - Wellbore #1 - Desig	12,499.09	7,250.97	877.03	773.63	8.482	CC
EXIST VERT HSR-TUDOR 11-31A - Wellbore #1 - Desig	12,500.00	7,250.97	877.03	773.61	8.480	ES
EXIST VERT HSR-TUDOR 11-31A - Wellbore #1 - Desig	12,600.00	7,250.97	882.82	777.53	8.385	SF
EXIST VERT HSR-UPSON 14-6 - Wellbore #1 - Design #	5,684.91	5,402.07	1,563.27	1,517.64	34.256	CC
EXIST VERT HSR-UPSON 14-6 - Wellbore #1 - Design #	5,800.00	5,510.51	1,563.75	1,517.09	33.517	ES
EXIST VERT HSR-UPSON 14-6 - Wellbore #1 - Design #	6,850.00	6,543.67	1,575.03	1,523.45	30.533	SF
EXIST VERT KNAUB 1-6 - Wellbore #1 - Design #1	9,857.52	7,250.98	448.95	391.01	7.748	CC, ES
EXIST VERT KNAUB 1-6 - Wellbore #1 - Design #1	9,900.00	7,250.98	450.95	392.31	7.690	SF
EXIST VERT KNAUB 2-6 - Wellbore #1 - Design #1	9,871.71	7,250.98	929.74	871.56	15.981	CC
EXIST VERT KNAUB 2-6 - Wellbore #1 - Design #1	9,900.00	7,250.98	930.17	871.53	15.862	ES
EXIST VERT KNAUB 2-6 - Wellbore #1 - Design #1	10,100.00	7,250.98	957.36	895.36	15.442	SF
EXIST VERT LUDWIG 3-6 - Wellbore #1 - Design #1	8,538.97	7,250.99	400.52	360.44	9.992	CC, ES
EXIST VERT LUDWIG 3-6 - Wellbore #1 - Design #1	8,600.00	7,250.99	405.14	364.53	9.977	SF
EXIST VERT LUDWIG H 6-19 - Wellbore #1 - Design #1	9,061.32	7,250.99	97.33	51.43	2.121	CC, ES, SF
EXIST VERT LUDWIG H 6-6X - Wellbore #1 - Design #1	1,909.94	1,849.50	406.21	395.37	37.487	CC, ES
EXIST VERT LUDWIG H 6-6X - Wellbore #1 - Design #1	8,600.00	7,250.99	1,075.65	1,035.04	26.489	SF
EXIST VERT OBERKFELL 6-7A - Wellbore #1 - Design #	6,841.13	6,534.80	3,883.26	3,833.32	77.754	CC, ES, SF
EXIST VERT PRINVALE 12-7A - Wellbore #1 - Design #	6,841.13	6,534.80	5,210.92	5,163.60	110.113	CC, ES
EXIST VERT PRINVALE 12-7A - Wellbore #1 - Design #	12,000.00	7,250.97	9,959.13	9,865.02	105.824	SF
EXIST VERT RURAL 18-31 - Wellbore #1 - Design #1	14,401.18	7,250.99	245.01	105.81	1.760	CC, ES, SF
EXIST VERT RURAL 22-31 - Wellbore #1 - Design #1	13,054.06	7,250.98	189.64	75.85	1.667	CC, ES, SF
EXIST VERT RURAL 23-31 - Wellbore #1 - Design #1	11,853.37	7,250.97	1,413.38	1,321.92	15.454	CC
EXIST VERT RURAL 23-31 - Wellbore #1 - Design #1	11,900.00	7,250.97	1,414.15	1,321.89	15.328	ES
EXIST VERT RURAL 23-31 - Wellbore #1 - Design #1	12,300.00	7,250.97	1,482.27	1,382.58	14.869	SF
EXIST VERT UPRR 21 PAN AM/N/#1 - Wellbore #1 - De	15,326.74	4,686.00	2,600.23	2,527.91	35.955	CC, ES
EXIST VERT UPRR 21 PAN AM/N/#1 - Wellbore #1 - De	15,648.91	4,686.00	2,620.11	2,545.28	35.014	SF
EXIST VERT WARDELL 13-6 - Wellbore #1 - Design #1	6,841.13	6,534.80	823.69	772.72	16.162	CC, ES, SF
EXIST VERT WARDELL 22-7 - Wellbore #1 - Wellbore #	6,866.11	6,727.58	4,662.70	4,627.40	132.108	CC, ES
EXIST VERT WARDELL 22-7 - Wellbore #1 - Wellbore #	12,600.00	7,300.00	9,982.83	9,891.71	109.550	SF
EXIST VERT WARDELL 3-7-5Z - Wellbore #1 - Wellbore	6,627.04	6,204.33	6,030.30	5,995.52	173.379	CC, ES
EXIST VERT WARDELL 3-7-5Z - Wellbore #1 - Wellbore	11,200.00	7,300.00	9,972.63	9,905.18	147.853	SF
