

# PDC Energy Inc. DJ Basin

Well Name: **McGlothlin Farms 4W-234**

Surface Location: McGlothlin Farms 5N64W4DX Pad Sec.4-T5N-R64W  
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone

Ground Elevation: 4616.0

+N/-S+E/-W Northing Easting Latitude Longitude Slot

0.0 0.0 1398811.84265106.02 40.424233 -104.547770

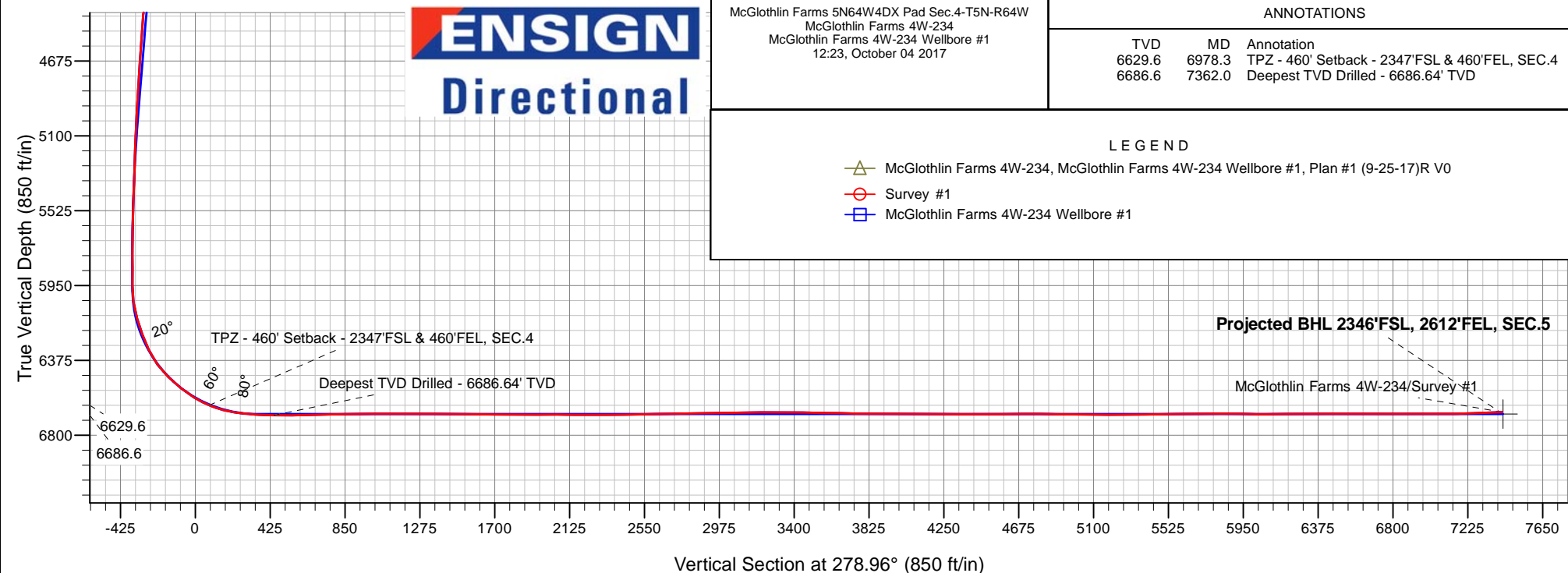
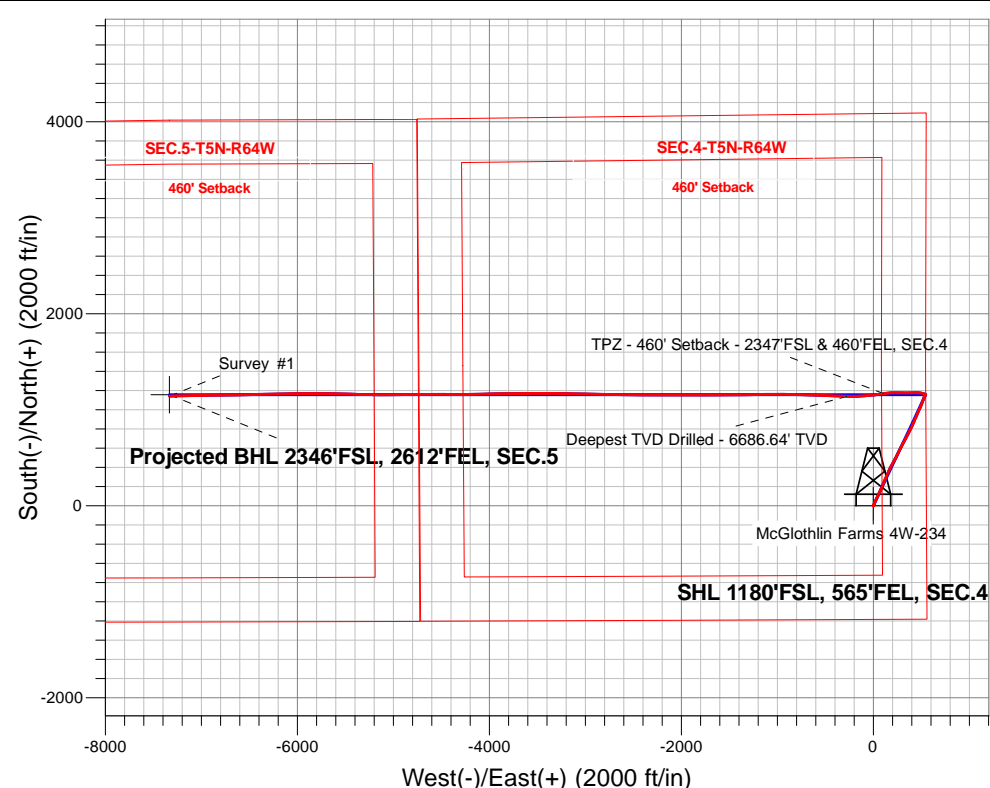
Ensign Rig #161 - RKB - 23'WELL @ 4639.0ft (Ensign Rig #161 - RKB - 23')

