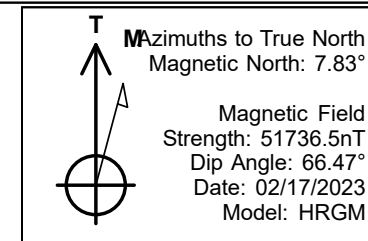


# PDC Energy Inc. DJ Basin



Steamboat 14N  
 Steamboat 4N66W34 1-16 Pad  
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone  
 Ground Elevation: 4805.0  
 +N/-S +E/-W Northing Easting Longitude Slot  
 0.0 0.0 1340316.83 3205790.63 40.265220 -104.762580  
 Patterson 272 RKB - 28.5'Well @ 4833.5ft (Patterson 272 RKB - 28.5')

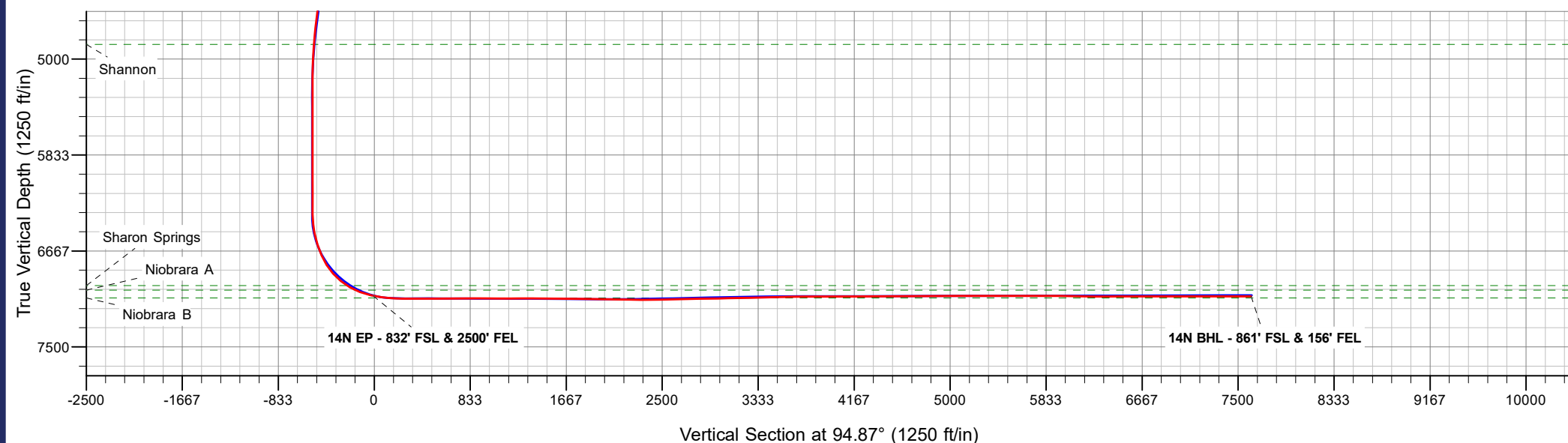
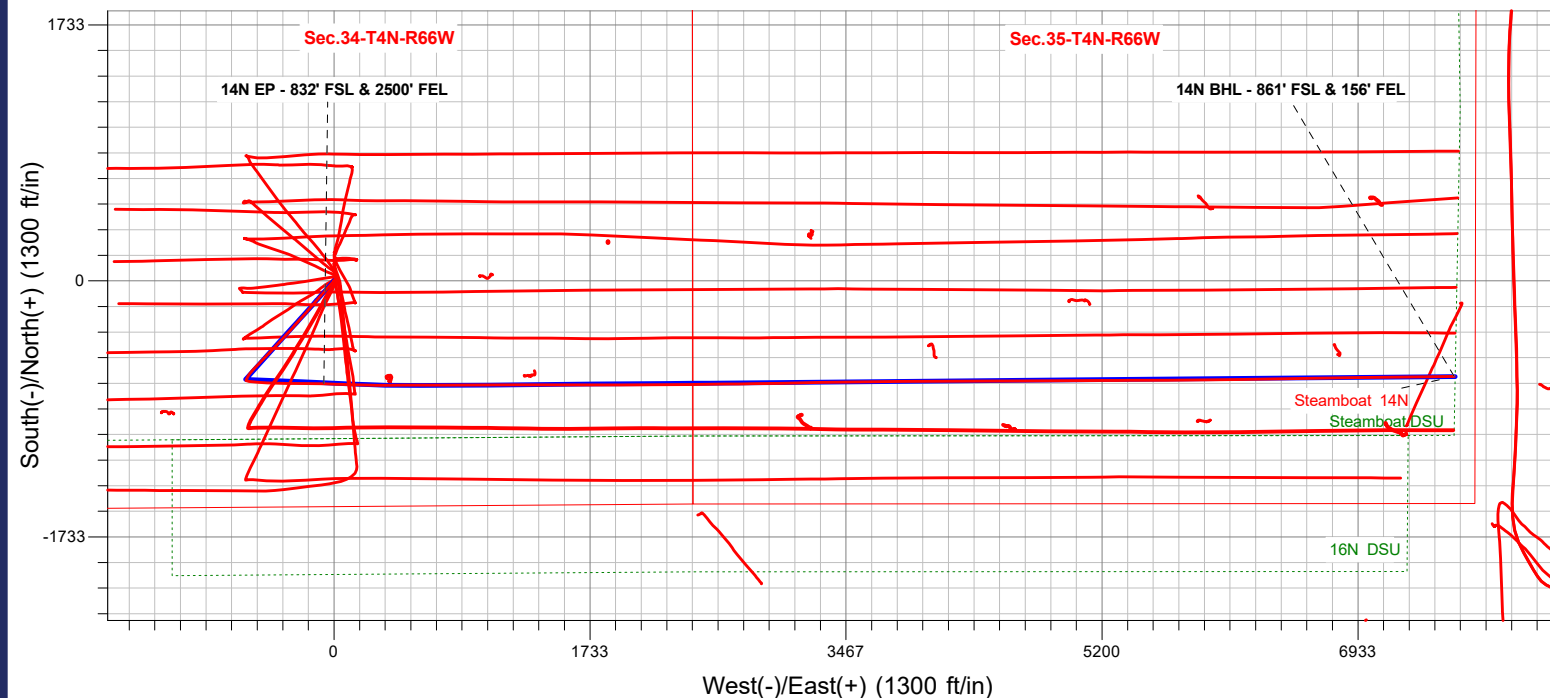
Steamboat 4N66W34 1-16 Pad  
 Steamboat 14N  
 Steamboat 14N Final Surveys  
 14:02, March 03 2023



