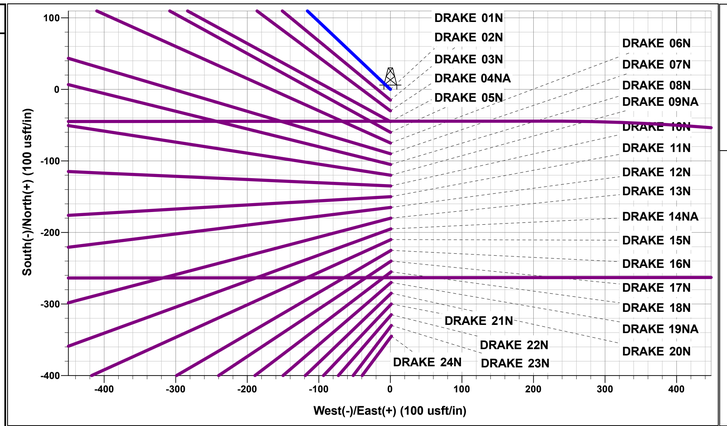
Project: WELD COUNTY, COLORADO (TRUE)
Site: SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)
Well: DRAKE 01N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

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: 2056ft FNL & 1017ft FWL of Sec 17
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	START NUDGE (2.5°/100ft BUR)
1596.04	32.40	313.45	1528.06	245.40	-259.01	-203.78	356.80	EOB TO 32.4° INC
5486.40	32.40	313.45	4812.76	1679.14	-1772.28	-1394.38	2441.42	END OF TANGENT
6782.44	0.00	0.00	6040.82	1924.54	-2031.29	-1598.16	2798.21	EOD TO VERTICAL
6882.44	0.00	0.00	6140.82	1924.54	-2031.29	-1598.16	2798.21	KOP (8°/100ft BUR)
7819.94	75.00	89.97	6832.61	1924.82	-1500.46	-1078.33	3329.05	EP: 120ft FNL & 450ft FEL of Sec 18
8011.06	90.29	89.97	6857.00	1924.92	-1311.47	-893.26	3518.03	HZ LANDING POINT
18633.63	90.30	89.97	6802.00	1930.97	9310.96	9509.08	14140.46	BHL: 120ft FNL & 200ft FEL of Sec 16

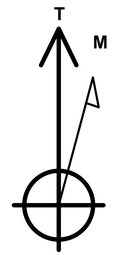


PROPOSED LOCAL COORDINATES:

SHL: 2056ft FNL & 1017ft FWL of Sec 17

EP: 120ft FNL & 450ft FEL of Sec 18

BHL: 120ft FNL & 200ft FEL of Sec 16

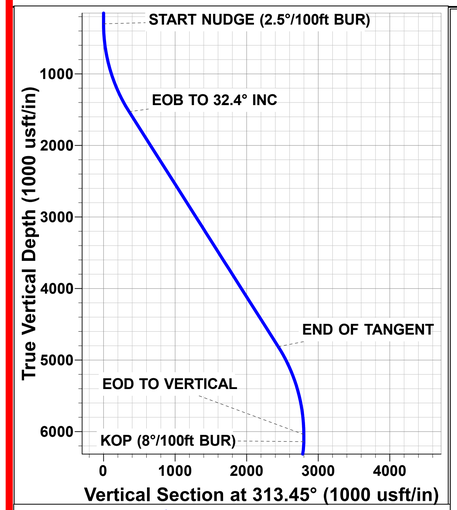


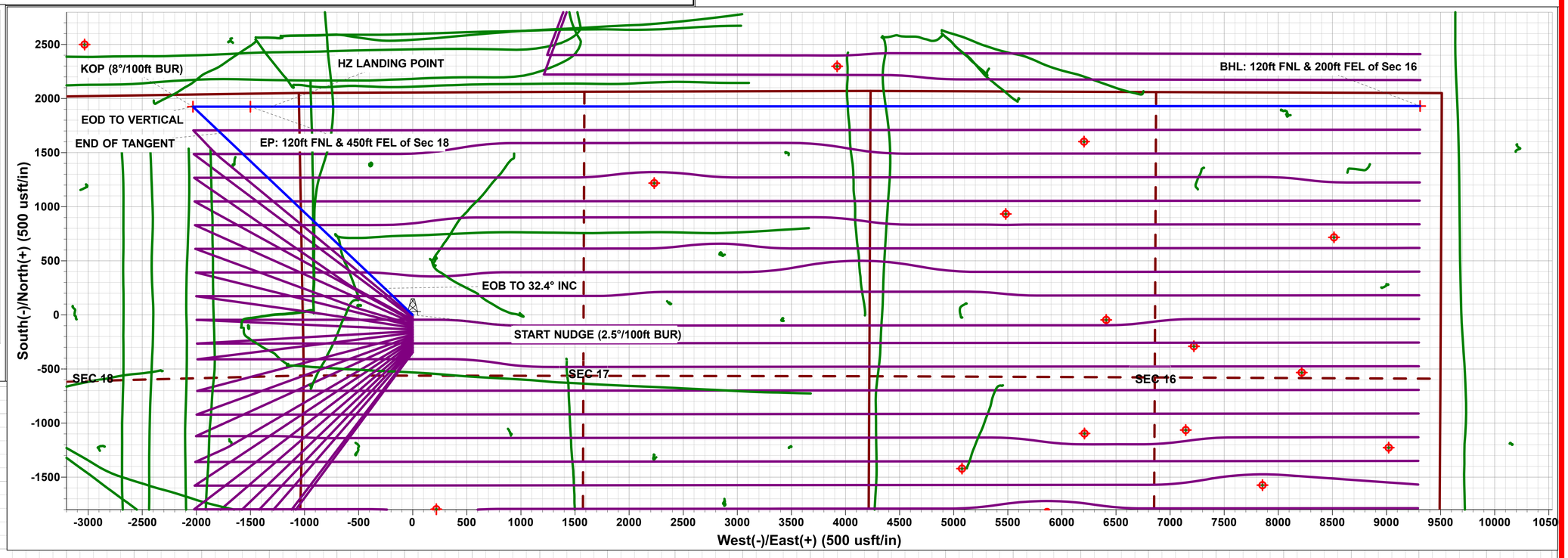
Azimuths to True North
Magnetic North: 7.75°

