

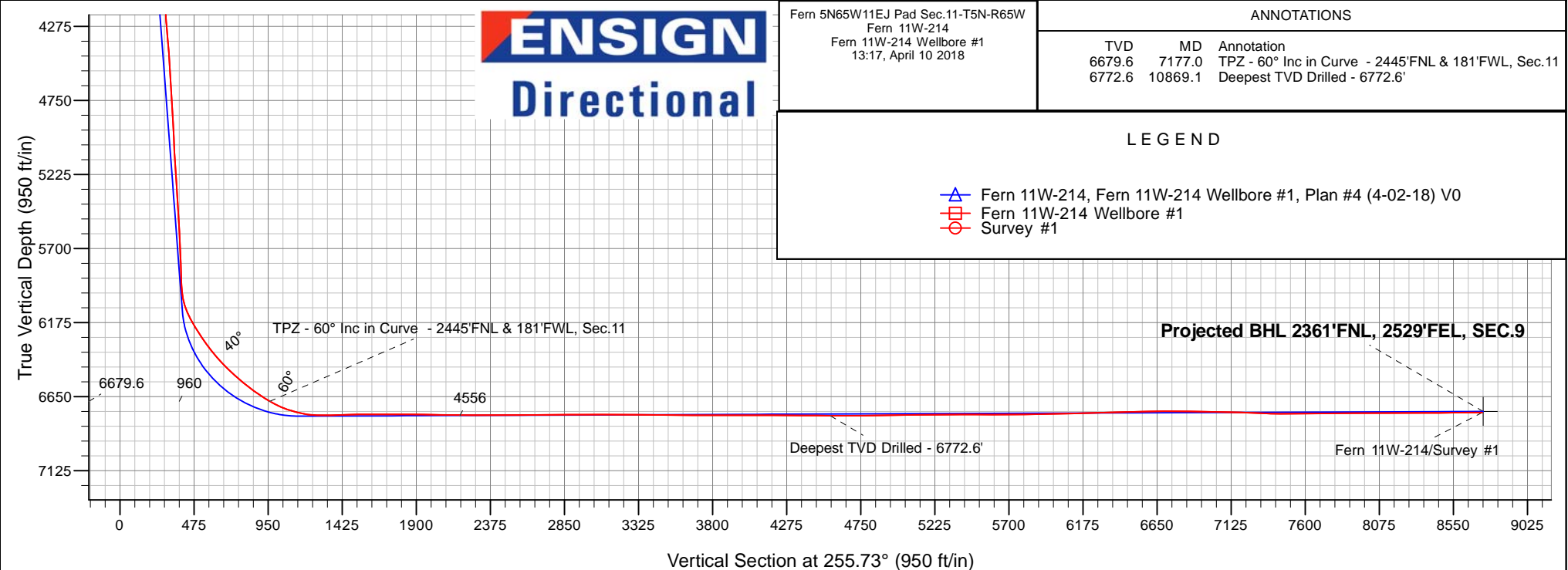
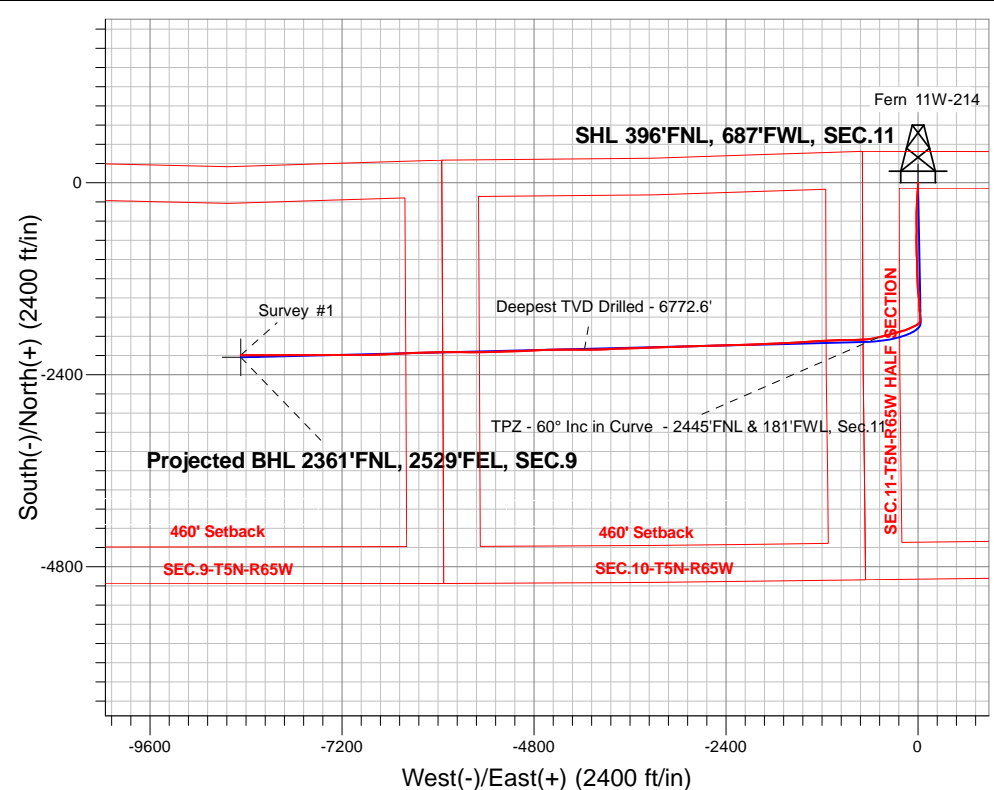
PDC Energy Inc. DJ Basin