**ANNOTATIONS**

MD	TVD	Annotation
7401.7	7055.2	14N EP - 832' FSL & 2500' FEL
15058.0	7060.8	14N BHL - 861' FSL & 156' FEL

**FINAL SURVEY**  
**Projected Bottom Hole Location**  
**15058' MD / 7060.8' TVD**  
**89.77° INC / 89.30° AZM**  
**861' FSL / 156' FEL**





# **PDC Energy Inc. DJ Basin**

**SEC.34-T4N-R66W**

**Steamboat 4N66W34 1-16 Pad**

**Steamboat 14N**

**Steamboat 14N Wellbore #1**

**Design: Steamboat 14N Final Surveys**

## **Standard Survey Report**

**03 March, 2023**

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Steamboat 14N
<b>Project:</b>	SEC.34-T4N-R66W	<b>TVD Reference:</b>	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
<b>Site:</b>	Steamboat 4N66W34 1-16 Pad	<b>MD Reference:</b>	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
<b>Well:</b>	Steamboat 14N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Steamboat 14N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Steamboat 14N Final Surveys	<b>Database:</b>	US_EDM

<b>Project</b>	SEC.34-T4N-R66W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Steamboat 4N66W34 1-16 Pad				
<b>Site Position:</b>		<b>Northing:</b>	1,340,466.93 usft	<b>Latitude:</b>	40.265632
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,205,789.66 usft	<b>Longitude:</b>	-104.762559
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.48 °