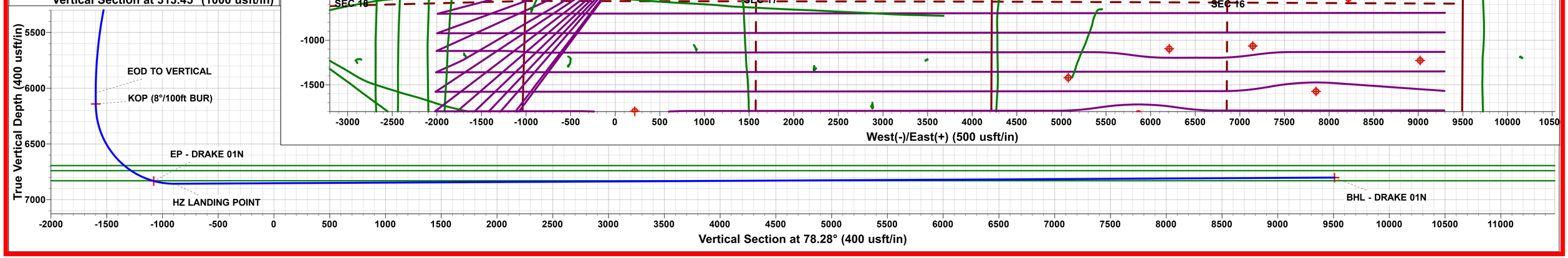
Magnetic Field
Strength: 51936.5nT
Dip Angle: 66.61°
Date: 2021-05-19
Model: IGRF2020

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL - DRAKE 01N	6802.00	1930.97	9310.96	1360585.63	3265775.09	40.319287	-104.546843
EP - DRAKE 01N	6832.61	1924.82	-1500.46	1360467.34	3254964.78	40.319275	-104.585614
KOP - DRAKE 01N	6140.82	1924.54	-2031.29	1360461.56	3254434.00	40.319274	-104.587517







PDC ENERGY

WELD COUNTY, COLORADO (TRUE)
SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)
DRAKE 01N

ORIGINAL WELLBORE
PROPOSAL #1

Anticollision Report

26 May, 2021

Anticollision Report

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well DRAKE 01N
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	KB 23ft @ 4762.00usft
Reference Site:	SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)	**MD Reference:**	KB 23ft @ 4762.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	DRAKE 01N	**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 #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 98.43usft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum centre distance of 9,999.98usft	**Error Surface:**	Ellipsoid Separation
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 2021-05-26

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	18,633.62	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
SW NE SEC. 21 T4N R64W 6th P.M. (GEORGE)						
GEORGE 01N - ORIGINAL WELLBORE - PROPOSAL #	8,441.84	18,121.45	5,268.04	4,924.96	15.355	CC
GEORGE 01N - ORIGINAL WELLBORE - PROPOSAL #	18,110.20	8,530.70	5,270.15	4,913.16	14.763	ES
GEORGE 01N - ORIGINAL WELLBORE - PROPOSAL #	18,633.63	7,934.63	5,284.75	4,915.71	14.320	SF
GEORGE 02N - ORIGINAL WELLBORE - PROPOSAL #	8,441.36	18,011.63	5,487.27	5,143.52	15.963	CC
GEORGE 02N - ORIGINAL WELLBORE - PROPOSAL #	18,633.63	7,843.94	5,489.54	5,120.41	14.872	ES, SF
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
ABDN DD ALTER C 16-28D - Wellbore #1 - Wellbore #1	16,073.06	7,197.10	128.74	-139.14	0.481	Level 3, CC, ES, SF
ABDN DD ALTER C 16-29D - ORIGINAL WELLBORE - W	14,927.50	6,900.36	67.73	-155.51	0.303	Level 3, CC, ES, SF
ABDN DD ALTER C 16-29D - SIDETRACK - SIDETRAC	14,637.59	6,816.46	331.10	115.32	1.534	CC, ES, SF
ABDN HZ FRANKLIN C08-62HNX - ORIGINAL WELLBO	8,937.25	7,332.84	667.27	582.67	7.887	CC
ABDN HZ FRANKLIN C08-62HNX - ORIGINAL WELLBO	12,400.00	10,756.00	750.74	492.10	2.903	ES, SF
ABDN HZ FRANKLIN C08-62HNX - SIDETRACK - SIDE	9,112.67	7,535.82	609.42	518.32	6.690	CC
ABDN HZ FRANKLIN C08-62HNX - SIDETRACK - SIDE	9,200.00	7,602.62	610.93	517.23	6.520	ES
ABDN HZ FRANKLIN C08-62HNX - SIDETRACK - SIDE	12,401.55	10,722.83	849.09	593.93	3.328	SF
ABDN VERT RYANN STATE C 16-27 - Wellbore #1 - We	17,419.14	6,727.39	85.09	-183.92	0.316	Level 3, CC, ES, SF
ABDN VERT STATE 16-2I4 - Wellbore #1 - Wellbore #1	16,577.88	6,735.21	767.18	510.90	2.994	CC
ABDN VERT STATE 16-2I4 - Wellbore #1 - Wellbore #1	16,600.00	6,735.13	767.50	510.84	2.990	ES, SF
EXIST DD NGL C1C - Wellbore #1 - Wellbore #1	13,445.51	6,633.51	1,451.72	1,276.27	8.275	CC