## FINAL SURVEY

**Projected Bottom Hole Location**

**14,425'MD 6669'TVD 1143'N & 7332'W of SHL**

**92.8 degree Incl @ 268.6 degree AZM**





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

**SEC.4-T5N-R64W**

**McGlothlin Farms 5N64W4DX Pad Sec.4-T5N-R64W**

**McGlothlin Farms 4W-234**

**McGlothlin Farms 4W-234 Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**04 October, 2017**

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well McGlothlin Farms 4W-234
<b>Project:</b>	SEC.4-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4639.0ft (Ensign Rig #161 - RKB - 23')
<b>Site:</b>	McGlothlin Farms 5N64W4DX Pad Sec.4-T5N-R64W	<b>MD Reference:</b>	WELL @ 4639.0ft (Ensign Rig #161 - RKB - 23')
<b>Well:</b>	McGlothlin Farms 4W-234	<b>North Reference:</b>	True
<b>Wellbore:</b>	McGlothlin Farms 4W-234 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	McGlothlin Farms 4W-234 Wellbore #1	<b>Database:</b>	US_EDM

<b>Project</b>	SEC.4-T5N-R64W, Weld County, Colorado		
<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	McGlothlin Farms 5N64W4DX Pad Sec.4-T5N-R64W				
Site Position:		Northing:	1,398,838.61 usft	Latitude:	40.424309
From:	Lat/Long	Easting:	3,265,019.98 usft	Longitude:	-104.548078
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.62 °

Well	McGlothlin Farms 4W-234					
Well Position	+N/-S	0.0 ft	Northing:	1,398,811.84 usft	Latitude:	40.424233
	+E/-W	0.0 ft	Easting:	3,265,106.03 usft	Longitude:	-104.547770
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,616.0 ft

<b>Wellbore</b>	McGlothlin Farms 4W-234 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>
	IGRF2010	9/25/2017	7.90	66.88	52,506

<b>Design</b>	McGlothlin Farms 4W-234 Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	278.96	

