

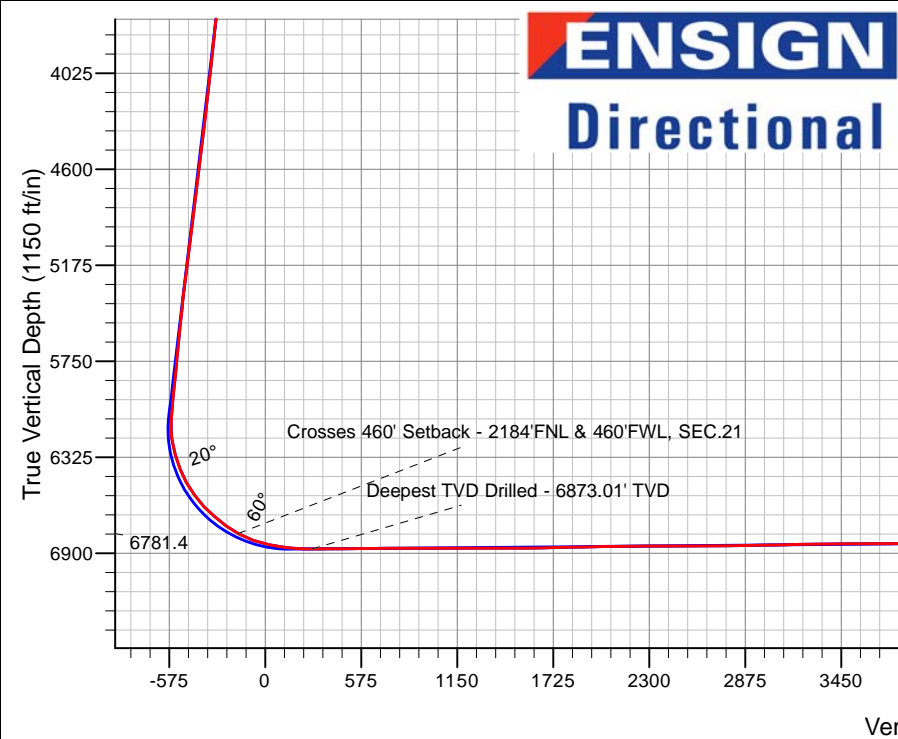
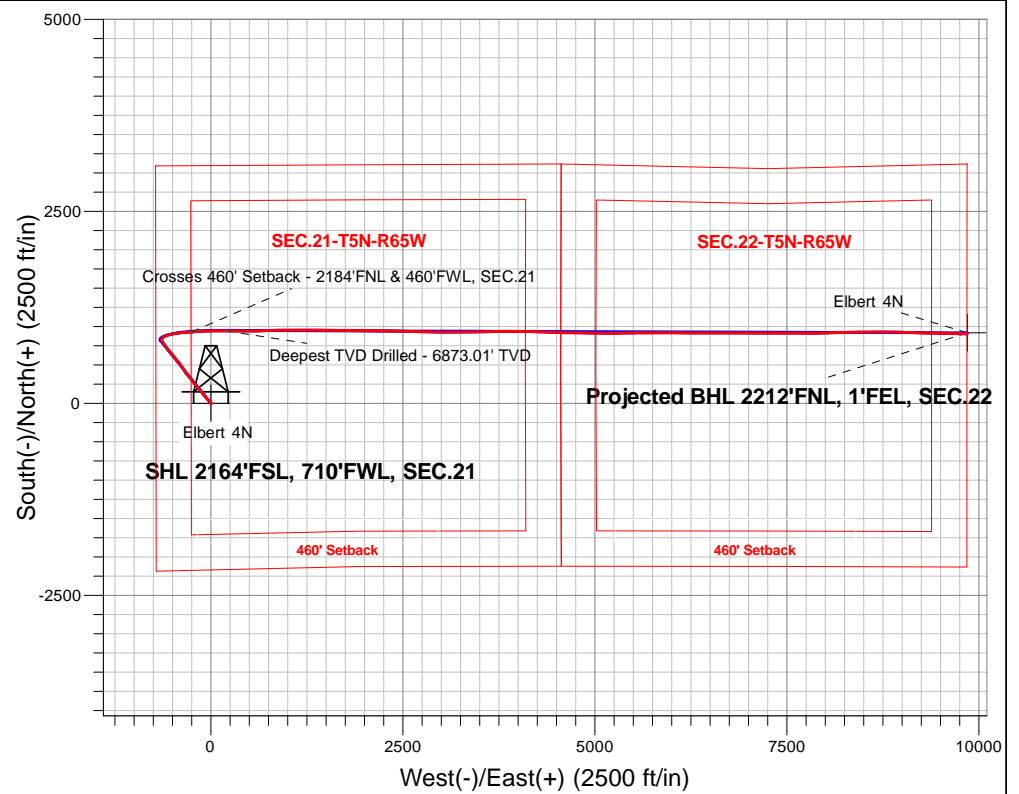
PDC Energy Inc. DJ Basin

