

PDC Energy Inc. DJ Basin

Well Name: **Pharaoh 4N (Nio C)**

Pharaoh 5N64W36 Pad Sec.36-T5N-R64W

North American Datum 1983, US State Plane 1983Colorado Northern Zone

Ground Elevation: 4593.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.01373137	28	28	40.353262	-104.489914	

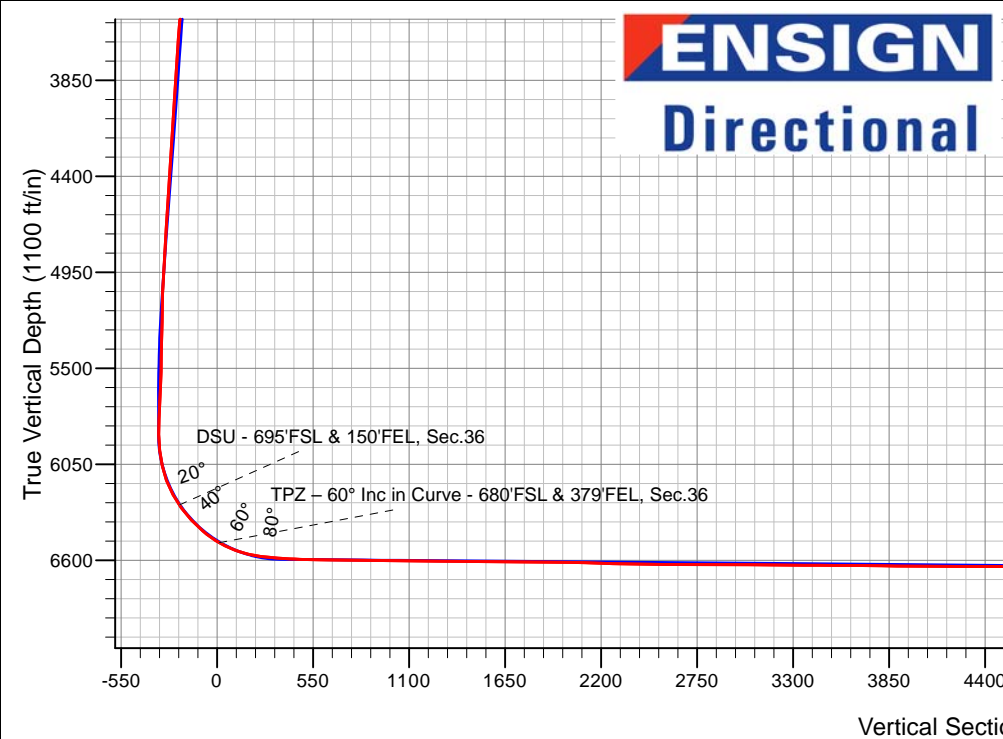
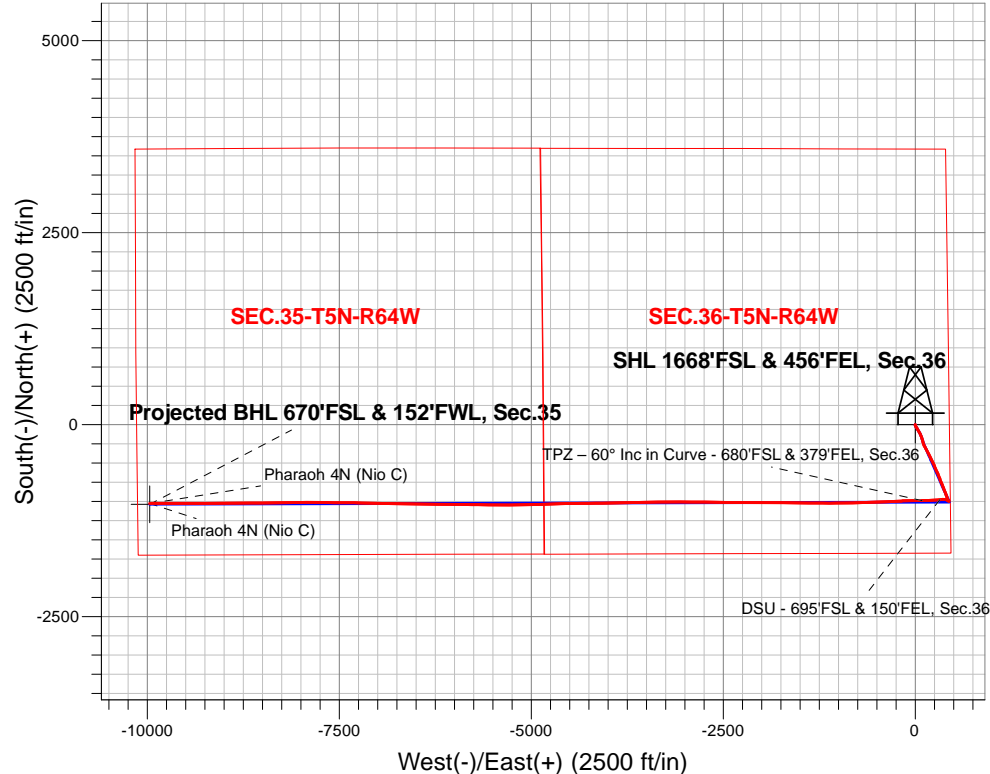
Ensign 142 RKB - 28' WELL @ 4621.0ft (Ensign 142 RKB - 28')