<b>Survey Program</b>	<b>Date</b>	10/4/2017			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
250.0	14,425.0	Survey #1 (McGlothlin Farms 4W-234 We	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	209.00	1.0	0.0	0.0	0.0	0.24	0.24	0.00	
<b>SHL 1180'FSL, 565'FEL, SEC.4</b>										
250.0	0.60	209.00	250.0	-1.1	-0.6	0.4	0.24	0.24	0.00	
345.0	0.40	151.20	345.0	-1.9	-0.7	0.4	0.54	-0.21	-60.84	
441.0	0.90	40.10	441.0	-1.6	-0.1	-0.2	1.15	0.52	-115.73	
537.0	2.10	21.30	537.0	0.6	1.1	-0.9	1.33	1.25	-19.58	
632.0	4.40	21.60	631.8	5.6	3.0	-2.1	2.42	2.42	0.32	
728.0	6.60	17.20	727.3	14.3	6.0	-3.7	2.33	2.29	-4.58	
823.0	8.50	25.00	821.5	25.9	10.6	-6.4	2.27	2.00	8.21	

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well McGlothlin Farms 4W-234
<b>Project:</b>	SEC.4-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4639.0ft (Ensign Rig #161 - RKB - 23')
<b>Site:</b>	McGlothlin Farms 5N64W4DX Pad Sec.4-T5N-R64W	<b>MD Reference:</b>	WELL @ 4639.0ft (Ensign Rig #161 - RKB - 23')
<b>Well:</b>	McGlothlin Farms 4W-234	<b>North Reference:</b>	True
<b>Wellbore:</b>	McGlothlin Farms 4W-234 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	McGlothlin Farms 4W-234 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)	
919.0	10.10	23.00	916.3	40.1	16.9	-10.4	1.70	1.67	-2.08	
1,015.0	11.90	26.20	1,010.5	56.7	24.5	-15.4	1.98	1.88	3.33	
1,110.0	13.50	25.10	1,103.2	75.6	33.6	-21.4	1.70	1.68	-1.16	
1,206.0	15.70	25.10	1,196.1	97.5	43.8	-28.1	2.29	2.29	0.00	
1,302.0	17.30	26.50	1,288.1	122.0	55.7	-36.0	1.72	1.67	1.46	
1,398.0	17.80	25.30	1,379.6	148.0	68.4	-44.5	0.64	0.52	-1.25	
1,494.0	17.90	24.80	1,471.0	174.7	80.8	-52.6	0.19	0.10	-0.52	
1,618.0	15.60	22.30	1,589.7	207.4	95.1	-61.7	1.94	-1.85	-2.02	
1,683.0	14.30	19.50	1,652.5	223.1	101.1	-65.2	2.29	-2.00	-4.31	
1,779.0	16.80	23.50	1,745.0	247.0	110.6	-70.8	2.83	2.60	4.17	
1,874.0	16.70	24.10	1,836.0	272.0	121.7	-77.8	0.21	-0.11	0.63	
1,969.0	16.30	24.40	1,927.1	296.6	132.8	-84.9	0.43	-0.42	0.32	
