

PDC Energy Inc. DJ Basin

Well Name: **Judy 6S-302**

Surface Location: Judy 4N64W6S Pad Sec.6-T4N-R64W

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

Ground Elevation: 4794.0

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

0.0 0.0 1368249.363254467.41 40.340650 -104.587110

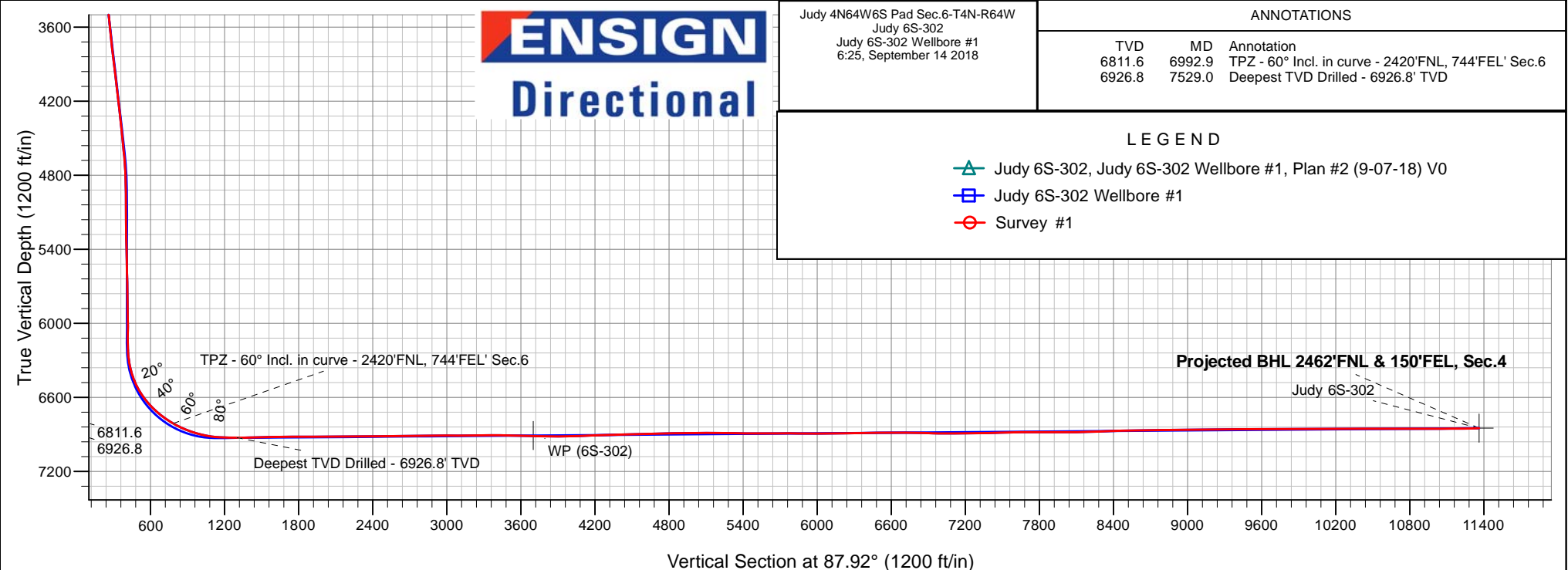
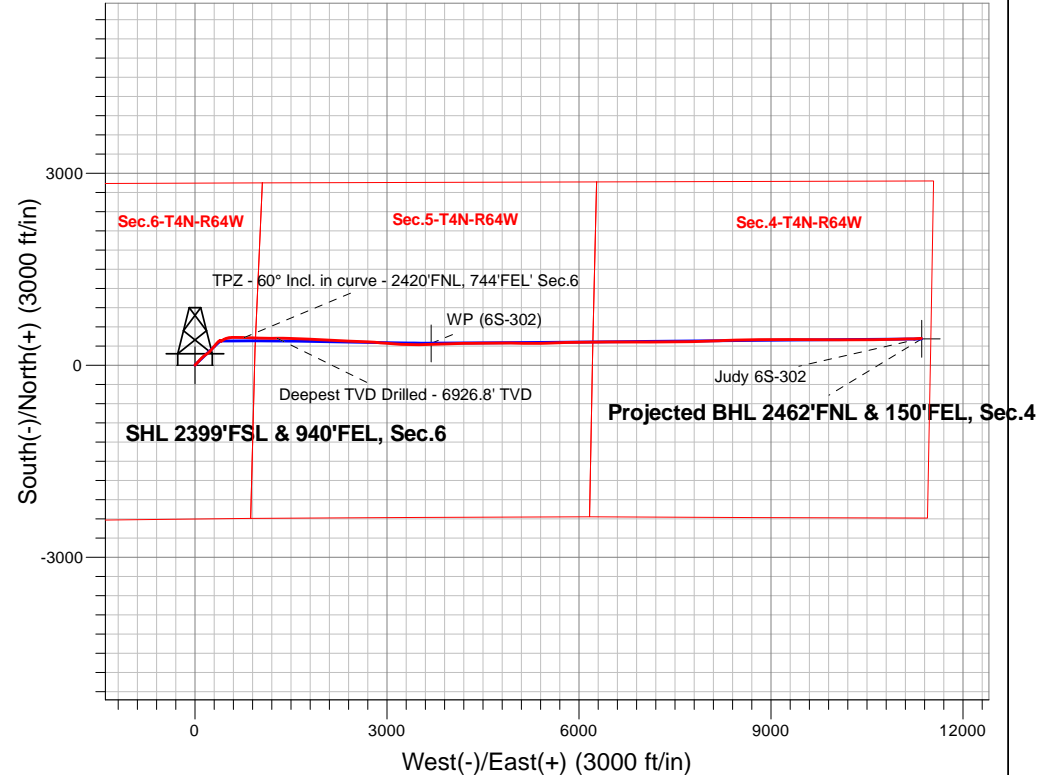
Original Well Elev WELL @ 4817.0ft (Original Well Elev)