EXIST DD NGL C1C - Wellbore #1 - Wellbore #1	13,484.23	6,635.65	1,452.23	1,275.62	8.223	ES
EXIST DD NGL C1C - Wellbore #1 - Wellbore #1	13,681.08	6,641.38	1,470.69	1,289.66	8.124	SF
EXIST HZ FRANKLIN C17-69HN - Wellbore #1 - Wellbor	9,170.05	7,582.85	180.72	91.59	2.028	CC
EXIST HZ FRANKLIN C17-69HN - Wellbore #1 - Wellbor	12,401.55	10,816.70	217.15	-35.75	0.859	Level 3, ES, SF
EXIST HZ JAGGED 11N - Wellbore #1 - Wellbore #1	7,677.15	10,033.71	494.13	366.71	3.878	ES, SF
EXIST HZ JAGGED 11N - Wellbore #1 - Wellbore #1	7,698.77	10,013.35	494.03	366.73	3.881	CC
EXIST HZ JAGGED 12N - Wellbore #1 - Wellbore #1	7,650.00	10,006.89	254.26	124.85	1.965	ES, SF
EXIST HZ JAGGED 12N - Wellbore #1 - Wellbore #1	7,685.00	9,974.84	253.82	125.40	1.976	CC
EXIST HZ MARK ALTER C16-79HN - Wellbore #1 - Well	13,694.49	7,157.53	32.68	-30.03	0.521	Level 3, CC
EXIST HZ MARK ALTER C16-79HN - Wellbore #1 - Well	13,700.00	7,158.31	33.13	-31.77	0.511	Level 3, ES, SF
EXIST HZ SANDY HILLS PC C17-67HN - Wellbore #1 -	1,904.84	1,815.13	217.93	203.66	15.269	CC, ES
EXIST HZ SANDY HILLS PC C17-67HN - Wellbore #1 -	13,000.00	11,004.00	1,126.04	851.20	4.097	SF
EXIST HZ STOCKLEY C15-79HN - Wellbore #1 - Wellbo	18,633.63	11,194.97	353.58	224.51	2.739	CC, ES, SF
EXIST VERT CPC HARLESS 17-1 - Wellbore #1 - Wellb	12,798.18	6,778.61	437.82	285.91	2.882	CC
EXIST VERT CPC HARLESS 17-1 - Wellbore #1 - Wellb	12,800.00	6,778.60	437.82	285.85	2.881	ES, SF
EXIST VERT HARLESS PM C 17-2 - Wellbore #1 - Desi	11,554.45	6,815.03	708.36	454.16	2.787	CC, ES
EXIST VERT HARLESS PM C 17-2 - Wellbore #1 - Desi	11,600.00	6,814.80	709.83	454.35	2.778	SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well DRAKE 01N
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	KB 23ft @ 4762.00usft
Reference Site:	SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)	**MD Reference:**	KB 23ft @ 4762.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	DRAKE 01N	**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 #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
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST VERT NGL C1A - Wellbore #1 - Design #1	13,245.64	6,787.21	370.33	71.74	1.240	Level 3, CC, ES, SF
EXIST VERT ROHR 15-4I4 - Wellbore #1 - Wellbore #1	18,633.63	6,694.36	976.66	868.50	9.030	CC, ES, SF
EXIST VERT ROHR C 15-19 - Wellbore #1 - Wellbore #1	18,633.63	6,701.61	1,816.82	1,630.79	9.766	CC, ES, SF
EXIST VERT RYANN STATE C 16-1 - Wellbore #1 - Wel	17,963.38	6,693.40	606.55	312.73	2.064	CC, ES, SF
EXIST VERT STATE 16-3I4 - Wellbore #1 - Design #1	15,526.99	6,747.60	327.43	-31.80	0.911	Level 3, CC, ES, SF
EXIST VERT STATE 16-4I4 - Wellbore #1 - Design #1	14,803.39	6,758.86	995.32	654.70	2.922	CC, ES
EXIST VERT STATE 16-4I4 - Wellbore #1 - Design #1	14,862.18	6,758.55	997.06	655.33	2.918	SF
HEN 21N - ORIGINAL WELLBORE - PROPOSAL #1	13,250.99	9,969.71	470.40	238.98	2.033	CC
HEN 21N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	15,353.97	479.64	-32.43	0.937	Level 3, ES, SF
HEN 22N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	15,394.40	252.95	-94.61	0.728	Level 3, CC, ES, SF