FINAL SURVEY

Projected Bottom Hole Location

16,829'MD 6630'TVD 1025'S & 9970'W of SHL

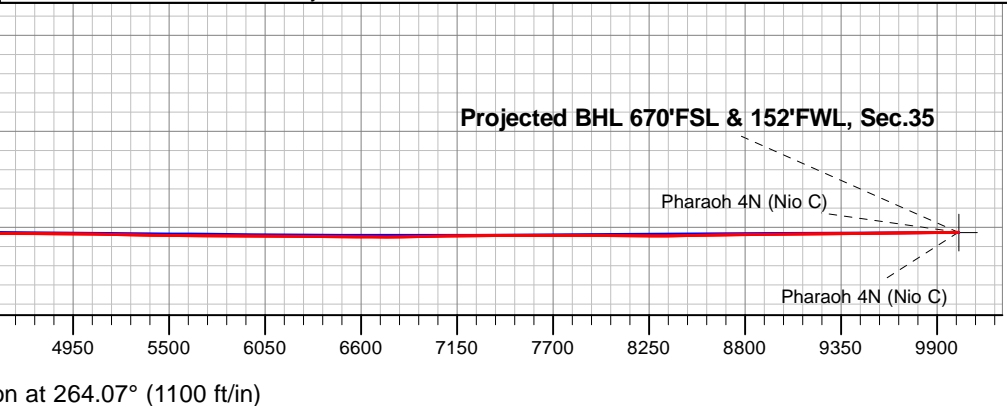
90.17 degree Incl @ 268.51 degree AZM



Pharaoh 5N64W36 Pad Sec.36-T5N-R64W
Pharaoh 4N (Nio C)
Pharaoh 4N Wellbore #1
16:01, January 19 2021

ANNOTATIONS		
TVD	MD	Annotation
6283.9	6434.2	DSU - 695'FSL & 150'FEL, Sec.36
6499.9	6751.7	TPZ - 60° Inc in Curve - 680'FSL & 379'FEL, Sec.36

LEGEND	
	Pharaoh 4N (Nio C), Pharaoh 4N Wellbore #1, Plan #3 (1-7-21) V0
	Pharaoh 4N Wellbore #1
	Survey #1





PDC Energy Inc. DJ Basin

SEC.36-T5N-R64W

Pharaoh 5N64W36 Pad Sec.36-T5N-R64W

Pharaoh 4N (Nio C)

Pharaoh 4N Wellbore #1

Survey: Survey #1

Standard Survey Report

19 January, 2021



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Pharaoh 4N (Nio C)
Project:	SEC.36-T5N-R64W	TVD Reference:	WELL @ 4621.0ft (Ensign 142 RKB - 28')
Site:	Pharaoh 5N64W36 Pad Sec.36-T5N-R64W	MD Reference:	WELL @ 4621.0ft (Ensign 142 RKB - 28')
Well:	Pharaoh 4N (Nio C)	North Reference:	True
Wellbore:	Pharaoh 4N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Pharaoh 4N Wellbore #1	Database:	US_EDM

Project	SEC.36-T5N-R64W		
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	Pharaoh 5N64W36 Pad Sec.36-T5N-R64W				
Site Position:		Northing:	1,373,122.36 usft	Latitude:	40.353221
From:	Lat/Long	Easting:	3,281,507.17 usft	Longitude:	-104.489915
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.65 °

Well	Pharaoh 4N (Nio C)					
Well Position	+N/-S	0.0 ft	Northing:	1,373,137.28 usft	Latitude:	40.353262
	+E/-W	0.0 ft	Easting:	3,281,507.27 usft	Longitude:	-104.489914
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,593.0 ft

