

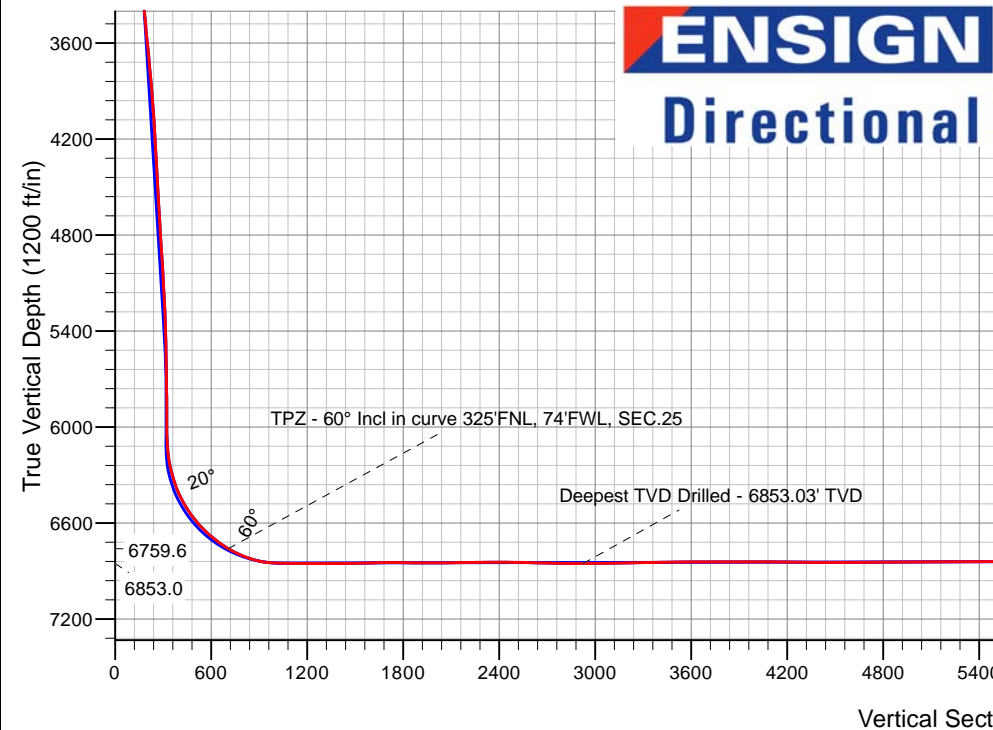
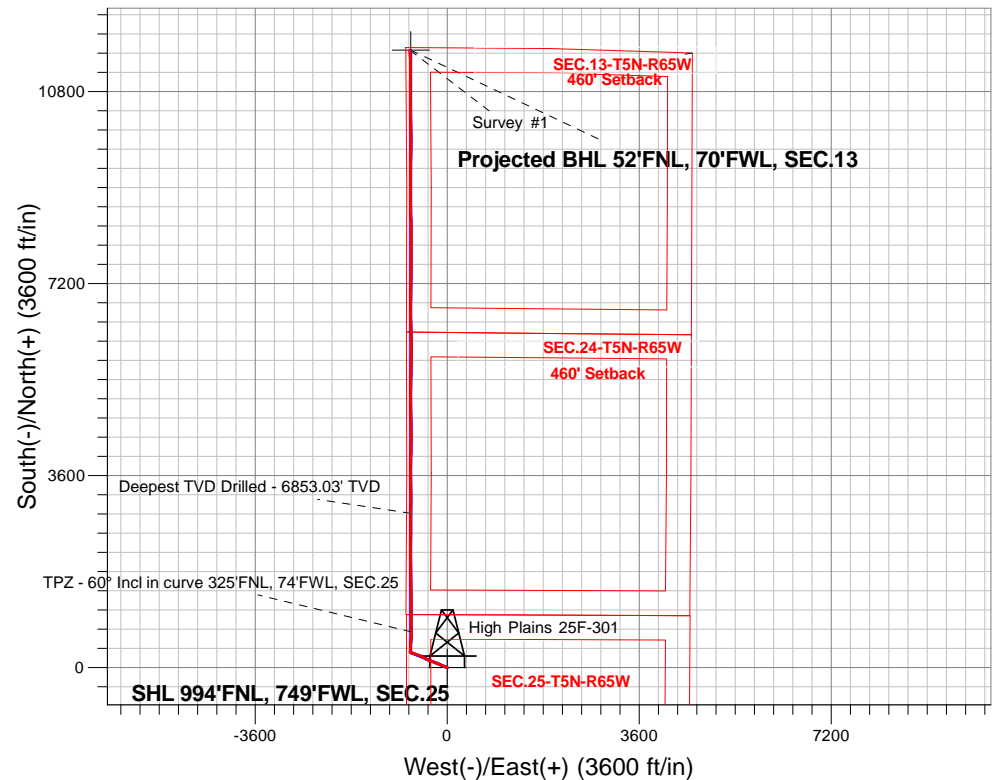
PDC Energy Inc. DJ Basin

