

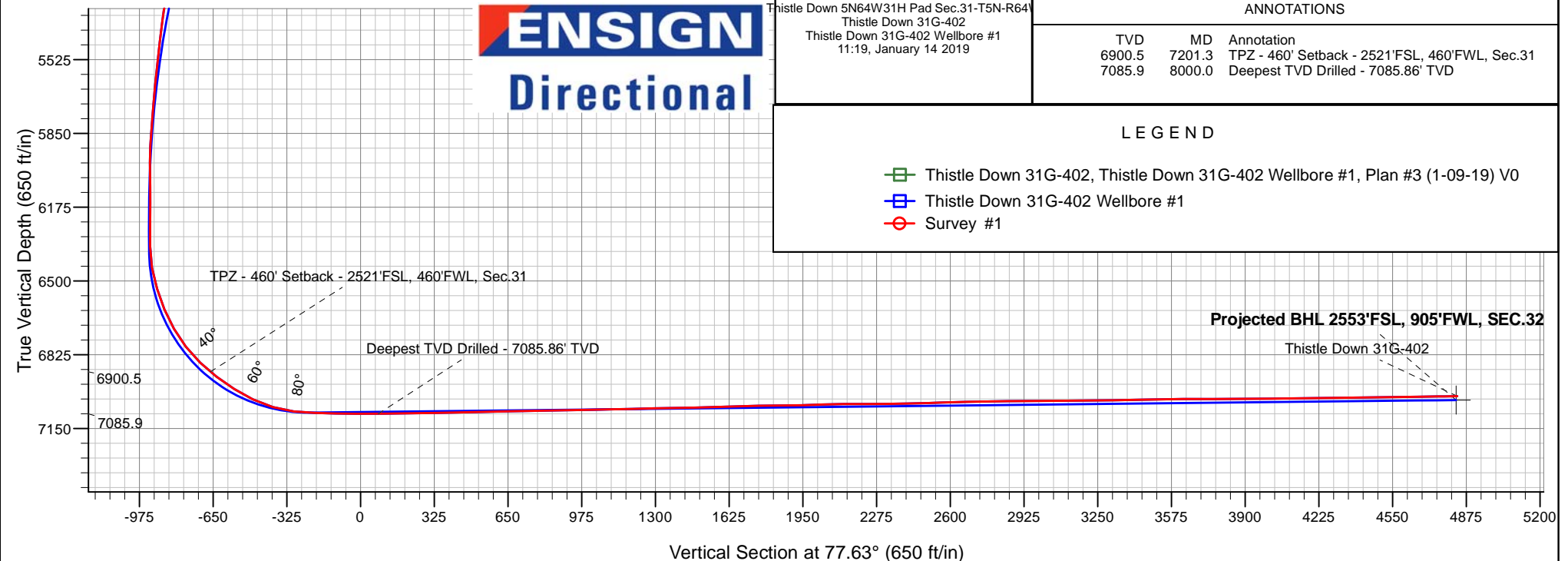
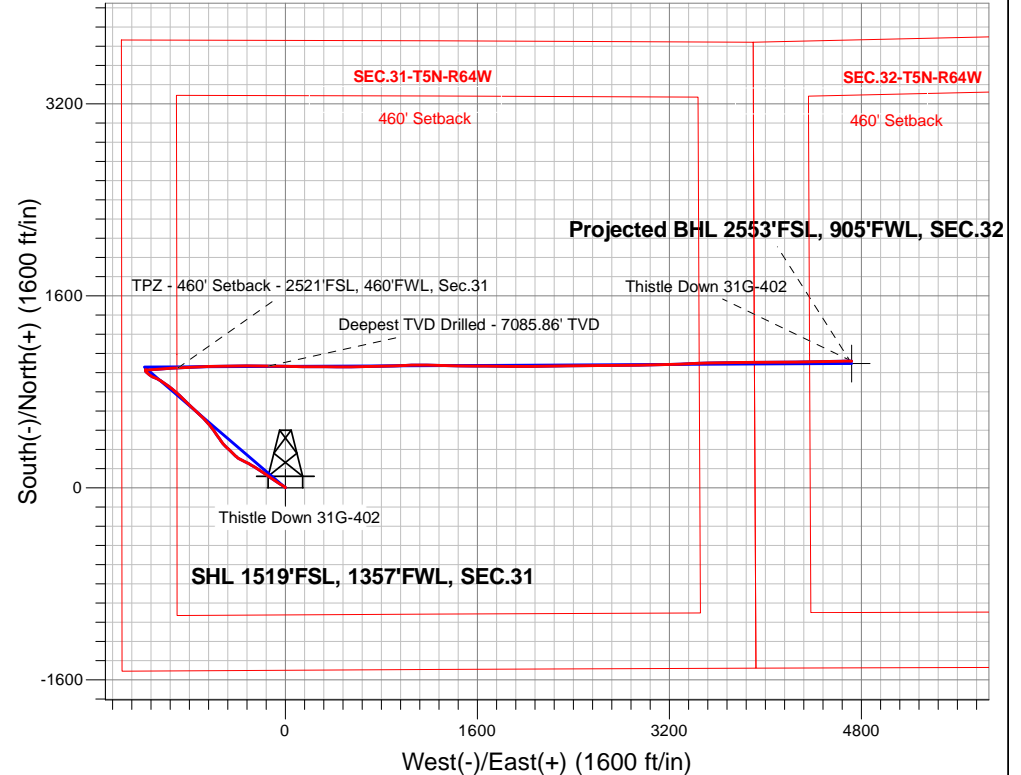
# PDC Energy Inc. DJ Basin