FINAL SURVEY

Projected Bottom Hole Location

17,604'MD 6851'TVD 420'N & 11353'E of SHL

90.8 degree Incl @ 87.7 degree AZM





PDC Energy Inc. DJ Basin

SEC.6-T4N-R64W

Judy 4N64W6S Pad Sec.6-T4N-R64W

Judy 6S-302

Judy 6S-302 Wellbore #1

Survey: Survey #1

Standard Survey Report

14 September, 2018

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Judy 6S-302
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4817.0ft (Original Well Elev)
Site:	Judy 4N64W6S Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4817.0ft (Original Well Elev)
Well:	Judy 6S-302	North Reference:	True
Wellbore:	Judy 6S-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Judy 6S-302 Wellbore #1	Database:	US_EDM

Project	SEC.6-T4N-R64W, 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	Judy 4N64W6S Pad Sec.6-T4N-R64W				
Site Position:		Northing:	1,368,263.94 usft	Latitude:	40.340690
From:	Lat/Long	Easting:	3,254,467.26 usft	Longitude:	-104.587110
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.59 °

Well	Judy 6S-302					
Well Position	+N/-S	0.0 ft	Northing:	1,368,249.36 usft	Latitude:	40.340650
	+E/-W	0.0 ft	Easting:	3,254,467.41 usft	Longitude:	-104.587110
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,794.0 ft

Wellbore	Judy 6S-302 Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/7/2018	8.20	66.85	52,219

Design	Judy 6S-302 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	87.92	

Survey Program	Date	9/14/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
145.0	17,604.0	Survey #1 (Judy 6S-302 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	
1.0	0.00	333.60	1.0	0.0	0.0	0.0	0.21	0.21	0.00	
SHL 2399'FSL & 940'FEL, Sec.6										
145.0	0.30	333.60	145.0	0.3	-0.2	-0.2	0.21	0.21	0.00	
236.0	0.40	336.10	236.0	0.8	-0.4	-0.4	0.11	0.11	2.75	
325.0	0.40	27.20	325.0	1.4	-0.4	-0.3	0.39	0.00	57.42	
416.0	0.30	24.40	416.0	1.9	-0.1	-0.1	0.11	-0.11	-3.08	
506.0	0.30	33.40	506.0	2.3	0.1	0.2	0.05	0.00	10.00	
596.0	0.30	341.70	596.0	2.7	0.1	0.2	0.29	0.00	-57.44	
686.0	0.00	0.00	686.0	3.0	0.1	0.2	0.33	-0.33	0.00	
775.0	0.30	200.90	775.0	2.7	0.0	0.1	0.34	0.34	0.00	

