

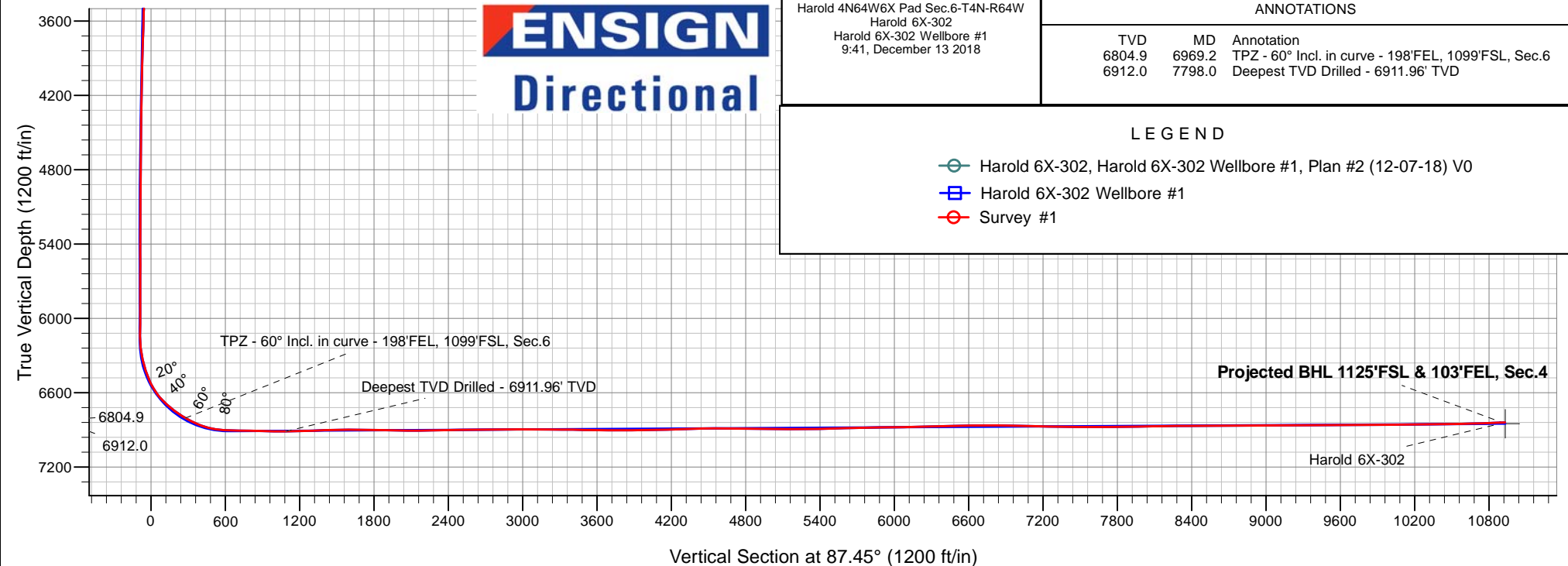
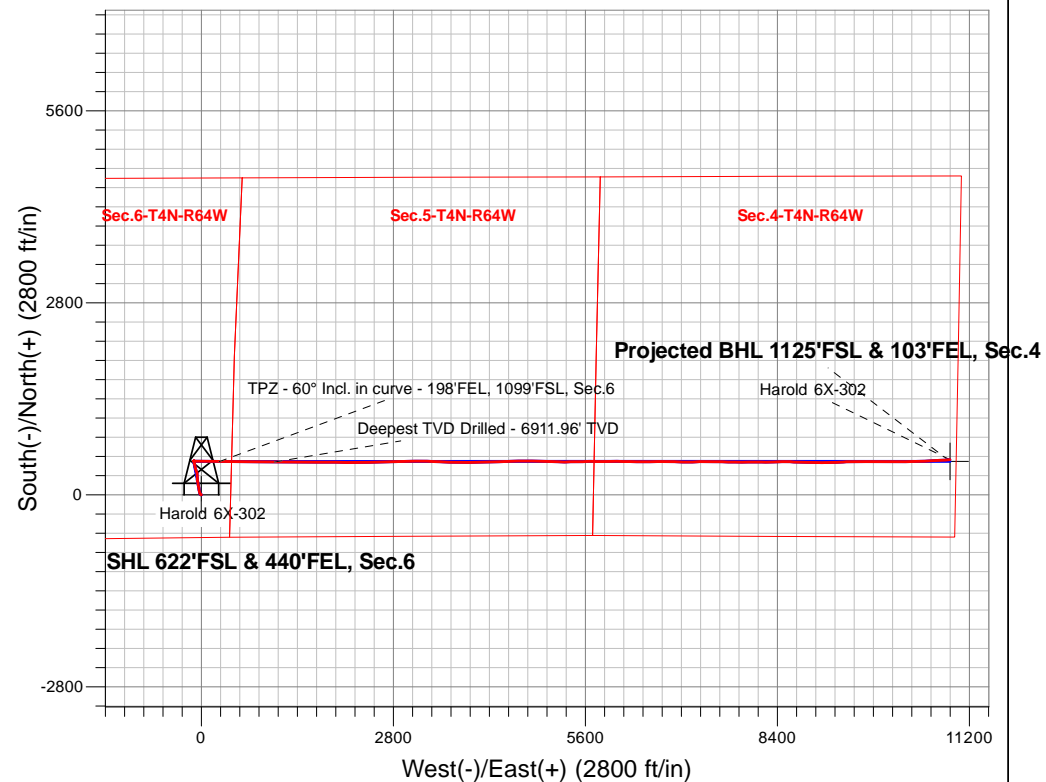
PDC Energy Inc. DJ Basin