Wellbore	Pharaoh 4N Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	01/08/2021	7.78	66.77	51,967

Design	Pharaoh 4N 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	264.07	

Survey Program	Date	01/19/2021			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
162.0	16,829.0	Survey #1 (Pharaoh 4N 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	
162.0	0.18	274.64	162.0	0.0	-0.3	0.3	0.11	0.11	0.00	
254.0	0.70	277.45	254.0	0.1	-1.0	0.9	0.57	0.57	3.05	
375.0	0.35	285.18	375.0	0.3	-2.0	2.0	0.29	-0.29	6.39	
465.0	1.58	179.89	465.0	-0.9	-2.3	2.4	1.90	1.37	-116.99	
554.0	3.25	156.69	553.9	-4.4	-1.3	1.8	2.14	1.88	-26.07	
643.0	4.13	170.40	642.7	-9.9	0.2	0.8	1.39	0.99	15.40	
733.0	3.96	153.70	732.5	-15.9	2.1	-0.5	1.32	-0.19	-18.56	
822.0	5.45	147.19	821.2	-22.2	5.8	-3.5	1.78	1.67	-7.31	
912.0	7.39	146.32	910.6	-30.6	11.3	-8.1	2.16	2.16	-0.97	

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Site:	Pharaoh 5N64W36 Pad Sec.36-T5N-R64W	MD Reference:	WELL @ 4621.0ft (Ensign 142 RKB - 28')
Well:	Pharaoh 4N (Nio C)	North Reference:	True
Wellbore:	Pharaoh 4N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Pharaoh 4N 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)	
1,002.0	9.15	149.66	999.7	-41.6	18.1	-13.8	2.03	1.96	3.71	
1,091.0	12.05	149.66	1,087.2	-55.7	26.4	-20.5	3.26	3.26	0.00	
1,181.0	13.45	150.53	1,174.9	-72.9	36.3	-28.6	1.57	1.56	0.97	
1,270.0	15.30	150.01	1,261.1	-92.1	47.3	-37.5	2.08	2.08	-0.58	
1,359.0	16.71	152.64	1,346.7	-113.7	59.0	-47.0	1.78	1.58	2.96	
1,448.0	16.62	156.34	1,432.0	-136.7	70.0	-55.5	1.20	-0.10	4.16	
1,538.0	15.06	160.73	1,518.5	-159.5	79.0	-62.1	2.18	-1.73	4.88	
1,620.0	14.86	162.49	1,597.8	-179.6	85.7	-66.7	0.61	-0.24	2.15	
1,701.0	14.69	162.73	1,676.1	-199.3	91.9	-70.8	0.22	-0.21	0.30	
1,791.0	12.98	164.27	1,763.5	-219.9	98.0	-74.8	1.94	-1.90	1.71	
1,880.0	11.75	167.61	1,850.4	-238.4	102.7	-77.5	1.60	-1.38	3.75	
1,970.0	14.80	158.62	1,938.0	-258.1	108.8	-81.6	4.08	3.39	-9.99	
2,060.0	14.33	154.39	2,025.1	-278.8	117.8	-88.4	1.29	-0.52	-4.70	
2,149.0	14.84	148.25	2,111.2	-298.4	128.6	-97.1	1.83	0.57	-6.90	
2,238.0	13.69	151.90	2,197.5	-317.4	139.6	-106.0	1.64	-1.29	4.10	
2,328.0	14.38	154.88	2,284.8	-336.9	149.3	-113.7	1.11	0.77	3.31	
2,418.0	14.43	152.29	2,372.0	-357.0	159.3	-121.6	0.72	0.06	-2.88	
2,507.0	13.83	146.14	2,458.3	-375.6	170.4	-130.7	1.82	-0.67	-6.91	
2,598.0	14.40	155.20	2,546.6	-394.9	181.2	-139.4	2.50	0.63	9.96	
2,687.0	14.01	153.86	2,632.8	-414.7	190.6	-146.7	0.57	-0.44	-1.51	
2,777.0	14.00	152.82	2,720.2	-434.1	200.3	-154.4	0.28	-0.01	-1.16	
2,867.0	14.10	153.54	2,807.5	-453.6	210.2	-162.2	0.22	0.11	0.80	
2,956.0	13.45	157.92	2,893.9	-472.9	218.9	-168.9	1.38	-0.73	4.92	
3,046.0	13.91	152.86	2,981.4	-492.2	227.8	-175.7	1.42	0.51	-5.62	
3,136.0	12.97	155.46	3,068.9	-511.1	236.9	-182.9	1.24	-1.04	2.89	
3,227.0	13.16	159.42	3,157.5	-530.0	244.8	-188.7	1.01	0.21	4.35	
3,316.0	13.86	156.91	3,244.1	-549.3	252.5	-194.5	1.03	0.79	-2.82	
3,406.0	11.27	154.19	3,331.9	-567.2	260.6	-200.6	2.95	-2.88	-3.02	
3,494.0	13.31	157.02	3,417.9	-584.2	268.3	-206.5	2.42	2.32	3.22	
3,584.0	13.93	153.95	3,505.4	-603.5	277.1	-213.3	1.06	0.69	-3.41	
3,674.0	13.24	153.68	3,592.9	-622.5	286.4	-220.6	0.77	-0.77	-0.30	
3,763.0	14.04	158.03	3,679.3	-641.6	295.0	-227.1	1.46	0.90	4.89	
3,853.0	13.07	158.13	3,766.8	-661.2	302.9	-233.0	1.08	-1.08	0.11	
3,943.0	13.37	158.21	3,854.5	-680.3	310.5	-238.6	0.33	0.33	0.09	
4,032.0	14.03	160.60	3,940.9	-700.0	317.9	-243.9	0.98	0.74	2.69	
4,121.0	13.66	162.53	4,027.3	-720.2	324.6	-248.5	0.66	-0.42	2.17	
4,211.0	13.22	155.53	4,114.9	-739.7	332.1	-253.9	1.87	-0.49	-7.78	
4,301.0	14.17	158.48	4,202.3	-759.4	340.4	-260.2	1.31	1.06	3.28	
4,391.0	13.40	157.54	4,289.7	-779.2	348.4	-266.1	0.89	-0.86	-1.04	
4,480.0	13.39	156.18	4,376.3	-798.2	356.5	-272.2	0.35	-0.01	-1.53	
4,570.0	12.86	160.98	4,464.0	-817.2	364.0	-277.7	1.35	-0.59	5.33	
4,659.0	11.90	158.88	4,550.9	-835.1	370.5	-282.3	1.19	-1.08	-2.36	
4,749.0	12.79	156.86	4,638.8	-852.9	377.8	-287.7	1.10	0.99	-2.24	
4,839.0	13.11	159.14	4,726.5	-871.6	385.3	-293.3	0.67	0.36	2.53	