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Wellbore:	Judy 6S-302 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)
865.0	0.40	213.00	865.0	2.3	-0.3	-0.2	0.14	0.11	13.44
955.0	0.40	220.70	955.0	1.8	-0.6	-0.6	0.06	0.00	8.56
1,045.0	1.10	52.90	1,045.0	2.0	-0.2	-0.1	1.66	0.78	-186.44
1,134.0	2.90	43.40	1,133.9	4.2	2.1	2.2	2.05	2.02	-10.67
1,224.0	4.70	39.70	1,223.7	8.7	6.0	6.3	2.02	2.00	-4.11
1,314.0	6.20	43.00	1,313.3	15.1	11.7	12.2	1.70	1.67	3.67
1,403.0	7.80	45.10	1,401.6	22.9	19.2	20.0	1.82	1.80	2.36
1,493.0	9.10	45.10	1,490.7	32.2	28.6	29.7	1.44	1.44	0.00
1,583.0	9.00	47.40	1,579.5	42.0	38.8	40.3	0.42	-0.11	2.56
1,633.0	7.80	46.20	1,629.0	47.0	44.1	45.8	2.43	-2.40	-2.40
1,760.0	7.20	43.70	1,754.9	58.7	55.8	57.9	0.54	-0.47	-1.97
1,850.0	8.30	40.20	1,844.1	67.7	63.9	66.4	1.33	1.22	-3.89
1,939.0	9.30	41.80	1,932.1	78.0	72.9	75.7	1.16	1.12	1.80
2,028.0	9.30	41.60	2,019.9	88.7	82.4	85.6	0.04	0.00	-0.22
2,118.0	9.10	41.80	2,108.7	99.5	92.0	95.6	0.23	-0.22	0.22
2,207.0	9.00	41.60	2,196.6	109.9	101.3	105.2	0.12	-0.11	-0.22
2,297.0	9.50	47.40	2,285.4	120.2	111.5	115.8	1.17	0.56	6.44
2,386.0	9.20	49.00	2,373.3	129.9	122.2	126.9	0.45	-0.34	1.80
2,476.0	9.00	51.10	2,462.1	139.0	133.2	138.1	0.43	-0.22	2.33
2,565.0	8.80	53.90	2,550.1	147.4	144.1	149.3	0.54	-0.22	3.15
2,655.0	8.50	54.30	2,639.0	155.3	155.0	160.6	0.34	-0.33	0.44
2,745.0	8.70	52.80	2,728.0	163.3	165.9	171.7	0.33	0.22	-1.67
2,835.0	8.60	53.00	2,817.0	171.5	176.7	182.8	0.12	-0.11	0.22
2,925.0	8.90	52.70	2,906.0	179.8	187.6	194.0	0.34	0.33	-0.33
3,015.0	8.40	54.10	2,994.9	187.8	198.4	205.1	0.60	-0.56	1.56
3,105.0	8.80	50.70	3,083.9	196.0	209.1	216.1	0.72	0.44	-3.78
3,194.0	8.20	51.30	3,171.9	204.3	219.3	226.6	0.68	-0.67	0.67
3,283.0	8.50	44.60	3,260.0	213.0	228.9	236.5	1.14	0.34	-7.53
3,373.0	7.90	44.10	3,349.1	222.2	237.9	245.8	0.67	-0.67	-0.56
3,463.0	8.80	41.10	3,438.1	231.8	246.7	254.9	1.11	1.00	-3.33
3,552.0	8.10	39.70	3,526.2	241.7	255.2	263.8	0.82	-0.79	-1.57
3,642.0	9.00	38.80	3,615.2	252.1	263.6	272.6	1.01	1.00	-1.00
3,732.0	8.00	38.30	3,704.2	262.5	271.9	281.3	1.11	-1.11	-0.56
3,822.0	10.20	41.40	3,793.0	273.4	281.1	290.8	2.50	2.44	3.44
3,912.0	10.20	43.50	3,881.6	285.2	291.8	302.0	0.41	0.00	2.33
4,002.0	10.10	42.00	3,970.2	296.8	302.6	313.2	0.31	-0.11	-1.67
4,091.0	9.60	40.50	4,057.9	308.2	312.6	323.6	0.63	-0.56	-1.69
4,181.0	9.00	37.90	4,146.7	319.5	321.8	333.2	0.81	-0.67	-2.89
4,271.0	10.40	40.70	4,235.4	331.2	331.5	343.2	1.64	1.56	3.11
4,361.0	9.70	40.70	4,324.0	343.1	341.7	353.9	0.78	-0.78	0.00
4,450.0	8.90	39.00	4,411.9	354.2	350.9	363.5	0.95	-0.90	-1.91
4,540.0	7.90	42.70	4,500.9	364.1	359.5	372.5	1.26	-1.11	4.11
4,629.0	7.10	52.00	4,589.1	372.0	368.0	381.2	1.63	-0.90	10.45