Well Name: **Harold 6X-302**

Surface Location: Harold 4N64W6X Pad Sec.6-T4N-R64W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4788.0
+N/-S+E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1366480.003254937.26 40.335780 -104.585490
RKB - 23' WELL @ 4811.0ft (RKB - 23')

FINAL SURVEY

Projected Bottom Hole Location
17,653'MD 6840'TVD 510'N & 10917'E of SHL
92.48 degree Incl @ 86.09 degree AZM





PDC Energy Inc. DJ Basin

SEC.6-T4N-R64W

Harold 4N64W6X Pad Sec.6-T4N-R64W

Harold 6X-302

Harold 6X-302 Wellbore #1

Survey: Survey #1

Standard Survey Report

13 December, 2018

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Harold 6X-302
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4811.0ft (RKB - 23')
Site:	Harold 4N64W6X Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4811.0ft (RKB - 23')
Well:	Harold 6X-302	North Reference:	True
Wellbore:	Harold 6X-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Harold 6X-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	Harold 4N64W6X Pad Sec.6-T4N-R64W				
Site Position:		Northing:	1,366,494.58 usft	Latitude:	40.335820
From:	Lat/Long	Easting:	3,254,937.11 usft	Longitude:	-104.585490
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.59 °

Well	Harold 6X-302					
Well Position	+N/-S	0.0 ft	Northing:	1,366,480.00 usft	Latitude:	40.335780
	+E/-W	0.0 ft	Easting:	3,254,937.26 usft	Longitude:	-104.585490
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,788.0 ft

Wellbore	Harold 6X-302 Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/7/2018	8.18	66.83	52,192

Design	Harold 6X-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	87.45	

Survey Program	Date	12/13/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
250.0	17,653.0	Survey #1 (Harold 6X-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	300.20	1.0	0.0	0.0	0.0	0.41	0.41	0.00
SHL 622'FSL & 440'FEL, Sec.6									
250.0	1.02	300.20	250.0	1.1	-1.9	-1.9	0.41	0.41	0.00
346.0	2.50	282.09	345.9	2.0	-4.7	-4.6	1.63	1.54	-18.86
442.0	3.84	291.84	441.8	3.6	-9.7	-9.6	1.50	1.40	10.16
537.0	4.02	309.69	536.6	6.9	-15.3	-14.9	1.30	0.19	18.79
633.0	4.28	328.15	632.3	12.1	-19.7	-19.2	1.41	0.27	19.23
728.0	4.99	343.55	727.0	19.1	-22.8	-21.9	1.50	0.75	16.21
823.0	6.45	348.88	821.5	28.3	-25.0	-23.7	1.63	1.54	5.61
919.0	7.14	348.78	916.9	39.4	-27.2	-25.4	0.72	0.72	-0.10