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Survey										
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4,928.0	13.45	159.52	4,813.1	-890.8	392.6	-298.5	0.39	0.38	0.43	
5,018.0	13.62	158.40	4,900.6	-910.4	400.1	-304.0	0.35	0.19	-1.24	
5,107.0	13.24	162.77	4,987.2	-929.9	407.0	-308.8	1.22	-0.43	4.91	
5,197.0	12.36	167.12	5,075.0	-949.1	412.2	-312.0	1.45	-0.98	4.83	
5,287.0	8.18	165.71	5,163.5	-964.7	415.9	-314.1	4.65	-4.64	-1.57	
5,377.0	5.74	159.22	5,252.8	-975.2	419.1	-316.2	2.84	-2.71	-7.21	
5,467.0	3.94	158.96	5,342.5	-982.3	421.8	-318.1	2.00	-2.00	-0.29	
5,556.0	3.33	155.67	5,431.3	-987.5	424.0	-319.7	0.72	-0.69	-3.70	
5,646.0	2.69	140.86	5,521.2	-991.5	426.4	-321.7	1.11	-0.71	-16.46	
5,735.0	2.93	121.85	5,610.1	-994.3	429.6	-324.7	1.08	0.27	-21.36	
5,825.0	2.71	101.27	5,700.0	-995.9	433.7	-328.5	1.14	-0.24	-22.87	
5,915.0	2.74	93.06	5,789.9	-996.5	437.9	-332.7	0.43	0.03	-9.12	
6,005.0	0.53	313.56	5,879.9	-996.3	439.8	-334.5	3.51	-2.46	-155.00	
6,095.0	8.37	303.93	5,969.5	-992.3	434.0	-329.2	8.72	8.71	-10.70	
6,185.0	14.82	300.46	6,057.6	-982.8	418.6	-314.9	7.21	7.17	-3.86	
6,274.0	20.87	279.64	6,142.4	-974.4	393.2	-290.4	9.78	6.80	-23.39	
6,364.0	28.45	268.43	6,224.2	-972.3	355.8	-253.5	9.86	8.42	-12.46	
6,434.2	34.86	265.82	6,283.9	-974.2	319.1	-216.8	9.33	9.12	-3.72	
DSU - 695°FSL & 150°FEL, Sec.36										
6,454.0	36.67	265.23	6,300.0	-975.1	307.5	-205.2	9.33	9.17	-2.97	
6,544.0	42.78	263.67	6,369.2	-980.7	250.3	-147.7	6.88	6.79	-1.73	
6,634.0	49.26	265.64	6,431.6	-986.7	185.9	-83.0	7.37	7.20	2.19	
6,723.0	57.19	270.68	6,484.9	-988.8	114.7	-12.0	9.99	8.91	5.66	
6,751.7	60.00	270.51	6,499.9	-988.6	90.2	12.3	9.80	9.79	-0.60	
TPZ - 60° Inc in Curve - 680°FSL & 379°FEL, Sec.36										
6,813.0	66.00	270.17	6,527.7	-988.3	35.6	66.6	9.80	9.79	-0.55	
6,902.0	74.16	269.60	6,558.0	-988.4	-48.0	149.8	9.19	9.17	-0.64	
6,992.0	81.77	267.81	6,576.7	-990.4	-135.9	237.4	8.68	8.46	-1.99	
7,082.0	86.02	265.11	6,586.3	-996.0	-225.2	326.8	5.59	4.72	-3.00	
7,171.0	86.33	268.56	6,592.2	-1,000.9	-313.8	415.5	3.88	0.35	3.88	
7,260.0	88.69	267.73	6,596.1	-1,003.8	-402.7	504.2	2.81	2.65	-0.93	
7,350.0	89.39	268.30	6,597.6	-1,006.9	-492.6	594.0	1.00	0.78	0.63	
7,440.0	89.41	267.89	6,598.5	-1,009.9	-582.6	683.7	0.46	0.02	-0.46	
7,530.0	89.03	267.43	6,599.8	-1,013.5	-672.5	773.6	0.66	-0.42	-0.51	
7,619.0	89.53	268.38	6,600.9	-1,016.8	-761.4	862.3	1.21	0.56	1.07	
7,709.0	89.04	269.09	6,602.0	-1,018.8	-851.4	952.0	0.96	-0.54	0.79	
7,798.0	89.62	269.88	6,603.1	-1,019.6	-940.4	1,040.6	1.10	0.65	0.89	
7,888.0	89.01	269.52	6,604.1	-1,020.0	-1,030.4	1,130.2	0.79	-0.68	-0.40	
7,977.0	89.44	270.12	6,605.3	-1,020.3	-1,119.4	1,218.7	0.83	0.48	0.67	
8,066.0	89.50	270.92	6,606.2	-1,019.5	-1,208.4	1,307.2	0.90	0.07	0.90	
8,156.0	89.40	270.26	6,607.0	-1,018.6	-1,298.3	1,396.6	0.74	-0.11	-0.73	
8,246.0	89.48	270.71	6,607.9	-1,017.8	-1,388.3	1,486.0	0.51	0.09	0.50	
8,336.0	89.46	270.09	6,608.7	-1,017.2	-1,478.3	1,575.5	0.69	-0.02	-0.69	