Well Name: **High Plains 25F-301**

Surface Location: High Plains 5N65W25AF Pad Sec.25-T5N-R65W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4639.0
+N/-S+E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1380569.263245642.89 40.374712 -104.618326
Original Well Elev WELL @ 4662.0ft (Original Well Elev)

FINAL SURVEY

Projected Bottom Hole Location
17,876'MD 6823'TVD 11,575'N & 700'W of SHL
91.1 degree Incl @ 357.2 degree AZM



ENSIGN
Directional

High Plains 5N65W25AF Pad Sec.25-T5N-R65W
High Plains 25F-301
High Plains 25F-301 Wellbore #1
8:46, December 14 2017

ANNOTATIONS

TVD	MD	Annotation
6759.6	6950.9	TPZ - 60° Incl in curve 325'FNL, 74'FWL, SEC.25
6853.0	9189.0	Deepest TVD Drilled - 6853.03' TVD

LEGEND

- High Plains 25F-301, High Plains 25F-301 Wellbore #1, Plan #2 (12-05-17) V0
- High Plains 25F-301 Wellbore #1
- Survey #1

Projected BHL 52'FNL, 70'FWL, SEC.13

High Plains 25F-301/Survey #1



PDC Energy Inc. DJ Basin

SEC.25-T5N-R65W

High Plains 5N65W25AF Pad Sec.25-T5N-R65W

High Plains 25F-301

High Plains 25F-301 Wellbore #1

Survey: Survey #1

Standard Survey Report

14 December, 2017

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well High Plains 25F-301
Project:	SEC.25-T5N-R65W	TVD Reference:	WELL @ 4662.0ft (Original Well Elev)
Site:	High Plains 5N65W25AF Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4662.0ft (Original Well Elev)
Well:	High Plains 25F-301	North Reference:	True
Wellbore:	High Plains 25F-301 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	High Plains 25F-301 Wellbore #1	Database:	US_EDM

Project	SEC.25-T5N-R65W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	High Plains 5N65W25AF Pad Sec.25-T5N-R65W				
Site Position:		Northing:	1,380,509.53 usft	Latitude:	40.374548
From:	Lat/Long	Easting:	3,245,642.93 usft	Longitude:	-104.618328
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.57 °

Well	High Plains 25F-301					
Well Position	+N/-S	0.0 ft	Northing:	1,380,569.26 usft	Latitude:	40.374712
	+E/-W	0.0 ft	Easting:	3,245,642.89 usft	Longitude:	-104.618326
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,639.0 ft

Wellbore	High Plains 25F-301 Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/5/2017	7.91	66.83	52,453

Design	High Plains 25F-301 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	356.61	

Survey Program	Date	12/14/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
156.0	17,876.0	Survey #1 (High Plains 25F-301 Wellbore	MWD	MWD - Standard	