VEGA 10N - ORIGINAL WELLBORE - PROPOSAL #1	600.00	600.00	74.97	72.55	30.972	CC, ES
VEGA 10N - ORIGINAL WELLBORE - PROPOSAL #1	7,800.00	8,045.85	598.85	554.95	13.642	SF
VEGA 11N - ORIGINAL WELLBORE - PROPOSAL #1	600.00	600.00	89.95	87.53	37.157	CC, ES
VEGA 11N - ORIGINAL WELLBORE - PROPOSAL #1	7,600.00	7,978.02	219.60	172.39	4.652	SF
VEGA 12N - ORIGINAL WELLBORE - PROPOSAL #1	600.00	600.00	104.99	102.57	43.372	CC, ES
VEGA 12N - ORIGINAL WELLBORE - PROPOSAL #1	7,600.00	7,946.91	217.12	167.57	4.382	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 VEGA 4N
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	WELL @ 4998.00usft (Original Well Elev)
Reference Site:	SE NW SEC. 6 T3N R65W 6th P.M.	**MD Reference:**	WELL @ 4998.00usft (Original Well Elev)
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	VEGA 4N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	**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 NW SEC. 6 T3N R65W 6th P.M.						
VEGA 14N - ORIGINAL WELLBORE - PROPOSAL #1	500.00	500.00	134.94	132.97	68.455	CC
VEGA 14N - ORIGINAL WELLBORE - PROPOSAL #1	600.00	598.83	135.37	132.96	56.184	ES
VEGA 14N - ORIGINAL WELLBORE - PROPOSAL #1	7,250.00	8,112.88	867.30	814.67	16.479	SF
VEGA 15N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	149.95	148.43	98.542	CC, ES
VEGA 15N - ORIGINAL WELLBORE - PROPOSAL #1	7,300.00	7,826.79	1,119.50	1,073.98	24.594	SF
VEGA 16N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	300.00	164.96	163.89	153.859	CC, ES
VEGA 16N - ORIGINAL WELLBORE - PROPOSAL #1	7,300.00	7,900.00	1,451.33	1,405.10	31.399	SF
VEGA 1N - ORIGINAL WELLBORE - PROPOSAL #1	600.00	600.00	44.99	42.57	18.586	CC, ES
VEGA 1N - ORIGINAL WELLBORE - PROPOSAL #1	15,648.91	15,842.93	953.60	660.92	3.258	SF
VEGA 2N - ORIGINAL WELLBORE - PROPOSAL #1	600.00	600.00	29.95	27.53	12.371	CC, ES
VEGA 2N - ORIGINAL WELLBORE - PROPOSAL #1	15,648.91	15,879.05	564.88	271.72	1.927	SF
VEGA 3N - ORIGINAL WELLBORE - PROPOSAL #1	600.00	600.00	15.01	12.59	6.200	CC, ES
VEGA 3N - ORIGINAL WELLBORE - PROPOSAL #1	15,648.91	15,687.04	304.07	17.43	1.061	Level 2, SF
VEGA 5N - ORIGINAL WELLBORE - PROPOSAL #1	600.00	600.00	15.05	12.63	6.215	CC
VEGA 5N - ORIGINAL WELLBORE - PROPOSAL #1	700.00	699.67	15.26	12.43	5.394	ES
VEGA 5N - ORIGINAL WELLBORE - PROPOSAL #1	15,648.91	15,452.99	438.23	150.77	1.524	SF
VEGA 6N - ORIGINAL PROPOSAL - PROPOSAL #1	500.00	500.00	30.02	28.05	15.229	CC, ES
VEGA 6N - ORIGINAL PROPOSAL - PROPOSAL #1	15,648.91	15,469.40	779.84	486.22	2.656	SF
VEGA 7N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	45.03	43.51	29.591	CC, ES
VEGA 7N - ORIGINAL WELLBORE - PROPOSAL #1	15,648.91	15,359.62	1,137.95	845.79	3.895	SF
VEGA 8N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	300.00	60.00	58.93	55.964	CC, ES
VEGA 8N - ORIGINAL WELLBORE - PROPOSAL #1	15,648.91	15,432.67	1,459.70	1,164.15	4.939	SF
VEGA 9N - ORIGINAL WELLBORE - PROPOSAL #1	600.00	600.00	59.96	57.54	24.771	CC, ES
VEGA 9N - ORIGINAL WELLBORE - PROPOSAL #1	2,600.00	2,567.26	390.90	367.89	16.991	SF