2,065.0	15.70	21.40	2,019.4	321.0	143.1	-91.3	1.06	-0.63	-3.13	
2,160.0	15.40	21.60	2,110.9	344.7	152.4	-96.8	0.32	-0.32	0.21	
2,256.0	15.70	24.40	2,203.4	368.4	162.5	-103.1	0.84	0.31	2.92	
2,352.0	15.80	27.40	2,295.8	391.8	173.8	-110.7	0.85	0.10	3.13	
2,447.0	17.10	29.70	2,386.9	415.4	186.7	-119.7	1.53	1.37	2.42	
2,543.0	16.60	29.30	2,478.8	439.6	200.4	-129.5	0.53	-0.52	-0.42	
2,638.0	16.30	28.60	2,569.9	463.2	213.4	-138.7	0.38	-0.32	-0.74	
2,733.0	16.10	27.60	2,661.1	486.6	225.9	-147.4	0.36	-0.21	-1.05	
2,829.0	16.10	27.10	2,753.3	510.2	238.1	-155.8	0.14	0.00	-0.52	
2,925.0	15.70	26.70	2,845.7	533.7	250.0	-163.9	0.43	-0.42	-0.42	
3,020.0	15.70	25.50	2,937.1	556.8	261.4	-171.5	0.34	0.00	-1.26	
3,116.0	15.20	24.60	3,029.6	579.9	272.2	-178.5	0.58	-0.52	-0.94	
3,212.0	15.90	30.40	3,122.1	602.7	284.1	-186.7	1.78	0.73	6.04	
3,308.0	15.70	28.80	3,214.5	625.4	297.0	-196.0	0.50	-0.21	-1.67	
3,404.0	14.90	28.30	3,307.1	647.7	309.1	-204.5	0.84	-0.83	-0.52	
3,499.0	15.90	28.80	3,398.7	669.8	321.2	-212.9	1.06	1.05	0.53	
3,595.0	15.70	27.90	3,491.1	692.8	333.6	-221.6	0.33	-0.21	-0.94	
3,691.0	15.80	28.10	3,583.5	715.8	345.8	-230.1	0.12	0.10	0.21	
3,786.0	15.70	27.40	3,674.9	738.7	357.8	-238.4	0.23	-0.11	-0.74	
3,883.0	15.80	27.80	3,768.3	762.0	370.0	-246.8	0.15	0.10	0.41	
3,978.0	16.30	25.00	3,859.6	785.5	381.7	-254.7	0.97	0.53	-2.95	
4,074.0	16.10	24.10	3,951.7	809.9	392.8	-261.9	0.33	-0.21	-0.94	
4,170.0	15.90	23.50	4,044.0	834.1	403.5	-268.7	0.27	-0.21	-0.63	
4,265.0	15.70	24.10	4,135.4	857.8	413.9	-275.3	0.27	-0.21	0.63	
4,361.0	15.10	23.50	4,228.0	881.1	424.2	-281.8	0.65	-0.63	-0.63	
4,457.0	16.50	25.00	4,320.4	904.9	435.0	-288.7	1.52	1.46	1.56	
4,553.0	16.30	24.40	4,412.5	929.5	446.3	-296.1	0.27	-0.21	-0.63	
4,648.0	15.70	23.40	4,503.8	953.5	456.9	-302.8	0.70	-0.63	-1.05	
4,744.0	15.20	24.60	4,596.3	976.8	467.3	-309.5	0.62	-0.52	1.25	
4,840.0	14.90	23.50	4,689.0	999.6	477.5	-315.9	0.43	-0.31	-1.15	