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Site:	Harold 4N64W6X Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4811.0ft (RKB - 23')
Well:	Harold 6X-302	North Reference:	True
Wellbore:	Harold 6X-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Harold 6X-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)
1,015.0	6.91	348.33	1,012.1	50.9	-29.5	-27.2	0.25	-0.24	-0.47
1,110.0	6.41	348.83	1,106.5	61.7	-31.7	-28.9	0.53	-0.53	0.53
1,206.0	6.01	346.20	1,201.9	71.9	-33.9	-30.7	0.51	-0.42	-2.74
1,301.0	6.92	350.62	1,296.3	82.4	-36.0	-32.3	1.09	0.96	4.65
1,397.0	7.12	353.14	1,391.6	94.0	-37.7	-33.5	0.38	0.21	2.63
1,493.0	6.41	352.19	1,486.9	105.2	-39.1	-34.4	0.75	-0.74	-0.99
1,589.0	6.62	352.66	1,582.3	116.0	-40.6	-35.4	0.23	0.22	0.49
1,777.0	5.99	344.40	1,769.2	136.2	-44.6	-38.5	0.59	-0.34	-4.39
1,873.0	6.68	352.56	1,864.6	146.5	-46.7	-40.1	1.18	0.72	8.50
1,968.0	6.61	352.49	1,959.0	157.4	-48.1	-41.0	0.07	-0.07	-0.07
2,064.0	6.08	352.21	2,054.4	168.0	-49.5	-42.0	0.55	-0.55	-0.29
2,159.0	7.28	349.34	2,148.7	178.9	-51.3	-43.3	1.31	1.26	-3.02
2,255.0	7.12	349.68	2,244.0	190.7	-53.5	-44.9	0.17	-0.17	0.35
2,350.0	6.22	350.22	2,338.3	201.6	-55.4	-46.4	0.95	-0.95	0.57
2,446.0	7.02	356.77	2,433.7	212.5	-56.6	-47.1	1.14	0.83	6.82
2,541.0	6.71	357.10	2,528.0	223.9	-57.2	-47.2	0.33	-0.33	0.35
2,637.0	8.89	354.89	2,623.1	236.9	-58.2	-47.6	2.29	2.27	-2.30
2,733.0	8.46	357.65	2,718.0	251.3	-59.1	-47.9	0.62	-0.45	2.88
2,828.0	8.39	356.79	2,812.0	265.2	-59.8	-47.9	0.15	-0.07	-0.91
2,923.0	8.17	356.44	2,906.0	278.9	-60.6	-48.1	0.24	-0.23	-0.37
3,019.0	7.31	355.50	3,001.1	291.8	-61.5	-48.5	0.91	-0.90	-0.98
3,114.0	6.37	354.41	3,095.5	303.0	-62.5	-48.9	1.00	-0.99	-1.15
3,210.0	5.36	350.13	3,191.0	312.8	-63.8	-49.8	1.15	-1.05	-4.46
3,306.0	6.86	345.47	3,286.4	322.7	-66.0	-51.6	1.64	1.56	-4.85
3,401.0	5.20	337.48	3,380.9	332.2	-69.1	-54.2	1.95	-1.75	-8.41
3,496.0	6.02	338.14	3,475.4	340.8	-72.6	-57.3	0.87	0.86	0.69
3,591.0	7.14	345.23	3,569.8	351.1	-75.9	-60.2	1.45	1.18	7.46
3,687.0	6.90	343.91	3,665.1	362.4	-79.1	-62.8	0.30	-0.25	-1.38
3,783.0	7.11	343.60	3,760.4	373.7	-82.3	-65.6	0.22	0.22	-0.32
3,878.0	7.05	341.59	3,854.6	384.9	-85.8	-68.6	0.27	-0.06	-2.12
3,974.0	7.04	343.06	3,949.9	396.1	-89.4	-71.7	0.19	-0.01	1.53
4,070.0	7.16	347.44	4,045.2	407.5	-92.4	-74.2	0.58	0.13	4.56
4,165.0	6.72	351.93	4,139.5	418.8	-94.5	-75.7	0.73	-0.46	4.73
4,260.0	6.07	348.74	4,233.9	429.2	-96.3	-77.0	0.78	-0.68	-3.36
4,356.0	5.69	347.63	4,329.4	438.9	-98.3	-78.6	0.41	-0.40	-1.16
4,452.0	5.57	348.50	4,424.9	448.1	-100.2	-80.2	0.15	-0.13	0.91
4,547.0	5.03	347.72	4,519.5	456.7	-102.0	-81.6	0.57	-0.57	-0.82
4,642.0	4.78	345.87	4,614.2	464.6	-103.9	-83.1	0.31	-0.26	-1.95
4,738.0	4.59	353.01	4,709.8	472.3	-105.3	-84.2	0.64	-0.20	7.44
4,833.0	4.85	0.39	4,804.5	480.1	-105.8	-84.3	0.69	0.27	7.77
4,929.0	4.58	3.88	4,900.2	487.9	-105.5	-83.6	0.41	-0.28	3.64
5,025.0	2.31	316.10	4,996.0	493.2	-106.5	-84.5	3.62	-2.36	-49.77
5,120.0	1.17	216.04	5,091.0	493.8	-108.4	-86.3	2.91	-1.20	-105.33