Well Name: **Elbert 4N**

Surface Location: Elbert 1-12 Pad Sec.21-T5N-R65W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4638.0
 +N/-S+E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1383559.643229751.77 40.383340 -104.675260
 Original Well Elev WELL @ 4661.0ft (Original Well Elev)

FINAL SURVEY

Projected Bottom Hole Location
17,161'MD 6785'TVD 908'N & 9849'E of SHL
92.4 degree Incl @ 90.7 degree AZM



Elbert 1-12 Pad Sec.21-T5N-R65W
 Elbert 4N
 Wellbore #1
 11:39, August 10 2017

ANNOTATIONS

TVD	MD	Annotation
6781.4	7044.7	Crosses 460' Setback - 2184'FNL & 460'FWL, SEC.21
6873.0	7503.0	Deepest TVD Drilled - 6873.01' TVD

LEGEND

- Elbert 4N, Wellbore #1, Plan #4 (7-28-17) V0
- Wellbore #1
- Survey #1

Projected BHL 2212'FNL, 1'FEL, SEC.22

Elbert 4N

Vertical Section at 84.74° (1150 ft/in)



PDC Energy Inc. DJ Basin

SEC.21-T5N-R65W

Elbert 1-12 Pad Sec.21-T5N-R65W

Elbert 4N

Wellbore #1

Survey: Survey #1

Standard Survey Report

10 August, 2017



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Elbert 4N
Project:	SEC.21-T5N-R65W	TVD Reference:	WELL @ 4661.0ft (Original Well Elev)
Site:	Elbert 1-12 Pad Sec.21-T5N-R65W	MD Reference:	WELL @ 4661.0ft (Original Well Elev)
Well:	Elbert 4N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	US_EDM

Project	SEC.21-T5N-R65W, Weld County, Colorado		
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	Elbert 1-12 Pad Sec.21-T5N-R65W				
Site Position:		Northing:	1,383,603.37 usft	Latitude:	40.383460
From:	Lat/Long	Easting:	3,229,751.36 usft	Longitude:	-104.675260
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.53 °

Well	Elbert 4N					
Well Position	+N/-S	0.0 ft	Northing:	1,383,559.64 usft	Latitude:	40.383340
	+E/-W	0.0 ft	Easting:	3,229,751.77 usft	Longitude:	-104.675260
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,638.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/28/2017	7.99	66.84	52,489