Offset Design SE NW SEC. 6 T3N R65W 6th P.M. - ABDN VERT JJ WARDELL A - Wellbore #1 - Wellbore #1

Survey Program: 100-GYD_CT

Offset Site Error: 0.00 usft

Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-154.49	-1,978.66	-944.16	2,192.46				
100.00	100.00	81.86	81.86	0.09	0.09	-154.49	-1,978.59	-944.26	2,192.37	2,192.19	0.17	N/A	
200.00	200.00	188.86	188.86	0.31	0.21	-154.48	-1,978.27	-944.51	2,192.19	2,191.67	0.52	4,192.884	
256.42	256.42	237.41	237.41	0.44	0.23	-154.47	-1,978.10	-944.60	2,192.06	2,191.39	0.67	3,259.227	
300.00	300.00	272.76	272.75	0.54	0.24	-154.47	-1,978.11	-944.71	2,192.14	2,191.36	0.78	2,811.982	
400.00	400.00	362.20	362.19	0.76	0.30	-154.46	-1,978.56	-945.21	2,192.82	2,191.77	1.06	2,072.731	
500.00	500.00	479.59	479.58	0.99	0.36	-154.45	-1,979.02	-946.01	2,193.50	2,192.16	1.34	1,635.175	
558.52	558.52	538.60	538.59	1.12	0.39	-154.44	-1,978.82	-946.34	2,193.47	2,191.97	1.50	1,460.128	
600.00	600.00	575.64	575.63	1.21	0.41	-154.43	-1,978.74	-946.63	2,193.53	2,191.91	1.62	1,357.182	
700.00	699.98	667.03	667.02	1.42	0.46	-33.65	-1,978.82	-947.44	2,192.53	2,190.67	1.86	1,179.507	
800.00	799.84	762.00	761.98	1.61	0.51	-33.75	-1,979.39	-947.94	2,188.94	2,186.84	2.11	1,038.892	
900.00	899.45	864.75	864.73	1.83	0.55	-33.96	-1,980.24	-948.17	2,182.54	2,180.17	2.38	918.926	
1,000.00	998.70	968.29	968.26	2.09	0.59	-34.27	-1,981.02	-948.00	2,173.03	2,170.37	2.66	816.290	
1,100.00	1,097.47	1,065.00	1,064.97	2.38	0.63	-34.64	-1,981.60	-947.98	2,160.62	2,157.66	2.96	728.758	
1,200.00	1,195.62	1,159.44	1,159.41	2.72	0.66	-35.09	-1,982.20	-948.30	2,145.58	2,142.29	3.29	652.183	
1,300.00	1,293.06	1,255.17	1,255.13	3.13	0.70	-35.64	-1,982.85	-948.87	2,127.94	2,124.29	3.65	583.778	
1,400.00	1,389.64	1,351.97	1,351.93	3.60	0.75	-36.28	-1,983.56	-949.41	2,107.63	2,103.59	4.04	522.053	
1,500.00	1,485.27	1,451.40	1,451.36	4.13	0.79	-37.04	-1,984.25	-949.91	2,084.63	2,080.16	4.47	466.022	
1,588.27	1,568.79	1,537.37	1,537.33	4.66	0.82	-37.81	-1,984.66	-950.28	2,062.03	2,057.13	4.90	421.023	
1,600.00	1,579.82	1,548.19	1,548.15	4.74	0.82	-37.87	-1,984.71	-950.33	2,058.90	2,053.94	4.95	415.661	

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