Well Name: **Thistle Down 31G-402**

Surface Location: Thistle Down 5N64W31H Pad Sec.31-T5N-R64W  
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone  
Ground Elevation: 4805.0  
+N/-S+E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1372573.723251618.97 40.352600 -104.597170  
Original Well Elev WELL @ 4828.0ft (Original Well Elev)

## FINAL SURVEY

**Projected Bottom Hole Location**  
**12,863'MD 7008'TVD 1056'N & 4718'E of SHL**  
**90.38 degree Incl @ 88.63 degree AZM**





## **PDC Energy Inc. DJ Basin**

**SEC.31-T5N-R64W**

**Thistle Down 5N64W31H Pad Sec.31-T5N-R64W**

**Thistle Down 31G-402**

**Thistle Down 31G-402 Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**14 January, 2019**

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Thistle Down 31G-402
<b>Project:</b>	SEC.31-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Site:</b>	Thistle Down 5N64W31H Pad Sec.31-T5N-R64W	<b>MD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Well:</b>	Thistle Down 31G-402	<b>North Reference:</b>	True
<b>Wellbore:</b>	Thistle Down 31G-402 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Thistle Down 31G-402 Wellbore #1	<b>Database:</b>	US_EDM

<b>Project</b>	SEC.31-T5N-R64W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site	Thistle Down 5N64W31H Pad Sec.31-T5N-R64W				
Site Position:		Northing:	1,372,559.16 usft	Latitude:	40.352560
From:	Lat/Long	Easting:	3,251,619.12 usft	Longitude:	-104.597170
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.58 °

Well	Thistle Down 31G-402					
Well Position	+N/-S	0.0 ft	Northing:	1,372,573.72 usft	Latitude:	40.352600
	+E/-W	0.0 ft	Easting:	3,251,618.97 usft	Longitude:	-104.597170
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,805.0 ft

<b>Wellbore</b>	Thistle Down 31G-402 Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	1/9/2019	8.15	66.83	52,175

Design	Thistle Down 31G-402 Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	77.63	