Design	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	84.74	

Survey Program	Date	8/10/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
142.0	17,161.0	Survey #1 (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	
142.0	0.50	89.20	142.0	0.0	0.6	0.6	0.35	0.35	0.00	
232.0	0.60	78.10	232.0	0.1	1.5	1.5	0.16	0.11	-12.33	
321.0	0.50	72.50	321.0	0.3	2.3	2.3	0.13	-0.11	-6.29	
411.0	0.50	80.60	411.0	0.5	3.1	3.1	0.08	0.00	9.00	
500.0	0.80	100.50	500.0	0.5	4.1	4.1	0.42	0.34	22.36	
590.0	1.00	89.60	590.0	0.3	5.5	5.5	0.29	0.22	-12.11	
680.0	0.80	84.50	680.0	0.4	6.9	6.9	0.24	-0.22	-5.67	
770.0	0.80	93.40	769.9	0.4	8.1	8.1	0.14	0.00	9.89	
860.0	1.30	342.00	859.9	1.4	8.4	8.5	1.95	0.56	-123.78	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Elbert 4N
Project:	SEC.21-T5N-R65W	TVD Reference:	WELL @ 4661.0ft (Original Well Elev)
Site:	Elbert 1-12 Pad Sec.21-T5N-R65W	MD Reference:	WELL @ 4661.0ft (Original Well Elev)
Well:	Elbert 4N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	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)	
949.0	2.90	323.70	948.9	4.1	6.8	7.1	1.93	1.80	-20.56	
1,039.0	4.70	313.10	1,038.7	8.5	2.7	3.5	2.14	2.00	-11.78	
1,129.0	5.50	314.70	1,128.3	14.1	-3.0	-1.7	0.90	0.89	1.78	
1,218.0	6.00	315.60	1,216.9	20.4	-9.3	-7.4	0.57	0.56	1.01	
1,307.0	8.20	317.70	1,305.2	28.4	-16.8	-14.1	2.49	2.47	2.36	
1,397.0	8.40	316.70	1,394.2	37.9	-25.7	-22.1	0.27	0.22	-1.11	
1,487.0	9.10	315.10	1,483.2	47.8	-35.2	-30.7	0.82	0.78	-1.78	
1,577.0	11.20	316.30	1,571.8	59.1	-46.2	-40.6	2.35	2.33	1.33	
1,666.0	11.30	317.40	1,659.1	71.8	-58.1	-51.3	0.27	0.11	1.24	
1,755.0	12.50	322.10	1,746.2	85.8	-69.9	-61.8	1.73	1.35	5.28	
1,845.0	12.10	320.70	1,834.1	100.8	-81.9	-72.3	0.55	-0.44	-1.56	
1,935.0	11.80	320.20	1,922.1	115.2	-93.8	-82.8	0.35	-0.33	-0.56	
2,025.0	13.60	322.50	2,009.9	130.6	-106.1	-93.7	2.08	2.00	2.56	
2,115.0	13.20	321.60	2,097.5	147.1	-118.9	-104.9	0.50	-0.44	-1.00	
2,204.0	12.80	320.50	2,184.2	162.6	-131.5	-116.0	0.53	-0.45	-1.24	