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Wellbore:	Pharaoh 4N Wellbore #1	Survey Calculation Method:	Minimum Curvature
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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)
8,426.0	89.40	269.59	6,609.6	-1,017.5	-1,568.3	1,665.0	0.56	-0.07	-0.56
8,516.0	89.79	270.90	6,610.3	-1,017.1	-1,658.3	1,754.5	1.52	0.43	1.46
8,606.0	89.52	270.59	6,610.8	-1,015.9	-1,748.3	1,843.9	0.46	-0.30	-0.34
8,695.0	89.39	269.66	6,611.7	-1,015.7	-1,837.3	1,932.4	1.06	-0.15	-1.04
8,785.0	89.35	269.90	6,612.6	-1,016.0	-1,927.3	2,021.9	0.27	-0.04	0.27
8,874.0	88.56	270.74	6,614.3	-1,015.6	-2,016.3	2,110.4	1.30	-0.89	0.94
8,964.0	87.98	270.87	6,617.0	-1,014.3	-2,106.2	2,199.7	0.66	-0.64	0.14
9,054.0	88.46	269.90	6,619.8	-1,013.7	-2,196.2	2,289.1	1.20	0.53	-1.08
9,144.0	88.58	271.11	6,622.1	-1,012.9	-2,286.2	2,378.5	1.35	0.13	1.34
9,233.0	89.73	270.38	6,623.4	-1,011.7	-2,375.1	2,466.9	1.53	1.29	-0.82
9,323.0	89.28	270.00	6,624.2	-1,011.4	-2,465.1	2,556.4	0.65	-0.50	-0.42
9,412.0	89.72	271.07	6,625.0	-1,010.6	-2,554.1	2,644.8	1.30	0.49	1.20
9,503.0	89.91	270.96	6,625.3	-1,009.0	-2,645.1	2,735.2	0.24	0.21	-0.12
9,592.0	90.04	270.99	6,625.3	-1,007.5	-2,734.1	2,823.5	0.15	0.15	0.03
9,682.0	89.52	270.74	6,625.6	-1,006.1	-2,824.1	2,912.9	0.64	-0.58	-0.28
9,772.0	89.42	269.62	6,626.5	-1,005.8	-2,914.1	3,002.4	1.25	-0.11	-1.24
9,861.0	89.84	270.92	6,627.1	-1,005.4	-3,003.1	3,090.8	1.53	0.47	1.46
9,951.0	89.66	269.77	6,627.4	-1,004.9	-3,093.1	3,180.3	1.29	-0.20	-1.28
10,041.0	89.83	268.88	6,627.8	-1,005.9	-3,183.1	3,269.9	1.01	0.19	-0.99
10,130.0	89.40	269.75	6,628.4	-1,007.0	-3,272.0	3,358.5	1.09	-0.48	0.98
10,219.0	89.69	270.40	6,629.2	-1,006.9	-3,361.0	3,447.0	0.80	0.33	0.73
10,309.0	89.33	268.01	6,629.9	-1,008.1	-3,451.0	3,536.7	2.69	-0.40	-2.66
10,398.0	89.81	268.75	6,630.6	-1,010.6	-3,540.0	3,625.4	0.99	0.54	0.83
10,489.0	89.46	269.02	6,631.2	-1,012.4	-3,631.0	3,716.1	0.49	-0.38	0.30
10,578.0	89.26	268.77	6,632.2	-1,014.1	-3,719.9	3,804.8	0.36	-0.22	-0.28
10,667.0	89.78	268.63	6,632.9	-1,016.2	-3,808.9	3,893.5	0.61	0.58	-0.16
10,757.0	89.27	268.93	6,633.7	-1,018.1	-3,898.9	3,983.2	0.66	-0.57	0.33
10,847.0	89.63	269.03	6,634.5	-1,019.7	-3,988.9	4,072.8	0.42	0.40	0.11
10,936.0	89.68	269.30	6,635.1	-1,021.0	-4,077.9	4,161.5	0.31	0.06	0.30
11,026.0	89.66	269.34	6,635.6	-1,022.0	-4,167.9	4,251.1	0.05	-0.02	0.04
11,116.0	89.75	269.28	6,636.0	-1,023.1	-4,257.8	4,340.7	0.12	0.10	-0.07
11,206.0	89.90	269.44	6,636.3	-1,024.1	-4,347.8	4,430.4	0.24	0.17	0.18
11,296.0	89.66	268.61	6,636.7	-1,025.7	-4,437.8	4,520.0	0.96	-0.27	-0.92
11,386.0	90.14	269.02	6,636.8	-1,027.5	-4,527.8	4,609.7	0.70	0.53	0.46
11,476.0	90.13	269.17	6,636.6	-1,028.9	-4,617.8	4,699.4	0.17	-0.01	0.17
11,566.0	89.70	267.66	6,636.7	-1,031.4	-4,707.8	4,789.1	1.74	-0.48	-1.68
11,655.0	89.45	267.98	6,637.4	-1,034.8	-4,796.7	4,877.9	0.46	-0.28	0.36
11,745.0	88.99	268.24	6,638.6	-1,037.8	-4,886.6	4,967.7	0.59	-0.51	0.29
11,834.0	89.40	269.56	6,639.9	-1,039.5	-4,975.6	5,056.3	1.55	0.46	1.48
11,924.0	88.77	268.61	6,641.3	-1,040.9	-5,065.6	5,146.0	1.27	-0.70	-1.06
12,013.0	88.87	268.84	6,643.1	-1,042.9	-5,154.5	5,234.7	0.28	0.11	0.26
12,102.0	88.88	268.87	6,644.9	-1,044.7	-5,243.5	5,323.4	0.04	0.01	0.03
12,191.0	89.37	270.10	6,646.2	-1,045.5	-5,332.5	5,411.9	1.49	0.55	1.38
12,281.0	89.65	271.32	6,647.0	-1,044.4	-5,422.5	5,501.3	1.39	0.31	1.36

