

# PDC Energy Inc. DJ Basin

Well Name: **Erwin 6N (Nio B)**

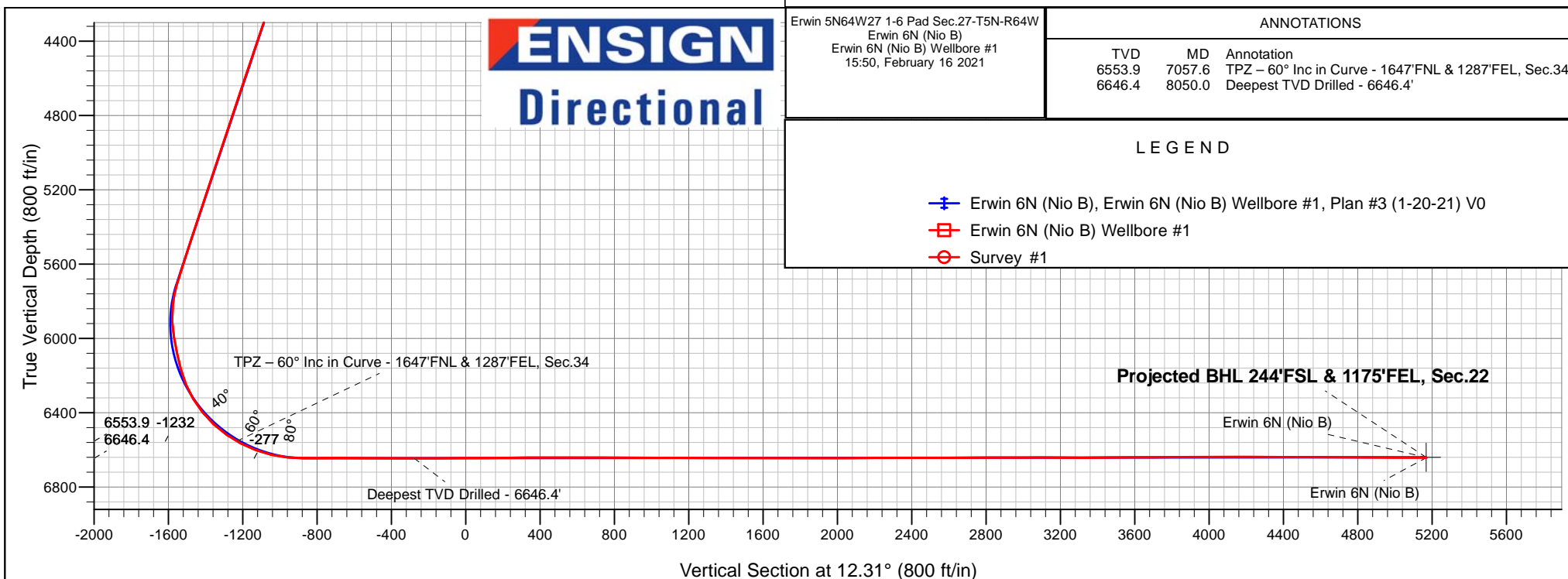
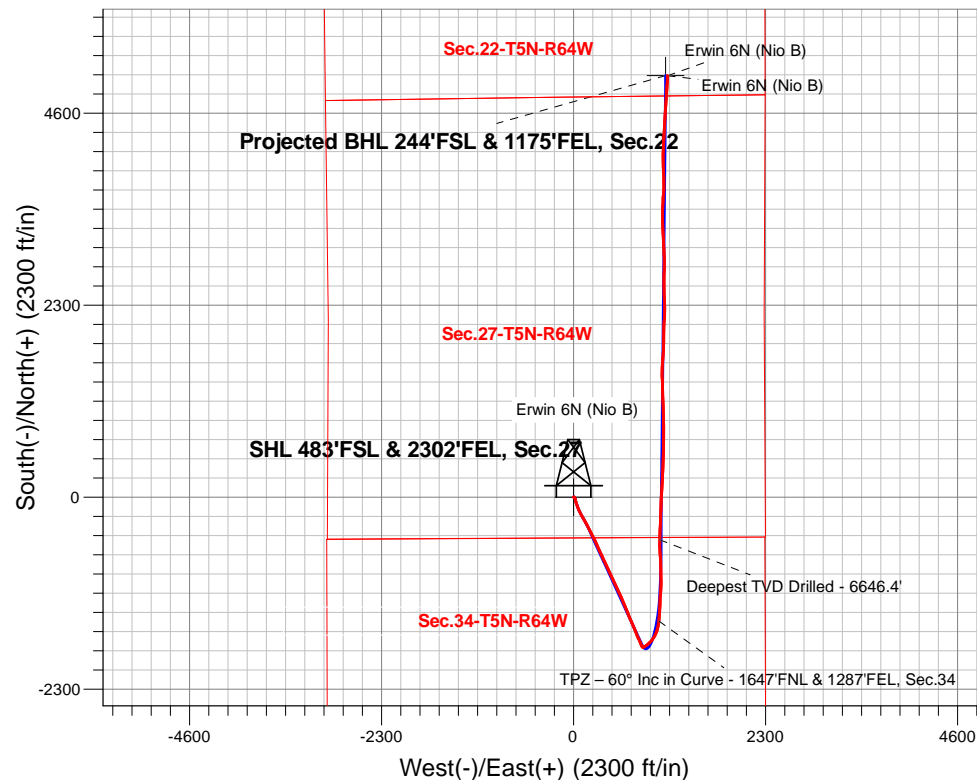
Surface Location: Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W  
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone  
Ground Elevation: 4640.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1377057.58	3269004.49	40.364405	-104.534619	