2,294.0	12.00	318.50	2,272.1	177.3	-144.0	-127.2	1.01	-0.89	-2.22	
2,384.0	11.70	314.90	2,360.2	190.8	-156.7	-138.5	0.89	-0.33	-4.00	
2,473.0	12.60	319.10	2,447.2	204.5	-169.5	-150.0	1.42	1.01	4.72	
2,562.0	12.40	317.70	2,534.1	218.9	-182.2	-161.4	0.41	-0.22	-1.57	
2,652.0	12.90	324.70	2,621.9	234.2	-194.6	-172.2	1.79	0.56	7.78	
2,741.0	13.20	324.00	2,708.6	250.6	-206.3	-182.4	0.38	0.34	-0.79	
2,830.0	12.60	322.80	2,795.4	266.5	-218.1	-192.7	0.74	-0.67	-1.35	
2,920.0	12.50	321.90	2,883.2	282.0	-230.1	-203.2	0.24	-0.11	-1.00	
3,010.0	12.50	321.60	2,971.1	297.3	-242.1	-213.8	0.07	0.00	-0.33	
3,100.0	12.00	322.10	3,059.0	312.3	-253.9	-224.2	0.57	-0.56	0.56	
3,190.0	11.40	322.60	3,147.2	326.8	-265.1	-234.0	0.68	-0.67	0.56	
3,279.0	10.80	321.40	3,234.5	340.3	-275.6	-243.2	0.72	-0.67	-1.35	
3,368.0	11.50	317.00	3,321.8	353.3	-286.9	-253.2	1.24	0.79	-4.94	
3,458.0	11.10	313.20	3,410.1	365.8	-299.3	-264.5	0.94	-0.44	-4.22	
3,548.0	11.80	319.00	3,498.3	378.7	-311.6	-275.6	1.50	0.78	6.44	
3,638.0	11.80	326.70	3,586.4	393.3	-322.7	-285.3	1.75	0.00	8.56	
3,727.0	12.00	328.00	3,673.5	408.7	-332.6	-293.7	0.38	0.22	1.46	
3,817.0	13.20	326.70	3,761.3	425.3	-343.2	-302.8	1.37	1.33	-1.44	
3,907.0	12.60	326.60	3,849.0	442.1	-354.3	-312.2	0.67	-0.67	-0.11	
3,997.0	12.40	327.60	3,936.9	458.4	-364.9	-321.3	0.33	-0.22	1.11	
4,087.0	11.70	327.30	4,024.9	474.2	-375.0	-329.9	0.78	-0.78	-0.33	
4,177.0	13.40	324.00	4,112.8	490.4	-386.0	-339.4	2.05	1.89	-3.67	
4,267.0	12.90	322.80	4,200.4	506.8	-398.2	-350.1	0.63	-0.56	-1.33	
4,357.0	12.20	320.90	4,288.3	522.2	-410.3	-360.7	0.90	-0.78	-2.11	
4,447.0	12.00	318.80	4,376.3	536.6	-422.5	-371.4	0.54	-0.22	-2.33	
4,537.0	11.40	317.20	4,464.4	550.2	-434.7	-382.4	0.76	-0.67	-1.78	
4,627.0	11.70	322.50	4,552.6	563.9	-446.3	-392.6	1.22	0.33	5.89	
4,718.0	12.20	321.90	4,641.6	578.8	-457.8	-402.8	0.57	0.55	-0.66	
4,808.0	11.40	320.40	4,729.7	593.2	-469.4	-413.0	0.95	-0.89	-1.67	