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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1.0	0.00	187.90	1.0	0.0	0.0	0.0	0.00	0.00	0.00	
SHL 994'FNL, 749'FWL, SEC.25										
156.0	0.20	187.90	156.0	-0.3	0.0	-0.3	0.13	0.13	0.00	
252.0	1.20	280.90	252.0	-0.2	-1.0	-0.2	1.28	1.04	96.88	
347.0	2.40	285.30	346.9	0.5	-3.9	0.7	1.27	1.26	4.63	
443.0	3.90	291.60	442.8	2.2	-8.9	2.7	1.60	1.56	6.56	
539.0	5.50	293.90	538.5	5.3	-16.2	6.2	1.68	1.67	2.40	
634.0	7.30	292.00	632.9	9.4	-25.9	10.9	1.91	1.89	-2.00	
730.0	9.10	291.30	727.9	14.4	-38.6	16.7	1.88	1.88	-0.73	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well High Plains 25F-301
Project:	SEC.25-T5N-R65W	TVD Reference:	WELL @ 4662.0ft (Original Well Elev)
Site:	High Plains 5N65W25AF Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4662.0ft (Original Well Elev)
Well:	High Plains 25F-301	North Reference:	True
Wellbore:	High Plains 25F-301 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	High Plains 25F-301 Wellbore #1	Database:	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)	
825.0	9.30	291.30	821.7	19.9	-52.8	23.0	0.21	0.21	0.00	
921.0	9.10	289.20	916.4	25.2	-67.2	29.2	0.41	-0.21	-2.19	
1,017.0	8.70	289.20	1,011.3	30.1	-81.2	34.9	0.42	-0.42	0.00	
1,113.0	9.30	294.60	1,106.1	35.7	-95.1	41.3	1.08	0.63	5.63	
1,208.0	9.00	295.70	1,199.9	42.2	-108.8	48.5	0.37	-0.32	1.16	
1,304.0	8.80	296.00	1,294.7	48.6	-122.2	55.8	0.21	-0.21	0.31	
1,399.0	8.60	295.30	1,388.6	54.9	-135.1	62.8	0.24	-0.21	-0.74	
1,494.0	7.60	294.40	1,482.7	60.5	-147.3	69.1	1.06	-1.05	-0.95	
1,590.0	7.80	294.80	1,577.8	65.8	-159.0	75.1	0.22	0.21	0.42	
1,635.0	7.50	293.90	1,622.4	68.3	-164.4	77.9	0.72	-0.67	-2.00	
1,783.0	6.80	285.30	1,769.3	74.5	-181.7	85.2	0.86	-0.47	-5.81	
1,879.0	7.80	286.20	1,864.5	77.9	-193.4	89.2	1.05	1.04	0.94	
1,975.0	7.70	285.50	1,959.6	81.4	-205.9	93.4	0.14	-0.10	-0.73	