<b>Survey Program</b>	<b>Date</b>	1/14/2019			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
156.0	12,863.0	Survey #1 (Thistle Down 31G-402 Wellbor	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1.0	0.00	45.30	1.0	0.0	0.0	0.0	0.26	0.26	0.00	
<b>SHL 1519'FSL, 1357'FWL, SEC.31</b>										
156.0	0.40	45.30	156.0	0.4	0.4	0.5	0.26	0.26	0.00	
250.0	1.60	321.80	250.0	1.6	-0.2	0.2	1.71	1.28	-88.83	
346.0	4.30	313.20	345.8	5.2	-3.6	-2.5	2.84	2.81	-8.96	
441.0	6.30	302.60	440.4	10.4	-10.6	-8.2	2.34	2.11	-11.16	
537.0	6.90	300.20	535.8	16.1	-20.1	-16.1	0.69	0.63	-2.50	
632.0	8.40	303.60	630.0	22.9	-30.8	-25.2	1.65	1.58	3.58	
727.0	10.90	300.90	723.6	31.3	-44.3	-36.5	2.67	2.63	-2.84	

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Thistle Down 31G-402
<b>Project:</b>	SEC.31-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Site:</b>	Thistle Down 5N64W31H Pad Sec.31-T5N-R64W	<b>MD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Well:</b>	Thistle Down 31G-402	<b>North Reference:</b>	True
<b>Wellbore:</b>	Thistle Down 31G-402 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Thistle Down 31G-402 Wellbore #1	<b>Database:</b>	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
823.0	14.90	303.00	817.2	42.7	-62.4	-51.8	4.19	4.17	2.19
918.0	16.20	303.20	908.7	56.6	-83.7	-69.7	1.37	1.37	0.21
1,014.0	18.60	305.30	1,000.3	72.8	-107.4	-89.3	2.58	2.50	2.19
1,109.0	19.20	304.90	1,090.2	90.5	-132.6	-110.1	0.65	0.63	-0.42
1,205.0	18.60	304.30	1,181.0	108.1	-158.2	-131.4	0.66	-0.63	-0.63
1,300.0	18.80	303.80	1,271.0	125.2	-183.4	-152.4	0.27	0.21	-0.53
1,395.0	19.20	303.00	1,360.8	142.2	-209.3	-173.9	0.50	0.42	-0.84
1,491.0	19.70	301.90	1,451.3	159.4	-236.2	-196.6	0.65	0.52	-1.15
1,586.0	20.30	302.00	1,540.6	176.6	-263.8	-219.9	0.63	0.63	0.11
1,681.0	18.60	300.20	1,630.2	192.9	-290.9	-242.8	1.90	-1.79	-1.89
1,777.0	15.90	297.20	1,721.8	206.6	-315.8	-264.2	2.96	-2.81	-3.13
1,872.0	14.60	294.60	1,813.5	217.6	-338.3	-283.8	1.55	-1.37	-2.74