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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)
4,719.0	5.10	63.90	4,678.6	377.2	376.0	389.4	2.62	-2.22	13.22
4,809.0	3.20	76.60	4,768.4	379.5	382.0	395.5	2.33	-2.11	14.11
4,899.0	0.90	76.40	4,858.3	380.3	385.1	398.7	2.56	-2.56	-0.22
4,989.0	0.40	74.80	4,948.3	380.5	386.1	399.7	0.56	-0.56	-1.78
5,078.0	0.70	56.40	5,037.3	380.9	386.9	400.4	0.39	0.34	-20.67
5,169.0	0.80	48.30	5,128.3	381.6	387.8	401.4	0.16	0.11	-8.90
5,258.0	0.80	58.30	5,217.3	382.4	388.8	402.4	0.16	0.00	11.24
5,347.0	1.00	47.40	5,306.3	383.2	389.9	403.5	0.29	0.22	-12.25
5,437.0	1.50	47.20	5,396.3	384.6	391.3	405.0	0.56	0.56	-0.22
5,528.0	1.70	83.80	5,487.2	385.5	393.6	407.3	1.12	0.22	40.22
5,618.0	1.40	119.30	5,577.2	385.1	395.8	409.5	1.10	-0.33	39.44
5,708.0	1.30	135.30	5,667.2	383.9	397.5	411.2	0.43	-0.11	17.78
5,797.0	1.30	124.70	5,756.2	382.6	399.1	412.7	0.27	0.00	-11.91
5,887.0	1.30	142.80	5,846.1	381.2	400.5	414.1	0.45	0.00	20.11
5,978.0	1.50	143.90	5,937.1	379.4	401.8	415.3	0.22	0.22	1.21
6,068.0	1.20	191.90	6,027.1	377.5	402.3	415.8	1.26	-0.33	53.33
6,158.0	1.00	190.80	6,117.1	375.8	402.0	415.4	0.22	-0.22	-1.22
6,248.0	1.80	72.00	6,207.1	375.5	403.2	416.5	2.72	0.89	-132.00
6,338.0	8.60	63.00	6,296.6	379.0	410.5	424.0	7.59	7.56	-10.00
6,427.0	16.80	57.80	6,383.4	388.9	427.4	441.2	9.29	9.21	-5.84
6,517.0	25.00	62.20	6,467.4	404.7	455.3	469.6	9.27	9.11	4.89
6,607.0	30.70	73.20	6,547.0	420.2	494.1	509.0	8.50	6.33	12.22
6,697.0	38.40	82.60	6,621.1	430.5	544.0	559.2	10.38	8.56	10.44
6,786.0	45.90	88.40	6,687.1	435.0	603.4	618.8	9.49	8.43	6.52
6,876.0	52.00	91.00	6,746.2	435.2	671.2	686.6	7.12	6.78	2.89
6,966.0	58.00	92.00	6,797.8	433.3	744.9	760.1	6.73	6.67	1.11
6,992.9	60.00	92.25	6,811.6	432.4	768.0	783.1	7.49	7.44	0.93
TPZ - 60° Incl. in curve - 2420'FNL, 744'FEL' Sec.6									
7,056.0	64.70	92.80	6,840.9	430.0	823.8	838.8	7.49	7.45	0.87
7,146.0	70.10	92.20	6,875.5	426.3	906.8	921.6	6.03	6.00	-0.67
7,236.0	76.40	90.60	6,901.4	424.3	992.9	1,007.6	7.20	7.00	-1.78
7,326.0	82.00	90.10	6,918.2	423.7	1,081.2	1,095.9	6.25	6.22	-0.56
7,363.9	84.61	90.48	6,922.7	423.5	1,118.9	1,133.5	6.96	6.89	1.01
LPL 2470'FNL & 154'FWL, Sec.5									
7,416.0	88.20	91.00	6,925.9	422.9	1,170.9	1,185.4	6.96	6.89	1.00
7,529.0	90.90	89.80	6,926.8	422.1	1,283.8	1,298.3	2.61	2.39	-1.06
Deepest TVD Drilled - 6926.8' TVD									
7,619.0	91.30	91.30	6,925.1	421.2	1,373.8	1,388.2	1.72	0.44	1.67
7,709.0	90.10	90.80	6,924.0	419.6	1,463.8	1,478.0	1.44	-1.33	-0.56
7,799.0	90.70	92.00	6,923.4	417.4	1,553.8	1,567.9	1.49	0.67	1.33
7,889.0	91.80	91.50	6,921.4	414.6	1,643.7	1,657.6	1.34	1.22	-0.56
7,979.0	90.90	92.80	6,919.3	411.2	1,733.6	1,747.4	1.76	-1.00	1.44
8,069.0	88.90	93.30	6,919.4	406.5	1,823.5	1,837.0	2.29	-2.22	0.56
8,159.0	90.60	92.90	6,919.8	401.6	1,913.3	1,926.6	1.94	1.89	-0.44