Well Name: **Fern 11W-214**

Surface Location: Fern 5N65W11EJ Pad Sec.11-T5N-R65W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4619.0
+N/-S+E/-W Northing Easting Latitude Longitude Slot
0.0 0.01397093.983240103.84 40.420220 -104.637629
Original Well Elev WELL @ 4642.0ft (Original Well Elev)

FINAL SURVEY

Projected Bottom Hole Location
15,165'MD 6752'TVD 2153'S & 8464'W of SHL
90.3 degree Incl @ 270.10 degree AZM





PDC Energy Inc. DJ Basin

SEC.11-T5N-R65W

Fern 5N65W11EJ Pad Sec.11-T5N-R65W

Fern 11W-214

Fern 11W-214 Wellbore #1

Survey: Survey #1

Standard Survey Report

10 April, 2018

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Fern 11W-214
Project:	SEC.11-T5N-R65W	TVD Reference:	WELL @ 4642.0ft (Original Well Elev)
Site:	Fern 5N65W11EJ Pad Sec.11-T5N-R65W	MD Reference:	WELL @ 4642.0ft (Original Well Elev)
Well:	Fern 11W-214	North Reference:	True
Wellbore:	Fern 11W-214 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Fern 11W-214 Wellbore #1	Database:	US_EDM

Project	SEC.11-T5N-R65W, Weld County, CO		
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		Fern 5N65W11EJ Pad Sec.11-T5N-R65W			
Site Position:		Northing:	1,397,139.19 usft	Latitude:	40.420344
From:	Lat/Long	Easting:	3,240,103.68 usft	Longitude:	-104.637628
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.56 °

Well	Fern 11W-214					
Well Position	+N/-S	0.0 ft	Northing:	1,397,093.99 usft	Latitude:	40.420220
	+E/-W	0.0 ft	Easting:	3,240,103.84 usft	Longitude:	-104.637629
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,619.0 ft

Wellbore	Fern 11W-214 Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/2/2018	7.88	66.85	52,441

Design	Fern 11W-214 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	255.73	

Survey Program	Date	4/10/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
153.0	15,165.0	Survey #1 (Fern 11W-214 Wellbore #1)	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	
153.0	0.40	277.90	153.0	0.1	-0.5	0.5	0.26	0.26	0.00	
248.0	1.60	200.50	248.0	-1.1	-1.3	1.6	1.64	1.26	-81.47	
344.0	2.60	183.00	343.9	-4.6	-1.9	3.0	1.23	1.04	-18.23	
439.0	5.10	175.60	438.7	-10.9	-1.7	4.3	2.68	2.63	-7.79	
534.0	7.60	176.60	533.1	-21.4	-1.0	6.2	2.63	2.63	1.05	
630.0	10.00	178.00	628.0	-36.1	-0.3	9.2	2.51	2.50	1.46	
725.0	12.50	181.00	721.1	-54.6	-0.2	13.7	2.70	2.63	3.16	
820.0	14.40	184.40	813.5	-76.7	-1.3	20.2	2.17	2.00	3.58	
916.0	16.00	185.20	906.2	-101.7	-3.4	28.4	1.68	1.67	0.83	

