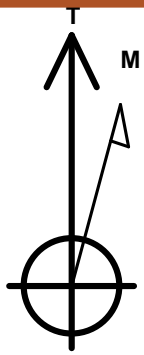
PDC ENERGY

Project: WELD COUNTY, COLORADO (TRUE)
Site: NW NW SEC. 16 T5N R64W 6th P.M.
Well: WATERMELON 10N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1



Azimuths to True North
Magnetic North: 7.93

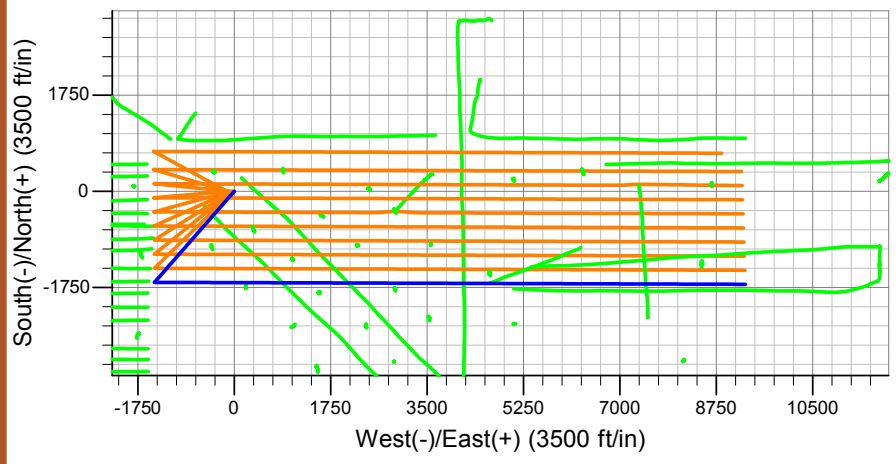
Magnetic Field
Strength: 52227.9nT
Dip Angle: 66.85
Date: 2/13/2019
Model: IGRF2015

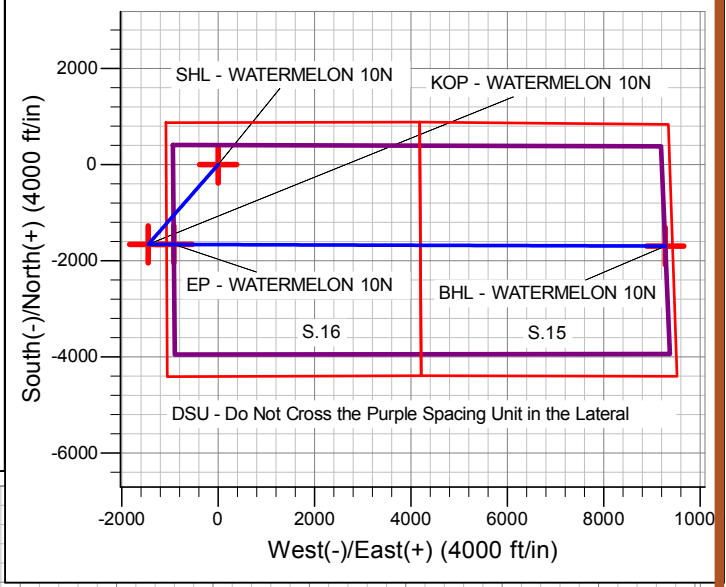
ANNOTATIONS

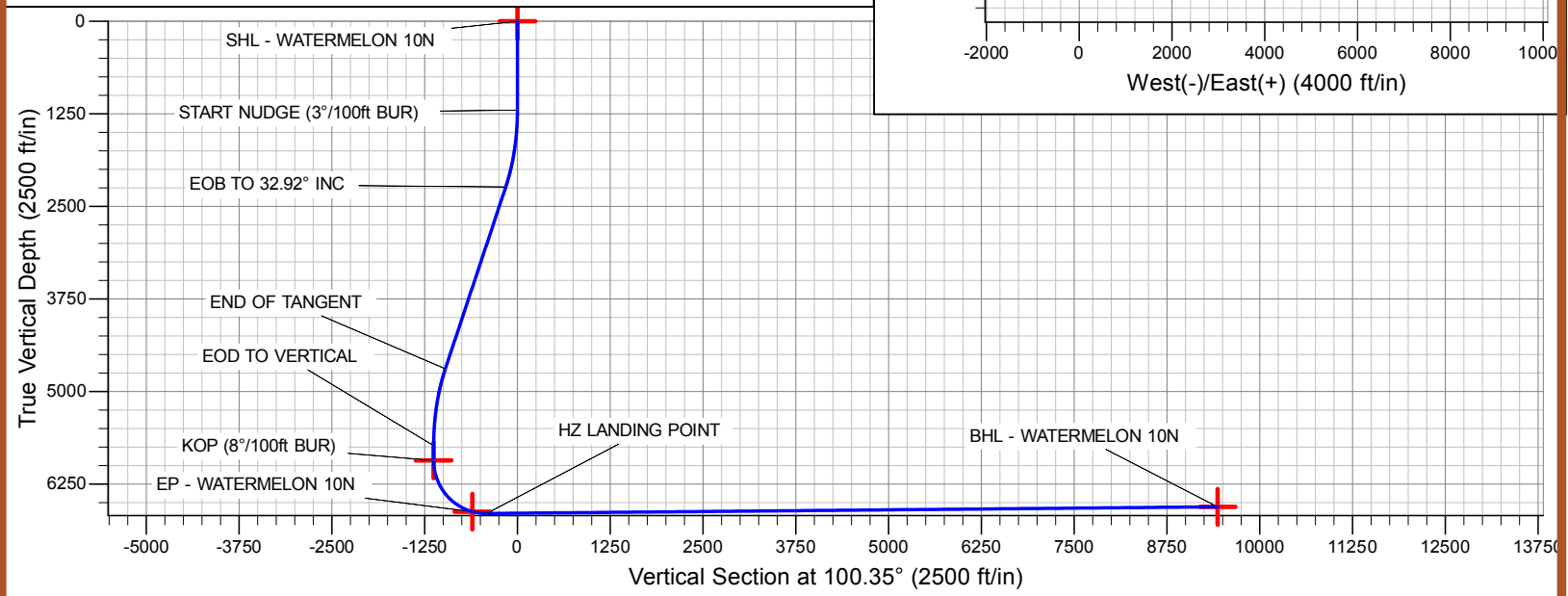
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0	SHL: 874ft FNL & 1078ft FWL of Sec 16
1200.0	0.00	0.00	1200.0	0.0	0.0	0.0	0.0	START NUDGE (3°/100ft BUR)
2297.2	32.92	221.16	2237.8	-230.8	-201.8	-157.0	306.6	EOB TO 32.92° INC
5223.1	32.92	221.16	4694.0	-1427.9	-1248.2	-971.4	1896.5	END OF TANGENT
6320.3	0.00	0.00	5731.9	-1658.7	-1450.0	-1128.4	2203.1	EOD TO VERTICAL
6520.3	0.00	0.00	5931.9	-1658.7	-1450.0	-1128.4	2203.1	KOP (8°/100ft BUR)
7457.8	75.00	90.19	6623.7	-1660.5	-919.1	-605.8	2734.0	EP: 2533ft FNL & 150ft FWL of Sec 16
7651.6	90.51	90.19	6648.0	-1661.1	-727.4	-417.2	2925.6	HZ LANDING POINT
17657.8	90.52	90.19	6558.0	-1694.4	9278.3	9431.8	12931.4	BHL: 2533ft FNL & 150ft FEL of Sec 15