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<b>Well:</b>	McGlothlin Farms 4W-234	<b>North Reference:</b>	True
<b>Wellbore:</b>	McGlothlin Farms 4W-234 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	McGlothlin Farms 4W-234 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)
4,936.0	14.60	22.50	4,781.8	1,022.1	487.0	-321.9	0.41	-0.31	-1.04
5,032.0	14.30	22.70	4,874.8	1,044.2	496.2	-327.5	0.32	-0.31	0.21
5,128.0	14.00	20.70	4,967.9	1,066.0	504.9	-332.7	0.60	-0.31	-2.08
5,254.0	12.90	20.60	5,090.4	1,093.4	515.2	-338.6	0.87	-0.87	-0.08
5,350.0	10.80	21.30	5,184.4	1,111.8	522.3	-342.7	2.19	-2.19	0.73
5,446.0	8.10	18.40	5,279.1	1,126.6	527.7	-345.8	2.86	-2.81	-3.02
5,542.0	6.10	25.80	5,374.3	1,137.7	532.0	-348.3	2.29	-2.08	7.71
5,638.0	4.90	41.50	5,469.9	1,145.3	537.0	-352.0	1.99	-1.25	16.35
5,733.0	2.60	38.50	5,564.7	1,150.0	541.0	-355.3	2.43	-2.42	-3.16
5,829.0	1.40	18.40	5,660.6	1,152.9	542.7	-356.5	1.43	-1.25	-20.94
5,925.0	1.50	17.00	5,756.6	1,155.2	543.5	-356.9	0.11	0.10	-1.46
6,021.0	1.30	34.80	5,852.6	1,157.3	544.5	-357.6	0.50	-0.21	18.54
6,117.0	0.40	39.00	5,948.6	1,158.4	545.3	-358.2	0.94	-0.94	4.38
6,212.0	8.80	286.20	6,043.2	1,160.7	538.5	-351.1	9.43	8.84	-118.74
6,308.0	16.00	289.70	6,136.9	1,167.2	519.0	-330.8	7.54	7.50	3.65
6,404.0	20.00	280.40	6,228.2	1,174.7	490.3	-301.4	5.12	4.17	-9.69
6,499.0	25.40	269.50	6,315.8	1,177.4	454.0	-265.0	7.18	5.68	-11.47
6,595.0	36.70	266.10	6,398.0	1,175.3	404.6	-216.6	11.91	11.77	-3.54
6,691.0	46.50	271.90	6,469.7	1,174.5	341.0	-153.9	10.96	10.21	6.04
6,787.0	51.40	271.60	6,532.7	1,176.7	268.6	-82.1	5.11	5.10	-0.31
6,883.0	59.40	267.20	6,587.2	1,175.7	189.7	-4.3	9.14	8.33	-4.58
6,978.0	67.70	261.20	6,629.5	1,167.0	105.2	77.8	10.40	8.74	-6.32
6,978.3	67.73	261.20	6,629.6	1,166.9	105.0	78.1	9.68	9.58	1.54
<b>TPZ - 460' Setback - 2347'FSL &amp; 460'FEL, SEC.4</b>									
7,074.0	76.90	262.60	6,658.7	1,154.1	14.8	165.1	9.68	9.58	1.46
7,170.0	83.70	266.30	6,674.8	1,145.0	-79.3	256.7	8.04	7.08	3.85
7,261.2	86.26	268.29	6,682.8	1,140.7	-170.0	345.6	3.56	2.81	2.19
<b>LPL 2336'FSL, 730'FEL, SEC.4</b>									
7,266.0	86.40	268.40	6,683.1	1,140.6	-174.8	350.4	3.56	2.82	2.18
7,362.0	89.40	271.20	6,686.6	1,140.3	-270.8	445.1	4.27	3.13	2.92
<b>Deepest TVD Drilled - 6686.64' TVD</b>									
7,457.0	91.00	272.10	6,686.3	1,143.0	-365.7	539.3	1.93	1.68	0.95
7,553.0	90.70	272.10	6,684.9	1,146.5	-461.6	634.6	0.31	-0.31	0.00
7,649.0	91.20	272.10	6,683.3	1,150.0	-557.6	729.9	0.52	0.52	0.00
7,744.0	91.30	272.10	6,681.2	1,153.5	-652.5	824.2	0.11	0.11	0.00
7,840.0	90.50	271.70	6,679.7	1,156.7	-748.4	919.4	0.93	-0.83	-0.42
7,936.0	90.70	271.20	6,678.7	1,159.1	-844.4	1,014.6	0.56	0.21	-0.52
8,032.0	89.80	270.20	6,678.3	1,160.3	-940.4	1,109.6	1.40	-0.94	-1.04
8,128.0	90.70	269.80	6,677.9	1,160.3	-1,036.4	1,204.4	1.03	0.94	-0.42
8,223.0	89.00	269.30	6,678.1	1,159.6	-1,131.4	1,298.1	1.87	-1.79	-0.53
8,318.0	89.20	268.90	6,679.6	1,158.1	-1,226.3	1,391.7	0.47	0.21	-0.42
8,414.0	89.20	268.40	6,681.0	1,155.8	-1,322.3	1,486.2	0.52	0.00	-0.52
8,510.0	89.30	269.60	6,682.2	1,154.1	-1,418.3	1,580.7	1.25	0.10	1.25