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Pharaoh 4N (Nio C)
Project:	SEC.36-T5N-R64W	TVD Reference:	WELL @ 4621.0ft (Ensign 142 RKB - 28')
Site:	Pharaoh 5N64W36 Pad Sec.36-T5N-R64W	MD Reference:	WELL @ 4621.0ft (Ensign 142 RKB - 28')
Well:	Pharaoh 4N (Nio C)	North Reference:	True
Wellbore:	Pharaoh 4N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Pharaoh 4N 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)	
12,370.0	89.82	271.49	6,647.4	-1,042.2	-5,511.5	5,589.6	0.27	0.19	0.19	
12,461.0	89.17	270.20	6,648.2	-1,040.8	-5,602.4	5,680.0	1.59	-0.71	-1.42	
12,550.0	89.10	270.13	6,649.6	-1,040.6	-5,691.4	5,768.5	0.11	-0.08	-0.08	
12,639.0	89.40	270.01	6,650.7	-1,040.5	-5,780.4	5,857.0	0.36	0.34	-0.13	
12,729.0	90.36	271.97	6,650.9	-1,038.9	-5,870.4	5,946.3	2.42	1.07	2.18	
12,819.0	89.25	269.76	6,651.2	-1,037.6	-5,960.4	6,035.7	2.75	-1.23	-2.46	
12,908.0	89.51	270.96	6,652.2	-1,037.0	-6,049.4	6,124.1	1.38	0.29	1.35	
12,997.0	89.72	269.82	6,652.8	-1,036.4	-6,138.4	6,212.6	1.30	0.24	-1.28	
13,087.0	89.86	270.69	6,653.1	-1,036.0	-6,228.4	6,302.0	0.98	0.16	0.97	
13,177.0	89.71	271.29	6,653.5	-1,034.4	-6,318.4	6,391.4	0.69	-0.17	0.67	
13,266.0	89.36	269.81	6,654.2	-1,033.6	-6,407.3	6,479.8	1.71	-0.39	-1.66	
13,356.0	89.43	270.60	6,655.1	-1,033.3	-6,497.3	6,569.3	0.88	0.08	0.88	
13,446.0	89.72	271.59	6,655.8	-1,031.6	-6,587.3	6,658.6	1.15	0.32	1.10	
13,536.0	89.79	270.81	6,656.2	-1,029.7	-6,677.3	6,747.9	0.87	0.08	-0.87	
13,625.0	90.88	271.24	6,655.7	-1,028.1	-6,766.3	6,836.3	1.32	1.22	0.48	
13,714.0	91.41	271.24	6,653.9	-1,026.1	-6,855.2	6,924.6	0.60	0.60	0.00	
13,804.0	90.86	271.19	6,652.1	-1,024.2	-6,945.2	7,013.8	0.61	-0.61	-0.06	
13,894.0	90.59	270.22	6,651.0	-1,023.1	-7,035.2	7,103.2	1.12	-0.30	-1.08	
13,984.0	90.77	271.28	6,649.9	-1,022.0	-7,125.2	7,192.6	1.19	0.20	1.18	
14,074.0	90.81	271.40	6,648.7	-1,019.9	-7,215.1	7,281.9	0.14	0.04	0.13	
14,163.0	91.15	271.50	6,647.1	-1,017.6	-7,304.1	7,370.1	0.40	0.38	0.11	