Ensign 142 RKB - 28' WELL @ 4668.0ft (Ensign 142 RKB - 28')

## FINAL SURVEY

**Projected Bottom Hole Location**  
**13,611'MD 6642'TVD 5047'N & 1124'E of SHL**  
**89.94 degree Inc @ 1.00 degree Azm**





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

**SEC.27-T5N-R64W**

**Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W**

**Erwin 6N (Nio B)**

**Erwin 6N (Nio B) Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**16 February, 2021**

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Erwin 6N (Nio B)
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4668.0ft (Ensign 142 RKB - 28')
<b>Site:</b>	Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4668.0ft (Ensign 142 RKB - 28')
<b>Well:</b>	Erwin 6N (Nio B)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Erwin 6N (Nio B) Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Erwin 6N (Nio B) Wellbore #1	<b>Database:</b>	US_EDM

<b>Project</b>	SEC.27-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		Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W						
Site Position:		Northing:	1,377,056.42	usft	Latitude:	40.364404		
From:	Lat/Long	Easting:	3,268,929.60	usft	Longitude:	-104.534888		
Position Uncertainty:	0.0	ft	Slot Radius:	13-3/16	"	Grid Convergence:	0.62	°

Well	Erwin 6N (Nio B)					
Well Position	+N/-S	0.0 ft	Northing:	1,377,057.59 usft	Latitude:	40.364405
	+E/-W	0.0 ft	Easting:	3,269,004.49 usft	Longitude:	-104.534619
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,640.0 ft

<b>Wellbore</b>	Erwin 6N (Nio B) 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	01/20/2021	7.75	66.77	51,980

<b>Design</b>	Erwin 6N (Nio B) 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	12.31	

<b>Survey Program</b>	<b>Date</b>	02/16/2021			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
71.0	13,611.0	Survey #1 (Erwin 6N (Nio B) Wellbore #1)	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	
71.0	0.60	61.70	71.0	0.2	0.3	0.2	0.85	0.85	0.00	
162.0	0.70	64.70	162.0	0.6	1.2	0.9	0.12	0.11	3.30	
253.0	0.50	43.80	253.0	1.2	2.0	1.6	0.32	-0.22	-22.97	
343.0	1.80	115.20	343.0	0.8	3.6	1.6	1.90	1.44	79.33	
463.0	4.30	138.90	462.8	-3.3	8.2	-1.5	2.29	2.08	19.75	
553.0	5.40	142.80	552.5	-9.3	13.0	-6.3	1.28	1.22	4.33	
642.0	5.80	157.50	641.1	-16.8	17.3	-12.7	1.67	0.45	16.52	
731.0	7.40	167.40	729.5	-26.5	20.2	-21.6	2.20	1.80	11.12	
820.0	9.80	169.60	817.5	-39.5	22.9	-33.8	2.72	2.70	2.47	