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<b>Well:</b>	McGlothlin Farms 4W-234	<b>North Reference:</b>	True
<b>Wellbore:</b>	McGlothlin Farms 4W-234 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	McGlothlin Farms 4W-234 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)
8,605.0	89.70	270.00	6,683.0	1,153.8	-1,513.3	1,674.5	0.60	0.42	0.42
8,701.0	90.20	269.80	6,683.1	1,153.6	-1,609.3	1,769.3	0.56	0.52	-0.21
8,797.0	90.90	269.50	6,682.2	1,153.0	-1,705.3	1,864.0	0.79	0.73	-0.31
8,892.0	89.30	270.20	6,682.0	1,152.8	-1,800.3	1,957.8	1.84	-1.68	0.74
8,988.0	89.50	269.80	6,683.0	1,152.8	-1,896.2	2,052.7	0.47	0.21	-0.42
9,084.0	89.40	269.10	6,684.0	1,151.9	-1,992.2	2,147.3	0.74	-0.10	-0.73
9,180.0	90.00	271.00	6,684.5	1,152.0	-2,088.2	2,242.2	2.08	0.63	1.98
9,276.0	90.10	270.70	6,684.4	1,153.4	-2,184.2	2,337.2	0.33	0.10	-0.31
9,371.0	90.90	270.70	6,683.6	1,154.5	-2,279.2	2,431.2	0.84	0.84	0.00
9,467.0	91.00	270.00	6,682.0	1,155.1	-2,375.2	2,526.1	0.74	0.10	-0.73
9,563.0	91.10	269.60	6,680.2	1,154.8	-2,471.2	2,620.9	0.43	0.10	-0.42
9,659.0	90.80	270.90	6,678.6	1,155.2	-2,567.2	2,715.8	1.39	-0.31	1.35
9,755.0	90.90	270.70	6,677.2	1,156.5	-2,663.1	2,810.8	0.23	0.10	-0.21
9,851.0	91.20	270.70	6,675.4	1,157.7	-2,759.1	2,905.8	0.31	0.31	0.00
9,946.0	91.60	270.50	6,673.1	1,158.7	-2,854.1	2,999.7	0.47	0.42	-0.21
10,042.0	90.90	271.20	6,671.0	1,160.1	-2,950.0	3,094.7	1.03	-0.73	0.73
10,137.0	90.10	272.10	6,670.2	1,162.9	-3,045.0	3,189.0	1.27	-0.84	0.95
10,233.0	89.40	271.90	6,670.6	1,166.2	-3,140.9	3,284.3	0.76	-0.73	-0.21
10,329.0	89.70	270.50	6,671.4	1,168.2	-3,236.9	3,379.4	1.49	0.31	-1.46
10,424.0	88.90	270.50	6,672.5	1,169.1	-3,331.9	3,473.3	0.84	-0.84	0.00
10,520.0	89.50	270.20	6,673.9	1,169.7	-3,427.9	3,568.2	0.70	0.63	-0.31
10,615.0	88.60	270.00	6,675.4	1,169.8	-3,522.9	3,662.1	0.97	-0.95	-0.21
10,711.0	89.30	269.60	6,677.2	1,169.5	-3,618.9	3,756.8	0.84	0.73	-0.42
10,807.0	90.10	269.10	6,677.7	1,168.4	-3,714.9	3,851.5	0.98	0.83	-0.52
10,902.0	89.00	269.30	6,678.4	1,167.1	-3,809.8	3,945.1	1.18	-1.16	0.21
10,998.0	89.90	268.80	6,679.4	1,165.5	-3,905.8	4,039.7	1.07	0.94	-0.52
11,093.0	89.20	269.10	6,680.1	1,163.7	-4,000.8	4,133.2	0.80	-0.74	0.32
11,189.0	89.50	269.10	6,681.2	1,162.2	-4,096.8	4,227.8	0.31	0.31	0.00
11,285.0	90.10	268.80	6,681.5	1,160.5	-4,192.8	4,322.3	0.70	0.63	-0.31
11,381.0	90.90	268.90	6,680.7	1,158.5	-4,288.7	4,416.8	0.84	0.83	0.10
11,477.0	89.70	270.50	6,680.2	1,158.0	-4,384.7	4,511.6	2.08	-1.25	1.67
11,573.0	90.20	270.50	6,680.3	1,158.9	-4,480.7	4,606.5	0.52	0.52	0.00
11,668.0	90.70	270.20	6,679.5	1,159.5	-4,575.7	4,700.5	0.61	0.53	-0.32
11,764.0	89.30	270.00	6,679.5	1,159.6	-4,671.7	4,795.3	1.47	-1.46	-0.21
11,860.0	89.30	269.30	6,680.7	1,159.0	-4,767.7	4,890.0	0.73	0.00	-0.73
11,956.0	89.30	268.90	6,681.9	1,157.5	-4,863.7	4,984.6	0.42	0.00	-0.42
12,051.0	89.30	268.60	6,683.0	1,155.5	-4,958.7	5,078.1	0.32	0.00	-0.32
12,147.0	89.80	270.70	6,683.8	1,154.9	-5,054.7	5,172.8	2.25	0.52	2.19
12,243.0	90.30	270.50	6,683.7	1,155.9	-5,150.6	5,267.8	0.56	0.52	-0.21
12,338.0	91.30	270.50	6,682.4	1,156.7	-5,245.6	5,361.8	1.05	1.05	0.00
12,434.0	90.00	271.50	6,681.3	1,158.4	-5,341.6	5,456.8	1.71	-1.35	1.04
12,530.0	90.50	271.40	6,680.9	1,160.8	-5,437.6	5,552.0	0.53	0.52	-0.10
12,626.0	91.50	271.60	6,679.2	1,163.3	-5,533.5	5,647.2	1.06	1.04	0.21