1,967.0	14.80	296.90	1,905.4	228.0	-360.0	-302.8	0.65	0.21	2.42
2,063.0	14.20	299.30	1,998.3	239.4	-381.2	-321.1	0.88	-0.63	2.50
2,158.0	15.60	307.20	2,090.1	252.8	-401.5	-338.0	2.59	1.47	8.32
2,253.0	16.40	315.50	2,181.5	270.1	-421.1	-353.5	2.55	0.84	8.74
2,348.0	15.50	315.70	2,272.8	288.7	-439.4	-367.3	0.95	-0.95	0.21
2,442.0	13.50	313.40	2,363.8	305.3	-456.1	-380.1	2.21	-2.13	-2.45
2,632.0	13.70	311.74	2,548.5	335.5	-489.0	-405.8	0.23	0.11	-0.87
2,727.0	15.36	314.61	2,640.4	351.8	-506.4	-419.2	1.90	1.75	3.02
2,822.0	17.13	321.78	2,731.7	371.6	-524.0	-432.2	2.81	1.86	7.55
2,942.0	20.06	326.38	2,845.4	402.7	-546.3	-447.4	2.73	2.44	3.83
3,038.0	19.89	325.43	2,935.6	429.8	-564.7	-459.5	0.38	-0.18	-0.99
3,132.0	19.09	325.18	3,024.2	455.6	-582.6	-471.4	0.86	-0.85	-0.27
3,228.0	18.38	324.49	3,115.1	480.8	-600.3	-483.3	0.77	-0.74	-0.72
3,323.0	17.21	324.19	3,205.6	504.4	-617.2	-494.8	1.24	-1.23	-0.32
3,418.0	18.15	319.06	3,296.1	527.0	-635.2	-507.5	1.91	0.99	-5.40
3,514.0	18.43	317.37	3,387.3	549.4	-655.2	-522.3	0.62	0.29	-1.76
3,609.0	16.76	315.26	3,477.8	570.2	-675.0	-537.2	1.88	-1.76	-2.22
3,705.0	19.69	315.48	3,569.0	591.6	-696.1	-553.2	3.05	3.05	0.23
3,800.0	18.43	313.11	3,658.8	613.3	-718.3	-570.2	1.56	-1.33	-2.49
3,895.0	16.90	311.71	3,749.3	632.7	-739.6	-586.8	1.67	-1.61	-1.47
3,991.0	19.59	313.31	3,840.5	653.0	-761.7	-604.1	2.85	2.80	1.67
4,087.0	21.59	315.38	3,930.3	676.6	-785.8	-622.6	2.22	2.08	2.16
4,183.0	21.25	314.13	4,019.7	701.3	-810.7	-641.6	0.59	-0.35	-1.30
4,278.0	20.16	314.64	4,108.6	724.8	-834.7	-660.0	1.16	-1.15	0.54
4,374.0	18.96	313.61	4,199.0	747.2	-857.8	-677.8	1.30	-1.25	-1.07
4,469.0	18.26	312.26	4,289.1	767.9	-880.0	-695.0	0.87	-0.74	-1.42
4,564.0	17.56	311.40	4,379.5	787.3	-901.8	-712.1	0.79	-0.74	-0.91
4,659.0	16.73	310.19	4,470.2	805.6	-923.0	-728.9	0.95	-0.87	-1.27
4,755.0	16.03	309.61	4,562.3	823.0	-943.7	-745.5	0.75	-0.73	-0.60
4,851.0	15.52	307.39	4,654.7	839.3	-964.1	-761.9	0.82	-0.53	-2.31