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Erwin 6N (Nio B)
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4668.0ft (Ensign 142 RKB - 28')
<b>Site:</b>	Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4668.0ft (Ensign 142 RKB - 28')
<b>Well:</b>	Erwin 6N (Nio B)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Erwin 6N (Nio B) Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Erwin 6N (Nio B) 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)
909.0	11.90	165.80	904.9	-55.9	26.5	-49.0	2.49	2.36	-4.27
998.0	13.90	161.90	991.6	-75.0	32.1	-66.4	2.45	2.25	-4.38
1,088.0	14.40	159.50	1,078.9	-95.7	39.3	-85.1	0.86	0.56	-2.67
1,177.0	14.90	160.50	1,165.0	-116.9	47.0	-104.1	0.63	0.56	1.12
1,263.0	15.70	157.70	1,247.9	-138.1	55.1	-123.1	1.27	0.93	-3.26
1,352.0	16.40	155.80	1,333.5	-160.7	64.9	-143.1	0.98	0.79	-2.13
1,442.0	16.70	153.70	1,419.7	-183.8	75.8	-163.4	0.74	0.33	-2.33
1,530.0	17.50	152.40	1,503.9	-206.9	87.5	-183.5	1.01	0.91	-1.48
1,639.0	19.60	149.60	1,607.2	-237.2	104.4	-209.5	2.09	1.93	-2.57
1,793.0	17.76	150.40	1,753.1	-279.9	129.0	-245.9	1.21	-1.19	0.52
1,883.0	17.39	151.16	1,838.9	-303.6	142.3	-266.3	0.48	-0.41	0.84
1,972.0	20.86	149.09	1,922.9	-328.9	156.9	-287.9	3.97	3.90	-2.33
2,062.0	22.11	151.75	2,006.7	-357.5	173.1	-312.4	1.76	1.39	2.96
2,152.0	22.15	152.48	2,090.1	-387.5	189.0	-338.3	0.31	0.04	0.81
2,242.0	22.60	153.95	2,173.3	-418.1	204.4	-364.9	0.80	0.50	1.63
2,332.0	22.64	153.58	2,256.4	-449.1	219.7	-392.0	0.16	0.04	-0.41
2,421.0	21.97	152.20	2,338.7	-479.2	235.1	-418.0	0.96	-0.75	-1.55
2,511.0	22.14	153.02	2,422.1	-509.2	250.6	-444.0	0.39	0.19	0.91
2,600.0	22.50	157.63	2,504.5	-539.9	264.7	-471.0	2.01	0.40	5.18
2,690.0	23.52	156.03	2,587.3	-572.2	278.6	-499.7	1.33	1.13	-1.78
2,779.0	23.41	155.34	2,668.9	-604.5	293.2	-528.1	0.33	-0.12	-0.78
2,869.0	23.47	155.43	2,751.5	-637.1	308.1	-556.7	0.08	0.07	0.10
2,958.0	23.47	155.79	2,833.1	-669.4	322.7	-585.2	0.16	0.00	0.40
3,047.0	23.57	156.07	2,914.7	-701.8	337.2	-613.7	0.17	0.11	0.31
3,137.0	23.26	155.26	2,997.3	-734.4	351.9	-642.4	0.50	-0.34	-0.90
3,226.0	22.57	153.73	3,079.3	-765.7	366.9	-669.8	1.02	-0.78	-1.72
3,316.0	23.28	154.77	3,162.2	-797.2	382.1	-697.4	0.91	0.79	1.16
3,406.0	23.39	155.60	3,244.8	-829.6	397.0	-725.8	0.39	0.12	0.92
3,495.0	23.08	154.87	3,326.6	-861.5	411.8	-753.9	0.48	-0.35	-0.82
3,585.0	23.39	154.54	3,409.3	-893.6	426.9	-782.0	0.37	0.34	-0.37
3,675.0	23.55	155.34	3,491.9	-926.0	442.1	-810.5	0.40	0.18	0.89
3,765.0	23.99	154.00	3,574.2	-958.8	457.6	-839.2	0.77	0.49	-1.49
3,854.0	23.55	155.46	3,655.7	-991.3	472.9	-867.6	0.83	-0.49	1.64
3,944.0	23.64	154.41	3,738.2	-1,023.9	488.2	-896.2	0.48	0.10	-1.17
4,034.0	23.61	154.05	3,820.6	-1,056.4	503.9	-924.6	0.16	-0.03	-0.40
4,123.0	23.00	157.59	3,902.4	-1,088.5	518.3	-952.9	1.72	-0.69	3.98
4,214.0	23.54	154.15	3,986.0	-1,121.3	533.0	-981.8	1.61	0.59	-3.78
4,304.0	22.77	155.22	4,068.7	-1,153.3	548.2	-1,009.8	0.97	-0.86	1.19
4,393.0	22.05	155.97	4,151.0	-1,184.2	562.2	-1,037.0	0.87	-0.81	0.84
4,483.0	22.58	157.01	4,234.3	-1,215.5	575.8	-1,064.7	0.73	0.59	1.16
4,572.0	22.30	156.45	4,316.5	-1,246.7	589.2	-1,092.4	0.40	-0.31	-0.63
4,662.0	22.46	156.98	4,399.7	-1,278.2	602.8	-1,120.2	0.29	0.18	0.59
4,752.0	22.39	157.58	4,482.9	-1,309.8	616.0	-1,148.3	0.27	-0.08	0.67
4,842.0	22.26	156.52	4,566.2	-1,341.3	629.4	-1,176.3	0.47	-0.14	-1.18