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Site:	Harold 4N64W6X Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4811.0ft (RKB - 23')
Well:	Harold 6X-302	North Reference:	True
Wellbore:	Harold 6X-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Harold 6X-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)
5,216.0	0.70	207.64	5,187.0	492.4	-109.3	-87.2	0.51	-0.49	-8.75
5,312.0	0.39	196.75	5,283.0	491.6	-109.7	-87.7	0.34	-0.32	-11.34
5,407.0	0.31	171.16	5,378.0	491.1	-109.7	-87.7	0.18	-0.08	-26.94
5,502.0	0.50	102.75	5,473.0	490.7	-109.3	-87.3	0.51	0.20	-72.01
5,598.0	0.20	206.79	5,569.0	490.5	-108.9	-87.0	0.61	-0.31	108.38
5,693.0	0.41	212.36	5,664.0	490.0	-109.2	-87.3	0.22	0.22	5.86
5,789.0	0.11	203.75	5,760.0	489.7	-109.4	-87.5	0.31	-0.31	-8.97
5,885.0	0.18	356.62	5,856.0	489.7	-109.5	-87.5	0.29	0.07	159.24
5,980.0	0.30	269.15	5,951.0	489.9	-109.7	-87.8	0.36	0.13	-92.07
6,076.0	0.38	270.64	6,047.0	489.9	-110.3	-88.4	0.08	0.08	1.55
6,172.0	0.52	237.22	6,143.0	489.6	-111.0	-89.0	0.30	0.15	-34.81
6,267.0	6.17	92.41	6,237.8	489.2	-106.2	-84.3	6.95	5.95	-152.43
6,363.0	13.04	89.66	6,332.4	489.0	-90.2	-68.3	7.17	7.16	-2.86
6,458.0	17.80	87.99	6,424.0	489.6	-65.0	-43.1	5.03	5.01	-1.76
6,554.0	24.92	90.82	6,513.3	489.8	-30.0	-8.2	7.49	7.42	2.95
6,650.0	34.63	93.10	6,596.5	488.1	17.5	39.3	10.18	10.11	2.38
6,746.0	45.21	91.65	6,670.1	485.6	79.0	100.5	11.06	11.02	-1.51
6,841.0	51.67	92.08	6,733.0	483.3	150.0	171.4	6.81	6.80	0.45
6,937.0	57.98	90.75	6,788.3	481.4	228.4	249.6	6.67	6.57	-1.39
6,969.2	60.00	90.20	6,804.9	481.1	256.0	277.2	6.43	6.26	-1.71
TPZ - 60° Incl. in curve - 198'FEL, 1099'FSL, Sec.6									
7,033.0	64.00	89.17	6,834.9	481.5	312.3	333.5	6.43	6.27	-1.61
7,129.0	70.94	87.16	6,871.6	484.3	400.9	422.1	7.48	7.23	-2.09
7,224.0	80.94	90.84	6,894.7	485.9	492.9	514.0	11.18	10.53	3.87
7,321.0	88.25	91.12	6,903.8	484.2	589.4	610.4	7.54	7.54	0.29
7,339.5	88.36	91.00	6,904.4	483.9	607.9	628.9	0.86	0.59	-0.63
LPL 1102'FSL & 154'FWL, Sec.5									
7,416.0	88.81	90.52	6,906.3	482.9	684.3	705.2	0.86	0.59	-0.63
7,512.0	89.12	90.64	6,908.0	481.9	780.3	801.0	0.35	0.32	0.13
7,607.0	88.87	90.59	6,909.7	480.9	875.3	895.9	0.27	-0.26	-0.05
7,702.0	88.75	90.44	6,911.6	480.0	970.3	990.7	0.20	-0.13	-0.16
7,798.0	90.85	91.08	6,912.0	478.8	1,066.3	1,086.5	2.29	2.19	0.67
Deepest TVD Drilled - 6911.96' TVD									
7,923.0	91.14	90.93	6,909.8	476.6	1,191.2	1,211.3	0.26	0.23	-0.12
8,019.0	91.78	90.33	6,907.3	475.5	1,287.2	1,307.1	0.91	0.67	-0.63
8,115.0	92.71	90.09	6,903.6	475.2	1,383.1	1,402.9	1.00	0.97	-0.25
8,210.0	91.11	90.87	6,900.4	474.4	1,478.0	1,497.7	1.87	-1.68	0.82
8,306.0	90.02	90.26	6,899.5	473.4	1,574.0	1,593.6	1.30	-1.14	-0.64
8,401.0	89.65	89.87	6,899.7	473.3	1,669.0	1,688.5	0.57	-0.39	-0.41
8,497.0	89.29	89.90	6,900.6	473.5	1,765.0	1,784.4	0.38	-0.38	0.03
8,593.0	88.65	89.66	6,902.4	473.9	1,861.0	1,880.3	0.71	-0.67	-0.25
8,688.0	88.39	89.97	6,904.8	474.2	1,956.0	1,975.2	0.43	-0.27	0.33
8,784.0	89.93	90.35	6,906.2	473.9	2,052.0	2,071.0	1.65	1.60	0.40
8,879.0	90.63	90.55	6,905.8	473.2	2,147.0	2,165.9	0.77	0.74	0.21

