

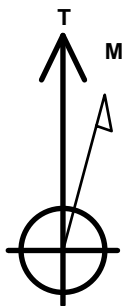
PDC Energy Inc. DJ Basin

Well Name: **Daisy 31E-232**

Surface Location: Daisy 5N64W31F Pad Sec.31-T5N-R64W
 North American Datum 1983 , US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4774.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1375092.50 3250679.21 40.359540 -104.600450
 Original Well Elev WELL @ 4797.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1206'FNL, 445'FWL, SEC.31	1.0	0.0	0.0	Point
BHL 318'FNL, 2575'FWL, SEC.32	6847.0	926.5	7396.1	Point
LPL 318'FNL, 736'FWL, SEC.31	6877.0	888.9	289.0	Point



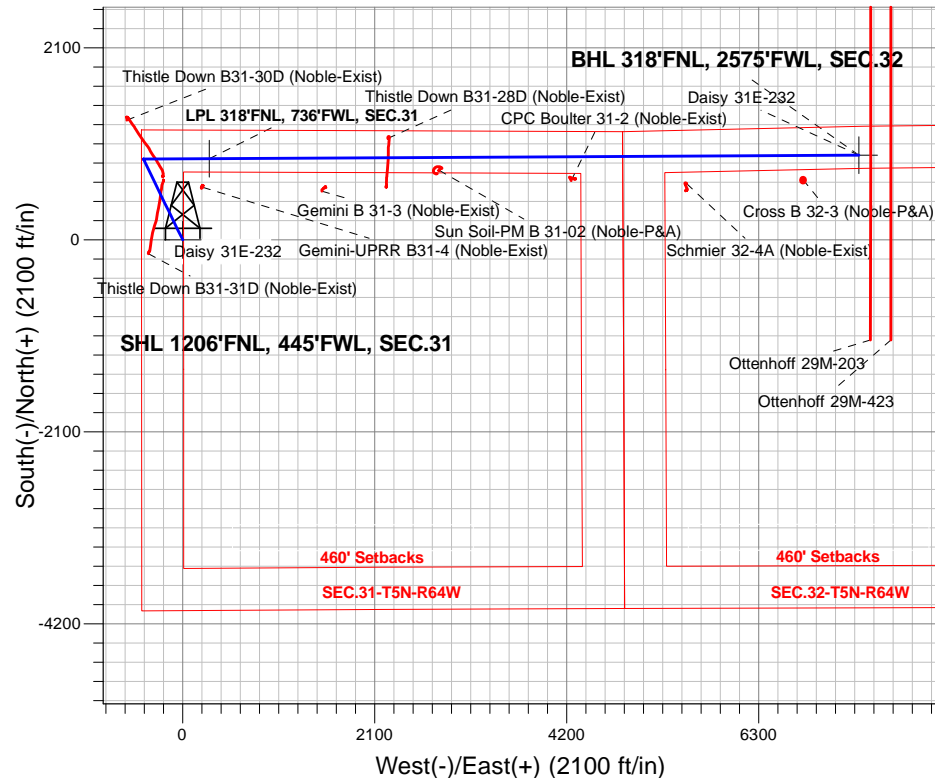
Azimuths to True North
 Magnetic North: 8.00°

Magnetic Field
 Strength: 52525.3snT
 Dip Angle: 66.84°
 Date: 3/3/2017
 Model: IGRF2010

Daisy 5N64W31F Pad Sec.31-T5N-R64W
 Daisy 31E-232
 Plan #1 (2-28-17)
 12:29, March 03 2017

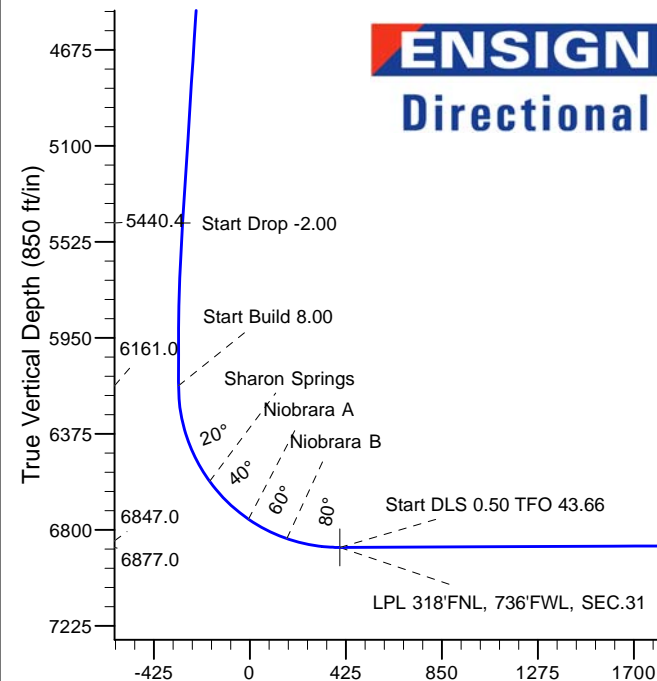
ANNOTATIONS

TVD	MD	Annotation
400.0	400.0	KOP - Start Build 1.50
5440.4	5529.6	Start Drop -2.00
6161.0	6253.8	Start Build 8.00
6877.0	7381.5	Start DLS 0.50 TFO 43.66
6877.0	7382.0	Start 7106.8 hold at 7382.0 MD
6847.0	14488.8	TD at 14488.8