Anticollision Report

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well DRAKE 01N
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	KB 23ft @ 4762.00usft
Reference Site:	SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)	**MD Reference:**	KB 23ft @ 4762.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	DRAKE 01N	**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 #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
SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)						
ABDN DD SH C17-24D - Wellbore #1 - Wellbore #1	98.43	75.48	1,476.93	1,476.76	8,722.055	CC
ABDN DD SH C17-24D - Wellbore #1 - Wellbore #1	300.00	274.57	1,477.23	1,476.38	1,750.994	ES
ABDN DD SH C17-24D - Wellbore #1 - Wellbore #1	12,500.00	7,094.67	4,141.01	3,989.31	27.298	SF
ABDN DD STATE C 16-20D - Wellbore #1 - Wellbore #1	14,771.78	6,828.60	2,580.33	2,360.12	11.718	CC
ABDN DD STATE C 16-20D - Wellbore #1 - Wellbore #1	14,862.18	6,828.97	2,581.92	2,359.54	11.611	ES
ABDN DD STATE C 16-20D - Wellbore #1 - Wellbore #1	15,157.45	6,830.19	2,609.00	2,381.40	11.463	SF
ABDN HZ FRICK C #17-79HN - ORIGINAL WELLBORE	8,384.38	8,428.17	80.73	47.30	2.414	CC
ABDN HZ FRICK C #17-79HN - ORIGINAL WELLBORE	8,400.00	8,427.85	82.23	47.00	2.334	ES
ABDN HZ FRICK C #17-79HN - ORIGINAL WELLBORE	8,464.55	8,426.54	113.77	58.33	2.052	SF
ABDN HZ FRICK C #17-79HN - SIDETRACK - SIDETRA	8,587.33	8,461.79	2.22	-32.35	0.064	Level 3, CC, SF
ABDN HZ FRICK C #17-79HN - SIDETRACK - SIDETRA	8,600.00	8,461.52	12.85	-62.18	0.171	Level 3, ES
ABDN VERT ANGELA C17-25 - Wellbore #1 - Design #1	300.00	283.00	1,809.44	1,803.64	311.974	CC
ABDN VERT ANGELA C17-25 - Wellbore #1 - Design #1	393.70	376.67	1,810.92	1,802.99	228.408	ES
ABDN VERT ANGELA C17-25 - Wellbore #1 - Design #1	10,728.33	6,826.17	3,907.51	3,675.52	16.843	SF
ABDN VERT CHENOWETH 21-4 - Wellbore #1 - Wellbo	14,446.26	6,956.78	5,859.27	5,662.24	29.738	CC
ABDN VERT CHENOWETH 21-4 - Wellbore #1 - Wellbo	14,600.00	6,955.24	5,861.29	5,660.14	29.139	ES
ABDN VERT CHENOWETH 21-4 - Wellbore #1 - Wellbo	16,500.00	6,936.16	6,208.76	5,970.25	26.032	SF
ABDN VERT CHENOWTH #1 - Wellbore #1 - Design #1	15,470.10	6,785.64	6,114.78	5,755.20	17.006	CC
ABDN VERT CHENOWTH #1 - Wellbore #1 - Design #1	15,649.58	6,784.70	6,117.41	5,753.05	16.789	ES
ABDN VERT CHENOWTH #1 - Wellbore #1 - Design #1	17,027.53	6,777.48	6,310.00	5,916.55	16.038	SF
ABDN VERT CLEMONS 13-15 - Wellbore #1 - Wellbore	18,633.63	6,705.82	3,244.52	2,942.15	10.730	CC, ES, SF
ABDN VERT FRICK #32-18 - Wellbore #1 - Wellbore #1	5,013.14	4,388.16	2,143.61	2,095.10	44.190	CC
ABDN VERT FRICK #32-18 - Wellbore #1 - Wellbore #1	5,100.00	4,457.13	2,144.20	2,094.63	43.256	ES
ABDN VERT FRICK #32-18 - Wellbore #1 - Wellbore #1	6,889.75	6,143.91	2,233.76	2,174.45	37.661	SF
ABDN VERT FRICK C18-2 - Wellbore #1 - Wellbore #1	6,522.67	5,791.29	1,237.90	1,178.65	20.893	CC, ES
ABDN VERT FRICK C18-2 - Wellbore #1 - Wellbore #1	6,700.00	5,958.52	1,239.75	1,180.12	20.792	SF
ABDN VERT FRICK C18-8 - Wellbore #1 - Wellbore #1	2,928.21	2,671.81	1,127.14	1,103.08	46.862	CC
ABDN VERT FRICK C18-8 - Wellbore #1 - Wellbore #1	2,952.75	2,692.76	1,127.21	1,102.88	46.327	ES
ABDN VERT FRICK C18-8 - Wellbore #1 - Wellbore #1	8,800.00	6,847.42	2,276.83	2,214.58	36.578	SF
ABDN VERT HARLESS PM C17-8 - Wellbore #1 - Wellb	12,748.31	6,776.45	1,982.73	1,831.87	13.143	CC
ABDN VERT HARLESS PM C17-8 - Wellbore #1 - Wellb	12,800.00	6,776.54	1,983.40	1,831.15	13.028	ES
ABDN VERT HARLESS PM C17-8 - Wellbore #1 - Wellb	13,100.00	6,777.03	2,013.68	1,855.54	12.734	SF
ABDN VERT MARY MILLS #41-18 - Wellbore #1 - Wellb	4,952.50	4,383.74	126.03	78.28	2.639	CC, ES, SF
ABDN VERT OCOMA C17-10 - Wellbore #1 - Wellbore #	98.43	38.90	2,581.75	2,581.63	10,000.000	CC
ABDN VERT OCOMA C17-10 - Wellbore #1 - Wellbore #	295.28	228.24	2,582.18	2,581.41	3,333.766	ES
ABDN VERT OCOMA C17-10 - Wellbore #1 - Wellbore #	12,600.00	6,813.26	3,404.77	3,263.68	24.133	SF
ABDN VERT OCOMA C17-11 - Wellbore #1 - Wellbore #	315.25	276.73	1,436.02	1,435.16	1,656.880	CC, ES
ABDN VERT OCOMA C17-11 - Wellbore #1 - Wellbore #	11,417.30	6,818.44	3,221.20	3,110.74	29.161	SF
ABDN VERT OCOMA C17-13 - Wellbore #1 - Design #1	300.00	289.00	2,634.58	2,628.71	449.318	CC
ABDN VERT OCOMA C17-13 - Wellbore #1 - Design #1	400.00	388.97	2,635.67	2,627.53	324.102	ES
ABDN VERT OCOMA C17-13 - Wellbore #1 - Design #1	10,500.00	6,833.34	4,832.83	4,606.91	21.392	SF
ABDN VERT OCOMA C17-16 - Wellbore #1 - Wellbore #	98.43	25.31	4,374.51	4,374.40	10,000.000	CC
ABDN VERT OCOMA C17-16 - Wellbore #1 - Wellbore #	12,992.10	6,997.20	4,406.23	4,248.56	27.945	ES
ABDN VERT OCOMA C17-16 - Wellbore #1 - Wellbore #	14,370.05	7,034.93	4,653.00	4,468.29	25.191	SF
ABDN VERT OCOMA C17-23 - Wellbore #1 - Wellbore #	321.25	289.85	3,375.74	3,374.84	3,774.780	CC, ES
ABDN VERT OCOMA C17-23 - Wellbore #1 - Wellbore #	13,385.80	6,852.21	3,821.35	3,660.47	23.752	SF
ABDN VERT OCOMA C17-9 - Wellbore #1 - Wellbore #1	12,798.62	6,776.25	3,152.47	3,000.35	20.724	CC
ABDN VERT OCOMA C17-9 - Wellbore #1 - Wellbore #1	12,893.68	6,775.29	3,153.90	2,999.24	20.393	ES
ABDN VERT OCOMA C17-9 - Wellbore #1 - Wellbore #1	13,600.00	6,768.06	3,252.72	3,084.02	19.282	SF
ABDN VERT OCOMA-UPRR C7-15 - Wellbore #1 - Desi	6,882.44	6,208.82	1,154.77	1,005.62	7.742	CC
ABDN VERT OCOMA-UPRR C7-15 - Wellbore #1 - Desi	6,900.00	6,226.38	1,154.96	1,005.44	7.724	ES
ABDN VERT OCOMA-UPRR C7-15 - Wellbore #1 - Desi	7,050.00	6,374.85	1,171.73	1,018.89	7.666	SF