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<b>Well:</b>	Erwin 6N (Nio B)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Erwin 6N (Nio B) Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Erwin 6N (Nio B) 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)	
4,931.0	22.46	157.55	4,648.5	-1,372.5	642.6	-1,203.9	0.49	0.22	1.16	
5,021.0	22.03	159.40	4,731.8	-1,404.2	655.1	-1,232.2	0.91	-0.48	2.06	
5,111.0	22.23	157.92	4,815.2	-1,435.8	667.4	-1,260.4	0.66	0.22	-1.64	
5,201.0	22.46	156.30	4,898.4	-1,467.3	680.7	-1,288.4	0.73	0.26	-1.80	
5,290.0	22.19	156.84	4,980.7	-1,498.3	694.2	-1,315.8	0.38	-0.30	0.61	
5,379.0	21.92	157.11	5,063.2	-1,529.1	707.2	-1,343.1	0.32	-0.30	0.30	
5,469.0	22.54	156.62	5,146.5	-1,560.4	720.6	-1,370.8	0.72	0.69	-0.54	
5,559.0	22.19	157.68	5,229.8	-1,591.9	733.9	-1,398.8	0.59	-0.39	1.18	
5,649.0	21.09	158.89	5,313.4	-1,622.8	746.2	-1,426.3	1.32	-1.22	1.34	
5,739.0	22.32	157.51	5,397.0	-1,653.7	758.6	-1,453.8	1.48	1.37	-1.53	
5,828.0	21.65	155.63	5,479.6	-1,684.2	771.8	-1,480.9	1.09	-0.75	-2.11	
5,918.0	21.98	157.04	5,563.1	-1,714.9	785.2	-1,508.0	0.69	0.37	1.57	
6,007.0	21.90	156.97	5,645.7	-1,745.5	798.2	-1,535.1	0.09	-0.09	-0.08	
6,097.0	18.02	153.10	5,730.3	-1,773.3	811.1	-1,559.6	4.55	-4.31	-4.30	
6,187.0	9.72	145.74	5,817.6	-1,792.1	821.7	-1,575.6	9.41	-9.22	-8.18	
6,277.0	9.72	89.96	5,906.5	-1,798.4	833.6	-1,579.2	10.07	0.00	-61.98	
6,366.0	11.27	42.35	5,994.1	-1,791.9	847.0	-1,570.1	9.61	1.74	-53.49	
6,456.0	15.83	53.88	6,081.6	-1,778.2	862.8	-1,553.3	5.87	5.07	12.81	
6,545.0	20.10	56.77	6,166.3	-1,762.6	885.4	-1,533.3	4.90	4.80	3.25	
6,635.0	26.84	45.76	6,248.8	-1,739.9	913.0	-1,505.2	8.90	7.49	-12.23	
6,724.0	32.44	36.81	6,326.2	-1,706.8	941.7	-1,466.7	8.01	6.29	-10.06	
6,814.0	41.02	30.67	6,398.3	-1,661.9	971.3	-1,416.6	10.36	9.53	-6.82	
6,904.0	46.95	17.10	6,463.1	-1,604.9	996.1	-1,355.6	12.34	6.59	-15.08	
6,993.0	55.01	10.41	6,519.2	-1,537.8	1,012.3	-1,286.6	10.77	9.06	-7.52	
7,057.6	59.99	6.85	6,553.9	-1,484.0	1,020.4	-1,232.2	9.00	7.70	-5.51	
TPZ – 60° Inc in Curve - 1647'FNL & 1287'FEL, Sec.34										
7,082.0	61.89	5.60	6,565.7	-1,462.8	1,022.7	-1,211.0	9.00	7.80	-5.12	
7,172.0	70.67	3.30	6,601.9	-1,380.7	1,029.1	-1,129.5	10.03	9.76	-2.56	
7,261.0	76.48	2.85	6,627.0	-1,295.5	1,033.6	-1,045.3	6.55	6.53	-0.51	
7,351.0	85.70	2.23	6,641.0	-1,206.8	1,037.6	-957.8	10.27	10.24	-0.69	
7,441.0	90.01	5.30	6,644.3	-1,117.1	1,043.5	-868.9	5.88	4.79	3.41	
7,531.0	90.26	359.37	6,644.1	-1,027.2	1,047.1	-780.3	6.59	0.28	-6.59	
7,621.0	90.18	358.96	6,643.8	-937.2	1,045.8	-692.6	0.46	-0.09	-0.46	
7,711.0	89.51	358.51	6,644.0	-847.2	1,043.8	-605.1	0.90	-0.74	-0.50	
7,801.0	89.76	358.15	6,644.6	-757.3	1,041.2	-517.8	0.49	0.28	-0.40	
7,891.0	89.36	353.70	6,645.3	-667.5	1,034.8	-431.5	4.96	-0.44	-4.94	
7,981.0	89.66	359.41	6,646.1	-577.7	1,029.4	-344.9	6.35	0.33	6.34	
8,050.0	89.85	2.04	6,646.4	-508.7	1,030.3	-277.3	3.82	0.28	3.81	
Deepest TVD Drilled - 6646.4'										
8,070.0	89.91	2.80	6,646.4	-488.7	1,031.1	-257.6	3.82	0.28	3.81	
8,160.0	90.77	2.42	6,645.9	-398.8	1,035.2	-168.9	1.04	0.96	-0.42	
8,250.0	90.49	2.28	6,644.9	-308.9	1,038.9	-80.3	0.35	-0.31	-0.16	
8,339.0	90.38	1.72	6,644.2	-220.0	1,042.0	7.3	0.64	-0.12	-0.63	