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well McGlothlin Farms 4W-234
<b>Project:</b>	SEC.4-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4639.0ft (Ensign Rig #161 - RKB - 23')
<b>Site:</b>	McGlothlin Farms 5N64W4DX Pad Sec.4-T5N-R64W	<b>MD Reference:</b>	WELL @ 4639.0ft (Ensign Rig #161 - RKB - 23')
<b>Well:</b>	McGlothlin Farms 4W-234	<b>North Reference:</b>	True
<b>Wellbore:</b>	McGlothlin Farms 4W-234 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	McGlothlin Farms 4W-234 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)	
12,721.0	90.00	271.20	6,677.9	1,165.6	-5,628.5	5,741.4	1.63	-1.58	-0.42	
12,817.0	90.50	271.00	6,677.5	1,167.5	-5,724.5	5,836.4	0.56	0.52	-0.21	
12,913.0	88.40	269.80	6,678.5	1,168.2	-5,820.5	5,931.4	2.52	-2.19	-1.25	
13,009.0	89.00	269.60	6,680.6	1,167.7	-5,916.4	6,026.1	0.66	0.63	-0.21	
13,105.0	90.10	269.60	6,681.4	1,167.0	-6,012.4	6,120.8	1.15	1.15	0.00	
13,201.0	90.90	269.50	6,680.5	1,166.2	-6,108.4	6,215.5	0.84	0.83	-0.10	
13,296.0	91.40	269.30	6,678.6	1,165.2	-6,203.4	6,309.2	0.57	0.53	-0.21	
13,392.0	89.90	269.10	6,677.6	1,163.9	-6,299.4	6,403.8	1.58	-1.56	-0.21	
13,488.0	89.10	268.80	6,678.4	1,162.1	-6,395.4	6,498.3	0.89	-0.83	-0.31	
13,584.0	89.80	267.90	6,679.3	1,159.4	-6,491.3	6,592.7	1.19	0.73	-0.94	
13,680.0	90.70	267.20	6,678.9	1,155.3	-6,587.2	6,686.8	1.19	0.94	-0.73	
13,776.0	89.90	268.20	6,678.4	1,151.4	-6,683.1	6,780.9	1.33	-0.83	1.04	
13,871.0	90.10	268.80	6,678.4	1,148.9	-6,778.1	6,874.3	0.67	0.21	0.63	
13,967.0	89.80	269.30	6,678.5	1,147.3	-6,874.1	6,968.9	0.61	-0.31	0.52	
14,063.0	89.90	270.20	6,678.7	1,146.9	-6,970.1	7,063.7	0.94	0.10	0.94	
14,158.0	90.80	269.60	6,678.1	1,146.8	-7,065.1	7,157.5	1.14	0.95	-0.63	
14,254.0	91.70	269.50	6,676.0	1,146.0	-7,161.1	7,252.2	0.94	0.94	-0.10	
14,365.0	92.80	268.60	6,671.7	1,144.2	-7,272.0	7,361.4	1.28	0.99	-0.81	
14,425.0	92.80	268.60	6,668.8	1,142.7	-7,331.9	7,420.4	0.00	0.00	0.00	
BHL 2360'FSL, 2614'FEL, SEC.5										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude		
- hit/miss target										
- Shape										
SHL 1180'FSL, 565'FEL,	0.00	0.00	1.0	0.0	0.0	1,398,811.85	3,265,106.03	40.424233		
- survey hits target center										
- Point										
BHL 2360'FSL, 2614'FEL	0.00	0.00	6,680.0	1,156.3	-7,333.6	1,399,889.32	3,257,760.76	40.427404		
- survey misses target center by 17.8ft at 14425.0ft MD (6668.8 TVD, 1142.7 N, -7331.9 E)										
- Point										

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
6,978.3	6,629.6	1,166.9	105.0	TPZ - 460' Setback - 2347'FSL & 460'FEL, SEC.4	
7,362.0	6,686.6	1,140.3	-270.8	Deepest TVD Drilled - 6686.64' TVD	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_