<b>Well</b>	Steamboat 14N					
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,340,316.83 usft	<b>Latitude:</b>	40.265220
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	3,205,790.63 usft	<b>Longitude:</b>	-104.762580
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	4,805.0 ft

<b>Wellbore</b>	Steamboat 14N 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>
	HRGM	02/17/2023	7.83	66.47	51,736.51071114

<b>Design</b>	Steamboat 14N Final Surveys				
<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	94.87	

<b>Survey Program</b>	<b>Date</b>	03/03/2023			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
161.5	15,058.0	Survey #1 (Steamboat 14N 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	
161.5	1.32	158.68	161.5	-1.7	0.7	0.8	0.82	0.82	0.00	
253.5	0.35	30.89	253.5	-2.5	1.2	1.4	1.69	-1.05	-138.90	
344.5	0.79	24.91	344.5	-1.7	1.6	1.7	0.49	0.48	-6.57	
461.5	1.06	10.50	461.5	0.1	2.1	2.1	0.30	0.23	-12.32	
548.5	1.06	228.99	548.5	0.4	1.7	1.7	2.30	0.00	-162.66	
633.5	2.81	229.34	633.4	-1.5	-0.5	-0.4	2.06	2.06	0.41	
720.5	4.66	225.15	720.2	-5.4	-4.6	-4.1	2.15	2.13	-4.82	
810.5	7.12	224.25	809.7	-11.9	-11.1	-10.0	2.74	2.73	-1.00	
873.9	8.45	221.97	872.5	-18.2	-16.9	-15.3	2.15	2.10	-3.60	
<b>Fox Hills Aq Base</b>										