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Survey										
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8,975.0	90.86	90.32	6,904.5	472.4	2,243.0	2,261.8	0.34	0.24	-0.24	
9,071.0	90.89	90.16	6,903.0	472.0	2,338.9	2,357.6	0.17	0.03	-0.17	
9,166.0	91.03	89.93	6,901.4	472.0	2,433.9	2,452.5	0.28	0.15	-0.24	
9,262.0	90.72	89.10	6,900.0	472.8	2,529.9	2,548.5	0.92	-0.32	-0.86	
9,357.0	90.47	88.38	6,899.0	474.9	2,624.9	2,643.4	0.80	-0.26	-0.76	
9,452.0	90.63	87.57	6,898.1	478.2	2,719.8	2,738.4	0.87	0.17	-0.85	
9,548.0	90.33	87.34	6,897.3	482.5	2,815.7	2,834.4	0.39	-0.31	-0.24	
9,643.0	90.16	88.58	6,896.9	485.9	2,910.7	2,929.4	1.32	-0.18	1.31	
9,738.0	89.77	88.17	6,896.9	488.5	3,005.6	3,024.4	0.60	-0.41	-0.43	
9,834.0	89.46	88.05	6,897.6	491.7	3,101.6	3,120.4	0.35	-0.32	-0.13	
9,928.0	89.68	91.58	6,898.3	492.0	3,195.5	3,214.3	3.76	0.23	3.76	
10,024.0	89.63	92.72	6,898.9	488.4	3,291.5	3,310.0	1.19	-0.05	1.19	
10,119.0	89.49	92.65	6,899.6	484.0	3,386.4	3,404.6	0.16	-0.15	-0.07	
10,213.0	88.87	92.66	6,900.9	479.6	3,480.3	3,498.2	0.66	-0.66	0.01	
10,309.0	88.64	91.85	6,903.0	475.8	3,576.2	3,593.8	0.88	-0.24	-0.84	
10,404.0	90.10	90.99	6,904.1	473.5	3,671.1	3,688.6	1.78	1.54	-0.91	
10,500.0	89.91	90.44	6,904.1	472.3	3,767.1	3,784.4	0.61	-0.20	-0.57	
10,596.0	90.05	90.10	6,904.1	471.8	3,863.1	3,880.3	0.38	0.15	-0.35	
10,691.0	91.19	89.78	6,903.1	471.9	3,958.1	3,975.2	1.25	1.20	-0.34	
10,787.0	91.47	89.22	6,900.8	472.8	4,054.1	4,071.1	0.65	0.29	-0.58	
10,882.0	91.61	88.68	6,898.3	474.5	4,149.0	4,166.0	0.59	0.15	-0.57	
10,978.0	91.64	88.08	6,895.6	477.2	4,244.9	4,262.0	0.63	0.03	-0.63	
11,073.0	91.89	87.53	6,892.6	480.9	4,339.8	4,356.9	0.64	0.26	-0.58	
11,169.0	91.98	87.01	6,889.4	485.4	4,435.7	4,452.9	0.55	0.09	-0.54	
11,265.0	89.74	88.25	6,888.0	489.4	4,531.6	4,548.9	2.67	-2.33	1.29	
11,361.0	89.43	90.21	6,888.6	490.7	4,627.5	4,644.8	2.07	-0.32	2.04	
11,457.0	89.23	89.97	6,889.8	490.5	4,723.5	4,740.7	0.33	-0.21	-0.25	
11,553.0	88.78	89.78	6,891.4	490.7	4,819.5	4,836.6	0.51	-0.47	-0.20	
11,648.0	89.34	92.26	6,893.0	489.1	4,914.5	4,931.4	2.68	0.59	2.61	