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL - WATERMELON 10N	0.0	0.0	0.0	1391462.22	3261612.56	40° 24' 14.982 N	104° 33' 38.149 W
KOP - WATERMELON 10N	5931.9	-1658.7	-1450.0	1389788.32	3260180.32	40° 23' 58.591 N	104° 33' 56.890 W
BHL - WATERMELON 10N	6558.0	-1694.4	9278.3	1389866.27	3270907.94	40° 23' 58.221 N	104° 31' 38.223 W
EP - WATERMELON 10N	6623.6	-1660.5	-919.1	1389792.18	3260711.12	40° 23' 58.574 N	104° 33' 50.028 W







PDC ENERGY

WELD COUNTY, COLORADO (TRUE)
NW NW SEC. 16 T5N R64W 6th P.M. (WATERMELON)
WATERMELON 10N

ORIGINAL WELLBORE
PROPOSAL #1

Anticollision Report

18 March, 2019

PDC Energy
Anticollision Report

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well WATERMELON 10N - Slot WATERMELON 10N
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	KB 23' @ 4633.0ft (Original Well Elev)
Reference Site:	NW NW SEC. 16 T5N R64W 6th P.M. (WATERMELON)	**MD Reference:**	KB 23' @ 4633.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	WATERMELON 10N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM
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:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.0 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 3/18/2019