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8,248.0	91.50	92.60	6,918.2	397.3	2,002.2	2,015.3	1.07	1.01	-0.34	
8,338.0	89.50	93.30	6,917.4	392.7	2,092.1	2,105.0	2.35	-2.22	0.78	
8,428.0	90.20	93.80	6,917.6	387.1	2,181.9	2,194.5	0.96	0.78	0.56	
8,518.0	90.70	92.40	6,916.9	382.2	2,271.8	2,284.1	1.65	0.56	-1.56	
8,607.0	89.80	92.80	6,916.5	378.2	2,360.7	2,372.8	1.11	-1.01	0.45	
8,697.0	90.30	91.50	6,916.5	374.8	2,450.6	2,462.6	1.55	0.56	-1.44	
8,787.0	91.50	90.80	6,915.1	373.0	2,540.6	2,552.4	1.54	1.33	-0.78	
8,877.0	90.70	92.80	6,913.3	370.2	2,630.5	2,642.2	2.39	-0.89	2.22	
8,967.0	89.90	94.00	6,912.9	364.9	2,720.4	2,731.8	1.60	-0.89	1.33	
9,056.0	91.90	94.30	6,911.5	358.4	2,809.1	2,820.3	2.27	2.25	0.34	
9,146.0	90.50	94.70	6,909.6	351.4	2,898.8	2,909.6	1.62	-1.56	0.44	
9,236.0	89.10	94.00	6,909.9	344.5	2,988.5	2,999.1	1.74	-1.56	-0.78	
9,325.0	90.00	93.80	6,910.6	338.5	3,077.3	3,087.6	1.04	1.01	-0.22	
9,415.0	91.40	93.80	6,909.5	332.5	3,167.1	3,177.1	1.56	1.56	0.00	
9,504.0	90.30	93.50	6,908.2	326.9	3,255.9	3,265.7	1.28	-1.24	-0.34	
9,594.0	91.40	92.80	6,906.8	321.9	3,345.8	3,355.3	1.45	1.22	-0.78	
9,683.0	87.60	89.10	6,907.6	320.4	3,434.7	3,444.1	5.96	-4.27	-4.16	
9,774.0	88.50	88.90	6,910.7	322.0	3,525.7	3,535.0	1.01	0.99	-0.22	
9,864.0	88.50	87.80	6,913.1	324.6	3,615.6	3,625.0	1.22	0.00	-1.22	
9,938.2	88.92	88.55	6,914.7	327.0	3,689.8	3,699.2	1.16	0.56	1.01	
WP (6S-302)										
9,953.0	89.00	88.70	6,915.0	327.3	3,704.5	3,714.0	1.16	0.56	1.01	
10,043.0	89.70	88.40	6,916.0	329.6	3,794.5	3,804.0	0.85	0.78	-0.33	
10,133.0	89.90	88.00	6,916.3	332.4	3,884.5	3,894.0	0.50	0.22	-0.44	
10,222.0	91.50	88.20	6,915.3	335.4	3,973.4	3,983.0	1.81	1.80	0.22	
10,312.0	91.50	88.40	6,912.9	338.1	4,063.3	4,072.9	0.22	0.00	0.22	
10,401.0	92.40	88.20	6,909.9	340.7	4,152.2	4,161.9	1.04	1.01	-0.22	
10,491.0	92.10	89.80	6,906.3	342.3	4,242.2	4,251.8	1.81	-0.33	1.78	
10,580.0	90.80	90.30	6,904.1	342.2	4,331.1	4,340.7	1.56	-1.46	0.56	
10,670.0	91.70	89.60	6,902.1	342.3	4,421.1	4,430.6	1.27	1.00	-0.78	
10,759.0	92.20	88.70	6,899.1	343.6	4,510.0	4,519.5	1.16	0.56	-1.01	
10,849.0	91.50	90.30	6,896.2	344.4	4,600.0	4,609.4	1.94	-0.78	1.78	
10,938.0	90.40	87.50	6,894.7	346.1	4,688.9	4,698.4	3.38	-1.24	-3.15	
11,028.0	91.50	89.40	6,893.2	348.5	4,778.9	4,788.4	2.44	1.22	2.11	
11,118.0	90.30	91.30	6,891.8	348.0	4,868.9	4,878.3	2.50	-1.33	2.11	
11,208.0	92.30	91.90	6,889.8	345.4	4,958.8	4,968.1	2.32	2.22	0.67	
11,297.0	90.30	90.80	6,887.7	343.4	5,047.8	5,056.9	2.56	-2.25	-1.24	
11,386.0	89.30	91.30	6,888.1	341.7	5,136.7	5,145.8	1.26	-1.12	0.56	
11,476.0	89.30	90.30	6,889.2	340.5	5,226.7	5,235.6	1.11	0.00	-1.11	
11,566.0	88.70	88.90	6,890.7	341.1	5,316.7	5,325.6	1.69	-0.67	-1.56	
11,655.0	89.10	88.90	6,892.4	342.8	5,405.7	5,414.6	0.45	0.45	0.00	
11,745.0	90.00	88.70	6,893.1	344.7	5,495.7	5,504.5	1.02	1.00	-0.22	
11,834.0	90.00	87.80	6,893.1	347.4	5,584.6	5,593.5	1.01	0.00	-1.01	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Judy 6S-302
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4817.0ft (Original Well Elev)
Site:	Judy 4N64W6S Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4817.0ft (Original Well Elev)