11,744.0	89.04	92.16	6,894.4	485.4	5,010.4	5,027.1	0.33	-0.31	-0.10	
11,839.0	90.58	91.84	6,894.7	482.0	5,105.3	5,121.8	1.66	1.62	-0.34	
11,935.0	90.52	91.15	6,893.7	479.5	5,201.3	5,217.5	0.72	-0.06	-0.72	
12,031.0	90.63	90.06	6,892.8	478.5	5,297.3	5,313.4	1.14	0.11	-1.14	
12,126.0	90.91	89.19	6,891.5	479.1	5,392.3	5,408.3	0.96	0.29	-0.92	
12,222.0	91.33	88.71	6,889.6	480.9	5,488.3	5,504.2	0.66	0.44	-0.50	
12,317.0	91.61	88.06	6,887.2	483.6	5,583.2	5,599.2	0.74	0.29	-0.68	
12,413.0	91.30	90.34	6,884.8	484.9	5,679.1	5,695.1	2.40	-0.32	2.38	
12,509.0	91.16	90.58	6,882.7	484.1	5,775.1	5,790.9	0.29	-0.15	0.25	
12,605.0	90.63	89.14	6,881.2	484.4	5,871.1	5,886.8	1.60	-0.55	-1.50	
12,700.0	90.35	88.67	6,880.4	486.2	5,966.1	5,981.8	0.58	-0.29	-0.49	
12,796.0	91.47	91.18	6,878.9	486.3	6,062.1	6,077.7	2.86	1.17	2.61	
12,892.0	91.53	91.65	6,876.3	484.0	6,158.0	6,173.4	0.49	0.06	0.49	
12,988.0	91.25	90.77	6,874.0	481.9	6,253.9	6,269.2	0.96	-0.29	-0.92	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Harold 6X-302
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4811.0ft (RKB - 23')
Site:	Harold 4N64W6X Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4811.0ft (RKB - 23')
Well:	Harold 6X-302	North Reference:	True
Wellbore:	Harold 6X-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Harold 6X-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)
13,083.0	91.56	90.25	6,871.7	481.1	6,348.9	6,364.0	0.64	0.33	-0.55
13,178.0	91.36	89.89	6,869.3	481.0	6,443.9	6,458.9	0.43	-0.21	-0.38
13,275.0	91.47	89.44	6,866.9	481.5	6,540.8	6,555.8	0.48	0.11	-0.46
13,371.0	90.66	89.68	6,865.1	482.3	6,636.8	6,651.7	0.88	-0.84	0.25
13,467.0	89.82	89.51	6,864.7	482.9	6,732.8	6,747.7	0.89	-0.88	-0.18
13,563.0	89.12	91.58	6,865.6	482.0	6,828.8	6,843.5	2.28	-0.73	2.16
13,658.0	88.95	91.15	6,867.2	479.8	6,923.8	6,938.3	0.49	-0.18	-0.45
13,753.0	88.92	90.49	6,868.9	478.4	7,018.7	7,033.1	0.70	-0.03	-0.69
13,848.0	88.90	89.94	6,870.7	478.1	7,113.7	7,128.0	0.58	-0.02	-0.58
13,944.0	88.64	88.65	6,872.8	479.2	7,209.7	7,223.9	1.37	-0.27	-1.34
14,040.0	88.98	88.61	6,874.8	481.5	7,305.6	7,319.8	0.36	0.35	-0.04
14,136.0	89.60	90.44	6,876.0	482.3	7,401.6	7,415.8	2.01	0.65	1.91