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Site:	Elbert 1-12 Pad Sec.21-T5N-R65W	MD Reference:	WELL @ 4661.0ft (Original Well Elev)
Well:	Elbert 4N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	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)	
4,898.0	13.30	320.50	4,817.6	608.0	-481.6	-423.8	2.11	2.11	0.11	
4,988.0	12.80	320.20	4,905.3	623.7	-494.6	-435.3	0.56	-0.56	-0.33	
5,078.0	12.50	319.30	4,993.1	638.7	-507.3	-446.6	0.40	-0.33	-1.00	
5,168.0	12.00	317.90	5,081.0	653.0	-519.9	-457.8	0.65	-0.56	-1.56	
5,258.0	12.40	320.50	5,169.0	667.4	-532.4	-468.9	0.76	0.44	2.89	
5,349.0	11.40	318.90	5,258.1	681.7	-544.5	-479.6	1.16	-1.10	-1.76	
5,438.0	12.50	322.80	5,345.1	696.0	-556.1	-489.9	1.53	1.24	4.38	
5,527.0	11.00	321.80	5,432.3	710.4	-567.2	-499.6	1.70	-1.69	-1.12	
5,617.0	12.10	326.70	5,520.4	725.0	-577.7	-508.7	1.64	1.22	5.44	
5,706.0	10.70	325.10	5,607.7	739.6	-587.5	-517.2	1.61	-1.57	-1.80	
5,796.0	12.40	327.20	5,695.9	754.6	-597.5	-525.8	1.95	1.89	2.33	
5,886.0	11.50	326.20	5,783.9	770.1	-607.7	-534.5	1.03	-1.00	-1.11	
5,976.0	12.80	328.30	5,871.9	786.1	-618.0	-543.2	1.53	1.44	2.33	
6,066.0	11.60	327.20	5,959.9	802.2	-628.1	-551.9	1.36	-1.33	-1.22	
6,156.0	10.60	326.00	6,048.2	816.6	-637.6	-560.0	1.14	-1.11	-1.33	
6,246.0	9.40	353.20	6,136.8	830.8	-643.1	-564.2	5.36	-1.33	30.22	
6,336.0	13.10	35.80	6,225.2	846.4	-638.0	-557.7	9.81	4.11	47.33	
6,425.0	17.70	55.80	6,311.1	862.2	-620.9	-539.2	7.82	5.17	22.47	
6,514.0	23.20	66.00	6,394.5	877.0	-593.7	-510.7	7.34	6.18	11.46	
6,604.0	29.30	73.00	6,475.2	890.6	-556.4	-472.3	7.59	6.78	7.78	
6,694.0	36.20	77.60	6,550.8	902.8	-509.3	-424.3	8.15	7.67	5.11	
6,783.0	43.40	82.20	6,619.2	912.6	-453.3	-367.6	8.74	8.09	5.17	
6,873.0	48.80	84.50	6,681.6	920.0	-388.9	-302.8	6.28	6.00	2.56	
6,963.0	54.30	85.30	6,737.5	926.3	-318.7	-232.4	6.15	6.11	0.89	
7,044.7	60.75	85.67	6,781.4	931.7	-250.0	-163.5	7.90	7.89	0.45	
Crosses 460' Setback - 2184'FNL & 460'FWL, SEC.21										
7,053.0	61.40	85.70	6,785.4	932.3	-242.8	-156.2	7.90	7.89	0.41	
7,143.0	71.30	86.70	6,821.4	937.7	-160.6	-73.9	11.05	11.00	1.11	
7,233.0	77.80	87.80	6,845.4	941.8	-74.0	12.7	7.32	7.22	1.22	
7,323.0	81.40	88.00	6,861.6	945.1	14.4	101.1	4.01	4.00	0.22	
7,413.0	87.00	89.90	6,870.7	946.7	103.9	190.3	6.57	6.22	2.11	
7,503.0	90.10	90.70	6,873.0	946.2	193.9	279.9	3.56	3.44	0.89	
Deepest TVD Drilled - 6873.01' TVD										
7,593.0	90.20	90.60	6,872.8	945.2	283.9	369.4	0.16	0.11	-0.11	
7,683.0	90.20	90.60	6,872.5	944.3	373.9	458.9	0.00	0.00	0.00	
7,772.0	90.60	90.70	6,871.8	943.3	462.8	547.4	0.46	0.45	0.11	
7,862.0	90.50	88.90	6,871.0	943.6	552.8	637.1	2.00	-0.11	-2.00	
7,951.0	90.20	88.70	6,870.4	945.4	641.8	725.9	0.41	-0.34	-0.22	
8,041.0	90.30	88.00	6,870.0	948.0	731.8	815.7	0.79	0.11	-0.78	