2,071.0	7.30	287.40	2,054.8	84.9	-217.9	97.7	0.49	-0.42	1.98	
2,166.0	8.10	292.30	2,148.9	89.3	-229.9	102.7	1.09	0.84	5.16	
2,262.0	7.50	290.70	2,244.1	94.1	-242.0	108.2	0.66	-0.63	-1.67	
2,358.0	8.90	298.30	2,339.1	99.8	-254.4	114.7	1.84	1.46	7.92	
2,454.0	8.70	296.90	2,433.9	106.6	-267.4	122.2	0.31	-0.21	-1.46	
2,549.0	8.60	293.60	2,527.9	112.7	-280.3	129.1	0.53	-0.11	-3.47	
2,645.0	8.30	290.90	2,622.8	118.0	-293.4	135.2	0.52	-0.31	-2.81	
2,741.0	8.20	290.20	2,717.8	122.9	-306.3	140.8	0.15	-0.10	-0.73	
2,837.0	8.80	292.70	2,812.8	128.1	-319.5	146.7	0.73	0.63	2.60	
2,933.0	8.70	290.90	2,907.7	133.5	-333.0	153.0	0.30	-0.10	-1.88	
3,029.0	8.50	289.90	3,002.6	138.5	-346.5	158.7	0.26	-0.21	-1.04	
3,125.0	8.00	287.40	3,097.6	142.9	-359.5	163.9	0.64	-0.52	-2.60	
3,220.0	7.70	287.40	3,191.7	146.8	-371.9	168.5	0.32	-0.32	0.00	
3,316.0	7.90	295.50	3,286.8	151.6	-384.0	174.0	1.16	0.21	8.44	
3,412.0	9.00	305.70	3,381.8	158.8	-396.0	181.9	1.93	1.15	10.63	
3,508.0	8.30	298.30	3,476.7	166.5	-408.2	190.3	1.37	-0.73	-7.71	
3,604.0	9.70	303.90	3,571.5	174.3	-421.1	198.8	1.72	1.46	5.83	
3,700.0	9.50	300.80	3,666.2	182.8	-434.6	208.2	0.58	-0.21	-3.23	
3,795.0	9.40	299.70	3,759.9	190.7	-448.1	216.8	0.22	-0.11	-1.16	
3,891.0	9.30	297.40	3,854.6	198.1	-461.7	225.1	0.40	-0.10	-2.40	
3,987.0	9.40	296.50	3,949.3	205.2	-475.6	233.0	0.18	0.10	-0.94	
4,083.0	9.00	293.40	4,044.1	211.7	-489.6	240.2	0.66	-0.42	-3.23	
4,179.0	8.20	292.30	4,139.0	217.3	-502.8	246.6	0.85	-0.83	-1.15	
4,275.0	7.20	289.90	4,234.1	221.9	-514.8	251.9	1.09	-1.04	-2.50	
4,370.0	8.70	289.70	4,328.2	226.4	-527.1	257.1	1.58	1.58	-0.21	
4,466.0	8.40	289.50	4,423.1	231.1	-540.6	262.7	0.31	-0.31	-0.21	
4,562.0	7.70	285.10	4,518.2	235.2	-553.4	267.5	0.97	-0.73	-4.58	
4,658.0	9.30	290.40	4,613.1	239.5	-566.9	272.6	1.85	1.67	5.52	
4,754.0	8.60	291.10	4,708.0	244.8	-580.8	278.7	0.74	-0.73	0.73	