14,232.0	89.57	91.13	6,876.7	481.0	7,497.6	7,511.6	0.72	-0.03	0.72
14,327.0	89.51	90.53	6,877.4	479.6	7,592.6	7,606.4	0.63	-0.06	-0.63
14,423.0	90.41	91.01	6,877.5	478.3	7,688.6	7,702.3	1.06	0.94	0.50
14,519.0	90.72	90.81	6,876.6	476.8	7,784.6	7,798.1	0.38	0.32	-0.21
14,615.0	91.19	90.21	6,875.0	476.0	7,880.6	7,893.9	0.79	0.49	-0.63
14,710.0	91.11	89.27	6,873.1	476.4	7,975.5	7,988.8	0.99	-0.08	-0.99
14,806.0	90.86	90.07	6,871.4	477.0	8,071.5	8,084.8	0.87	-0.26	0.83
14,902.0	90.52	90.13	6,870.3	476.8	8,167.5	8,180.6	0.36	-0.35	0.06
14,998.0	90.44	89.39	6,869.4	477.2	8,263.5	8,276.6	0.78	-0.08	-0.77
15,093.0	90.60	88.69	6,868.6	478.8	8,358.5	8,371.5	0.76	0.17	-0.74
15,188.0	90.60	88.19	6,867.6	481.4	8,453.4	8,466.5	0.53	0.00	-0.53
15,283.0	90.02	91.22	6,867.1	481.9	8,548.4	8,561.4	3.25	-0.61	3.19
15,378.0	90.32	92.47	6,866.8	478.8	8,643.4	8,656.1	1.35	0.32	1.32
15,474.0	90.07	92.54	6,866.5	474.6	8,739.3	8,751.8	0.27	-0.26	0.07
15,569.0	90.21	91.69	6,866.2	471.1	8,834.2	8,846.4	0.91	0.15	-0.89
15,665.0	90.32	90.90	6,865.8	468.9	8,930.2	8,942.2	0.83	0.11	-0.82
15,760.0	90.49	89.80	6,865.1	468.3	9,025.2	9,037.1	1.17	0.18	-1.16
15,855.0	90.46	89.57	6,864.3	468.9	9,120.2	9,132.0	0.24	-0.03	-0.24
15,951.0	90.41	88.05	6,863.6	470.9	9,216.2	9,228.0	1.58	-0.05	-1.58
16,046.0	90.32	86.47	6,863.0	475.4	9,311.0	9,323.0	1.67	-0.09	-1.66
16,142.0	90.49	88.12	6,862.3	479.9	9,406.9	9,419.0	1.73	0.18	1.72
16,237.0	90.35	90.53	6,861.6	481.0	9,501.9	9,513.9	2.54	-0.15	2.54
16,332.0	90.07	89.42	6,861.3	481.1	9,596.9	9,608.8	1.21	-0.29	-1.17
16,428.0	89.79	88.75	6,861.4	482.6	9,692.9	9,704.8	0.76	-0.29	-0.70
16,524.0	90.66	91.38	6,861.0	482.5	9,788.9	9,800.7	2.89	0.91	2.74
16,619.0	90.52	90.23	6,860.0	481.2	9,883.9	9,895.5	1.22	-0.15	-1.21
16,714.0	90.69	89.12	6,859.0	481.7	9,978.9	9,990.4	1.18	0.18	-1.17
16,810.0	90.55	90.71	6,858.0	481.9	10,074.9	10,086.3	1.66	-0.15	1.66
16,905.0	90.60	90.05	6,857.0	481.2	10,169.9	10,181.2	0.70	0.05	-0.69
17,000.0	90.58	89.50	6,856.1	481.6	10,264.8	10,276.1	0.58	-0.02	-0.58
17,096.0	90.86	88.12	6,854.9	483.6	10,360.8	10,372.1	1.47	0.29	-1.44