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

Anticollision Report

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well DRAKE 01N
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	KB 23ft @ 4762.00usft
Reference Site:	SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)	**MD Reference:**	KB 23ft @ 4762.00usft
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Reference Well:	DRAKE 01N	**Survey Calculation Method:**	Minimum Curvature
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Reference Wellbore	ORIGINAL WELLBORE	**Database:**	Database 1
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
SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)						
ABDN VERT OCOMA-UPRR C7-16 - Wellbore #1 - Well	7,250.00	6,522.95	680.65	624.10	12.037	SF
ABDN VERT OCOMA-UPRR C7-16 - Wellbore #1 - Well	7,578.73	6,768.32	631.70	584.51	13.387	ES
ABDN VERT OCOMA-UPRR C7-16 - Wellbore #1 - Well	7,629.15	6,797.60	630.32	585.36	14.020	CC
ABDN VERT RITER C18-10 - Wellbore #1 - Wellbore #1	3,252.46	2,968.70	2,848.43	2,820.50	101.987	CC
ABDN VERT RITER C18-10 - Wellbore #1 - Wellbore #1	3,400.00	3,096.06	2,849.43	2,819.78	96.098	ES
ABDN VERT RITER C18-10 - Wellbore #1 - Wellbore #1	7,000.00	6,256.18	3,284.51	3,229.66	59.890	SF
ABDN VERT RITER C18-16 - Wellbore #1 - Wellbore #1	0.00	4.88	3,033.11			
ABDN VERT RITER C18-16 - Wellbore #1 - Wellbore #1	313.74	322.98	3,033.16	3,032.28	3,443.799	ES
ABDN VERT RITER C18-16 - Wellbore #1 - Wellbore #1	11,300.00	6,900.00	5,730.58	5,634.78	59.817	SF
ABDN VERT RYANN STATE C16-22 - Wellbore #1 - Des	17,537.84	6,726.79	2,462.88	2,047.29	5.926	CC
ABDN VERT RYANN STATE C16-22 - Wellbore #1 - Des	17,600.00	6,726.46	2,463.66	2,046.54	5.906	ES
ABDN VERT RYANN STATE C16-22 - Wellbore #1 - Des	17,716.50	6,725.85	2,469.35	2,049.89	5.887	SF
ABDN VERT RYANN STATE C16-24 - Wellbore #1 - We	16,316.62	6,763.86	3,777.09	3,528.46	15.191	CC
ABDN VERT RYANN STATE C16-24 - Wellbore #1 - We	16,400.00	6,763.03	3,778.01	3,527.19	15.063	ES
ABDN VERT RYANN STATE C16-24 - Wellbore #1 - We	17,027.53	6,756.80	3,843.41	3,580.46	14.617	SF
ABDN VERT SANDY HILLS FARM C17-4 - Wellbore #1	8,928.48	6,846.63	527.66	470.01	9.153	CC
ABDN VERT SANDY HILLS FARM C17-4 - Wellbore #1	8,956.68	6,847.45	528.41	469.15	8.917	ES
ABDN VERT SANDY HILLS FARM C17-4 - Wellbore #1	9,055.10	6,850.31	542.63	478.87	8.511	SF
ABDN VERT SCHNEIDER #43-18 - Wellbore #1 - Wellbo	1,652.31	1,581.49	2,018.95	2,009.94	223.999	CC
ABDN VERT SCHNEIDER #43-18 - Wellbore #1 - Wellbo	1,700.00	1,618.07	2,019.16	2,009.61	211.395	ES
ABDN VERT SCHNEIDER #43-18 - Wellbore #1 - Wellbo	9,600.00	6,878.60	3,654.26	3,582.60	50.997	SF
ABDN VERT SCHNEIDER/DIC/COLTON #34-18 - Wellb	1,723.79	1,685.92	3,997.71	3,954.92	93.417	CC
ABDN VERT SCHNEIDER/DIC/COLTON #34-18 - Wellb	2,100.00	2,003.56	4,002.79	3,949.34	74.894	ES
ABDN VERT SCHNEIDER/DIC/COLTON #34-18 - Wellb	7,750.00	6,861.24	4,773.25	4,582.91	25.077	SF
ABDN VERT STATE 16-12I4 - Wellbore #1 - Design #1	14,397.32	6,760.23	3,349.32	3,019.72	10.162	CC
ABDN VERT STATE 16-12I4 - Wellbore #1 - Design #1	14,468.48	6,759.86	3,350.07	3,018.59	10.106	ES
ABDN VERT STATE 16-12I4 - Wellbore #1 - Design #1	14,960.60	6,757.30	3,396.35	3,054.50	9.935	SF
ABDN VERT STATE 16-6I4 - Wellbore #1 - Design #1	15,731.13	6,743.27	1,975.26	1,609.38	5.399	CC
ABDN VERT STATE 16-6I4 - Wellbore #1 - Design #1	15,800.00	6,742.91	1,976.46	1,608.91	5.377	ES
ABDN VERT STATE 16-6I4 - Wellbore #1 - Design #1	15,900.00	6,742.39	1,982.46	1,613.06	5.367	SF
ABDN VERT STATE 16-7I4 - Wellbore #1 - Design #1	16,541.47	6,725.03	2,219.96	1,832.02	5.722	CC
ABDN VERT STATE 16-7I4 - Wellbore #1 - Design #1	16,600.00	6,724.72	2,220.74	1,831.34	5.703	ES
ABDN VERT STATE 16-7I4 - Wellbore #1 - Design #1	16,732.25	6,724.03	2,228.15	1,836.21	5.685	SF
ABDN VERT STATE 16-8I4 - Wellbore #1 - Wellbore #1	18,274.52	6,705.98	1,677.77	1,374.92	5.540	CC
ABDN VERT STATE 16-8I4 - Wellbore #1 - Wellbore #1	18,307.05	6,705.69	1,678.08	1,374.47	5.527	ES
ABDN VERT STATE 16-8I4 - Wellbore #1 - Wellbore #1	18,400.00	6,704.86	1,682.45	1,377.41	5.515	SF
ABDN VERT STATE 16-9I4 - Wellbore #1 - Design #1	18,340.84	6,733.55	3,157.45	2,719.37	7.207	CC
ABDN VERT STATE 16-9I4 - Wellbore #1 - Design #1	18,405.48	6,733.21	3,158.11	2,718.38	7.182	ES
ABDN VERT STATE 16-9I4 - Wellbore #1 - Design #1	18,633.63	6,732.00	3,171.00	2,726.59	7.135	SF
ABDN VERT STATE A 14-16 - Wellbore #1 - Design #1	14,541.88	4,414.00	4,792.92	4,544.05	19.259	CC
ABDN VERT STATE A 14-16 - Wellbore #1 - Design #1	14,665.33	4,414.00	4,794.51	4,542.70	19.040	ES
ABDN VERT STATE A 14-16 - Wellbore #1 - Design #1	15,800.00	4,414.00	4,955.29	4,681.83	18.121	SF
ABDN VERT STATE A 14-16X - Wellbore #1 - Wellbore #	14,544.86	6,756.89	4,223.34	4,023.51	21.135	CC
ABDN VERT STATE A 14-16X - Wellbore #1 - Wellbore #	14,665.33	6,756.46	4,225.06	4,022.03	20.811	ES
ABDN VERT STATE A 14-16X - Wellbore #1 - Wellbore #	15,649.58	6,752.93	4,365.43	4,143.27	19.650	SF
ABDN VERT UPRR 36 PAN AM B #1 - Wellbore #1 - De	300.00	292.00	2,585.46	2,579.46	431.115	CC
ABDN VERT UPRR 36 PAN AM B #1 - Wellbore #1 - De	393.70	385.67	2,586.56	2,578.44	318.470	ES
ABDN VERT UPRR 36 PAN AM B #1 - Wellbore #1 - De	10,700.00	6,835.31	4,814.89	4,584.52	20.900	SF
ABDN VERT UPRR OCOMA C17-12 - Wellbore #1 - We	212.01	189.01	1,392.11	1,391.60	2,710.925	CC
ABDN VERT UPRR OCOMA C17-12 - Wellbore #1 - We	300.00	276.07	1,392.15	1,391.36	1,758.309	ES
ABDN VERT UPRR OCOMA C17-12 - Wellbore #1 - We	10,531.48	6,846.40	3,562.44	3,473.91	40.238	SF
DRAKE 02N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	299.00	15.02	13.95	14.037	CC