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<b>Well:</b>	Erwin 6N (Nio B)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Erwin 6N (Nio B) Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Erwin 6N (Nio B) 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)
8,428.0	90.06	2.19	6,643.9	-131.0	1,045.1	94.8	0.64	-0.36	0.53
8,518.0	90.46	2.95	6,643.4	-41.1	1,049.1	183.5	0.95	0.44	0.84
8,608.0	90.85	3.26	6,642.4	48.7	1,054.0	272.4	0.55	0.43	0.34
8,698.0	90.36	2.97	6,641.5	138.6	1,058.9	361.2	0.63	-0.54	-0.32
8,788.0	89.38	2.27	6,641.7	228.5	1,063.0	449.9	1.34	-1.09	-0.78
8,877.0	89.85	2.38	6,642.3	317.4	1,066.6	537.6	0.54	0.53	0.12
8,966.0	90.04	2.28	6,642.4	406.4	1,070.2	625.2	0.24	0.21	-0.11
9,056.0	90.21	2.34	6,642.2	496.3	1,073.8	713.9	0.20	0.19	0.07
9,146.0	89.87	1.65	6,642.1	586.2	1,077.0	802.4	0.85	-0.38	-0.77
9,235.0	89.93	0.66	6,642.2	675.2	1,078.8	889.7	1.11	0.07	-1.11
9,325.0	89.83	359.46	6,642.4	765.2	1,078.9	977.7	1.34	-0.11	-1.33
9,414.0	89.83	358.64	6,642.7	854.2	1,077.4	1,064.3	0.92	0.00	-0.92
9,504.0	89.52	358.19	6,643.2	944.2	1,074.9	1,151.7	0.61	-0.34	-0.50
9,593.0	90.00	358.72	6,643.6	1,033.1	1,072.5	1,238.1	0.80	0.54	0.60
9,684.0	89.53	357.91	6,644.0	1,124.1	1,069.8	1,326.4	1.03	-0.52	-0.89
9,773.0	89.75	358.35	6,644.5	1,213.0	1,066.9	1,412.6	0.55	0.25	0.49
9,863.0	89.71	359.29	6,644.9	1,303.0	1,065.1	1,500.2	1.05	-0.04	1.04
9,954.0	89.99	356.70	6,645.2	1,393.9	1,061.9	1,588.3	2.86	0.31	-2.85
10,043.0	90.21	359.37	6,645.0	1,482.9	1,058.8	1,674.6	3.01	0.25	3.00
10,133.0	89.83	4.33	6,645.0	1,572.8	1,061.7	1,763.0	5.53	-0.42	5.51
10,223.0	90.11	3.45	6,645.0	1,662.6	1,067.8	1,852.1	1.03	0.31	-0.98
10,312.0	89.88	3.87	6,645.0	1,751.4	1,073.5	1,940.1	0.54	-0.26	0.47
10,402.0	90.36	0.73	6,644.9	1,841.3	1,077.1	2,028.7	3.53	0.53	-3.49
10,491.0	90.31	0.76	6,644.3	1,930.3	1,078.3	2,115.9	0.07	-0.06	0.03
10,581.0	90.17	1.43	6,644.0	2,020.3	1,080.0	2,204.1	0.76	-0.16	0.74
10,671.0	90.37	4.67	6,643.5	2,110.2	1,084.8	2,293.0	3.61	0.22	3.60
10,760.0	90.10	0.61	6,643.2	2,199.1	1,088.9	2,380.7	4.57	-0.30	-4.56
10,850.0	89.99	1.46	6,643.1	2,289.0	1,090.5	2,468.9	0.95	-0.12	0.94
10,940.0	90.28	354.70	6,642.9	2,378.9	1,087.5	2,556.1	7.52	0.32	-7.51
11,029.0	90.30	358.54	6,642.4	2,467.8	1,082.3	2,641.8	4.31	0.02	4.31
11,118.0	90.05	0.80	6,642.2	2,556.8	1,081.8	2,728.6	2.55	-0.28	2.54
11,208.0	90.08	0.93	6,642.1	2,646.7	1,083.1	2,816.8	0.15	0.03	0.14
11,298.0	90.11	1.48	6,641.9	2,736.7	1,085.0	2,905.2	0.61	0.03	0.61
11,388.0	90.05	358.21	6,641.8	2,826.7	1,084.8	2,993.0	3.63	-0.07	-3.63
11,477.0	89.96	359.63	6,641.8	2,915.7	1,083.1	3,079.6	1.60	-0.10	1.60
11,567.0	89.73	358.19	6,642.0	3,005.7	1,081.4	3,167.1	1.62	-0.26	-1.60
11,657.0	89.80	354.64	6,642.4	3,095.5	1,075.7	3,253.7	3.95	0.08	-3.94
11,747.0	90.01	356.12	6,642.5	3,185.2	1,068.5	3,339.8	1.66	0.23	1.64
11,837.0	90.45	357.04	6,642.2	3,275.0	1,063.1	3,426.4	1.13	0.49	1.02
11,927.0	90.57	3.48	6,641.4	3,365.0	1,063.5	3,514.4	7.16	0.13	7.16
12,016.0	90.32	1.55	6,640.7	3,453.9	1,067.4	3,602.1	2.19	-0.28	-2.17
12,106.0	89.86	1.89	6,640.5	3,543.8	1,070.1	3,690.5	0.64	-0.51	0.38
12,196.0	90.37	5.26	6,640.4	3,633.7	1,075.8	3,779.5	3.79	0.57	3.74
12,286.0	90.14	1.13	6,640.0	3,723.5	1,080.8	3,868.3	4.60	-0.26	-4.59