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Steamboat 14N
<b>Project:</b>	SEC.34-T4N-R66W	<b>TVD Reference:</b>	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
<b>Site:</b>	Steamboat 4N66W34 1-16 Pad	<b>MD Reference:</b>	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
<b>Well:</b>	Steamboat 14N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Steamboat 14N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Steamboat 14N Final Surveys	<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)
898.5	8.97	221.26	896.9	-21.0	-19.4	-17.6	2.15	2.11	-2.87
988.5	10.64	222.14	985.5	-32.4	-29.6	-26.8	1.86	1.86	0.98
1,076.5	10.82	222.14	1,072.0	-44.6	-40.6	-36.7	0.20	0.20	0.00
1,165.5	11.43	221.43	1,159.3	-57.4	-52.1	-47.0	0.70	0.69	-0.80
1,254.5	11.34	220.38	1,246.6	-70.7	-63.6	-57.3	0.25	-0.10	-1.18
1,342.5	11.61	220.38	1,332.8	-84.0	-74.9	-67.5	0.31	0.31	0.00
1,431.5	12.40	223.19	1,419.9	-97.8	-87.2	-78.6	1.10	0.89	3.16
1,519.5	12.57	221.96	1,505.8	-111.8	-100.1	-90.3	0.36	0.19	-1.40
1,606.5	12.13	222.31	1,590.8	-125.6	-112.6	-101.5	0.51	-0.51	0.40
1,643.5	11.87	220.38	1,627.0	-131.4	-117.7	-106.1	1.29	-0.70	-5.22
1,785.0	11.53	220.14	1,765.5	-153.3	-136.2	-122.7	0.24	-0.24	-0.17
1,880.0	10.94	219.36	1,858.7	-167.5	-148.1	-133.3	0.64	-0.62	-0.82
1,975.0	10.21	218.40	1,952.1	-181.1	-159.0	-143.1	0.79	-0.77	-1.01
2,070.0	9.81	220.39	2,045.7	-193.8	-169.5	-152.4	0.56	-0.42	2.09
2,164.0	12.06	221.99	2,137.9	-207.2	-181.2	-163.0	2.42	2.39	1.70
2,259.0	13.21	224.88	2,230.6	-222.3	-195.5	-176.0	1.38	1.21	3.04
2,354.0	12.83	220.78	2,323.2	-238.0	-210.1	-189.1	1.05	-0.40	-4.32
2,448.0	13.25	222.15	2,414.8	-253.9	-224.1	-201.8	0.55	0.45	1.46
2,543.0	12.80	220.57	2,507.3	-269.9	-238.3	-214.5	0.60	-0.47	-1.66
2,638.0	13.19	220.56	2,599.9	-286.2	-252.2	-227.0	0.41	0.41	-0.01
2,733.0	12.92	220.86	2,692.4	-302.4	-266.2	-239.5	0.29	-0.28	0.32
2,828.0	13.14	221.91	2,785.0	-318.5	-280.3	-252.3	0.34	0.23	1.11
2,922.0	12.96	224.66	2,876.6	-334.0	-294.9	-265.5	0.69	-0.19	2.93
3,017.0	12.98	222.02	2,969.1	-349.5	-309.5	-278.7	0.62	0.02	-2.78
3,112.0	12.99	222.12	3,061.7	-365.3	-323.8	-291.6	0.03	0.01	0.11
3,206.0	12.03	221.25	3,153.5	-380.5	-337.4	-303.8	1.04	-1.02	-0.93
3,301.0	12.39	224.05	3,246.3	-395.3	-351.0	-316.1	0.73	0.38	2.95
3,396.0	11.91	222.44	3,339.2	-409.8	-364.7	-328.6	0.62	-0.51	-1.69
3,491.0	12.26	224.38	3,432.1	-424.3	-378.3	-340.9	0.56	0.37	2.04
3,586.0	11.95	224.70	3,525.0	-438.5	-392.3	-353.7	0.33	-0.33	0.34
3,680.0	12.05	223.33	3,616.9	-452.5	-405.9	-366.0	0.32	0.11	-1.46
3,775.0	12.32	225.00	3,709.8	-466.9	-419.9	-378.7	0.47	0.28	1.76
3,843.3	12.37	224.50	3,776.5	-477.3	-430.1	-388.1	0.17	0.07	-0.74
<b>Parkman</b>									
3,870.0	12.39	224.30	3,802.6	-481.4	-434.2	-391.7	0.17	0.07	-0.73
3,964.0	11.18	218.03	3,894.6	-495.8	-446.8	-403.1	1.87	-1.29	-6.67
4,059.0	12.10	221.04	3,987.7	-510.5	-459.0	-414.0	1.16	0.97	3.17
4,154.0	12.26	225.58	4,080.5	-525.1	-472.8	-426.5	1.02	0.17	4.78
4,248.0	12.19	225.15	4,172.4	-539.1	-486.9	-439.4	0.12	-0.07	-0.46
4,288.0	11.66	224.32	4,211.5	-545.0	-492.7	-444.7	1.39	-1.32	-2.07
<b>Sussex</b>									
4,343.0	10.94	223.06	4,265.5	-552.8	-500.2	-451.4	1.39	-1.31	-2.30
4,438.0	11.02	223.92	4,358.7	-565.9	-512.7	-462.7	0.19	0.08	0.91