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

Anticollision Report

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well DRAKE 01N
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	KB 23ft @ 4762.00usft
Reference Site:	SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)	**MD Reference:**	KB 23ft @ 4762.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	DRAKE 01N	**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 #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
SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)						
DRAKE 02N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,518.75	232.87	-130.75	0.640	Level 3, ES, SF
DRAKE 03N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	299.00	30.00	28.93	28.036	CC
DRAKE 03N - ORIGINAL WELLBORE - PROPOSAL #1	18,593.53	18,499.38	437.24	-165.89	0.725	Level 3, ES, SF
DRAKE 04NA - ORIGINAL WELLBORE - PROPOSAL #1	300.00	299.00	44.97	43.90	42.031	CC, ES
DRAKE 04NA - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,377.70	717.50	135.38	1.233	Level 3, SF
DRAKE 05N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	298.00	59.97	58.91	56.174	CC, ES
DRAKE 05N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,361.97	877.96	263.37	1.429	Level 3, SF
DRAKE 06N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	298.00	74.91	73.85	70.168	CC, ES
DRAKE 06N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,392.23	1,093.45	471.72	1.759	SF
DRAKE 07N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	297.00	89.96	88.89	84.435	CC, ES
DRAKE 07N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,294.20	1,314.28	694.35	2.120	SF
DRAKE 08N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	297.00	104.97	103.90	98.523	CC, ES
DRAKE 08N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,352.08	1,530.91	909.39	2.463	SF
DRAKE 09NA - ORIGINAL WELLBORE - PROPOSAL #1	300.00	296.00	119.94	118.88	112.815	CC, ES
DRAKE 09NA - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,207.35	1,754.32	1,134.76	2.832	SF
DRAKE 10N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	296.00	134.91	133.85	126.899	CC, ES
DRAKE 10N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,252.80	1,970.03	1,349.00	3.172	SF
DRAKE 11N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	296.00	149.96	148.89	141.051	CC, ES
DRAKE 11N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,346.24	2,186.94	1,563.68	3.509	SF
DRAKE 12N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	295.00	164.93	163.87	155.464	CC, ES
DRAKE 12N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,278.62	2,407.08	1,785.38	3.872	SF
DRAKE 13N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	295.00	179.94	178.88	169.612	CC, ES
DRAKE 13N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,359.72	2,624.32	2,002.97	4.224	SF
DRAKE 14NA - ORIGINAL WELLBORE - PROPOSAL #1	300.00	295.00	194.95	193.89	183.760	CC, ES
DRAKE 14NA - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,279.88	2,845.47	2,224.93	4.585	SF
DRAKE 15N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	295.00	209.89	208.83	197.839	CC, ES
DRAKE 15N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,367.16	3,062.68	2,443.10	4.943	SF
DRAKE 16N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	295.00	224.93	223.87	212.022	CC, ES
DRAKE 16N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,470.78	3,280.35	2,660.30	5.290	SF
DRAKE 17N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	295.00	239.94	238.88	226.170	CC, ES
DRAKE 17N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,237.47	3,492.43	2,881.28	5.714	SF
DRAKE 18N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	294.00	254.92	253.86	240.793	CC, ES
DRAKE 18N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,584.07	3,717.70	3,098.60	6.005	SF
DRAKE 19NA - ORIGINAL WELLBORE - PROPOSAL #1	300.00	294.00	269.89	268.83	254.937	CC, ES
DRAKE 19NA - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,523.56	3,936.40	3,317.32	6.358	SF
DRAKE 20N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	294.00	284.90	283.84	269.115	CC, ES
DRAKE 20N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,629.88	4,155.68	3,536.52	6.712	SF
DRAKE 21N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	295.00	299.95	298.89	282.731	CC, ES
DRAKE 21N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,755.39	4,373.78	3,755.39	7.073	SF
DRAKE 22N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	295.00	314.88	313.82	296.806	CC, ES
DRAKE 22N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,786.52	4,592.94	3,975.26	7.436	SF
DRAKE 23N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	294.00	329.93	328.87	311.649	CC, ES
DRAKE 23N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,757.30	4,811.14	4,196.24	7.824	SF
DRAKE 24N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	294.00	344.94	343.88	325.827	CC, ES
DRAKE 24N - ORIGINAL WELLBORE - PROPOSAL #1	18,633.63	18,931.07	4,954.98	4,337.66	8.027	SF
EXIST DD CRICKET C22-30D - Wellbore #1 - Wellbore #	18,633.63	6,806.45	5,235.51	4,907.27	15.950	CC, ES, SF
EXIST DD FRANKLIN #C18-27D - Wellbore #1 - Wellbor	6,699.09	6,141.36	350.19	293.08	6.132	CC
EXIST DD FRANKLIN #C18-27D - Wellbore #1 - Wellbor	6,700.00	6,142.30	350.19	293.08	6.132	ES
EXIST DD FRANKLIN #C18-27D - Wellbore #1 - Wellbor	6,782.44	6,226.43	351.15	293.78	6.121	SF
EXIST DD NEI C17-33D - Wellbore #1 - Wellbore #1	3,648.67	3,881.31	3,033.43	2,975.54	52.398	CC
EXIST DD NEI C17-33D - Wellbore #1 - Wellbore #1	3,838.58	4,113.02	3,035.49	2,973.67	49.103	ES
EXIST DD NEI C17-33D - Wellbore #1 - Wellbore #1	9,940.93	7,668.30	4,291.85	4,156.16	31.629	SF