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<b>Project:</b>	SEC.31-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Site:</b>	Thistle Down 5N64W31H Pad Sec.31-T5N-R64W	<b>MD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Well:</b>	Thistle Down 31G-402	<b>North Reference:</b>	True
<b>Wellbore:</b>	Thistle Down 31G-402 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Thistle Down 31G-402 Wellbore #1	<b>Database:</b>	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,946.0	14.68	305.94	4,746.4	854.0	-984.0	-778.1	0.97	-0.88	-1.53
5,041.0	13.80	303.96	4,838.5	867.4	-1,003.1	-794.0	1.06	-0.93	-2.08
5,137.0	12.90	303.36	4,931.9	879.7	-1,021.6	-809.3	0.95	-0.94	-0.63
5,232.0	11.94	300.88	5,024.7	890.6	-1,038.9	-823.9	1.16	-1.01	-2.61
5,328.0	11.78	299.22	5,118.6	900.5	-1,055.9	-838.5	0.39	-0.17	-1.73
5,423.0	11.02	296.18	5,211.8	909.2	-1,072.6	-852.8	1.02	-0.80	-3.20
5,519.0	9.97	292.64	5,306.2	916.5	-1,088.5	-866.8	1.28	-1.09	-3.69
5,614.0	8.57	290.79	5,399.9	922.2	-1,102.7	-879.5	1.51	-1.47	-1.95
5,709.0	8.84	301.60	5,493.8	928.5	-1,115.5	-890.6	1.74	0.28	11.38
5,804.0	9.69	310.92	5,587.6	937.6	-1,127.8	-900.7	1.81	0.89	9.81
5,900.0	8.33	309.52	5,682.4	947.3	-1,139.2	-909.8	1.43	-1.42	-1.46
5,995.0	7.15	308.16	5,776.5	955.3	-1,149.2	-917.8	1.26	-1.24	-1.43
6,090.0	6.49	310.20	5,870.9	962.4	-1,157.9	-924.8	0.74	-0.69	2.15
6,186.0	4.39	343.27	5,966.5	969.4	-1,163.1	-928.4	3.84	-2.19	34.45
6,282.0	4.03	0.48	6,062.2	976.3	-1,164.2	-927.9	1.36	-0.38	17.93
6,377.0	1.09	329.23	6,157.1	980.5	-1,164.6	-927.5	3.31	-3.09	-32.89
6,472.0	0.56	295.39	6,252.1	981.4	-1,165.5	-928.1	0.74	-0.56	-35.62
6,568.0	0.34	32.41	6,348.1	981.9	-1,165.8	-928.3	0.72	-0.23	101.06
6,663.0	10.46	90.67	6,442.6	982.0	-1,157.0	-919.7	10.83	10.65	61.33
6,759.0	17.61	86.60	6,535.6	982.8	-1,133.7	-896.8	7.51	7.45	-4.24
6,854.0	22.22	83.54	6,624.9	985.6	-1,101.5	-864.7	4.97	4.85	-3.22
6,950.0	30.15	87.36	6,711.0	988.8	-1,059.3	-822.8	8.44	8.26	3.98
7,046.0	38.15	87.90	6,790.4	991.0	-1,005.5	-769.8	8.34	8.33	0.56
7,141.0	46.43	85.53	6,860.6	994.8	-941.8	-706.7	8.87	8.72	-2.49
7,201.3	50.64	86.29	6,900.5	998.0	-896.7	-662.0	7.04	6.98	1.26
<b>TPZ - 460' Setback - 2521'FSL, 460'FWL, Sec.31</b>									
7,236.0	53.06	86.69	6,922.0	999.6	-869.5	-635.1	7.04	6.98	1.15
7,332.0	58.12	87.41	6,976.2	1,003.7	-790.4	-557.0	5.31	5.27	0.75
7,427.0	64.70	87.53	7,021.6	1,007.4	-707.1	-474.8	6.93	6.93	0.13
7,523.0	73.35	86.90	7,056.0	1,011.7	-617.7	-386.5	9.03	9.01	-0.66
7,618.0	83.56	89.18	7,075.0	1,014.9	-524.8	-295.1	11.00	10.75	2.40
7,691.3	87.48	90.20	7,080.7	1,015.3	-451.8	-223.7	5.53	5.35	1.40
<b>LPL 2532'FSL, 905'FWL, SEC.31</b>									
7,714.0	88.70	90.52	7,081.4	1,015.1	-429.0	-201.5	5.53	5.35	1.39
7,809.0	88.29	90.61	7,083.9	1,014.2	-334.1	-109.0	0.44	-0.43	0.09
7,904.0	89.77	90.06	7,085.5	1,013.6	-239.1	-16.3	1.66	1.56	-0.58
8,000.0	89.85	89.78	7,085.9	1,013.8	-143.1	77.5	0.30	0.08	-0.29
<b>Deepest TVD Drilled - 7085.86' TVD</b>									
8,095.0	91.69	91.21	7,084.6	1,013.0	-48.1	170.1	2.45	1.94	1.51
8,191.0	91.55	91.23	7,081.9	1,010.9	47.8	263.3	0.15	-0.15	0.02
8,287.0	90.89	90.25	7,079.8	1,009.7	143.8	356.8	1.23	-0.69	-1.02
8,382.0	90.52	90.24	7,078.7	1,009.3	238.8	449.5	0.39	-0.39	-0.01
8,478.0	91.14	90.49	7,077.3	1,008.7	334.8	543.1	0.70	0.65	0.26