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,657.3	PROPOSAL #1 (ORIGINAL WELLBORE)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
NW NW SEC. 16 T5N R64W 6th P.M. (WATERMELON)						
ABDN VERT DROEGEMULLER #11-5 - Wellbore #1 - W	13,456.8	6,554.8	1,865.5	1,688.8	10.556	CC
ABDN VERT DROEGEMULLER #11-5 - Wellbore #1 - W	13,500.0	6,554.8	1,866.0	1,688.3	10.499	ES
ABDN VERT DROEGEMULLER #11-5 - Wellbore #1 - W	13,700.0	6,554.9	1,881.3	1,700.1	10.382	SF
ABDN VERT LOUSTALET #15-1 - Wellbore #1 - Wellbor	13,486.9	6,539.2	729.7	552.5	4.117	CC
ABDN VERT LOUSTALET #15-1 - Wellbore #1 - Wellbor	13,500.0	6,539.1	729.9	552.2	4.107	ES, SF
ABDN VERT LOUSTALET #21-15 - Wellbore #1 - Wellbo	14,711.1	6,490.8	1,995.9	1,784.6	9.447	CC, ES
ABDN VERT LOUSTALET #21-15 - Wellbore #1 - Wellbo	14,900.0	6,486.8	2,005.3	1,790.3	9.330	SF
ABDN VERT LOUSTALET #B15-14 - Wellbore #1 - Desi	14,780.8	6,535.1	2,056.5	1,714.6	6.016	CC
ABDN VERT LOUSTALET #B15-14 - Wellbore #1 - Desi	14,800.0	6,534.9	2,056.5	1,714.1	6.006	ES
ABDN VERT LOUSTALET #B15-14 - Wellbore #1 - Desi	15,000.0	6,533.1	2,068.1	1,720.7	5.953	SF
ABDN VERT LOUSTALET #B15-15 - Wellbore #1 - Desi	15,866.1	6,524.3	2,079.5	1,707.6	5.592	CC
ABDN VERT LOUSTALET #B15-15 - Wellbore #1 - Desi	15,900.0	6,524.0	2,079.8	1,706.9	5.577	ES
ABDN VERT LOUSTALET #B15-15 - Wellbore #1 - Desi	16,100.0	6,522.1	2,092.6	1,715.0	5.541	SF
ABDN VERT LOUSTALET #B15-16 - Wellbore #1 - Wellb	17,058.5	6,429.2	2,176.0	1,899.3	7.864	CC
ABDN VERT LOUSTALET #B15-16 - Wellbore #1 - Wellb	17,100.0	6,430.2	2,176.4	1,898.5	7.830	ES
ABDN VERT LOUSTALET #B15-16 - Wellbore #1 - Wellb	17,300.0	6,434.9	2,189.4	1,906.8	7.747	SF
ABDN VERT LOUSTALET #B15-9 - Wellbore #1 - Desig	17,096.7	6,511.1	849.4	443.4	2.092	CC
ABDN VERT LOUSTALET #B15-9 - Wellbore #1 - Desig	17,100.0	6,511.1	849.4	443.3	2.092	ES, SF
ABDN VERT PATRIOT #B16-13 - Wellbore #1 - Wellbore	7,940.3	6,583.0	2,184.9	2,147.9	58.959	CC, ES
ABDN VERT PATRIOT #B16-13 - Wellbore #1 - Wellbore	9,500.0	6,619.1	2,684.2	2,624.2	44.716	SF
ABDN VERT PATRIOT #B16-3 - Wellbore #1 - Wellbore	329.4	289.4	963.3	962.4	1,093.473	CC
ABDN VERT PATRIOT #B16-3 - Wellbore #1 - Wellbore	1,200.0	1,160.0	963.7	960.5	301.973	ES
ABDN VERT PATRIOT #B16-3 - Wellbore #1 - Wellbore	10,000.0	6,686.8	2,139.1	2,060.4	27.183	SF
ABDN VERT PATRIOT #B16-9 - Wellbore #1 - Wellbore	11,911.5	6,594.6	661.2	527.2	4.936	CC, ES
ABDN VERT PATRIOT #B16-9 - Wellbore #1 - Wellbore	12,000.0	6,593.4	667.0	531.2	4.911	SF
ABDN VERT SOLIS #43-17 - Wellbore #1 - Wellbore #1	6,169.9	5,500.0	1,073.0	1,047.0	41.268	CC, ES
ABDN VERT SOLIS #43-17 - Wellbore #1 - Wellbore #1	6,300.0	5,500.0	1,084.9	1,058.1	40.570	SF
ABDN VERT SOLIS #44-17 - Wellbore #1 - Wellbore #1	6,291.9	5,678.5	1,891.0	1,858.0	57.379	CC, ES
ABDN VERT SOLIS #44-17 - Wellbore #1 - Wellbore #1	6,550.0	5,930.0	1,894.4	1,861.1	57.001	SF
EXIST DD BAUER DEBUS #22JD - Wellbore #1 - Wellbo	13,944.4	6,530.0	2,840.8	2,636.1	13.878	CC