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Steamboat 14N
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<b>Site:</b>	Steamboat 4N66W34 1-16 Pad	<b>MD Reference:</b>	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
<b>Well:</b>	Steamboat 14N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Steamboat 14N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Steamboat 14N Final Surveys	<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)
4,532.0	12.25	225.81	4,450.8	-579.3	-526.0	-474.9	1.37	1.31	2.01
4,627.0	11.74	224.70	4,543.7	-593.2	-540.1	-487.7	0.59	-0.54	-1.17
4,722.0	11.80	221.88	4,636.7	-607.3	-553.3	-499.8	0.61	0.06	-2.97
4,816.0	11.50	218.51	4,728.8	-621.8	-565.6	-510.7	0.79	-0.32	-3.59
4,910.0	9.65	212.31	4,821.2	-635.8	-575.6	-519.6	2.31	-1.97	-6.60
4,961.0	9.19	211.26	4,871.5	-642.9	-580.0	-523.3	0.96	-0.90	-2.06
<b>Shannon</b>									
5,005.0	8.80	210.27	4,915.0	-648.8	-583.6	-526.3	0.96	-0.89	-2.25
5,100.0	7.87	206.68	5,009.0	-660.9	-590.1	-531.9	1.12	-0.98	-3.78
5,194.0	4.06	193.23	5,102.4	-669.9	-593.8	-534.8	4.29	-4.05	-14.31
5,290.0	1.25	183.54	5,198.3	-674.2	-594.6	-535.2	2.95	-2.93	-10.09
5,385.0	0.07	268.78	5,293.3	-675.3	-594.8	-535.3	1.31	-1.24	89.73
5,479.0	0.12	135.13	5,387.3	-675.3	-594.7	-535.2	0.19	0.05	-142.18
5,574.0	0.02	282.16	5,482.3	-675.4	-594.7	-535.2	0.14	-0.11	154.77
5,669.0	0.09	218.77	5,577.3	-675.4	-594.8	-535.2	0.09	0.07	-66.73
5,764.0	0.13	157.73	5,672.3	-675.6	-594.8	-535.2	0.12	0.04	-64.25
5,858.0	0.10	332.45	5,766.3	-675.6	-594.8	-535.2	0.24	-0.03	185.87
5,953.0	0.12	111.93	5,861.3	-675.6	-594.7	-535.2	0.22	0.02	146.82
6,048.0	0.04	210.51	5,956.3	-675.7	-594.6	-535.1	0.14	-0.08	103.77
6,142.0	0.01	45.79	6,050.3	-675.7	-594.6	-535.1	0.05	-0.03	-175.23
6,237.0	0.03	339.21	6,145.3	-675.7	-594.6	-535.1	0.03	0.02	-70.08
6,332.0	0.06	286.03	6,240.3	-675.6	-594.7	-535.2	0.05	0.03	-55.98
6,426.0	0.11	281.04	6,334.3	-675.6	-594.8	-535.3	0.05	0.05	-5.31
6,521.0	5.85	107.50	6,429.1	-677.0	-590.3	-530.7	6.27	6.04	-182.67
6,616.0	12.42	99.75	6,522.9	-680.2	-575.6	-515.7	7.02	6.92	-8.16
6,711.0	17.08	96.75	6,614.7	-683.6	-551.7	-491.6	4.97	4.91	-3.16
6,806.0	23.94	94.09	6,703.7	-686.6	-518.5	-458.4	7.29	7.22	-2.80
6,901.0	32.00	91.39	6,787.5	-688.6	-474.1	-413.9	8.59	8.48	-2.84
6,995.0	41.51	93.28	6,862.7	-691.0	-418.0	-357.8	10.19	10.12	2.01
7,090.0	50.75	92.84	6,928.5	-694.6	-349.6	-289.4	9.73	9.73	-0.46
7,154.8	57.37	90.07	6,966.5	-695.9	-297.3	-237.1	10.79	10.21	-4.28
<b>Sharon Springs</b>									
7,184.0	60.37	88.95	6,981.6	-695.7	-272.2	-212.2	10.79	10.28	-3.82
7,238.6	65.36	89.54	7,006.5	-695.0	-223.7	-163.8	9.20	9.15	1.07
<b>Niobrara A</b>									
7,279.0	69.06	89.94	7,022.2	-694.9	-186.4	-126.7	9.20	9.15	1.00
7,374.0	77.50	91.36	7,049.5	-695.9	-95.5	-36.1	9.00	8.88	1.49
7,401.7	78.70	91.68	7,055.2	-696.6	-68.4	-9.0	4.46	4.32	1.16
<b>14N EP - 832' FSL &amp; 2500' FEL</b>									
7,468.0	81.56	92.44	7,066.5	-699.0	-3.2	56.2	4.46	4.32	1.14
7,535.9	84.98	91.62	7,074.5	-701.4	64.2	123.6	5.17	5.03	-1.20
<b>Niobrara B</b>									
7,563.0	86.34	91.30	7,076.5	-702.1	91.2	150.5	5.17	5.03	-1.19
7,657.0	89.24	91.04	7,080.2	-704.0	185.1	244.2	3.10	3.09	-0.28