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Site:	Fern 5N65W11EJ Pad Sec.11-T5N-R65W	MD Reference:	WELL @ 4642.0ft (Original Well Elev)
Well:	Fern 11W-214	North Reference:	True
Wellbore:	Fern 11W-214 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Fern 11W-214 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)
1,011.0	17.90	185.10	997.0	-129.3	-5.9	37.6	2.00	2.00	-0.11
1,107.0	18.60	184.20	1,088.2	-159.3	-8.3	47.4	0.79	0.73	-0.94
1,202.0	17.50	186.50	1,178.5	-188.6	-11.1	57.2	1.38	-1.16	2.42
1,297.0	17.60	184.70	1,269.1	-217.1	-13.9	67.0	0.58	0.11	-1.89
1,393.0	17.90	183.50	1,360.5	-246.3	-16.0	76.2	0.49	0.31	-1.25
1,488.0	15.60	181.70	1,451.5	-273.6	-17.2	84.2	2.48	-2.42	-1.89
1,616.0	11.50	181.90	1,575.9	-303.6	-18.2	92.4	3.20	-3.20	0.16
1,679.0	10.40	177.20	1,637.8	-315.5	-18.1	95.3	2.25	-1.75	-7.46
1,775.0	12.40	181.90	1,731.9	-334.5	-18.0	99.9	2.30	2.08	4.90
1,869.0	14.60	181.20	1,823.3	-356.4	-18.6	105.9	2.35	2.34	-0.74
1,965.0	17.00	178.00	1,915.6	-382.6	-18.3	112.1	2.66	2.50	-3.33
2,060.0	17.70	180.50	2,006.3	-410.9	-18.0	118.7	1.08	0.74	2.63
2,251.0	17.20	177.90	2,188.5	-468.1	-17.2	132.1	0.48	-0.26	-1.36
2,346.0	18.20	180.10	2,279.0	-497.0	-16.7	138.7	1.27	1.05	2.32
2,442.0	18.10	181.20	2,370.3	-526.9	-17.1	146.4	0.37	-0.10	1.15
2,537.0	17.70	179.60	2,460.7	-556.1	-17.3	153.8	0.67	-0.42	-1.68
2,632.0	17.30	180.70	2,551.3	-584.7	-17.3	161.0	0.55	-0.42	1.16
2,728.0	19.20	182.30	2,642.4	-614.7	-18.1	169.2	2.05	1.98	1.67
2,823.0	20.00	181.40	2,731.9	-646.6	-19.2	178.0	0.90	0.84	-0.95
2,919.0	19.90	180.80	2,822.2	-679.3	-19.8	186.7	0.24	-0.10	-0.63
3,015.0	19.80	181.40	2,912.5	-711.9	-20.4	195.3	0.24	-0.10	0.63
3,110.0	19.50	179.80	3,001.9	-743.9	-20.8	203.5	0.65	-0.32	-1.68
3,205.0	19.00	180.30	3,091.6	-775.2	-20.8	211.3	0.55	-0.53	0.53
3,300.0	18.50	179.40	3,181.6	-805.7	-20.7	218.7	0.61	-0.53	-0.95
3,395.0	18.00	179.30	3,271.8	-835.5	-20.4	225.7	0.53	-0.53	-0.11
3,491.0	17.30	177.70	3,363.3	-864.6	-19.6	232.2	0.89	-0.73	-1.67
3,586.0	16.20	174.00	3,454.2	-891.9	-17.7	237.0	1.61	-1.16	-3.89
3,682.0	17.20	175.00	3,546.2	-919.3	-15.0	241.2	1.08	1.04	1.04
3,777.0	19.40	178.20	3,636.4	-949.1	-13.3	246.9	2.55	2.32	3.37
3,873.0	19.50	179.30	3,726.9	-981.0	-12.6	254.1	0.40	0.10	1.15
3,968.0	19.80	179.10	3,816.4	-1,013.0	-12.2	261.6	0.32	0.32	-0.21
4,064.0	19.70	179.30	3,906.7	-1,045.4	-11.7	269.1	0.13	-0.10	0.21
4,159.0	19.30	179.80	3,996.3	-1,077.1	-11.5	276.7	0.46	-0.42	0.53
4,254.0	19.00	179.40	4,086.0	-1,108.3	-11.2	284.2	0.34	-0.32	-0.42
4,350.0	18.40	179.10	4,177.0	-1,139.1	-10.8	291.4	0.63	-0.63	-0.31
4,446.0	21.50	178.00	4,267.2	-1,171.8	-10.0	298.6	3.25	3.23	-1.15
4,541.0	21.50	177.90	4,355.6	-1,206.6	-8.7	306.0	0.04	0.00	-0.11
4,637.0	20.90	177.00	4,445.1	-1,241.3	-7.2	313.0	0.71	-0.63	-0.94
4,733.0	19.90	175.80	4,535.1	-1,274.7	-5.1	319.2	1.13	-1.04	-1.25
4,828.0	18.40	174.00	4,624.8	-1,305.7	-2.4	324.2	1.70	-1.58	-1.89
4,924.0	20.50	175.60	4,715.3	-1,337.5	0.5	329.3	2.26	2.19	1.67
5,020.0	20.10	175.80	4,805.4	-1,370.8	3.0	335.1	0.42	-0.42	0.21
5,115.0	19.50	174.50	4,894.7	-1,402.8	5.7	340.3	0.78	-0.63	-1.37
5,211.0	19.30	173.30	4,985.3	-1,434.5	9.1	344.9	0.46	-0.21	-1.25