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Harold 6X-302
Project:	SEC.6-T4N-R64W	TVD Reference:	WELL @ 4811.0ft (RKB - 23')
Site:	Harold 4N64W6X Pad Sec.6-T4N-R64W	MD Reference:	WELL @ 4811.0ft (RKB - 23')
Well:	Harold 6X-302	North Reference:	True
Wellbore:	Harold 6X-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Harold 6X-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)
17,191.0	91.02	88.42	6,853.3	486.5	10,455.8	10,467.0	0.36	0.17	0.32
17,286.0	90.88	87.85	6,851.7	489.6	10,550.7	10,562.0	0.62	-0.15	-0.60
17,382.0	91.44	87.23	6,849.8	493.7	10,646.6	10,658.0	0.87	0.58	-0.65
17,476.0	91.86	86.73	6,847.1	498.6	10,740.4	10,752.0	0.69	0.45	-0.53
17,593.0	92.48	86.09	6,842.6	505.9	10,857.1	10,868.9	0.76	0.53	-0.55
17,653.0	92.48	86.09	6,840.0	510.0	10,916.9	10,928.8	0.00	0.00	0.00
Projected BHL 1125'FSL & 103'FEL, Sec.4									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 622'FSL & 440'FEL	0.00	0.00	1.0	0.0	0.0	1,366,480.01	3,254,937.26	40.335780	-104.585490
- survey hits target center									
- Point									
Projected BHL 1125'FSL	0.00	0.00	6,851.0	486.9	10,919.9	1,367,079.51	3,265,851.03	40.337110	-104.546320
- survey misses target center by 25.7ft at 17653.0ft MD (6840.0 TVD, 510.0 N, 10916.9 E)									
- Point									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,969.2	6,804.9	481.1	256.0	TPZ - 60° Incl. in curve - 198'FEL, 1099'FSL, Sec.6
7,798.0	6,912.0	478.8	1,066.3	Deepest TVD Drilled - 6911.96' TVD

Checked By: _____	Approved By: _____	Date: _____
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