14,253.0	90.21	270.21	6,646.1	-1,016.3	-7,394.1	7,459.5	1.77	-1.04	-1.43	
14,342.0	89.57	269.95	6,646.2	-1,016.1	-7,483.1	7,548.0	0.78	-0.72	-0.29	
14,432.0	89.64	270.16	6,646.9	-1,016.0	-7,573.1	7,637.5	0.25	0.08	0.23	
14,521.0	89.84	270.93	6,647.3	-1,015.2	-7,662.1	7,725.9	0.89	0.22	0.87	
14,611.0	89.81	270.77	6,647.5	-1,013.9	-7,752.1	7,815.3	0.18	-0.03	-0.18	
14,701.0	89.46	271.56	6,648.1	-1,012.0	-7,842.0	7,904.6	0.96	-0.39	0.88	
14,791.0	90.17	269.97	6,648.4	-1,010.8	-7,932.0	7,994.0	1.93	0.79	-1.77	
14,881.0	90.00	270.27	6,648.3	-1,010.6	-8,022.0	8,083.5	0.38	-0.19	0.33	
14,971.0	89.51	268.30	6,648.7	-1,011.8	-8,112.0	8,173.1	2.26	-0.54	-2.19	
15,061.0	89.64	268.20	6,649.3	-1,014.5	-8,202.0	8,262.9	0.18	0.14	-0.11	
15,150.0	89.69	267.91	6,649.8	-1,017.5	-8,290.9	8,351.7	0.33	0.06	-0.33	
15,240.0	91.09	270.29	6,649.2	-1,019.0	-8,380.9	8,441.3	3.07	1.56	2.64	
15,330.0	91.27	269.98	6,647.4	-1,018.7	-8,470.9	8,530.8	0.40	0.20	-0.34	
15,420.0	90.63	268.96	6,645.9	-1,019.6	-8,560.9	8,620.4	1.34	-0.71	-1.13	
15,510.0	91.17	270.73	6,644.5	-1,019.8	-8,650.8	8,709.9	2.06	0.60	1.97	
15,600.0	91.19	270.38	6,642.6	-1,018.9	-8,740.8	8,799.3	0.39	0.02	-0.39	
15,690.0	90.32	268.78	6,641.4	-1,019.6	-8,830.8	8,888.9	2.02	-0.97	-1.78	
15,780.0	90.61	269.47	6,640.7	-1,021.0	-8,920.8	8,978.5	0.83	0.32	0.77	
15,869.0	90.43	269.00	6,639.9	-1,022.2	-9,009.8	9,067.2	0.57	-0.20	-0.53	
15,959.0	90.56	270.12	6,639.1	-1,022.9	-9,099.8	9,156.7	1.25	0.14	1.24	
16,049.0	90.69	269.34	6,638.1	-1,023.3	-9,189.8	9,246.3	0.88	0.14	-0.87	
16,138.0	90.67	269.33	6,637.1	-1,024.3	-9,278.7	9,334.9	0.03	-0.02	-0.01	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Pharaoh 4N (Nio C)
Project:	SEC.36-T5N-R64W	TVD Reference:	WELL @ 4621.0ft (Ensign 142 RKB - 28')
Site:	Pharaoh 5N64W36 Pad Sec.36-T5N-R64W	MD Reference:	WELL @ 4621.0ft (Ensign 142 RKB - 28')
Well:	Pharaoh 4N (Nio C)	North Reference:	True
Wellbore:	Pharaoh 4N Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Pharaoh 4N Wellbore #1	Database:	US_EDM