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Site:	Fern 5N65W11EJ Pad Sec.11-T5N-R65W	MD Reference:	WELL @ 4642.0ft (Original Well Elev)
Well:	Fern 11W-214	North Reference:	True
Wellbore:	Fern 11W-214 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Fern 11W-214 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)
5,306.0	18.60	171.90	5,075.1	-1,465.1	13.1	348.6	0.88	-0.74	-1.47
5,402.0	19.50	177.50	5,165.9	-1,496.3	15.9	353.5	2.12	0.94	5.83
5,497.0	18.80	179.10	5,255.6	-1,527.4	16.9	360.3	0.92	-0.74	1.68
5,593.0	17.90	177.30	5,346.7	-1,557.6	17.8	366.8	1.11	-0.94	-1.88
5,689.0	17.00	177.50	5,438.3	-1,586.4	19.1	372.6	0.94	-0.94	0.21
5,784.0	16.10	175.90	5,529.4	-1,613.4	20.7	377.8	1.06	-0.95	-1.68
5,879.0	15.10	175.90	5,620.9	-1,638.9	22.5	382.3	1.05	-1.05	0.00
5,974.0	14.40	174.00	5,712.8	-1,663.0	24.6	386.2	0.90	-0.74	-2.00
6,069.0	13.70	173.80	5,804.9	-1,685.9	27.1	389.5	0.74	-0.74	-0.21
6,165.0	13.00	174.90	5,898.3	-1,708.0	29.2	392.8	0.78	-0.73	1.15
6,260.0	14.90	190.30	5,990.5	-1,730.6	28.0	399.6	4.37	2.00	16.21
6,356.0	22.70	226.00	6,081.6	-1,755.8	12.4	420.9	14.13	8.13	37.19
6,451.0	30.70	242.50	6,166.6	-1,779.8	-22.4	460.5	11.41	8.42	17.37
6,546.0	32.80	244.50	6,247.3	-1,802.1	-67.1	509.4	2.47	2.21	2.11
6,642.0	37.00	247.30	6,326.1	-1,824.4	-117.3	563.5	4.68	4.38	2.92
6,738.0	41.40	251.30	6,400.5	-1,845.7	-174.0	623.7	5.28	4.58	4.17
6,834.0	45.90	254.90	6,469.9	-1,864.9	-237.4	689.9	5.35	4.69	3.75
6,929.0	48.50	256.60	6,534.5	-1,882.1	-305.0	759.6	3.04	2.74	1.79
7,025.0	53.20	254.50	6,595.0	-1,900.7	-377.0	834.0	5.18	4.90	-2.19
7,121.0	56.70	255.40	6,650.2	-1,921.1	-452.9	912.6	3.73	3.65	0.94
7,177.0	59.99	256.97	6,679.6	-1,932.4	-499.2	960.2	6.35	5.88	2.80
TPZ - 60° Inc in Curve - 2445'FNL & 181'FWL, Sec.11									
7,216.0	62.30	258.00	6,698.4	-1,939.8	-532.6	994.4	6.35	5.91	2.64
7,312.0	72.50	264.50	6,735.3	-1,953.1	-620.0	1,082.4	12.32	10.63	6.77
7,407.0	78.60	266.50	6,758.9	-1,960.3	-711.7	1,173.0	6.74	6.42	2.11
7,502.0	89.60	268.60	6,768.7	-1,964.3	-805.9	1,265.4	11.79	11.58	2.21
7,597.0	91.30	269.40	6,768.0	-1,966.0	-900.9	1,357.8	1.98	1.79	0.84
7,721.0	91.10	268.70	6,765.4	-1,968.0	-1,024.9	1,478.4	0.59	-0.16	-0.56
7,817.0	90.50	267.70	6,764.0	-1,971.0	-1,120.8	1,572.2	1.21	-0.63	-1.04
7,912.0	90.10	266.80	6,763.5	-1,975.6	-1,215.7	1,665.3	1.04	-0.42	-0.95
8,008.0	89.90	265.90	6,763.5	-1,981.7	-1,311.5	1,759.6	0.96	-0.21	-0.94
8,103.0	89.60	266.30	6,763.9	-1,988.2	-1,406.3	1,853.1	0.53	-0.32	0.42
8,199.0	89.30	265.60	6,764.9	-1,994.9	-1,502.0	1,947.5	0.79	-0.31	-0.73
8,295.0	88.90	266.60	6,766.4	-2,001.5	-1,597.8	2,041.9	1.12	-0.42	1.04
8,389.0	89.40	268.20	6,767.8	-2,005.7	-1,691.7	2,134.0	1.78	0.53	1.70
8,485.0	89.60	268.20	6,768.6	-2,008.7	-1,787.6	2,227.7	0.21	0.21	0.00
8,581.0	89.90	268.00	6,769.0	-2,011.9	-1,883.6	2,321.5	0.38	0.31	-0.21
8,677.0	90.20	267.50	6,768.9	-2,015.7	-1,979.5	2,415.4	0.61	0.31	-0.52
8,772.0	90.50	267.20	6,768.4	-2,020.1	-2,074.4	2,508.4	0.45	0.32	-0.32
8,868.0	90.30	267.50	6,767.7	-2,024.5	-2,170.3	2,602.5	0.38	-0.21	0.31
8,964.0	90.80	267.30	6,766.8	-2,028.9	-2,266.2	2,696.5	0.56	0.52	-0.21
9,059.0	90.10	269.40	6,766.0	-2,031.6	-2,361.1	2,789.2	2.33	-0.74	2.21
9,155.0	90.00	268.90	6,765.9	-2,033.0	-2,457.1	2,882.5	0.53	-0.10	-0.52