Well:	Judy 6S-302	North Reference:	True
Wellbore:	Judy 6S-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Judy 6S-302 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)
11,923.0	90.70	87.80	6,892.6	350.8	5,673.5	5,682.5	0.79	0.79	0.00
12,013.0	90.00	89.90	6,892.0	352.6	5,763.5	5,772.5	2.46	-0.78	2.33
12,102.0	89.40	89.20	6,892.5	353.3	5,852.5	5,861.5	1.04	-0.67	-0.79
12,192.0	89.40	88.90	6,893.5	354.8	5,942.5	5,951.5	0.33	0.00	-0.33
12,282.0	90.00	89.20	6,893.9	356.3	6,032.5	6,041.4	0.75	0.67	0.33
12,371.0	90.50	88.50	6,893.5	358.1	6,121.5	6,130.4	0.97	0.56	-0.79
12,461.0	90.70	88.40	6,892.6	360.5	6,211.4	6,220.4	0.25	0.22	-0.11
12,640.0	91.50	87.70	6,889.2	366.6	6,390.3	6,399.4	0.59	0.45	-0.39
12,729.0	90.60	89.60	6,887.5	368.7	6,479.2	6,488.3	2.36	-1.01	2.13
12,819.0	91.20	91.20	6,886.1	368.1	6,569.2	6,578.2	1.90	0.67	1.78
12,909.0	88.60	91.20	6,886.3	366.2	6,659.2	6,668.1	2.89	-2.89	0.00
12,999.0	89.00	90.80	6,888.2	364.6	6,749.2	6,757.9	0.63	0.44	-0.44
13,088.0	88.90	90.50	6,889.8	363.6	6,838.1	6,846.8	0.36	-0.11	-0.34
13,178.0	88.70	90.30	6,891.7	363.0	6,928.1	6,936.7	0.31	-0.22	-0.22
13,268.0	90.00	90.80	6,892.7	362.1	7,018.1	7,026.6	1.55	1.44	0.56
13,358.0	90.30	90.30	6,892.5	361.3	7,108.1	7,116.5	0.65	0.33	-0.56
13,448.0	90.70	89.90	6,891.7	361.1	7,198.1	7,206.5	0.63	0.44	-0.44
13,538.0	90.70	89.40	6,890.6	361.7	7,288.1	7,296.4	0.56	0.00	-0.56
13,628.0	91.20	89.40	6,889.1	362.6	7,378.1	7,386.4	0.56	0.56	0.00
13,718.0	91.50	88.90	6,887.0	363.9	7,468.0	7,476.3	0.65	0.33	-0.56
13,808.0	92.10	88.90	6,884.1	365.7	7,558.0	7,566.3	0.67	0.67	0.00
13,897.0	90.30	89.60	6,882.3	366.8	7,646.9	7,655.2	2.17	-2.02	0.79
13,987.0	89.90	88.20	6,882.1	368.6	7,736.9	7,745.2	1.62	-0.44	-1.56
14,076.0	90.00	87.70	6,882.2	371.7	7,825.9	7,834.2	0.57	0.11	-0.56
14,165.0	89.80	88.50	6,882.3	374.7	7,914.8	7,923.2	0.93	-0.22	0.90
14,256.0	90.20	88.40	6,882.3	377.2	8,005.8	8,014.2	0.45	0.44	-0.11
14,345.0	90.70	88.40	6,881.6	379.6	8,094.7	8,103.2	0.56	0.56	0.00
14,435.0	91.40	88.50	6,880.0	382.1	8,184.7	8,193.2	0.79	0.78	0.11
14,524.0	91.90	87.80	6,877.4	384.9	8,273.6	8,282.1	0.97	0.56	-0.79
14,613.0	92.50	87.10	6,874.0	388.9	8,362.5	8,371.1	1.04	0.67	-0.79
14,703.0	91.80	88.20	6,870.6	392.6	8,452.3	8,461.0	1.45	-0.78	1.22
14,792.0	90.80	88.50	6,868.6	395.1	8,541.3	8,550.0	1.17	-1.12	0.34
14,882.0	91.50	88.20	6,866.8	397.7	8,631.2	8,639.9	0.85	0.78	-0.33
14,971.0	90.00	89.10	6,865.6	399.8	8,720.2	8,728.9	1.97	-1.69	1.01
15,060.0	91.10	89.60	6,864.8	400.8	8,809.2	8,817.9	1.36	1.24	0.56
15,150.0	89.90	89.40	6,864.0	401.6	8,899.1	8,907.9	1.35	-1.33	-0.22
15,239.0	90.90	90.10	6,863.4	402.0	8,988.1	8,996.8	1.37	1.12	0.79
15,329.0	89.90	89.80	6,862.8	402.1	9,078.1	9,086.7	1.16	-1.11	-0.33
15,419.0	90.50	89.60	6,862.4	402.6	9,168.1	9,176.7	0.70	0.67	-0.22
15,508.0	91.50	90.30	6,860.9	402.6	9,257.1	9,265.6	1.37	1.12	0.79
15,598.0	90.20	90.60	6,859.6	401.9	9,347.1	9,355.5	1.48	-1.44	0.33
15,688.0	90.60	89.80	6,858.9	401.6	9,437.1	9,445.5	0.99	0.44	-0.89
15,778.0	91.20	90.80	6,857.5	401.2	9,527.1	9,535.4	1.30	0.67	1.11
15,867.0	90.00	91.90	6,856.6	399.1	9,616.1	9,624.2	1.83	-1.35	1.24