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Well:	High Plains 25F-301	North Reference:	True
Wellbore:	High Plains 25F-301 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	High Plains 25F-301 Wellbore #1	Database:	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)
4,850.0	7.80	290.70	4,803.0	249.7	-593.6	284.4	0.84	-0.83	-0.42
4,946.0	8.40	293.70	4,898.0	254.8	-606.2	290.2	0.76	0.63	3.13
5,042.0	7.70	291.80	4,993.1	260.0	-618.5	296.1	0.78	-0.73	-1.98
5,138.0	9.40	287.20	5,088.0	264.7	-632.0	301.6	1.91	1.77	-4.79
5,234.0	8.20	287.60	5,182.9	269.1	-646.0	306.8	1.25	-1.25	0.42
5,330.0	7.30	283.50	5,278.0	272.6	-658.5	311.1	1.10	-0.94	-4.27
5,426.0	6.50	282.70	5,373.3	275.2	-669.7	314.3	0.84	-0.83	-0.83
5,522.0	5.00	280.70	5,468.8	277.2	-679.1	316.9	1.58	-1.56	-2.08
5,618.0	3.30	290.40	5,564.6	279.0	-685.8	319.0	1.91	-1.77	10.10
5,713.0	1.90	293.00	5,659.5	280.5	-689.8	320.8	1.48	-1.47	2.74
5,810.0	0.40	263.30	5,756.5	281.1	-691.7	321.5	1.61	-1.55	-30.62
5,906.0	1.10	300.20	5,852.4	281.5	-692.8	322.0	0.85	0.73	38.44
6,002.0	0.90	303.40	5,948.4	282.4	-694.2	323.0	0.22	-0.21	3.33
6,097.0	0.70	313.40	6,043.4	283.2	-695.3	323.8	0.26	-0.21	10.53
6,193.0	4.90	4.60	6,139.3	287.7	-695.4	328.3	4.68	4.38	53.33
6,289.0	11.50	4.90	6,234.3	301.4	-694.2	341.9	6.88	6.88	0.31
6,384.0	17.40	0.50	6,326.2	325.0	-693.3	365.4	6.31	6.21	-4.63
6,479.0	23.30	1.20	6,415.2	358.0	-692.8	398.4	6.22	6.21	0.74
6,575.0	31.70	3.50	6,500.3	402.3	-690.8	442.4	8.82	8.75	2.40
6,670.0	40.40	7.70	6,577.1	457.8	-685.2	497.5	9.52	9.16	4.42
6,766.0	45.50	4.20	6,647.3	522.8	-678.5	562.0	5.86	5.31	-3.65
6,862.0	52.50	1.40	6,710.3	595.1	-675.0	634.0	7.62	7.29	-2.92
6,950.9	60.00	358.98	6,759.6	669.0	-674.9	707.7	8.73	8.44	-2.73
TPZ - 60° Incl in curve 325°FNL, 74°FWL, SEC.25									
6,958.0	60.60	358.80	6,763.2	675.2	-675.0	713.9	8.73	8.46	-2.49
7,053.0	66.70	359.50	6,805.3	760.2	-676.2	798.9	6.45	6.42	0.74
7,148.0	76.60	359.10	6,835.2	850.3	-677.3	888.8	10.43	10.42	-0.42
7,244.0	87.30	0.40	6,848.6	945.2	-677.7	983.6	11.23	11.15	1.35
7,295.0	88.20	0.29	6,850.6	996.1	-677.4	1,034.4	1.78	1.77	-0.21
LPL 2°FSL, 64°FWL, SEC.24									
7,340.0	89.00	0.20	6,851.7	1,041.2	-677.2	1,079.4	1.78	1.77	-0.21
7,465.0	89.80	359.60	6,853.0	1,166.1	-677.4	1,204.1	0.80	0.64	-0.48
7,561.0	90.20	359.60	6,853.0	1,262.1	-678.1	1,300.0	0.42	0.42	0.00
7,656.0	90.20	359.50	6,852.7	1,357.1	-678.9	1,394.9	0.11	0.00	-0.11
7,752.0	90.90	358.90	6,851.8	1,453.1	-680.2	1,490.8	0.96	0.73	-0.63
7,847.0	91.70	358.80	6,849.6	1,548.1	-682.1	1,585.7	0.85	0.84	-0.11
7,943.0	90.90	359.10	6,847.4	1,644.0	-683.9	1,681.6	0.89	-0.83	0.31
8,038.0	89.30	359.50	6,847.3	1,739.0	-685.0	1,776.5	1.74	-1.68	0.42
8,134.0	90.00	358.80	6,847.8	1,835.0	-686.5	1,872.4	1.03	0.73	-0.73
8,230.0	89.80	0.20	6,848.0	1,931.0	-687.3	1,968.3	1.47	-0.21	1.46
8,326.0	90.20	0.00	6,848.0	2,027.0	-687.1	2,064.1	0.47	0.42	-0.21
8,422.0	91.00	359.50	6,847.0	2,123.0	-687.5	2,159.9	0.98	0.83	-0.52
8,518.0	90.80	0.00	6,845.5	2,219.0	-688.0	2,255.8	0.56	-0.21	0.52