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9,250.0	90.00	268.60	6,765.9	-2,035.1	-2,552.1	2,975.1	0.32	0.00	-0.32
9,346.0	90.00	268.70	6,765.9	-2,037.4	-2,648.1	3,068.7	0.10	0.00	0.10
9,441.0	90.00	268.70	6,765.9	-2,039.5	-2,743.1	3,161.2	0.00	0.00	0.00
9,536.0	89.80	268.40	6,766.1	-2,041.9	-2,838.0	3,253.9	0.38	-0.21	-0.32
9,631.0	89.90	268.00	6,766.3	-2,044.9	-2,933.0	3,346.6	0.43	0.11	-0.42
9,727.0	89.70	267.70	6,766.7	-2,048.5	-3,028.9	3,440.5	0.38	-0.21	-0.31
9,822.0	89.30	267.30	6,767.5	-2,052.7	-3,123.8	3,533.5	0.60	-0.42	-0.42
9,918.0	89.00	266.80	6,768.9	-2,057.6	-3,219.7	3,627.6	0.61	-0.31	-0.52
10,013.0	89.80	268.40	6,769.9	-2,061.6	-3,314.6	3,720.6	1.88	0.84	1.68
10,109.0	90.20	268.70	6,769.9	-2,064.0	-3,410.6	3,814.2	0.52	0.42	0.31
10,204.0	90.30	268.60	6,769.5	-2,066.3	-3,505.5	3,906.8	0.15	0.11	-0.11
10,299.0	90.20	268.20	6,769.1	-2,068.9	-3,600.5	3,999.4	0.43	-0.11	-0.42
10,395.0	90.00	267.70	6,768.9	-2,072.3	-3,696.4	4,093.3	0.56	-0.21	-0.52
10,490.0	89.60	267.70	6,769.3	-2,076.2	-3,791.3	4,186.2	0.42	-0.42	0.00
10,585.0	89.40	267.50	6,770.1	-2,080.1	-3,886.3	4,279.2	0.30	-0.21	-0.21
10,680.0	89.80	269.30	6,770.8	-2,082.8	-3,981.2	4,371.8	1.94	0.42	1.89
10,775.0	89.30	269.10	6,771.5	-2,084.1	-4,076.2	4,464.2	0.57	-0.53	-0.21
10,869.1	89.30	268.71	6,772.6	-2,085.9	-4,170.3	4,555.8	0.42	0.00	-0.42
Deepest TVD Drilled - 6772.6'									
10,871.0	89.30	268.70	6,772.7	-2,086.0	-4,172.2	4,557.7	0.42	0.00	-0.42
10,967.0	90.70	270.50	6,772.7	-2,086.6	-4,268.2	4,650.9	2.38	1.46	1.88
11,062.0	90.70	270.30	6,771.5	-2,086.0	-4,363.2	4,742.8	0.21	0.00	-0.21