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<b>Site:</b>	Thistle Down 5N64W31H Pad Sec.31-T5N-R64W	<b>MD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Well:</b>	Thistle Down 31G-402	<b>North Reference:</b>	True
<b>Wellbore:</b>	Thistle Down 31G-402 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Thistle Down 31G-402 Wellbore #1	<b>Database:</b>	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,573.0	91.34	90.45	7,075.2	1,007.9	429.8	635.7	0.21	0.21	-0.04
8,669.0	91.24	89.79	7,073.0	1,007.7	525.7	729.4	0.70	-0.10	-0.69
8,764.0	91.09	89.13	7,071.1	1,008.6	620.7	822.4	0.71	-0.16	-0.69
8,860.0	91.01	88.92	7,069.4	1,010.2	716.7	916.5	0.23	-0.08	-0.22
8,956.0	90.85	88.44	7,067.8	1,012.4	812.6	1,010.7	0.53	-0.17	-0.50
9,051.0	91.29	87.86	7,066.0	1,015.5	907.6	1,104.1	0.77	0.46	-0.61
9,147.0	91.41	87.39	7,063.8	1,019.5	1,003.5	1,198.6	0.51	0.13	-0.49
9,242.0	91.39	89.30	7,061.4	1,022.2	1,098.4	1,291.9	2.01	-0.02	2.01
9,338.0	90.87	91.71	7,059.6	1,021.4	1,194.4	1,385.5	2.57	-0.54	2.51
9,433.0	91.06	91.59	7,058.0	1,018.6	1,289.3	1,477.6	0.24	0.20	-0.13
9,528.0	91.73	90.90	7,055.6	1,016.6	1,384.3	1,569.9	1.01	0.71	-0.73
9,624.0	92.13	90.55	7,052.4	1,015.4	1,480.2	1,663.4	0.55	0.42	-0.36
9,720.0	90.66	90.40	7,050.1	1,014.6	1,576.2	1,756.9	1.54	-1.53	-0.16
9,816.0	90.57	90.60	7,049.0	1,013.7	1,672.2	1,850.5	0.23	-0.09	0.21
9,910.0	91.59	91.01	7,047.3	1,012.4	1,766.1	1,942.0	1.17	1.09	0.44
10,005.0	91.90	90.44	7,044.4	1,011.2	1,861.1	2,034.5	0.68	0.33	-0.60
10,101.0	90.31	90.04	7,042.5	1,010.8	1,957.1	2,128.2	1.71	-1.66	-0.42
10,196.0	90.18	89.74	7,042.1	1,011.0	2,052.1	2,221.0	0.34	-0.14	-0.32
10,292.0	90.60	89.49	7,041.5	1,011.6	2,148.0	2,314.9	0.51	0.44	-0.26
10,388.0	90.91	89.38	7,040.2	1,012.6	2,244.0	2,408.9	0.34	0.32	-0.11
10,484.0	91.64	89.36	7,038.1	1,013.6	2,340.0	2,502.8	0.76	0.76	-0.02
10,579.0	92.07	88.75	7,035.0	1,015.2	2,434.9	2,595.9	0.79	0.45	-0.64
10,675.0	91.97	88.04	7,031.6	1,017.9	2,530.8	2,690.2	0.75	-0.10	-0.74
10,770.0	90.23	89.76	7,029.8	1,019.7	2,625.8	2,783.3	2.58	-1.83	1.81
10,866.0	90.25	90.24	7,029.4	1,019.7	2,721.8	2,877.1	0.50	0.02	0.50
10,961.0	90.10	89.76	7,029.1	1,019.7	2,816.8	2,969.9	0.53	-0.16	-0.51
11,057.0	90.44	89.61	7,028.6	1,020.2	2,912.8	3,063.7	0.39	0.35	-0.16
11,152.0	90.80	89.31	7,027.6	1,021.1	3,007.8	3,156.7	0.49	0.38	-0.32
11,248.0	90.85	88.40	7,026.2	1,023.0	3,103.8	3,250.9	0.95	0.05	-0.95
11,344.0	90.87	87.95	7,024.8	1,026.1	3,199.7	3,345.2	0.47	0.02	-0.47
11,439.0	90.75	86.86	7,023.4	1,030.4	3,294.6	3,438.9	1.15	-0.13	-1.15
11,534.0	91.24	87.01	7,021.8	1,035.5	3,389.4	3,532.6	0.54	0.52	0.16
11,630.0	90.27	89.16	7,020.5	1,038.7	3,485.4	3,627.0	2.46	-1.01	2.24
11,726.0	90.07	89.50	7,020.2	1,039.8	3,581.4	3,721.0	0.41	-0.21	0.35
11,821.0	90.19	89.30	7,020.0	1,040.8	3,676.4	3,814.0	0.25	0.13	-0.21
11,917.0	90.26	88.74	7,019.6	1,042.4	3,772.3	3,908.1	0.59	0.07	-0.58
12,013.0	90.62	88.61	7,018.9	1,044.7	3,868.3	4,002.3	0.40	0.38	-0.14
12,109.0	90.90	88.23	7,017.6	1,047.3	3,964.3	4,096.6	0.49	0.29	-0.40
12,204.0	90.66	90.62	7,016.3	1,048.3	4,059.2	4,189.6	2.53	-0.25	2.52
12,300.0	90.74	91.10	7,015.2	1,046.8	4,155.2	4,283.0	0.51	0.08	0.50
12,396.0	90.51	89.51	7,014.1	1,046.3	4,251.2	4,376.7	1.67	-0.24	-1.66
12,491.0	90.76	89.29	7,013.1	1,047.3	4,346.2	4,469.7	0.35	0.26	-0.23
12,587.0	90.77	88.66	7,011.8	1,049.0	4,442.2	4,563.8	0.66	0.01	-0.66