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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)
8,614.0	89.70	0.50	6,845.1	2,315.0	-687.5	2,351.6	1.26	-1.15	0.52
8,709.0	90.20	0.20	6,845.2	2,410.0	-687.0	2,446.4	0.61	0.53	-0.32
8,805.0	88.80	0.90	6,846.0	2,506.0	-686.0	2,542.1	1.63	-1.46	0.73
8,901.0	88.30	0.20	6,848.4	2,601.9	-685.1	2,637.9	0.90	-0.52	-0.73
8,997.0	88.50	359.50	6,851.1	2,697.9	-685.4	2,733.7	0.76	0.21	-0.73
9,093.0	89.50	1.10	6,852.8	2,793.9	-684.9	2,829.5	1.97	1.04	1.67
9,189.0	90.20	0.90	6,853.0	2,889.9	-683.2	2,925.2	0.76	0.73	-0.21
Deepest TVD Drilled - 6853.03' TVD									
9,285.0	90.70	0.50	6,852.3	2,985.9	-682.0	3,020.9	0.67	0.52	-0.42
9,381.0	91.70	359.60	6,850.3	3,081.8	-681.9	3,116.7	1.40	1.04	-0.94
9,477.0	90.60	359.60	6,848.3	3,177.8	-682.6	3,212.6	1.15	-1.15	0.00
9,573.0	91.10	358.60	6,846.9	3,273.8	-684.1	3,308.5	1.16	0.52	-1.04
9,669.0	90.50	0.40	6,845.6	3,369.8	-684.9	3,404.4	1.98	-0.63	1.88
9,765.0	90.90	359.80	6,844.4	3,465.8	-684.8	3,500.2	0.75	0.42	-0.63
9,861.0	91.50	359.10	6,842.4	3,561.7	-685.7	3,596.0	0.96	0.63	-0.73
9,957.0	89.40	0.20	6,841.6	3,657.7	-686.3	3,691.9	2.47	-2.19	1.15
10,053.0	90.10	359.60	6,842.1	3,753.7	-686.5	3,787.7	0.96	0.73	-0.63
10,149.0	90.50	0.40	6,841.6	3,849.7	-686.5	3,883.6	0.93	0.42	0.83
10,245.0	89.30	1.60	6,841.7	3,945.7	-684.8	3,979.3	1.77	-1.25	1.25
10,341.0	89.40	1.80	6,842.8	4,041.6	-681.9	4,074.9	0.23	0.10	0.21
10,437.0	89.30	1.10	6,843.9	4,137.6	-679.5	4,170.5	0.74	-0.10	-0.73
10,533.0	89.50	0.50	6,844.9	4,233.6	-678.2	4,266.3	0.66	0.21	-0.63
10,629.0	90.00	0.40	6,845.3	4,329.6	-677.4	4,362.1	0.53	0.52	-0.10
10,725.0	89.80	359.50	6,845.5	4,425.6	-677.5	4,457.9	0.96	-0.21	-0.94
10,821.0	90.00	359.10	6,845.7	4,521.6	-678.7	4,553.8	0.47	0.21	-0.42
10,917.0	90.20	358.20	6,845.5	4,617.6	-680.9	4,649.7	0.96	0.21	-0.94
11,013.0	90.80	358.20	6,844.7	4,713.5	-683.9	4,745.7	0.63	0.63	0.00
11,109.0	90.00	0.20	6,844.0	4,809.5	-685.3	4,841.6	2.24	-0.83	2.08
11,205.0	90.20	359.30	6,843.8	4,905.5	-685.7	4,937.4	0.96	0.21	-0.94
11,301.0	90.70	358.90	6,843.1	5,001.5	-687.2	5,033.3	0.67	0.52	-0.42
11,397.0	89.90	1.40	6,842.6	5,097.5	-687.0	5,129.1	2.73	-0.83	2.60
11,492.0	90.20	0.70	6,842.5	5,192.4	-685.2	5,223.9	0.80	0.32	-0.74
11,589.0	90.90	0.00	6,841.5	5,289.4	-684.6	5,320.7	1.02	0.72	-0.72
11,685.0	90.20	1.10	6,840.6	5,385.4	-683.7	5,416.4	1.36	-0.73	1.15
11,781.0	90.70	0.70	6,839.9	5,481.4	-682.2	5,512.1	0.67	0.52	-0.42
11,877.0	89.80	0.90	6,839.5	5,577.4	-680.9	5,607.9	0.96	-0.94	0.21
11,973.0	89.90	1.80	6,839.7	5,673.4	-678.6	5,703.6	0.94	0.10	0.94
12,069.0	90.50	1.40	6,839.4	5,769.3	-675.9	5,799.2	0.75	0.63	-0.42
12,165.0	90.70	0.90	6,838.4	5,865.3	-674.0	5,894.9	0.56	0.21	-0.52
12,261.0	88.60	0.20	6,838.9	5,961.3	-673.1	5,990.7	2.31	-2.19	-0.73
12,357.0	89.20	359.80	6,840.8	6,057.3	-673.1	6,086.5	0.75	0.63	-0.42
12,453.0	90.00	358.60	6,841.5	6,153.3	-674.4	6,182.4	1.50	0.83	-1.25
12,549.0	90.90	358.20	6,840.7	6,249.2	-677.1	6,278.3	1.03	0.94	-0.42