8,131.0	90.60	87.60	6,869.3	951.5	821.7	905.5	0.56	0.33	-0.44	
8,246.0	90.00	88.80	6,868.7	955.1	936.6	1,020.3	1.17	-0.52	1.04	
8,336.0	90.10	90.60	6,868.7	955.6	1,026.6	1,110.0	2.00	0.11	2.00	
8,426.0	89.80	90.80	6,868.7	954.5	1,116.6	1,199.5	0.40	-0.33	0.22	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	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)	
8,515.0	89.50	90.30	6,869.3	953.6	1,205.6	1,288.0	0.66	-0.34	-0.56	
8,605.0	89.80	91.00	6,869.8	952.6	1,295.6	1,377.6	0.85	0.33	0.78	
8,695.0	90.70	90.30	6,869.4	951.6	1,385.6	1,467.1	1.27	1.00	-0.78	
8,785.0	90.00	89.00	6,868.9	952.1	1,475.6	1,556.7	1.64	-0.78	-1.44	
8,875.0	91.40	90.30	6,867.8	952.7	1,565.6	1,646.4	2.12	1.56	1.44	
8,965.0	91.30	90.80	6,865.7	951.8	1,655.6	1,735.9	0.57	-0.11	0.56	
9,054.0	91.30	90.40	6,863.6	950.9	1,744.5	1,824.4	0.45	0.00	-0.45	
9,144.0	91.40	89.90	6,861.5	950.6	1,834.5	1,914.0	0.57	0.11	-0.56	
9,233.0	91.50	89.40	6,859.3	951.2	1,923.5	2,002.6	0.57	0.11	-0.56	
9,323.0	90.60	91.80	6,857.6	950.2	2,013.4	2,092.1	2.85	-1.00	2.67	
9,414.0	90.10	91.70	6,857.1	947.5	2,104.4	2,182.5	0.56	-0.55	-0.11	
9,503.0	90.30	91.50	6,856.8	945.0	2,193.4	2,270.8	0.32	0.22	-0.22	
9,593.0	90.30	91.30	6,856.3	942.8	2,283.3	2,360.2	0.22	0.00	-0.22	
9,684.0	90.30	91.10	6,855.8	940.9	2,374.3	2,450.6	0.22	0.00	-0.22	
9,774.0	90.30	91.00	6,855.3	939.2	2,464.3	2,540.1	0.11	0.00	-0.11	
9,864.0	90.10	90.90	6,855.0	937.7	2,554.3	2,629.6	0.25	-0.22	-0.11	
9,954.0	90.00	90.80	6,854.9	936.4	2,644.3	2,719.0	0.16	-0.11	-0.11	
10,044.0	91.10	91.30	6,854.1	934.7	2,734.3	2,808.5	1.34	1.22	0.56	
10,133.0	91.00	91.10	6,852.4	932.9	2,823.2	2,896.9	0.25	-0.11	-0.22	
10,223.0	91.00	91.30	6,850.9	931.0	2,913.2	2,986.3	0.22	0.00	0.22	
10,313.0	90.90	91.50	6,849.4	928.8	3,003.2	3,075.7	0.25	-0.11	0.22	
10,403.0	90.90	89.00	6,848.0	928.4	3,093.1	3,165.3	2.78	0.00	-2.78	
10,493.0	91.20	89.20	6,846.3	929.8	3,183.1	3,255.0	0.40	0.33	0.22	
10,583.0	91.50	88.70	6,844.2	931.5	3,273.1	3,344.7	0.65	0.33	-0.56	
10,673.0	90.10	90.10	6,842.9	932.4	3,363.0	3,434.4	2.20	-1.56	1.56	
10,763.0	90.00	89.60	6,842.9	932.6	3,453.0	3,524.1	0.57	-0.11	-0.56	
10,853.0	90.00	89.60	6,842.9	933.3	3,543.0	3,613.7	0.00	0.00	0.00	
10,943.0	90.00	88.20	6,842.9	935.0	3,633.0	3,703.5	1.56	0.00	-1.56	
11,034.0	90.70	88.90	6,842.3	937.3	3,724.0	3,794.3	1.09	0.77	0.77	
11,123.0	90.90	88.90	6,841.1	939.0	3,813.0	3,883.0	0.22	0.22	0.00	
11,213.0	90.90	90.10	6,839.7	939.8	3,903.0	3,972.7	1.33	0.00	1.33	
11,304.0	91.00	89.60	6,838.1	940.0	3,993.9	4,063.3	0.56	0.11	-0.55	
11,394.0	90.80	92.20	6,836.7	938.6	4,083.9	4,152.8	2.90	-0.22	2.89	
11,483.0	90.70	92.10	6,835.6	935.3	4,172.8	4,241.1	0.16	-0.11	-0.11	
11,573.0	90.90	91.80	6,834.3	932.2	4,262.8	4,330.3	0.40	0.22	-0.33	
11,663.0	90.70	92.00	6,833.1	929.2	4,352.7	4,419.6	0.31	-0.22	0.22	