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1150.9	11.26	334.09	1146.1	66.2	-32.2	1.50	334.09	-23.7	
4	5529.6	11.26	334.09	5440.4	835.5	-405.9	0.00	0.00	-298.9	
5	6092.8	0.00	0.00	6000.0	885.1	-430.0	2.00	180.00	-316.7	
6	6253.8	0.00	0.00	6161.0	885.1	-430.0	0.00	0.00	-316.7	
7	7381.5	90.24	89.70	6877.0	888.9	289.0	8.00	89.70	397.2	
8	7381.5	90.24	89.70	6877.0	888.9	289.0	0.00	0.00	397.2	LPL 318'FNL, 736'FWL, SEC.31
9	7382.0	90.24	89.70	6877.0	888.9	289.5	0.50	43.66	397.8	
10	14488.8	90.24	89.70	6847.0	926.5	7396.1	0.00	0.00	7453.9	BHL 318'FNL, 2575'FWL, SEC.32



Vertical Section at 82.86° (850 ft/in)

BHL 318'FNL, 2575'FWL, SEC.32

TD at 14488.8



PDC Energy Inc. DJ Basin

SEC.31-T5N-R64W

Daisy 5N64W31F Pad Sec.31-T5N-R64W

Daisy 31E-232

Wellbore #1

Plan #1 (2-28-17)

Anticollision Report

03 March, 2017



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Daisy 31E-232
Project:	SEC.31-T5N-R64W	TVD Reference:	WELL @ 4797.0ft (Original Well Elev)
Reference Site:	Daisy 5N64W31F Pad Sec.31-T5N-R64W	MD Reference:	WELL @ 4797.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Daisy 31E-232	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (2-28-17)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (2-28-17)		
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 center-center distance of 800.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	3/3/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,488.7	Plan #1 (2-28-17) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Daisy 5N64W31F Pad Sec.31-T5N-R64W						
Daisy 31E-302 - Wellbore #1 - Plan #1 (2-28-17)	200.0	199.0	14.6	13.7	17.701	CC
Daisy 31E-302 - Wellbore #1 - Plan #1 (2-28-17)	14,488.8	14,595.6	258.7	-250.6	0.508	Level 1, ES, SF
Daisy 31E-332 - Wellbore #1 - Plan #1 (2-28-17)	400.0	400.0	14.6	12.6	7.561	CC
Daisy 31E-332 - Wellbore #1 - Plan #1 (2-28-17)	14,488.8	14,526.9	267.0	-249.8	0.517	Level 1, ES, SF
Daisy 31F-202 - Wellbore #1 - Plan #1 (2-28-17)	400.0	401.0	58.3	56.4	30.200	CC, ES
Daisy 31F-202 - Wellbore #1 - Plan #1 (2-28-17)	800.0	800.3	77.7	73.5	18.607	SF
Daisy 31F-212 - Wellbore #1 - Plan #1 (2-28-17)	400.0	400.0	29.1	27.2	15.124	CC, ES
Daisy 31F-212 - Wellbore #1 - Plan #1 (2-28-17)	14,488.8	14,438.4	565.0	40.9	1.078	Level 2, SF
Daisy 31F-232 - Wellbore #1 - Plan #1 (2-28-17)	400.0	401.0	91.1	89.1	47.187	CC, ES
Daisy 31F-232 - Wellbore #1 - Plan #1 (2-28-17)	800.0	795.7	114.3	110.2	27.878	SF
Daisy 31F-302 - Wellbore #1 - Plan #1 (2-28-17)	400.0	400.0	43.7	41.8	22.682	CC, ES
Daisy 31F-302 - Wellbore #1 - Plan #1 (2-28-17)	700.0	699.7	54.6	50.9	15.133	SF
Daisy 31F-332 - Wellbore #1 - Plan #1 (2-28-17)	400.0	401.0	72.9	70.9	37.750	CC, ES
Daisy 31F-332 - Wellbore #1 - Plan #1 (2-28-17)	900.0	898.1	103.9	99.2	22.051	SF
Daisy 31G-202 - Wellbore #1 - Plan #1 (2-28-17)	166.3	167.3	120.2	119.6	186.867	CC
Daisy 31G-202 - Wellbore #1 - Plan #1 (2-28-17)	200.0	200.0	120.2	119.4	145.550	ES
Daisy 31G-202 - Wellbore #1 - Plan #1 (2-28-17)	900.0	868.7	207.3	202.5	43.854	SF
Daisy 31G-312 - Wellbore #1 - Plan #1 (2-28-17)	366.3	367.3	105.6	103.9	60.554	CC
Daisy 31G-312 - Wellbore #1 - Plan #1 (2-28-17)	400.0	400.0	105.7	103.7	54.818	ES
Daisy 31G-312 - Wellbore #1 - Plan #1 (2-28-17)	800.0	787.8	142.9	138.9	35.129	SF
Existing Wells Sec.31-T5N-R64W (GRID)						
CPC Boulder 31-2 (Noble-Exist) - Wellbore #1 - Wellbore	11,331.5	6,817.8	243.7	74.8	1.443	Level 3, CC, ES, SF
Gemini B 31-3 (Noble-Exist) - Wellbore #1 - Wellbore #1	8,612.9	6,820.9	350.3	270.9	4.411	CC, ES
Gemini B 31-3 (Noble-Exist) - Wellbore #1 - Wellbore #1	8,700.0	6,820.4	361.0	278.8	4.390	SF
Gemini-UPRR B31-4 (Noble-Exist) - Wellbore #1 - Wellb	7,311.3	6,826.2	308.4	267.1	7.469	CC, ES
Gemini-UPRR B31-4 (Noble-Exist) - Wellbore #1 - Wellb	7,350.0	6,829.1	310.8	268.7	7.385	SF
Sun Soil-PM B 31-02 (Noble-P&A) - Wellbore #1 - Wellbo	9,894.4	6,823.1	142.5	21.6	1.179	Level 2, CC
Sun Soil-PM B 31-02 (Noble-P&A) - Wellbore #1 - Wellbo	9,900.0	6,823.1	142.6	21.6	1.178	Level 2, ES, SF
Existing Wells Sec.32-T5N-R64W						
Cross B 32-3 (Noble-P&A) - Wellbore #1 - Wellbore #1	13,877.1	6,768.6	262.9	-144.2	0.646	Level 1, CC, ES, SF
Existing Wells Sec.32-T5N-R64W (GRID)						
Schmier 32-4A (Noble-Exist) - Wellbore #1 - Wellbore #1	12,599.1	6,796.2	296.4	80.7	1.374	Level 3, CC
Schmier 32-4A (Noble-Exist) - Wellbore #1 - Wellbore #1	12,600.0	6,796.2	296.4	80.7	1.374	Level 3, ES, SF