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well High Plains 25F-301
Project:	SEC.25-T5N-R65W	TVD Reference:	WELL @ 4662.0ft (Original Well Elev)
Site:	High Plains 5N65W25AF Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4662.0ft (Original Well Elev)
Well:	High Plains 25F-301	North Reference:	True
Wellbore:	High Plains 25F-301 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	High Plains 25F-301 Wellbore #1	Database:	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)	
12,645.0	89.60	358.80	6,840.3	6,345.2	-679.6	6,374.3	1.49	-1.35	0.63	
12,741.0	90.60	357.50	6,840.1	6,441.1	-682.7	6,470.2	1.71	1.04	-1.35	
12,837.0	89.10	358.60	6,840.4	6,537.1	-686.0	6,566.2	1.94	-1.56	1.15	
12,933.0	88.90	0.00	6,842.0	6,633.0	-687.1	6,662.1	1.47	-0.21	1.46	
13,029.0	89.20	359.50	6,843.6	6,729.0	-687.6	6,757.9	0.61	0.31	-0.52	
13,125.0	89.10	1.10	6,845.1	6,825.0	-687.1	6,853.7	1.67	-0.10	1.67	
13,221.0	89.40	0.70	6,846.3	6,921.0	-685.5	6,949.4	0.52	0.31	-0.42	
13,315.0	90.10	1.10	6,846.7	7,015.0	-684.1	7,043.1	0.86	0.74	0.43	
13,411.0	90.60	0.90	6,846.1	7,111.0	-682.4	7,138.9	0.56	0.52	-0.21	
13,507.0	91.50	0.90	6,844.4	7,206.9	-680.9	7,234.6	0.94	0.94	0.00	
13,602.0	91.00	0.40	6,842.3	7,301.9	-679.8	7,329.3	0.74	-0.53	-0.53	
13,698.0	91.30	359.80	6,840.4	7,397.9	-679.6	7,425.1	0.70	0.31	-0.63	
13,793.0	90.70	1.10	6,838.7	7,492.9	-678.9	7,519.9	1.51	-0.63	1.37	
13,888.0	91.40	0.00	6,837.0	7,587.8	-678.0	7,614.6	1.37	0.74	-1.16	
13,984.0	89.80	0.40	6,836.0	7,683.8	-677.6	7,710.5	1.72	-1.67	0.42	
14,079.0	90.00	0.70	6,836.1	7,778.8	-676.7	7,805.2	0.38	0.21	0.32	
14,175.0	90.50	0.40	6,835.7	7,874.8	-675.8	7,901.0	0.61	0.52	-0.31	
14,271.0	91.30	0.00	6,834.2	7,970.8	-675.5	7,996.8	0.93	0.83	-0.42	
14,367.0	89.80	359.60	6,833.3	8,066.8	-675.8	8,092.6	1.62	-1.56	-0.42	
14,462.0	89.60	359.50	6,833.8	8,161.8	-676.6	8,187.5	0.24	-0.21	-0.11	
14,558.0	90.00	358.90	6,834.1	8,257.8	-677.9	8,283.4	0.75	0.42	-0.63	
14,654.0	90.30	357.70	6,833.9	8,353.7	-680.8	8,379.4	1.29	0.31	-1.25	
14,750.0	89.70	359.10	6,833.9	8,449.7	-683.4	8,475.3	1.59	-0.63	1.46	
14,845.0	90.00	358.60	6,834.1	8,544.7	-685.3	8,570.3	0.61	0.32	-0.53	
14,941.0	89.10	359.30	6,834.9	8,640.7	-687.1	8,666.2	1.19	-0.94	0.73	
15,036.0	89.40	359.50	6,836.1	8,735.6	-688.1	8,761.0	0.38	0.32	0.21	
15,132.0	90.50	358.90	6,836.2	8,831.6	-689.4	8,856.9	1.31	1.15	-0.63	
15,227.0	90.10	0.40	6,835.7	8,926.6	-690.0	8,951.8	1.63	-0.42	1.58	
15,323.0	90.20	359.60	6,835.5	9,022.6	-690.0	9,047.6	0.84	0.10	-0.83	
15,419.0	90.00	0.00	6,835.3	9,118.6	-690.3	9,143.5	0.47	-0.21	0.42	
15,514.0	90.70	0.00	6,834.7	9,213.6	-690.3	9,238.3	0.74	0.74	0.00	
15,609.0	90.00	1.60	6,834.1	9,308.6	-689.0	9,333.1	1.84	-0.74	1.68	
15,705.0	90.80	1.40	6,833.5	9,404.6	-686.5	9,428.7	0.86	0.83	-0.21	