11,753.0	91.00	91.60	6,831.7	926.4	4,442.7	4,508.9	0.56	0.33	-0.44	
11,843.0	90.00	91.10	6,830.9	924.3	4,532.6	4,598.3	1.24	-1.11	-0.56	
11,933.0	90.10	90.90	6,830.9	922.7	4,622.6	4,687.8	0.25	0.11	-0.22	
12,023.0	90.40	90.60	6,830.5	921.5	4,712.6	4,777.3	0.47	0.33	-0.33	
12,113.0	90.80	90.60	6,829.5	920.6	4,802.6	4,866.8	0.44	0.44	0.00	
12,202.0	89.30	91.80	6,829.4	918.7	4,891.6	4,955.2	2.16	-1.69	1.35	
12,292.0	89.60	91.10	6,830.3	916.5	4,981.5	5,044.6	0.85	0.33	-0.78	
12,382.0	89.70	90.90	6,830.9	914.9	5,071.5	5,134.1	0.25	0.11	-0.22	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Elbert 4N
Project:	SEC.21-T5N-R65W	TVD Reference:	WELL @ 4661.0ft (Original Well Elev)
Site:	Elbert 1-12 Pad Sec.21-T5N-R65W	MD Reference:	WELL @ 4661.0ft (Original Well Elev)
Well:	Elbert 4N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	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)	
12,472.0	89.70	90.70	6,831.3	913.6	5,161.5	5,223.6	0.22	0.00	-0.22	
12,562.0	90.30	89.20	6,831.3	913.7	5,251.5	5,313.2	1.80	0.67	-1.67	
12,652.0	90.30	89.10	6,830.9	915.0	5,341.5	5,402.9	0.11	0.00	-0.11	
12,741.0	90.40	88.90	6,830.3	916.6	5,430.5	5,491.7	0.25	0.11	-0.22	
12,831.0	90.60	88.40	6,829.5	918.7	5,520.5	5,581.5	0.60	0.22	-0.56	
12,921.0	91.50	88.90	6,827.9	920.8	5,610.4	5,671.2	1.14	1.00	0.56	
13,011.0	91.80	89.40	6,825.3	922.2	5,700.4	5,760.9	0.65	0.33	0.56	
13,100.0	90.50	90.30	6,823.5	922.4	5,789.4	5,849.6	1.78	-1.46	1.01	
13,190.0	90.90	89.90	6,822.4	922.3	5,879.3	5,939.2	0.63	0.44	-0.44	
13,280.0	89.80	90.90	6,821.8	921.6	5,969.3	6,028.7	1.65	-1.22	1.11	
13,370.0	89.90	90.70	6,822.1	920.4	6,059.3	6,118.2	0.25	0.11	-0.22	
13,460.0	90.10	90.60	6,822.1	919.3	6,149.3	6,207.7	0.25	0.22	-0.11	
13,550.0	90.40	90.20	6,821.7	918.7	6,239.3	6,297.3	0.56	0.33	-0.44	
13,640.0	91.00	90.20	6,820.6	918.4	6,329.3	6,386.9	0.67	0.67	0.00	
13,730.0	89.80	90.90	6,820.0	917.5	6,419.3	6,476.4	1.54	-1.33	0.78	
13,820.0	90.40	89.90	6,819.8	916.9	6,509.3	6,566.0	1.30	0.67	-1.11	
13,910.0	91.00	89.00	6,818.7	917.8	6,599.3	6,655.7	1.20	0.67	-1.00	
14,000.0	91.20	89.40	6,817.0	919.0	6,689.3	6,745.4	0.50	0.22	0.44	
14,090.0	89.80	90.40	6,816.2	919.2	6,779.3	6,835.0	1.91	-1.56	1.11	
14,180.0	90.00	90.60	6,816.4	918.4	6,869.3	6,924.5	0.31	0.22	0.22	
14,270.0	90.30	90.40	6,816.1	917.6	6,959.2	7,014.1	0.40	0.33	-0.22	
14,360.0	90.60	90.20	6,815.4	917.1	7,049.2	7,103.7	0.40	0.33	-0.22	
14,450.0	91.20	90.10	6,814.0	916.9	7,139.2	7,193.2	0.68	0.67	-0.11	
14,540.0	91.60	89.90	6,811.8	916.9	7,229.2	7,282.8	0.50	0.44	-0.22	
14,630.0	89.70	90.30	6,810.8	916.8	7,319.2	7,372.4	2.16	-2.11	0.44	
14,720.0	89.90	90.20	6,811.1	916.4	7,409.2	7,462.0	0.25	0.22	-0.11	
14,809.0	90.40	90.40	6,810.9	915.9	7,498.2	7,550.6	0.61	0.56	0.22	