EXIST DD BAUER DEBUS #22JD - Wellbore #1 - Wellbo	14,000.0	6,529.1	2,841.4	2,634.9	13.765	ES
EXIST DD BAUER DEBUS #22JD - Wellbore #1 - Wellbo	14,600.0	6,519.4	2,915.5	2,695.2	13.237	SF
EXIST DD BAUER DEBUS #22MD - Wellbore #1 - Wellb	15,208.8	6,635.9	2,762.8	2,520.8	11.416	CC
EXIST DD BAUER DEBUS #22MD - Wellbore #1 - Wellb	15,300.0	6,634.6	2,764.3	2,519.8	11.307	ES
EXIST DD BAUER DEBUS #22MD - Wellbore #1 - Wellb	15,700.0	6,628.6	2,806.1	2,553.7	11.119	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 WATERMELON 10N - Slot WATERMELON 10N
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	KB 23' @ 4633.0ft (Original Well Elev)
Reference Site:	NW NW SEC. 16 T5N R64W 6th P.M. (WATERMELON)	**MD Reference:**	KB 23' @ 4633.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	WATERMELON 10N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM
Reference Design:	PROPOSAL #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
NW NW SEC. 16 T5N R64W 6th P.M. (WATERMELON)						
EXIST DD DOUGHMAN #22RD - Wellbore #1 - Wellbore	16,600.9	6,562.2	2,805.9	2,526.6	10.045	CC
EXIST DD DOUGHMAN #22RD - Wellbore #1 - Wellbore	16,700.0	6,561.8	2,807.7	2,525.3	9.941	ES
EXIST DD DOUGHMAN #22RD - Wellbore #1 - Wellbore	17,100.0	6,560.1	2,850.0	2,558.5	9.779	SF
EXIST DD FRENZEL #B15-6 - Wellbore #1 - Wellbore #1	14,664.2	6,880.0	656.7	440.2	3.033	CC, ES
EXIST DD FRENZEL #B15-6 - Wellbore #1 - Wellbore #1	14,700.0	6,880.2	657.7	440.7	3.031	SF
EXIST DD GLOVER USX #B15-02CD - Wellbore #1 - W	15,746.2	6,517.2	1,702.4	1,468.5	7.278	CC
EXIST DD GLOVER USX #B15-02CD - Wellbore #1 - W	15,800.0	6,514.8	1,703.3	1,468.3	7.250	ES
EXIST DD GLOVER USX #B15-02CD - Wellbore #1 - W	15,900.0	6,510.4	1,709.3	1,473.1	7.235	SF
EXIST DD JURGENS STATE #B16-30D - Wellbore #1 -	3,989.1	4,665.0	2,279.9	2,238.6	55.217	CC
EXIST DD JURGENS STATE #B16-30D - Wellbore #1 -	4,000.0	4,665.0	2,279.9	2,238.5	55.018	ES
EXIST DD JURGENS STATE #B16-30D - Wellbore #1 -	8,100.0	6,990.0	2,759.5	2,693.5	41.782	SF
EXIST DD KLEIN #B15-13D - Wellbore #1 - Wellbore #1	13,285.0	6,764.8	2,090.9	1,913.6	11.798	CC
EXIST DD KLEIN #B15-13D - Wellbore #1 - Wellbore #1	13,300.0	6,764.8	2,090.9	1,913.3	11.769	ES
EXIST DD KLEIN #B15-13D - Wellbore #1 - Wellbore #1	13,700.0	6,765.7	2,131.7	1,945.5	11.448	SF
EXIST DD PATRIOT #B16-1 - Wellbore #1 - Wellbore #1	11,973.9	6,679.2	1,981.7	1,844.9	14.486	CC
EXIST DD PATRIOT #B16-1 - Wellbore #1 - Wellbore #1	12,000.0	6,679.0	1,981.9	1,844.4	14.420	ES
EXIST DD PATRIOT #B16-1 - Wellbore #1 - Wellbore #1	12,300.0	6,677.6	2,008.3	1,865.2	14.032	SF
EXIST HZ CECILS KERSEY FARM #17B-212 - Wellbore	7,000.0	11,218.0	1,265.8	1,120.4	8.704	SF
EXIST HZ CECILS KERSEY FARM #17B-212 - Wellbore	7,024.8	11,218.0	1,265.4	1,120.2	8.715	CC, ES
EXIST HZ CECILS KERSEY FARM #17B-302 - Wellbore	7,000.0	11,362.0	1,465.1	1,317.9	9.956	SF