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Daisy 31E-232
Project:	SEC.31-T5N-R64W	TVD Reference:	WELL @ 4797.0ft (Original Well Elev)
Reference Site:	Daisy 5N64W31F Pad Sec.31-T5N-R64W	MD Reference:	WELL @ 4797.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Daisy 31E-232	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (2-28-17)	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Ottenhoff 5N64W29CR Pad Sec.29-T5N-R64W						
Ottenhoff 29M-203 - Wellbore #1 - Plan #2 (1-25-17)	14,488.8	12,181.4	135.1	11.6	1.094	Level 2, CC, ES, SF
Ottenhoff 29M-423 - Wellbore #1 - Plan #2 (1-25-17)	14,488.8	12,276.4	375.3	252.6	3.058	CC, ES, SF
Thistle Down Wells (Noble) Sec.31-T5N-R64W						
Thistle Down B31-28D (Noble-Exist) - Thistle Down B31-	9,335.9	6,893.7	217.1	112.9	2.084	CC, ES, SF
Thistle Down B31-30D (Noble-Exist) - Thistle Down B31-	2,681.4	2,548.4	440.5	426.5	31.305	CC
Thistle Down B31-30D (Noble-Exist) - Thistle Down B31-	2,700.0	2,566.2	440.6	426.4	31.054	ES
Thistle Down B31-30D (Noble-Exist) - Thistle Down B31-	6,253.8	6,241.1	488.7	438.7	9.775	SF
Thistle Down B31-31D (Noble-Exist) - Wellbore #1 - Well	2,764.8	2,734.1	96.5	76.3	4.775	CC, ES
Thistle Down B31-31D (Noble-Exist) - Wellbore #1 - Well	2,800.0	2,765.4	97.8	77.1	4.724	SF