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Judy 6S-302
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4817.0ft (Original Well Elev)
Site:	Judy 4N64W6S Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4817.0ft (Original Well Elev)
Well:	Judy 6S-302	North Reference:	True
Wellbore:	Judy 6S-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Judy 6S-302 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)
15,957.0	89.90	90.50	6,856.7	397.2	9,706.0	9,714.1	1.56	-0.11	-1.56
16,046.0	89.70	90.10	6,857.0	396.7	9,795.0	9,803.0	0.50	-0.22	-0.45
16,135.0	91.10	90.50	6,856.3	396.2	9,884.0	9,891.9	1.64	1.57	0.45
16,224.0	89.50	90.30	6,855.9	395.6	9,973.0	9,980.8	1.81	-1.80	-0.22
16,314.0	90.00	89.60	6,856.3	395.7	10,063.0	10,070.7	0.96	0.56	-0.78
16,404.0	90.70	88.70	6,855.7	397.0	10,153.0	10,160.7	1.27	0.78	-1.00
16,493.0	89.40	89.60	6,855.6	398.4	10,242.0	10,249.7	1.78	-1.46	1.01
16,582.0	90.10	89.10	6,856.0	399.4	10,331.0	10,338.7	0.97	0.79	-0.56
16,672.0	91.00	89.80	6,855.2	400.2	10,421.0	10,428.6	1.27	1.00	0.78
16,761.0	89.80	90.10	6,854.6	400.3	10,510.0	10,517.6	1.39	-1.35	0.34
16,851.0	89.60	89.40	6,855.0	400.7	10,600.0	10,607.5	0.81	-0.22	-0.78
16,941.0	89.90	89.10	6,855.4	401.9	10,690.0	10,697.5	0.47	0.33	-0.33
17,030.0	91.10	88.70	6,854.6	403.6	10,778.9	10,786.5	1.42	1.35	-0.45
17,120.0	89.60	89.20	6,854.1	405.2	10,868.9	10,876.5	1.76	-1.67	0.56
17,210.0	90.10	88.70	6,854.3	406.9	10,958.9	10,966.4	0.79	0.56	-0.56
17,300.0	90.00	88.00	6,854.2	409.5	11,048.9	11,056.4	0.79	-0.11	-0.78
17,389.0	90.50	88.50	6,853.9	412.2	11,137.8	11,145.4	0.79	0.56	0.56
17,479.0	90.70	88.20	6,852.9	414.8	11,227.8	11,235.4	0.40	0.22	-0.33
17,544.0	90.80	87.70	6,852.1	417.1	11,292.7	11,300.4	0.78	0.15	-0.77
17,604.0	90.80	87.70	6,851.2	419.5	11,352.7	11,360.4	0.00	0.00	0.00
BHL 2470'FNL & 150'FEL, Sec.4									