EXIST HZ CECILS KERSEY FARM #17B-302 - Wellbore	7,050.0	11,362.0	1,463.2	1,316.4	9.967	ES
EXIST HZ CECILS KERSEY FARM #17B-302 - Wellbore	7,059.4	11,362.0	1,463.2	1,316.4	9.973	CC
EXIST HZ CECILS KERSEY FARM #17K-232 - Wellbore	7,029.7	11,295.0	592.9	480.9	5.295	CC, ES, SF
EXIST HZ CECILS KERSEY FARM #17K-332 - Wellbore	7,050.0	11,372.0	802.2	675.3	6.321	ES, SF
EXIST HZ CECILS KERSEY FARM #17K-332 - Wellbore	7,055.2	11,372.0	802.1	675.3	6.324	CC
EXIST HZ CECILS KERSEY FARM #17K-402 - Wellbore	7,100.9	11,210.0	530.7	466.7	8.291	CC, ES
EXIST HZ CECILS KERSEY FARM #17K-402 - Wellbore	7,150.0	11,210.0	534.6	469.7	8.237	SF
EXIST HZ COCKROFT #B15-69-1HNM - Wellbore #1 - V	15,119.5	11,709.0	2,173.0	1,806.6	5.931	CC, ES
EXIST HZ COCKROFT #B15-69-1HNM - Wellbore #1 - V	15,200.0	11,668.6	2,174.1	1,806.8	5.919	SF
EXIST HZ GILLAM #18X-102 - Wellbore #1 - Wellbore #	6,950.0	12,169.0	1,668.8	1,491.1	9.395	SF
EXIST HZ GILLAM #18X-102 - Wellbore #1 - Wellbore #	7,037.2	12,169.0	1,665.3	1,488.3	9.412	CC, ES
EXIST HZ GILLAM #18X-232 - Wellbore #1 - Wellbore #	6,950.0	12,156.0	2,102.0	1,921.2	11.625	SF
EXIST HZ GILLAM #18X-232 - Wellbore #1 - Wellbore #	7,027.7	12,156.0	2,099.8	1,919.5	11.646	CC, ES
EXIST HZ GILLAM #18X-332 - Wellbore #1 - Wellbore #	7,000.0	12,231.0	1,893.0	1,714.8	10.624	SF
EXIST HZ GILLAM #18X-332 - Wellbore #1 - Wellbore #	7,050.0	12,231.0	1,891.2	1,713.4	10.636	ES
EXIST HZ GILLAM #18X-332 - Wellbore #1 - Wellbore #	7,065.9	12,231.0	1,891.1	1,713.5	10.645	CC
EXIST HZ GILLAM #18Y-202 - Wellbore #1 - Wellbore #	6,950.0	12,242.0	2,630.1	2,447.8	14.425	SF
EXIST HZ GILLAM #18Y-202 - Wellbore #1 - Wellbore #	7,038.9	12,242.0	2,627.8	2,445.9	14.446	CC, ES
EXIST HZ GILLAM #18Y-312 - Wellbore #1 - Wellbore #	7,000.0	12,233.0	2,413.3	2,232.9	13.376	SF
EXIST HZ GILLAM #18Y-312 - Wellbore #1 - Wellbore #	7,050.0	12,233.0	2,412.0	2,231.9	13.390	ES
EXIST HZ GILLAM #18Y-312 - Wellbore #1 - Wellbore #	7,065.6	12,233.0	2,411.9	2,231.9	13.397	CC
EXIST HZ HOLMAN #B15-65HNM - Wellbore #1 - Wellb	13,446.7	13,031.0	98.0	-253.5	0.279	Level 1, CC, SF
EXIST HZ HOLMAN #B15-65HNM - Wellbore #1 - Wellb	13,500.0	12,980.7	99.6	-254.5	0.281	Level 1, ES
EXIST HZ HOLMAN #B15-66HN - Wellbore #1 - Wellbor	13,764.1	12,684.0	303.2	-54.7	0.847	Level 1, CC, ES, SF
EXIST HZ HOP #18E-232 - Wellbore #1 - Wellbore #1	7,010.6	16,424.0	2,189.1	1,889.5	7.306	CC, ES
EXIST HZ HOP #18E-232 - Wellbore #1 - Wellbore #1	7,050.0	16,424.0	2,189.7	1,889.9	7.305	SF
EXIST HZ HOP #18E-332 - Wellbore #1 - Wellbore #1	7,057.5	16,442.0	1,987.9	1,690.2	6.678	CC, ES
EXIST HZ HOP #18E-332 - Wellbore #1 - Wellbore #1	7,100.0	16,442.0	1,988.7	1,690.8	6.677	SF
EXIST HZ HOP #18E-402 - Wellbore #1 - Wellbore #1	6,789.9	15,093.0	2,922.6	2,690.1	12.573	CC, ES
EXIST HZ HOP #18E-402 - Wellbore #1 - Wellbore #1	6,800.0	15,093.0	2,922.6	2,690.2	12.573	SF
EXIST HZ HOP #18F-102 - Wellbore #1 - Wellbore #1	6,990.1	16,506.0	1,299.6	1,004.4	4.403	CC, ES