Offset Design													Daisy 5N64W31F Pad Sec.31-T5N-R64W - Daisy 31E-302 - Wellbore #1 - Plan #1 (2-28-17)		Offset Site Error:		0.0 ft
Survey Program:				0-MWD									Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance										
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning				
0.0	0.0	0.0	0.0	0.0	0.0	0.00	14.6	0.0	14.6	14.6	0.00	N/A					
100.0	100.0	99.0	99.0	0.1	0.1	0.00	14.6	0.0	14.6	14.3	0.27	53.191					
200.0	200.0	199.0	199.0	0.4	0.4	0.00	14.6	0.0	14.6	13.7	0.82	17.701	CC				
300.0	300.0	298.6	298.6	0.7	0.7	-1.65	15.8	-0.5	15.8	14.4	1.37	11.486					
400.0	400.0	398.1	398.0	1.0	1.0	-5.41	19.4	-1.8	19.5	17.6	1.93	10.098					
500.0	500.0	497.4	497.1	1.2	1.3	17.51	25.4	-4.1	24.5	22.1	2.49	9.870					
600.0	599.9	596.6	595.9	1.5	1.6	15.97	33.8	-7.4	29.7	26.6	3.05	9.732					
700.0	699.7	695.6	694.3	1.8	1.9	15.25	44.6	-11.5	34.8	31.2	3.62	9.628					
800.0	799.3	794.6	792.2	2.1	2.3	15.03	57.7	-16.5	40.0	35.8	4.20	9.536					
900.0	898.6	893.3	889.5	2.4	2.7	15.14	73.2	-22.4	45.3	40.5	4.79	9.446					
1,000.0	997.5	992.0	986.3	2.8	3.2	15.48	91.0	-29.2	50.5	45.1	5.40	9.351					
1,100.0	1,096.1	1,090.6	1,082.6	3.2	3.7	15.98	111.1	-36.9	55.7	49.7	6.03	9.245					
1,150.9	1,146.1	1,141.5	1,132.1	3.4	4.0	16.38	122.0	-41.1	58.0	51.6	6.36	9.112					
1,200.0	1,194.2	1,190.6	1,179.9	3.7	4.2	16.83	132.4	-45.1	59.8	53.1	6.68	8.948					
1,300.0	1,292.3	1,290.5	1,277.1	4.1	4.8	17.68	153.7	-53.3	63.5	56.2	7.35	8.642					
1,400.0	1,390.4	1,390.4	1,374.4	4.6	5.3	18.43	175.1	-61.4	67.3	59.3	8.04	8.374					
1,500.0	1,488.4	1,490.3	1,471.7	5.1	5.9	19.10	196.4	-69.6	71.1	62.3	8.73	8.138					
1,600.0	1,586.5	1,590.3	1,569.0	5.6	6.5	19.70	217.7	-77.7	74.9	65.4	9.44	7.929					
1,700.0	1,684.6	1,690.2	1,666.3	6.1	7.1	20.25	239.0	-85.9	78.6	68.5	10.16	7.743					
1,800.0	1,782.7	1,790.1	1,763.6	6.6	7.7	20.74	260.4	-94.1	82.4	71.6	10.88	7.578					
1,900.0	1,880.7	1,890.0	1,860.8	7.1	8.2	21.19	281.7	-102.2	86.2	74.6	11.61	7.429					
2,000.0	1,978.8	1,990.0	1,958.1	7.6	8.8	21.61	303.0	-110.4	90.0	77.7	12.34	7.295					
2,100.0	2,076.9	2,089.9	2,055.4	8.1	9.4	21.99	324.4	-118.5	93.9	80.8	13.08	7.174					
2,200.0	2,175.0	2,189.8	2,152.7	8.6	10.0	22.34	345.7	-126.7	97.7	83.8	13.83	7.064					
2,300.0	2,273.0	2,289.7	2,250.0	9.2	10.6	22.66	367.0	-134.9	101.5	86.9	14.57	6.963					
2,400.0	2,371.1	2,389.7	2,347.2	9.7	11.2	22.96	388.3	-143.0	105.3	90.0	15.32	6.871					
2,500.0	2,469.2	2,489.6	2,444.5	10.2	11.7	23.24	409.7	-151.2	109.1	93.0	16.08	6.787					
2,600.0	2,567.3	2,589.5	2,541.8	10.7	12.3	23.50	431.0	-159.3	112.9	96.1	16.84	6.709					
2,700.0	2,665.3	2,689.4	2,639.1	11.2	12.9	23.74	452.3	-167.5	116.8	99.2	17.60	6.637					
2,800.0	2,763.4	2,789.4	2,736.4	11.8	13.5	23.97	473.6	-175.7	120.6	102.2	18.36	6.570					
2,900.0	2,861.5	2,889.3	2,833.7	12.3	14.1	24.19	495.0	-183.8	124.4	105.3	19.12	6.508					
3,000.0	2,959.6	2,989.2	2,930.9	12.8	14.7	24.39	516.3	-192.0	128.3	108.4	19.89	6.450					
3,100.0	3,057.6	3,089.1	3,028.2	13.3	15.3	24.58	537.6	-200.1	132.1	111.4	20.65	6.396					

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