11,158.0	90.70	270.00	6,770.3	-2,085.7	-4,459.2	4,835.7	0.31	0.00	-0.31
11,254.0	90.50	269.30	6,769.3	-2,086.3	-4,555.1	4,928.9	0.76	-0.21	-0.73
11,349.0	90.70	268.40	6,768.3	-2,088.2	-4,650.1	5,021.4	0.97	0.21	-0.95
11,444.0	90.60	267.70	6,767.3	-2,091.4	-4,745.1	5,114.2	0.74	-0.11	-0.74
11,540.0	90.50	267.20	6,766.3	-2,095.7	-4,841.0	5,208.2	0.53	-0.10	-0.52
11,635.0	90.80	267.20	6,765.3	-2,100.3	-4,935.8	5,301.3	0.32	0.32	0.00
11,730.0	89.90	268.40	6,764.7	-2,104.0	-5,030.8	5,394.2	1.58	-0.95	1.26
11,826.0	89.90	268.20	6,764.8	-2,106.8	-5,126.7	5,487.9	0.21	0.00	-0.21
11,920.0	89.90	267.70	6,765.0	-2,110.2	-5,220.7	5,579.8	0.53	0.00	-0.53
12,016.0	90.10	267.30	6,765.0	-2,114.4	-5,316.6	5,673.8	0.47	0.21	-0.42
12,111.0	90.70	270.10	6,764.4	-2,116.5	-5,411.5	5,766.3	3.01	0.63	2.95
12,206.0	90.90	270.50	6,763.0	-2,116.0	-5,506.5	5,858.3	0.47	0.21	0.42
12,302.0	91.00	270.10	6,761.4	-2,115.5	-5,602.5	5,951.2	0.43	0.10	-0.42
12,397.0	91.20	269.80	6,759.6	-2,115.6	-5,697.5	6,043.2	0.38	0.21	-0.32
12,493.0	91.50	269.60	6,757.3	-2,116.1	-5,793.5	6,136.4	0.38	0.31	-0.21
12,588.0	91.50	269.30	6,754.9	-2,117.0	-5,888.4	6,228.6	0.32	0.00	-0.32
12,683.0	91.50	268.90	6,752.4	-2,118.5	-5,983.4	6,321.0	0.42	0.00	-0.42
12,779.0	91.60	268.70	6,749.8	-2,120.5	-6,079.3	6,414.5	0.23	0.10	-0.21
12,874.0	91.50	268.60	6,747.2	-2,122.8	-6,174.3	6,507.0	0.15	-0.11	-0.11
12,970.0	91.50	268.40	6,744.7	-2,125.3	-6,270.2	6,600.6	0.21	0.00	-0.21
13,066.0	89.70	267.50	6,743.7	-2,128.7	-6,366.1	6,694.4	2.10	-1.88	-0.94
13,162.0	89.30	267.00	6,744.5	-2,133.3	-6,462.0	6,788.5	0.67	-0.42	-0.52