PDC Energy
Anticollision Report

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Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM
Reference Design:	PROPOSAL #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
NW NW SEC. 16 T5N R64W 6th P.M. (WATERMELON)						
EXIST HZ HOP #18F-102 - Wellbore #1 - Wellbore #1	7,000.0	16,506.0	1,299.6	1,004.5	4.403	SF
EXIST HZ HOP #18F-212 - Wellbore #1 - Wellbore #1	7,007.9	16,391.0	1,554.0	1,257.3	5.238	CC, ES, SF
EXIST HZ KLEIN #19M-402 - Wellbore #1 - Wellbore #1	10,296.8	17,440.0	2,814.7	2,425.9	7.239	CC
EXIST HZ KLEIN #19M-402 - Wellbore #1 - Wellbore #1	10,400.0	17,440.0	2,816.6	2,425.5	7.203	ES
EXIST HZ KLEIN #19M-402 - Wellbore #1 - Wellbore #1	10,500.0	17,440.0	2,822.0	2,429.3	7.186	SF
EXIST HZ KLEIN #B16-98HZ - Wellbore #1 - Wellbore #	9,200.0	9,931.8	45.4	-70.2	0.393	Level 1, ES, SF
EXIST HZ KLEIN #B16-98HZ - Wellbore #1 - Wellbore #	9,249.2	9,897.4	28.7	-22.5	0.560	Level 1, CC
EXIST HZ KLEIN #B16-99HZ - Wellbore #1 - Wellbore #	10,400.0	8,821.1	39.1	-77.0	0.337	Level 1, SF
EXIST HZ KLEIN #B16-99HZ - Wellbore #1 - Wellbore #	10,446.3	8,788.5	20.9	-31.9	0.396	Level 1, CC
EXIST HZ KLEIN #B16-99HZ - Wellbore #1 - Wellbore #	10,500.0	8,750.9	43.7	-77.4	0.361	Level 1, ES
EXIST HZ PATRIOT #B16-69HN - Wellbore #1 - Wellbor	0.0	0.0	1,578.5			
EXIST HZ PATRIOT #B16-69HN - Wellbore #1 - Wellbor	1,100.0	1,086.8	1,580.9	1,577.2	429.902	ES
EXIST HZ PATRIOT #B16-69HN - Wellbore #1 - Wellbor	12,400.0	11,086.0	2,723.3	2,455.0	10.150	SF
EXIST HZ SCHAUMBERG #17F-202 - ORIGINAL WELL	7,094.5	11,867.0	1,065.0	894.6	6.251	CC
EXIST HZ SCHAUMBERG #17F-202 - ORIGINAL WELL	7,100.0	11,867.0	1,065.0	894.6	6.248	ES
EXIST HZ SCHAUMBERG #17F-202 - ORIGINAL WELL	7,150.0	11,867.0	1,067.1	896.2	6.246	SF
EXIST HZ SCHAUMBERG #17F-202 - SIDETRACK - SI	7,011.3	11,810.0	1,147.0	983.8	7.026	CC, ES
EXIST HZ SCHAUMBERG #17F-202 - SIDETRACK - SI	7,050.0	11,810.0	1,148.1	984.6	7.020	SF
EXIST HZ SCHAUMBERG #17F-232 - Wellbore #1 - We	7,065.8	11,632.0	701.5	546.3	4.520	CC, ES
EXIST HZ SCHAUMBERG #17F-232 - Wellbore #1 - We	7,100.0	11,632.0	702.7	547.1	4.516	SF
EXIST HZ SCHAUMBERG #17F-332 - Wellbore #1 - We	7,116.8	11,779.0	890.8	731.7	5.600	CC, ES
EXIST HZ SCHAUMBERG #17F-332 - Wellbore #1 - We	7,150.0	11,779.0	891.7	732.3	5.592	SF
EXIST HZ SCHAUMBERG #17G-202 - Wellbore #1 - We	7,044.1	11,796.0	387.0	333.2	7.194	CC, ES
EXIST HZ SCHAUMBERG #17G-202 - Wellbore #1 - We	7,050.0	11,796.0	387.0	333.2	7.193	SF
EXIST HZ SCHAUMBERG #17G-312 - Wellbore #1 - We	7,084.9	11,790.0	475.4	367.8	4.418	CC, ES
EXIST HZ SCHAUMBERG #17G-312 - Wellbore #1 - We	7,100.0	11,790.0	475.8	367.9	4.411	SF
EXIST HZ SEYLER B #15-69HN - Wellbore #1 - Wellbor	16,016.0	9,782.0	2,615.1	2,277.3	7.740	CC
EXIST HZ SEYLER B #15-69HN - Wellbore #1 - Wellbor	17,657.8	11,412.5	2,658.4	2,230.2	6.207	ES, SF
EXIST HZ SEYLER STATE #B15-79HNM - Wellbore #1	12,500.0	11,131.1	41.6	-83.9	0.331	Level 1, ES
EXIST HZ SEYLER STATE #B15-79HNM - Wellbore #1	12,540.2	11,132.2	10.8	-73.1	0.129	Level 1, CC, SF
EXIST VERT FRENZEL #B15-25 - Wellbore #1 - Design	13,906.2	6,545.0	1,319.7	1,002.0	4.154	CC, ES
EXIST VERT FRENZEL #B15-25 - Wellbore #1 - Design	14,000.0	6,544.1	1,323.0	1,002.7	4.131	SF
EXIST VERT FRENZEL #B15-5 - Wellbore #1 - Wellbore	13,029.4	6,543.7	145.6	-19.1	0.884	Level 1, CC, ES, SF
EXIST VERT HOSHIKO #41-17 - Wellbore #1 - Wellbore	3,836.6	3,514.1	1,429.7	1,404.2	56.093	CC
EXIST VERT HOSHIKO #41-17 - Wellbore #1 - Wellbore	3,900.0	3,567.0	1,430.1	1,403.9	54.597	ES
EXIST VERT HOSHIKO #41-17 - Wellbore #1 - Wellbore	5,223.1	4,704.8	1,615.7	1,578.5	43.447	SF
EXIST VERT HOSHIKO #42-17 - Wellbore #1 - Wellbore	5,412.2	4,840.7	504.6	461.5	11.714	CC, ES
EXIST VERT HOSHIKO #42-17 - Wellbore #1 - Wellbore	5,600.0	5,013.1	509.9	466.0	11.607	SF
EXIST VERT LOUSTALET #41-15 - Wellbore #1 - Wellbc	17,041.3	6,510.1	1,844.6	1,568.1	6.672	CC
EXIST VERT LOUSTALET #41-15 - Wellbore #1 - Wellbc	17,100.0	6,510.5	1,845.5	1,567.8	6.645	ES
EXIST VERT LOUSTALET #41-15 - Wellbore #1 - Wellbc	17,200.0	6,511.2	1,851.4	1,572.1	6.630	SF
EXIST VERT LOUSTALET #42-15 - Wellbore #1 - Wellbc	16,880.3	6,559.8	371.2	99.9	1.368	Level 3, CC, ES, SF
EXIST VERT LOUSTALET #B15-10 - Wellbore #1 - Desi	15,892.7	6,514.0	653.5	281.0	1.754	CC
EXIST VERT LOUSTALET #B15-10 - Wellbore #1 - Desi	15,900.0	6,514.0	653.5	280.7	1.753	ES, SF
EXIST VERT LOUSTALET #B15-11 - Wellbore #1 - Desi	14,650.6	6,538.3	727.2	388.9	2.150	CC, ES
EXIST VERT LOUSTALET #B15-11 - Wellbore #1 - Desi	14,700.0	6,537.8	728.9	389.2	2.146	SF
EXIST VERT LOUSTALET #B15-15X - Wellbore #1 - De	16,084.2	6,521.3	2,223.7	1,845.8	5.884	CC
EXIST VERT LOUSTALET #B15-15X - Wellbore #1 - De	16,100.0	6,521.1	2,223.8	1,845.4	5.877	ES
EXIST VERT LOUSTALET #B15-15X - Wellbore #1 - De	16,300.0	6,519.3	2,234.1	1,850.7	5.826	SF
EXIST VERT LOUSTALET #B15-23 - Wellbore #1 - Well	16,544.7	6,548.4	1,395.1	1,133.1	5.323	CC
EXIST VERT LOUSTALET #B15-23 - Wellbore #1 - Well	16,600.0	6,550.2	1,396.2	1,132.5	5.295	ES