Anticollision Report

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well DRAKE 01N
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	KB 23ft @ 4762.00usft
Reference Site:	SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)	**MD Reference:**	KB 23ft @ 4762.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	DRAKE 01N	**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 #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
SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)						
EXIST DD NEI C18-21D - Wellbore #1 - Wellbore #1	4,823.17	4,371.76	2,690.27	2,635.18	48.832	CC
EXIST DD NEI C18-21D - Wellbore #1 - Wellbore #1	4,900.00	4,416.47	2,690.83	2,634.73	47.970	ES
EXIST DD NEI C18-21D - Wellbore #1 - Wellbore #1	7,000.00	6,476.83	2,777.57	2,705.15	38.358	SF
EXIST DD NEI C18-22D - Wellbore #1 - Wellbore #1	4,713.20	4,892.89	2,203.94	2,137.04	32.942	CC
EXIST DD NEI C18-22D - Wellbore #1 - Wellbore #1	4,724.40	4,896.99	2,203.96	2,136.89	32.856	ES
EXIST DD NEI C18-22D - Wellbore #1 - Wellbore #1	5,600.00	5,406.43	2,306.78	2,229.13	29.708	SF
EXIST DD NEI C18-23D - Wellbore #1 - Wellbore #1	3,682.55	3,721.41	3,152.57	3,098.77	58.592	CC
EXIST DD NEI C18-23D - Wellbore #1 - Wellbore #1	3,800.00	3,808.77	3,153.91	3,097.99	56.398	ES
EXIST DD NEI C18-23D - Wellbore #1 - Wellbore #1	9,350.38	7,527.02	4,548.54	4,438.17	41.213	SF
EXIST DD NEI C18-24D - Wellbore #1 - Wellbore #1	3,742.58	3,325.05	3,523.54	3,479.32	79.677	CC
EXIST DD NEI C18-24D - Wellbore #1 - Wellbore #1	3,838.58	3,345.51	3,524.14	3,478.73	77.611	ES
EXIST DD NEI C18-24D - Wellbore #1 - Wellbore #1	6,988.18	6,509.00	3,986.06	3,909.75	52.237	SF
EXIST DD OSTER C19-27D - Wellbore #1 - Wellbore #1	3,194.42	2,967.34	3,468.73	3,438.75	115.718	CC
EXIST DD OSTER C19-27D - Wellbore #1 - Wellbore #1	3,248.03	3,000.00	3,469.12	3,438.44	113.056	ES
EXIST DD OSTER C19-27D - Wellbore #1 - Wellbore #1	11,900.00	7,358.29	7,013.25	6,899.64	61.729	SF
EXIST DD PLUSS C17-32D - Wellbore #1 - Wellbore #1	1,695.98	1,564.57	318.76	307.60	28.561	CC
EXIST DD PLUSS C17-32D - Wellbore #1 - Wellbore #1	1,700.00	1,567.92	318.77	307.55	28.402	ES
EXIST DD PLUSS C17-32D - Wellbore #1 - Wellbore #1	1,900.00	1,724.66	340.47	326.53	24.429	SF
EXIST DD SH FARMS C17-3 - Wellbore #1 - Wellbore #1	10,259.02	7,027.85	443.17	337.40	4.190	CC, ES
EXIST DD SH FARMS C17-3 - Wellbore #1 - Wellbore #1	10,300.00	7,027.54	445.06	338.62	4.181	SF
EXIST DD SH FARMS C17-6 - Wellbore #1 - Wellbore #1	1,405.45	1,382.47	482.58	474.25	57.942	CC, ES
EXIST DD SH FARMS C17-6 - Wellbore #1 - Wellbore #1	10,900.00	6,966.02	2,005.05	1,883.57	16.505	SF
EXIST HZ COLLINS 18Q-221 - Wellbore #1 - Wellbore #	7,119.85	11,485.00	1,415.31	1,285.57	10.908	CC, ES
EXIST HZ COLLINS 18Q-221 - Wellbore #1 - Wellbore #	7,250.00	11,485.00	1,432.46	1,299.47	10.772	SF
EXIST HZ COLLINS 18Q-301 - Wellbore #1 - Wellbore #	7,113.49	11,575.00	1,658.14	1,527.99	12.740	CC, ES
EXIST HZ COLLINS 18Q-301 - Wellbore #1 - Wellbore #	7,250.00	11,575.00	1,676.23	1,543.16	12.597	SF
EXIST HZ COLLINS 18T-201 - Wellbore #1 - Wellbore #	7,272.18	11,318.00	702.77	588.21	6.135	CC
EXIST HZ COLLINS 18T-201 - Wellbore #1 - Wellbore #	7,300.00	11,318.00	703.77	586.88	6.021	ES
EXIST HZ COLLINS 18T-201 - Wellbore #1 - Wellbore #	7,400.00	11,318.00	723.47	599.53	5.837	SF
EXIST HZ COLLINS 18T-221 - ORIGINAL WELLBORE -	319.44	357.11	3,564.00	3,562.93	3,319.866	CC
EXIST HZ COLLINS 18T-221 - ORIGINAL WELLBORE -	393.70	432.29	3,564.22	3,562.83	2,558.039	ES
EXIST HZ COLLINS 18T-221 - ORIGINAL WELLBORE -	10,900.00	7,227.00	5,607.92	5,505.09	54.534	SF
EXIST HZ COLLINS 18T-221 - SIDETRACK - SIDETRAC	7,517.14	11,231.00	417.58	346.96	5.913	CC
EXIST HZ COLLINS 18T-221 - SIDETRACK - SIDETRAC	7,550.00	11,231.00	419.16	344.79	5.636	ES
EXIST HZ COLLINS 18T-221 - SIDETRACK - SIDETRAC	7,750.00	11,231.00	490.10	386.43	4.728	SF
EXIST HZ COLLINS 18T-321 - Wellbore #1 - Wellbore #	7,427.20	11,471.00	507.63	417.45	5.629	CC
EXIST HZ COLLINS 18T-321 - Wellbore #1 - Wellbore #	7,480.30	11,471.00	511.66	414.39	5.260	ES
EXIST HZ COLLINS 18T-321 - Wellbore #1 - Wellbore #	7,600.00	11,471.00	548.62	436.93	4.912	SF
EXIST HZ COLLINS 18T-341 - Wellbore #1 - Wellbore #	7,229.28	11,412.00	928.89	807.11	7.628	CC
EXIST HZ COLLINS 18T-341 - Wellbore #1 - Wellbore #	7,250.00	11,412.00	929.39	806.39	7.556	ES
EXIST HZ COLLINS 18T-341 - Wellbore #1 - Wellbore #	7,350.00	11,412.00	945.71	817.63	7.384	SF
EXIST HZ FRICK PC C17-65HN - Wellbore #1 - Wellbor	2,612.80	2,458.41	1,181.29	1,155.52	45.834	CC
EXIST HZ FRICK PC C17-65HN - Wellbore #1 - Wellbor	2,657.48	2,491.27	1,181.69	1,155.29	44.768	ES
EXIST HZ FRICK PC C17-65HN - Wellbore #1 - Wellbor	13,385.80	11,373.00	2,683.94	2,379.12	8.805	SF
EXIST HZ STOCKLEY C22-79HN - Wellbore #1 - Wellbo	18,633.63	6,050.00	5,107.96	4,788.40	15.984	CC, ES, SF
EXIST VERT CHENOWETH #21-2 - Wellbore #1 - Desig	16,825.70	6,760.54	5,856.56	5,460.09	14.772	CC
EXIST VERT CHENOWETH #21-2 - Wellbore #1 - Desig	17,000.00	6,759.62	5,859.15	5,458.06	14.608	ES
EXIST VERT CHENOWETH #21-2 - Wellbore #1 - Desig	18,110.20	6,753.77	5,995.77	5,571.56	14.134	SF
EXIST VERT CLEMONS #15-1 - Wellbore #1 - Wellbore	18,633.63	6,691.40	4,637.30	4,329.30	15.056	CC, ES, SF
EXIST VERT CPC-HARLESS #17-2 - Wellbore #1 - Well	11,679.92	6,870.66	1,810.84	1,688.26	14.774	CC
EXIST VERT CPC-HARLESS #17-2 - Wellbore #1 - Well	11,712.58	6,869.10	1,811.13	1,687.65	14.667	ES