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Erwin 6N (Nio B)
<b>Project:</b>	SEC.27-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4668.0ft (Ensign 142 RKB - 28')
<b>Site:</b>	Erwin 5N64W27 1-6 Pad Sec.27-T5N-R64W	<b>MD Reference:</b>	WELL @ 4668.0ft (Ensign 142 RKB - 28')
<b>Well:</b>	Erwin 6N (Nio B)	<b>North Reference:</b>	True
<b>Wellbore:</b>	Erwin 6N (Nio B) Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Erwin 6N (Nio B) 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)	
12,376.0	90.34	358.01	6,639.6	3,813.5	1,080.1	3,956.1	3.47	0.22	-3.47	
12,466.0	90.38	356.61	6,639.0	3,903.4	1,075.9	4,043.0	1.56	0.04	-1.56	
12,556.0	90.60	358.97	6,638.3	3,993.3	1,072.4	4,130.1	2.63	0.24	2.62	
12,646.0	90.24	0.38	6,637.6	4,083.3	1,071.9	4,217.9	1.62	-0.40	1.57	
12,736.0	89.65	1.85	6,637.7	4,173.3	1,073.6	4,306.2	1.76	-0.66	1.63	
12,825.0	89.52	2.99	6,638.3	4,262.2	1,077.4	4,393.9	1.29	-0.15	1.28	
12,915.0	89.46	3.26	6,639.1	4,352.1	1,082.3	4,482.7	0.31	-0.07	0.30	
13,005.0	89.51	3.51	6,639.9	4,441.9	1,087.6	4,571.7	0.28	0.06	0.28	
13,095.0	89.59	3.79	6,640.6	4,531.7	1,093.3	4,660.6	0.32	0.09	0.31	
13,185.0	89.24	2.45	6,641.6	4,621.6	1,098.2	4,749.5	1.54	-0.39	-1.49	
13,274.0	90.16	4.52	6,642.0	4,710.4	1,103.7	4,837.4	2.55	1.03	2.33	
13,364.0	89.96	4.71	6,641.9	4,800.1	1,110.9	4,926.6	0.31	-0.22	0.21	
13,453.0	89.85	3.38	6,642.1	4,888.9	1,117.2	5,014.7	1.50	-0.12	-1.49	
13,543.0	90.15	2.42	6,642.1	4,978.8	1,121.7	5,103.4	1.12	0.33	-1.07	
13,589.0	89.94	1.00	6,642.0	5,024.7	1,123.1	5,148.7	3.12	-0.46	-3.09	
13,611.0	89.94	1.00	6,642.1	5,046.7	1,123.5	5,170.2	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	
SHL 483'FSL & 2302'FE - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,377,057.60	3,269,004.49	40.364405	-104.534619	
BHL 241'FSL & 1196'FEI - survey hits target center - Point	0.00	0.00	6,640.0	5,049.4	1,102.1	1,382,118.45	3,270,051.54	40.378265	-104.530663	

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
7,057.6	6,553.9	-1,484.0	1,020.4	TPZ - 60° Inc in Curve - 1647'FNL & 1287'FEL, Sec.34	
8,050.0	6,646.4	-508.7	1,030.3	Deepest TVD Drilled - 6646.4'	

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