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well WATERMELON 10N - Slot WATERMELON 10N
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	KB 23' @ 4633.0ft (Original Well Elev)
Reference Site:	NW NW SEC. 16 T5N R64W 6th P.M. (WATERMELON)	**MD Reference:**	KB 23' @ 4633.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	WATERMELON 10N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM
Reference Design:	PROPOSAL #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
NW NW SEC. 16 T5N R64W 6th P.M. (WATERMELON)						
EXIST VERT LOUSTALET #B15-23 - Wellbore #1 - Well	16,700.0	6,553.5	1,403.8	1,138.2	5.285	SF
EXIST VERT PATRIOT #B16-10 - Wellbore #1 - Wellbore	10,783.6	6,592.1	815.1	711.3	7.850	CC
EXIST VERT PATRIOT #B16-10 - Wellbore #1 - Wellbore	10,800.0	6,592.0	815.3	711.0	7.816	ES
EXIST VERT PATRIOT #B16-10 - Wellbore #1 - Wellbore	10,900.0	6,591.2	823.4	717.0	7.737	SF
EXIST VERT PATRIOT #B16-11 - Wellbore #1 - Wellbore	9,408.7	6,614.8	803.1	735.3	11.855	CC, ES
EXIST VERT PATRIOT #B16-11 - Wellbore #1 - Wellbore	9,500.0	6,613.5	808.2	738.7	11.617	SF
EXIST VERT PATRIOT #B16-12 - Wellbore #1 - Design #	7,800.0	6,626.7	789.7	623.9	4.762	SF
EXIST VERT PATRIOT #B16-12 - Wellbore #1 - Design #	7,865.5	6,626.1	787.0	621.9	4.766	CC, ES
EXIST VERT PATRIOT #B16-14 - Wellbore #1 - Wellbore	9,271.7	6,533.5	2,265.2	2,200.8	35.200	CC
EXIST VERT PATRIOT #B16-14 - Wellbore #1 - Wellbore	9,300.0	6,532.0	2,265.3	2,200.3	34.849	ES
EXIST VERT PATRIOT #B16-14 - Wellbore #1 - Wellbore	10,300.0	6,475.7	2,487.1	2,402.5	29.402	SF
EXIST VERT PATRIOT #B16-15 - Wellbore #1 - Wellbore	10,650.0	6,539.3	2,336.7	2,236.7	23.375	CC
EXIST VERT PATRIOT #B16-15 - Wellbore #1 - Wellbore	10,700.0	6,539.7	2,337.2	2,235.9	23.065	ES
EXIST VERT PATRIOT #B16-15 - Wellbore #1 - Wellbore	11,400.0	6,546.9	2,454.1	2,337.9	21.121	SF
EXIST VERT PATRIOT #B16-16 - Wellbore #1 - Wellbore	11,965.2	6,400.0	2,332.9	2,197.7	17.257	CC
EXIST VERT PATRIOT #B16-16 - Wellbore #1 - Wellbore	12,000.0	6,400.0	2,333.1	2,196.9	17.132	ES
EXIST VERT PATRIOT #B16-16 - Wellbore #1 - Wellbore	12,600.0	6,410.8	2,417.7	2,268.7	16.231	SF
EXIST VERT PATRIOT #B16-17 - Wellbore #1 - Wellbore	11,317.3	6,576.8	1,275.8	1,158.0	10.833	CC, ES
EXIST VERT PATRIOT #B16-17 - Wellbore #1 - Wellbore	11,500.0	6,575.8	1,288.8	1,167.8	10.645	SF
EXIST VERT PATRIOT #B16-18 - Wellbore #1 - Wellbore	9,997.6	6,607.7	1,198.9	1,115.9	14.435	CC
EXIST VERT PATRIOT #B16-18 - Wellbore #1 - Wellbore	10,000.0	6,607.7	1,198.9	1,115.8	14.424	ES
EXIST VERT PATRIOT #B16-18 - Wellbore #1 - Wellbore	10,200.0	6,609.3	1,215.9	1,128.6	13.927	SF
EXIST VERT PATRIOT #B16-19 - Wellbore #1 - Wellbore	2,191.3	2,112.7	676.6	669.0	89.484	CC
EXIST VERT PATRIOT #B16-19 - Wellbore #1 - Wellbore	2,200.0	2,120.4	676.6	669.0	88.630	ES
EXIST VERT PATRIOT #B16-19 - Wellbore #1 - Wellbore	9,000.0	6,631.6	957.2	899.2	16.509	SF
EXIST VERT PATRIOT #B16-2 - Wellbore #1 - Wellbore	10,842.0	6,591.7	1,687.0	1,582.1	16.083	CC
EXIST VERT PATRIOT #B16-2 - Wellbore #1 - Wellbore	10,900.0	6,592.0	1,688.0	1,581.7	15.878	ES
EXIST VERT PATRIOT #B16-2 - Wellbore #1 - Wellbore	11,200.0	6,593.8	1,724.6	1,612.9	15.440	SF
EXIST VERT PATRIOT #B16-20 - Wellbore #1 - Wellbore	8,588.7	6,617.8	108.8	60.1	2.235	CC, ES, SF
EXIST VERT PATRIOT #B16-21 - Wellbore #1 - Wellbore	9,927.4	6,603.4	191.5	110.6	2.368	CC, ES, SF
EXIST VERT PATRIOT #B16-22 - Wellbore #1 - Wellbore	11,290.6	6,585.4	90.3	-26.7	0.772	Level 1, CC, ES, SF
EXIST VERT PATRIOT #B16-23 - Wellbore #1 - Wellbore	11,279.4	6,594.8	1,426.2	1,310.1	12.282	CC
EXIST VERT PATRIOT #B16-23 - Wellbore #1 - Wellbore	11,300.0	6,594.6	1,426.4	1,309.7	12.220	ES
EXIST VERT PATRIOT #B16-23 - Wellbore #1 - Wellbore	11,500.0	6,592.4	1,443.2	1,321.8	11.887	SF
EXIST VERT PATRIOT #B16-24 - Wellbore #1 - Wellbore	9,896.2	6,587.1	1,620.2	1,540.1	20.240	CC
EXIST VERT PATRIOT #B16-24 - Wellbore #1 - Wellbore	9,900.0	6,586.9	1,620.2	1,540.0	20.215	ES
EXIST VERT PATRIOT #B16-24 - Wellbore #1 - Wellbore	10,400.0	6,569.1	1,696.6	1,606.3	18.785	SF
EXIST VERT PATRIOT #B16-25 - Wellbore #1 - Design #	8,775.7	6,629.0	1,271.0	1,089.4	7.000	CC
EXIST VERT PATRIOT #B16-25 - Wellbore #1 - Design #	8,800.0	6,628.8	1,271.3	1,089.3	6.985	ES
EXIST VERT PATRIOT #B16-25 - Wellbore #1 - Design #	8,900.0	6,627.9	1,277.1	1,093.4	6.951	SF
EXIST VERT PATRIOT #B16-4 - Wellbore #1 - Wellbore	588.4	561.4	530.8	529.4	365.166	CC
EXIST VERT PATRIOT #B16-4 - Wellbore #1 - Wellbore	700.0	671.9	531.0	529.3	300.518	ES
EXIST VERT PATRIOT #B16-4 - Wellbore #1 - Wellbore	9,100.0	6,516.4	2,300.9	2,243.7	40.207	SF
EXIST VERT PATRIOT #B16-5 - Wellbore #1 - Wellbore	3,588.1	3,294.5	339.8	317.3	15.070	CC
EXIST VERT PATRIOT #B16-5 - Wellbore #1 - Wellbore	3,600.0	3,304.7	339.9	317.2	14.981	ES
EXIST VERT PATRIOT #B16-5 - Wellbore #1 - Wellbore	8,200.0	6,652.8	646.7	601.9	14.433	SF
EXIST VERT PATRIOT #B16-6 - Wellbore #1 - Wellbore	9,445.1	6,608.7	404.7	335.9	5.888	CC, ES
EXIST VERT PATRIOT #B16-6 - Wellbore #1 - Wellbore	9,500.0	6,608.4	408.4	338.4	5.839	SF
EXIST VERT PATRIOT #B16-7 - Wellbore #1 - Wellbore	10,610.2	6,594.7	677.8	579.2	6.875	CC, ES
EXIST VERT PATRIOT #B16-7 - Wellbore #1 - Wellbore	10,700.0	6,594.7	683.8	583.8	6.842	SF
EXIST VERT PATRIOT #B16-8 - Wellbore #1 - Wellbore	11,946.8	6,570.5	694.4	559.3	5.142	CC, ES