15,801.0	90.00	0.90	6,832.8	9,500.6	-684.6	9,524.4	0.98	-0.83	-0.52	
15,897.0	90.80	1.20	6,832.1	9,596.5	-682.8	9,620.1	0.89	0.83	0.31	
15,993.0	89.80	0.50	6,831.6	9,692.5	-681.4	9,715.8	1.27	-1.04	-0.73	
16,087.0	90.50	0.90	6,831.4	9,786.5	-680.2	9,809.6	0.86	0.74	0.43	
16,183.0	90.40	359.60	6,830.6	9,882.5	-679.8	9,905.4	1.36	-0.10	-1.35	
16,279.0	90.20	359.80	6,830.1	9,978.5	-680.3	10,001.3	0.29	-0.21	0.21	
16,374.0	90.50	359.50	6,829.5	10,073.5	-680.9	10,096.1	0.45	0.32	-0.32	
16,471.0	90.70	358.90	6,828.5	10,170.5	-682.3	10,193.0	0.65	0.21	-0.62	
16,566.0	91.10	358.40	6,827.0	10,265.4	-684.5	10,288.0	0.67	0.42	-0.53	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well High Plains 25F-301
Project:	SEC.25-T5N-R65W	TVD Reference:	WELL @ 4662.0ft (Original Well Elev)
Site:	High Plains 5N65W25AF Pad Sec.25-T5N-R65W	MD Reference:	WELL @ 4662.0ft (Original Well Elev)
Well:	High Plains 25F-301	North Reference:	True
Wellbore:	High Plains 25F-301 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	High Plains 25F-301 Wellbore #1	Database:	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)
16,661.0	89.90	358.40	6,826.2	10,360.4	-687.2	10,382.9	1.26	-1.26	0.00
16,757.0	90.30	357.90	6,826.0	10,456.4	-690.3	10,478.9	0.67	0.42	-0.52
16,852.0	88.90	358.60	6,826.7	10,551.3	-693.2	10,573.8	1.65	-1.47	0.74
16,948.0	89.40	0.00	6,828.1	10,647.3	-694.3	10,669.7	1.55	0.52	1.46
17,043.0	88.70	1.80	6,829.7	10,742.3	-692.8	10,764.4	2.03	-0.74	1.89
17,139.0	89.30	1.20	6,831.4	10,838.2	-690.3	10,860.1	0.88	0.63	-0.63
17,234.0	90.40	0.50	6,831.6	10,933.2	-688.9	10,954.8	1.37	1.16	-0.74
17,330.0	91.50	0.50	6,830.0	11,029.2	-688.1	11,050.6	1.15	1.15	0.00
17,426.0	90.50	0.20	6,828.4	11,125.2	-687.5	11,146.3	1.09	-1.04	-0.31
17,521.0	91.10	359.10	6,827.0	11,220.1	-688.1	11,241.2	1.32	0.63	-1.16
17,617.0	89.90	358.60	6,826.2	11,316.1	-690.0	11,337.1	1.35	-1.25	-0.52
17,712.0	90.70	358.10	6,825.7	11,411.1	-692.7	11,432.1	0.99	0.84	-0.53
17,821.0	91.10	357.20	6,824.0	11,520.0	-697.2	11,541.0	0.90	0.37	-0.83
17,876.0	91.10	357.20	6,822.9	11,574.9	-699.9	11,596.0	0.00	0.00	0.00
BHL 50'FNL, 85'FWL, SEC.13									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 994'FNL, 749'FWL, - survey hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,380,569.27	3,245,642.89	40.374712	-104.618326
BHL 50'FNL, 85'FWL, SI - survey misses target center by 16.2ft at 17876.0ft MD (6822.9 TVD, 11574.9 N, -699.9 E) - Point	0.00	0.00	6,830.0	11,576.4	-685.4	1,392,137.77	3,244,842.48	40.406488	-104.620787

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
6,950.9	6,759.6	669.0	-674.9	TPZ - 60° Incl in curve 325'FNL, 74'FWL, SEC.25	
9,189.0	6,853.0	2,889.9	-683.2	Deepest TVD Drilled - 6853.03' TVD	

Checked By: _____	Approved By: _____	Date: _____
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