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Fern 11W-214
Project:	SEC.11-T5N-R65W	TVD Reference:	WELL @ 4642.0ft (Original Well Elev)
Site:	Fern 5N65W11EJ Pad Sec.11-T5N-R65W	MD Reference:	WELL @ 4642.0ft (Original Well Elev)
Well:	Fern 11W-214	North Reference:	True
Wellbore:	Fern 11W-214 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Fern 11W-214 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)	
13,257.0	89.60	266.80	6,745.4	-2,138.5	-6,556.9	6,881.7	0.38	0.32	-0.21	
13,353.0	89.60	266.60	6,746.1	-2,144.0	-6,652.7	6,975.9	0.21	0.00	-0.21	
13,448.0	88.20	268.60	6,747.9	-2,148.0	-6,747.6	7,068.9	2.57	-1.47	2.11	
13,543.0	87.80	268.40	6,751.2	-2,150.5	-6,842.5	7,161.5	0.47	-0.42	-0.21	
13,640.0	88.10	269.80	6,754.7	-2,152.0	-6,939.4	7,255.8	1.48	0.31	1.44	
13,735.0	87.90	269.40	6,758.0	-2,152.6	-7,034.4	7,348.0	0.47	-0.21	-0.42	
13,831.0	90.50	270.10	6,759.4	-2,153.1	-7,130.4	7,441.1	2.80	2.71	0.73	
13,926.0	90.50	270.30	6,758.5	-2,152.7	-7,225.3	7,533.1	0.21	0.00	0.21	
14,022.0	90.50	270.10	6,757.7	-2,152.4	-7,321.3	7,626.0	0.21	0.00	-0.21	
14,117.0	90.20	269.80	6,757.1	-2,152.5	-7,416.3	7,718.1	0.45	-0.32	-0.32	
14,213.0	90.00	269.60	6,757.0	-2,153.0	-7,512.3	7,811.3	0.29	-0.21	-0.21	
14,309.0	89.80	269.60	6,757.1	-2,153.7	-7,608.3	7,904.5	0.21	-0.21	0.00	
14,404.0	90.70	270.70	6,756.7	-2,153.4	-7,703.3	7,996.5	1.50	0.95	1.16	
14,500.0	90.60	270.10	6,755.6	-2,152.7	-7,799.3	8,089.3	0.63	-0.10	-0.63	
14,595.0	90.70	270.10	6,754.5	-2,152.6	-7,894.3	8,181.3	0.11	0.11	0.00	
14,691.0	90.00	269.60	6,754.0	-2,152.8	-7,990.3	8,274.4	0.90	-0.73	-0.52	
14,787.0	89.70	269.40	6,754.2	-2,153.7	-8,086.3	8,367.7	0.38	-0.31	-0.21	
14,882.0	90.40	270.00	6,754.1	-2,154.2	-8,181.3	8,459.9	0.97	0.74	0.63	
14,977.0	90.60	270.30	6,753.3	-2,153.9	-8,276.3	8,551.9	0.38	0.21	0.32	
15,073.0	90.20	270.10	6,752.6	-2,153.6	-8,372.3	8,644.8	0.47	-0.42	-0.21	
15,103.0	90.30	270.10	6,752.5	-2,153.5	-8,402.3	8,673.9	0.33	0.33	0.00	
15,165.0	90.30	270.10	6,752.2	-2,153.4	-8,464.3	8,733.9	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 396°FNL, 687°FWL, - survey hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,397,094.02	3,240,103.84	40.420220	-104.637629	
BHL 2388°FNL, 2530°FE - survey misses target center by 28.1ft at 15165.0ft MD (6752.2 TVD, -2153.4 N, -8464.3 E) - Point	0.00	0.00	6,745.0	-2,180.6	-8,464.8	1,394,831.29	3,231,661.01	40.414231	-104.668027	

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,177.0	6,679.6	-1,932.4	-499.2	TPZ - 60° Inc in Curve - 2445°FNL & 181°FWL, Sec.11	
10,869.1	6,772.6	-2,085.9	-4,170.3	Deepest TVD Drilled - 6772.6'	

Checked By: _____	Approved By: _____	Date: _____
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