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Thistle Down 31G-402
<b>Project:</b>	SEC.31-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Site:</b>	Thistle Down 5N64W31H Pad Sec.31-T5N-R64W	<b>MD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Well:</b>	Thistle Down 31G-402	<b>North Reference:</b>	True
<b>Wellbore:</b>	Thistle Down 31G-402 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Thistle Down 31G-402 Wellbore #1	<b>Database:</b>	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,683.0	91.10	88.11	7,010.2	1,051.7	4,538.1	4,658.1	0.67	0.34	-0.57
12,778.0	90.61	88.76	7,008.8	1,054.3	4,633.1	4,751.4	0.86	-0.52	0.68
12,806.0	90.38	88.63	7,008.6	1,055.0	4,661.1	4,778.9	0.94	-0.82	-0.46
12,862.8	90.38	88.63	7,008.2	1,056.3	4,717.9	4,834.6	0.00	0.00	0.00
<b>Projected BHL 2553'FSL, 905'FWL, SEC.32</b>									
12,863.0	90.38	88.63	7,008.2	1,056.3	4,718.1	4,834.8	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 1519'FSL, 1357'FW	0.00	0.00	1.0	0.0	0.0	1,372,573.73	3,251,618.97	40.352600	-104.597170
- survey hits target center									
- Point									
Projected BHL 2553'FSL	0.00	0.00	7,025.0	1,035.1	4,718.5	1,373,656.76	3,256,326.47	40.355440	-104.580240
- survey misses target center by 27.1ft at 12862.8ft MD (7008.2 TVD, 1056.3 N, 4717.9 E)									
- Point									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,201.3	6,900.5	998.0	-896.7	TPZ - 460' Setback - 2521'FSL, 460'FWL, Sec.31
8,000.0	7,085.9	1,013.8	-143.1	Deepest TVD Drilled - 7085.86' TVD

Checked By: _____	Approved By: _____	Date: _____
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