EXIST VERT CPC-HARLESS #17-2 - Wellbore #1 - Well	12,007.85	6,855.54	1,840.24	1,710.37	14.170	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 DRAKE 01N
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	KB 23ft @ 4762.00usft
Reference Site:	SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)	**MD Reference:**	KB 23ft @ 4762.00usft
Site Error:	0.00 usft	**North Reference:**	True
Reference Well:	DRAKE 01N	**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 #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
SW NW SEC. 17 T4N R64W 6th P.M. (DRAKE)						
EXIST VERT MORIAH #17-15 - Wellbore #1 - Wellbore #	12,160.12	6,777.40	1,370.39	1,235.26	10.142	CC
EXIST VERT MORIAH #17-15 - Wellbore #1 - Wellbore #	12,200.00	6,778.20	1,370.97	1,234.74	10.064	ES
EXIST VERT MORIAH #17-15 - Wellbore #1 - Wellbore #	12,400.00	6,782.31	1,391.21	1,251.25	9.940	SF
EXIST VERT OCOMA C17-15 - Wellbore #1 - Wellbore #	306.22	262.60	3,480.24	3,479.45	4,373.511	CC, ES
EXIST VERT OCOMA C17-15 - Wellbore #1 - Wellbore #	13,484.23	6,994.13	5,045.20	4,887.53	32.000	SF
EXIST VERT RYANN STATE C16-21 - Wellbore #1 - Des	16,465.66	6,749.43	2,994.09	2,607.74	7.750	CC
EXIST VERT RYANN STATE C16-21 - Wellbore #1 - Des	16,535.40	6,749.06	2,994.90	2,606.76	7.716	ES
EXIST VERT RYANN STATE C16-21 - Wellbore #1 - Des	16,830.68	6,747.51	3,016.26	2,622.20	7.654	SF
EXIST VERT RYANN STATE C16-23 - Wellbore #1 - Des	17,855.67	6,734.11	3,871.37	3,446.79	9.118	CC
EXIST VERT RYANN STATE C16-23 - Wellbore #1 - Des	17,913.35	6,733.81	3,871.80	3,445.70	9.087	ES
EXIST VERT RYANN STATE C16-23 - Wellbore #1 - Des	18,400.00	6,731.24	3,909.45	3,473.43	8.966	SF
EXIST VERT RYANN STATE C16-25 - Wellbore #1 - Des	15,183.64	6,752.14	3,750.70	3,399.69	10.685	CC
EXIST VERT RYANN STATE C16-25 - Wellbore #1 - Des	15,300.00	6,751.53	3,752.51	3,398.45	10.599	ES
EXIST VERT RYANN STATE C16-25 - Wellbore #1 - Des	15,800.00	6,748.91	3,801.01	3,436.54	10.429	SF
EXIST VERT RYANN STATE C21-27 - Wellbore #1 - We	17,602.86	6,720.86	5,058.86	4,774.46	17.788	CC
EXIST VERT RYANN STATE C21-27 - Wellbore #1 - We	17,716.50	6,720.96	5,060.14	4,772.71	17.605	ES
EXIST VERT RYANN STATE C21-27 - Wellbore #1 - We	18,633.63	6,721.83	5,162.81	4,856.92	16.878	SF
EXIST VERT SANDY HILLS FARM C17-5 - Wellbore #1	1,698.98	1,595.65	265.06	255.18	26.817	CC
EXIST VERT SANDY HILLS FARM C17-5 - Wellbore #1	1,700.00	1,596.50	265.06	255.17	26.786	ES
EXIST VERT SANDY HILLS FARM C17-5 - Wellbore #1	1,870.08	1,738.81	281.03	269.69	24.780	SF
EXIST VERT SH FARMS C17-19 - Wellbore #1 - Wellbo	1,281.20	1,230.40	527.95	522.48	96.536	CC
EXIST VERT SH FARMS C17-19 - Wellbore #1 - Wellbo	1,300.00	1,247.65	528.00	522.38	93.928	ES
EXIST VERT SH FARMS C17-19 - Wellbore #1 - Wellbo	10,000.00	6,840.47	1,542.74	1,461.45	18.979	SF
EXIST VERT STATE 16-10I4 - Wellbore #1 - Design #1	17,174.44	6,749.70	3,503.96	3,097.95	8.630	CC
EXIST VERT STATE 16-10I4 - Wellbore #1 - Design #1	17,224.38	6,749.44	3,504.32	3,097.00	8.603	ES
EXIST VERT STATE 16-10I4 - Wellbore #1 - Design #1	17,618.08	6,747.37	3,531.94	3,116.43	8.500	SF
EXIST VERT STATE 16-11I4 - Wellbore #1 - Design #1	15,529.71	6,749.33	3,025.49	2,664.99	8.393	CC
EXIST VERT STATE 16-11I4 - Wellbore #1 - Design #1	15,600.00	6,748.96	3,026.30	2,663.98	8.353	ES
EXIST VERT STATE 16-11I4 - Wellbore #1 - Design #1	15,944.85	6,747.16	3,053.83	2,684.50	8.268	SF
EXIST VERT STATE 16-14I4 - Wellbore #1 - Design #1	15,375.75	6,758.13	4,708.53	4,352.09	13.210	CC
EXIST VERT STATE 16-14I4 - Wellbore #1 - Design #1	15,500.00	6,757.48	4,710.17	4,350.44	13.094	ES
EXIST VERT STATE 16-14I4 - Wellbore #1 - Design #1	16,338.55	6,753.09	4,805.96	4,428.61	12.736	SF
EXIST VERT STATE 16-15I4 - Wellbore #1 - Design #1	17,015.75	6,736.54	4,483.17	4,081.89	11.172	CC
EXIST VERT STATE 16-15I4 - Wellbore #1 - Design #1	17,125.95	6,735.96	4,484.53	4,080.35	11.095	ES
EXIST VERT STATE 16-15I4 - Wellbore #1 - Design #1	17,800.00	6,732.41	4,551.25	4,133.32	10.890	SF
EXIST VERT STATE 16-16I4 - Wellbore #1 - Design #1	18,329.36	6,728.61	4,494.45	4,056.83	10.270	CC
EXIST VERT STATE 16-16I4 - Wellbore #1 - Design #1	18,405.48	6,728.21	4,495.09	4,055.47	10.225	ES
EXIST VERT STATE 16-16I4 - Wellbore #1 - Design #1	18,633.63	6,727.00	4,504.74	4,059.67	10.122	SF
EXIST VERT STATE 16-5I4 - Wellbore #1 - Wellbore #1	14,440.14	6,753.60	1,824.04	1,627.10	9.262	CC
EXIST VERT STATE 16-5I4 - Wellbore #1 - Wellbore #1	14,500.00	6,753.25	1,825.03	1,626.58	9.197	ES
EXIST VERT STATE 16-5I4 - Wellbore #1 - Wellbore #1	14,665.33	6,752.31	1,837.89	1,636.49	9.125	SF
EXIST VERT STATE A 41-16 - Wellbore #1 - Design #1	17,836.84	6,705.21	1,213.75	790.35	2.867	CC, ES
EXIST VERT STATE A 41-16 - Wellbore #1 - Design #1	17,900.00	6,704.88	1,215.39	790.96	2.864	SF
EXIST VERT THOUTT #1 - Wellbore #1 - Wellbore #1	18,126.43	6,729.44	5,903.40	5,604.69	19.763	CC
EXIST VERT THOUTT #1 - Wellbore #1 - Wellbore #1	18,300.00	6,730.75	5,905.96	5,602.64	19.472	ES
EXIST VERT THOUTT #1 - Wellbore #1 - Wellbore #1	18,633.63	6,733.37	5,925.15	5,613.81	19.031	SF
EXIST VERT UPRR OCOMA C17-4 - Wellbore #1 - Desi	300.00	269.00	2,804.03	2,798.48	505.191	CC
EXIST VERT UPRR OCOMA C17-4 - Wellbore #1 - Desi	393.70	362.67	2,805.76	2,798.08	365.165	ES
EXIST VERT UPRR OCOMA C17-4 - Wellbore #1 - Desi	11,900.00	6,806.15	4,813.04	4,554.94	18.648	SF