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 2399'FSL & 940'FE - survey hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,368,249.37	3,254,467.41	40.340650	-104.587110
BHL 2470'FNL & 150'FE - survey misses target center by 7.6ft at 17604.0ft MD (6851.2 TVD, 419.5 N, 11352.7 E) - Point	0.00	0.00	6,850.0	412.0	11,353.2	1,368,778.18	3,265,815.23	40.341774	-104.546383
WP (6S-302) - survey misses target center by 16.5ft at 9938.2ft MD (6914.7 TVD, 327.0 N, 3689.8 E) - Point	0.00	0.00	6,909.9	342.7	3,689.4	1,368,630.00	3,258,152.92	40.341590	-104.573875

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,992.9	6,811.6	432.4	768.0	TPZ - 60° Incl. in curve - 2420'FNL, 744'FEL' Sec.6
7,529.0	6,926.8	422.1	1,283.8	Deepest TVD Drilled - 6926.8' TVD

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Judy 6S-302
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4817.0ft (Original Well Elev)
Site:	Judy 4N64W6S Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4817.0ft (Original Well Elev)
Well:	Judy 6S-302	North Reference:	True
Wellbore:	Judy 6S-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Judy 6S-302 Wellbore #1	Database:	US_EDM

Checked By: _____	Approved By: _____	Date: _____
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