14,899.0	91.00	90.20	6,809.8	915.4	7,588.2	7,640.2	0.70	0.67	-0.22	
14,989.0	91.50	90.10	6,807.8	915.2	7,678.2	7,729.7	0.57	0.56	-0.11	
15,079.0	90.20	89.90	6,806.5	915.2	7,768.1	7,819.4	1.46	-1.44	-0.22	
15,168.0	90.50	89.20	6,805.9	915.9	7,857.1	7,908.0	0.86	0.34	-0.79	
15,257.0	90.80	88.90	6,804.9	917.4	7,946.1	7,996.8	0.48	0.34	-0.34	
15,347.0	91.10	88.70	6,803.4	919.2	8,036.1	8,086.5	0.40	0.33	-0.22	
15,437.0	89.90	88.40	6,802.6	921.5	8,126.1	8,176.3	1.37	-1.33	-0.33	
15,527.0	90.10	88.00	6,802.6	924.4	8,216.0	8,266.2	0.50	0.22	-0.44	
15,617.0	90.10	89.40	6,802.5	926.4	8,306.0	8,356.0	1.56	0.00	1.56	
15,706.0	90.20	88.90	6,802.2	927.7	8,395.0	8,444.7	0.57	0.11	-0.56	
15,796.0	89.80	89.90	6,802.2	928.7	8,485.0	8,534.4	1.20	-0.44	1.11	
15,886.0	90.00	89.60	6,802.4	929.1	8,575.0	8,624.0	0.40	0.22	-0.33	
15,975.0	90.70	89.60	6,801.8	929.7	8,664.0	8,712.7	0.79	0.79	0.00	
16,065.0	91.60	89.60	6,800.0	930.3	8,753.9	8,802.4	1.00	1.00	0.00	
16,155.0	91.00	90.80	6,798.0	930.0	8,843.9	8,891.9	1.49	-0.67	1.33	
16,245.0	91.10	91.00	6,796.4	928.6	8,933.9	8,981.4	0.25	0.11	0.22	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Elbert 4N
Project:	SEC.21-T5N-R65W	TVD Reference:	WELL @ 4661.0ft (Original Well Elev)
Site:	Elbert 1-12 Pad Sec.21-T5N-R65W	MD Reference:	WELL @ 4661.0ft (Original Well Elev)
Well:	Elbert 4N	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	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)
16,335.0	89.70	91.80	6,795.7	926.4	9,023.9	9,070.8	1.79	-1.56	0.89
16,425.0	90.30	91.50	6,795.7	923.8	9,113.8	9,160.1	0.75	0.67	-0.33
16,515.0	91.00	91.50	6,794.7	921.4	9,203.8	9,249.5	0.78	0.78	0.00
16,605.0	89.10	91.50	6,794.6	919.1	9,293.8	9,338.9	2.11	-2.11	0.00
16,695.0	89.70	91.50	6,795.6	916.7	9,383.7	9,428.2	0.67	0.67	0.00
16,785.0	90.50	91.30	6,795.4	914.5	9,473.7	9,517.6	0.92	0.89	-0.22
16,875.0	91.10	91.50	6,794.2	912.3	9,563.7	9,607.0	0.70	0.67	0.22
16,966.0	91.30	91.10	6,792.2	910.3	9,654.6	9,697.4	0.49	0.22	-0.44
17,056.0	92.10	90.70	6,789.6	908.8	9,744.6	9,786.8	0.99	0.89	-0.44
17,103.0	92.40	90.70	6,787.7	908.3	9,791.5	9,833.6	0.64	0.64	0.00
17,161.0	92.40	90.70	6,785.3	907.6	9,849.5	9,891.2	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 2164'FSL, 710'FWL - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,383,559.65	3,229,751.77	40.383340	-104.675260
BHL 2200'FNL, 0'FEL, S - survey misses target center by 13.4ft at 17161.0ft MD (6785.3 TVD, 907.6 N, 9849.5 E) - Point	0.00	0.00	6,790.0	920.0	9,850.6	1,384,571.22	3,239,592.97	40.385860	-104.639900

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
7,044.7	6,781.4	931.7	-250.0	Crosses 460' Setback - 2184'FNL & 460'FWL, SEC.21
7,503.0	6,873.0	946.2	193.9	Deepest TVD Drilled - 6873.01' TVD

Checked By: _____ Approved By: _____ Date: _____