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)
16,227.0	90.38	269.86	6,636.3	-1,024.9	-9,367.7	9,423.5	0.68	-0.33	0.60
16,317.0	90.31	270.14	6,635.7	-1,024.9	-9,457.7	9,513.0	0.32	-0.08	0.31
16,407.0	91.02	270.24	6,634.7	-1,024.6	-9,547.7	9,602.5	0.80	0.79	0.11
16,496.0	90.83	270.71	6,633.2	-1,023.9	-9,636.7	9,690.9	0.57	-0.21	0.53
16,585.0	90.70	269.80	6,632.1	-1,023.5	-9,725.7	9,779.4	1.03	-0.15	-1.02
16,675.0	90.91	270.56	6,630.8	-1,023.2	-9,815.7	9,868.9	0.88	0.23	0.84
16,765.0	90.41	268.87	6,629.7	-1,023.7	-9,905.7	9,958.4	1.96	-0.56	-1.88
16,807.0	90.17	268.51	6,629.5	-1,024.6	-9,947.7	10,000.3	1.03	-0.57	-0.86
16,829.0	90.17	268.51	6,629.5	-1,025.2	-9,969.7	10,022.2	0.00	0.00	0.00

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 1668'FSL & 456'FE - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,373,137.30	3,281,507.27	40.353262	-104.489914
BHL 660'FSL & 150'FWL - survey misses target center by 10.2ft at 16829.0ft MD (6629.5 TVD, -1025.2 N, -9969.7 E) - Point	0.00	0.00	6,630.8	-1,035.2	-9,971.2	1,371,988.66	3,271,548.99	40.350415	-104.525688

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
6,434.2	6,283.9	-974.2	319.1	DSU - 695'FSL & 150'FEL, Sec.36
6,751.7	6,499.9	-988.6	90.2	TPZ - 60° Inc in Curve - 680'FSL & 379'FEL, Sec.36

Checked By: _____ Approved By: _____ Date: _____