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well WATERMELON 10N - Slot WATERMELON 10N
Project:	WELD COUNTY, COLORADO (TRUE)	**TVD Reference:**	KB 23' @ 4633.0ft (Original Well Elev)
Reference Site:	NW NW SEC. 16 T5N R64W 6th P.M. (WATERMELON)	**MD Reference:**	KB 23' @ 4633.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	WATERMELON 10N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	**Database:**	EDM
Reference Design:	PROPOSAL #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
NW NW SEC. 16 T5N R64W 6th P.M. (WATERMELON)						
EXIST VERT PATRIOT #B16-8 - Wellbore #1 - Wellbore	12,000.0	6,570.4	696.4	560.6	5.128	SF
WATERMELON 1N - ORIGINAL WELLBORE - PROPOS	300.0	300.0	135.0	133.9	125.882	CC, ES
WATERMELON 1N - ORIGINAL WELLBORE - PROPOS	17,400.0	16,962.6	2,392.9	1,830.2	4.252	SF
WATERMELON 2N - ORIGINAL WELLBORE - PROPOS	400.0	400.0	120.0	118.5	78.888	CC, ES
WATERMELON 2N - ORIGINAL WELLBORE - PROPOS	17,657.8	17,230.2	2,054.4	1,473.3	3.535	SF
WATERMELON 3N - ORIGINAL WELLBORE - PROPOS	500.0	500.0	105.0	103.0	53.261	CC, ES
WATERMELON 3N - ORIGINAL WELLBORE - PROPOS	17,600.0	17,294.2	1,797.6	1,217.1	3.097	SF
WATERMELON 4N - ORIGINAL WELLBORE - PROPOS	600.0	600.0	90.0	87.6	37.181	CC, ES
WATERMELON 4N - ORIGINAL WELLBORE - PROPOS	17,600.0	17,236.7	1,540.2	959.0	2.650	SF
WATERMELON 5N - ORIGINAL WELLBORE - PROPOS	700.0	700.0	74.9	72.0	26.100	CC, ES
WATERMELON 5N - ORIGINAL WELLBORE - PROPOS	17,657.8	17,341.3	1,286.1	705.3	2.214	SF
WATERMELON 6N - ORIGINAL WELLBORE - PROPOS	800.0	800.0	60.0	56.7	18.085	CC, ES
WATERMELON 6N - ORIGINAL WELLBORE - PROPOS	17,657.8	17,308.4	1,026.7	444.7	1.764	SF
WATERMELON 7N - ORIGINAL WELLBORE - PROPOS	900.0	900.0	45.0	41.3	11.948	CC, ES
WATERMELON 7N - ORIGINAL WELLBORE - PROPOS	17,626.9	17,452.9	773.6	193.5	1.334	Level 3, SF
WATERMELON 8N - ORIGINAL WELLBORE - PROPOS	1,000.0	1,000.0	30.0	25.8	7.122	CC
WATERMELON 8N - ORIGINAL WELLBORE - PROPOS	17,657.8	17,447.3	513.3	-68.7	0.882	Level 1, ES, SF
WATERMELON 9N - ORIGINAL WELLBORE - PROPOS	1,100.0	1,100.0	15.0	10.3	3.207	CC
WATERMELON 9N - ORIGINAL WELLBORE - PROPOS	17,657.8	17,610.9	269.9	-286.4	0.485	Level 1, ES, SF