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Steamboat 14N
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<b>Site:</b>	Steamboat 4N66W34 1-16 Pad	<b>MD Reference:</b>	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
<b>Well:</b>	Steamboat 14N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Steamboat 14N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Steamboat 14N Final Surveys	<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)	
7,752.0	90.22	92.64	7,080.6	-707.0	280.1	339.1	1.97	1.03	1.68	
7,847.0	89.78	87.82	7,080.6	-707.4	375.0	433.8	5.09	-0.46	-5.07	
7,942.0	90.25	89.93	7,080.6	-705.6	470.0	528.2	2.28	0.49	2.22	
8,036.0	90.61	90.12	7,079.9	-705.6	564.0	621.9	0.43	0.38	0.20	
8,225.0	90.57	89.93	7,077.9	-705.7	753.0	810.2	0.10	-0.02	-0.10	
8,320.0	89.50	90.22	7,077.9	-705.8	848.0	904.9	1.17	-1.13	0.31	
8,415.0	89.77	90.16	7,078.5	-706.1	943.0	999.6	0.29	0.28	-0.06	
8,509.0	89.81	89.90	7,078.8	-706.2	1,037.0	1,093.2	0.28	0.04	-0.28	
8,604.0	90.07	88.50	7,078.9	-704.8	1,132.0	1,187.8	1.50	0.27	-1.47	
8,698.0	90.62	89.76	7,078.4	-703.4	1,226.0	1,281.3	1.46	0.59	1.34	
8,793.0	89.34	90.18	7,078.4	-703.4	1,321.0	1,375.9	1.42	-1.35	0.44	
8,888.0	89.65	90.16	7,079.2	-703.6	1,416.0	1,470.6	0.33	0.33	-0.02	
8,983.0	88.97	90.15	7,080.4	-703.9	1,511.0	1,565.3	0.72	-0.72	-0.01	
9,077.0	89.69	90.08	7,081.5	-704.1	1,605.0	1,659.0	0.77	0.77	-0.07	
9,172.0	89.50	90.32	7,082.2	-704.4	1,699.9	1,753.6	0.32	-0.20	0.25	
9,267.0	88.60	89.93	7,083.7	-704.6	1,794.9	1,848.3	1.03	-0.95	-0.41	
9,362.0	89.03	89.92	7,085.7	-704.5	1,889.9	1,942.9	0.45	0.45	-0.01	
9,551.0	89.25	89.68	7,088.5	-703.8	2,078.9	2,131.2	0.17	0.12	-0.13	
9,645.0	89.36	89.85	7,089.7	-703.5	2,172.9	2,224.8	0.22	0.12	0.18	
9,740.0	89.19	89.91	7,090.9	-703.3	2,267.9	2,319.4	0.19	-0.18	0.06	
9,834.0	91.30	89.41	7,090.5	-702.7	2,361.9	2,413.0	2.31	2.24	-0.53	
9,929.0	91.37	88.91	7,088.3	-701.3	2,456.8	2,507.5	0.53	0.07	-0.53	
10,024.0	91.41	89.19	7,086.0	-699.7	2,551.8	2,602.0	0.30	0.04	0.29	
10,119.0	91.21	89.12	7,083.8	-698.3	2,646.8	2,696.5	0.22	-0.21	-0.07	
10,213.0	90.90	89.37	7,082.1	-697.1	2,740.7	2,790.0	0.42	-0.33	0.27	
10,308.0	90.86	89.25	7,080.6	-696.0	2,835.7	2,884.6	0.13	-0.04	-0.13	
10,403.0	91.27	89.18	7,078.8	-694.7	2,930.7	2,979.1	0.44	0.43	-0.07	
10,498.0	91.06	89.20	7,076.9	-693.3	3,025.7	3,073.6	0.22	-0.22	0.02	
10,687.0	91.55	88.57	7,072.6	-689.6	3,214.6	3,261.5	0.42	0.26	-0.33	
10,877.0	91.07	88.82	7,068.2	-685.3	3,404.5	3,450.4	0.28	-0.25	0.13	
11,066.0	91.20	89.17	7,064.5	-682.0	3,593.4	3,638.3	0.20	0.07	0.19	
11,161.0	90.34	89.72	7,063.2	-681.1	3,688.4	3,732.9	1.07	-0.91	0.58	
11,256.0	90.26	90.10	7,062.7	-680.9	3,783.4	3,827.6	0.41	-0.08	0.40	
11,351.0	90.01	89.75	7,062.5	-680.8	3,878.4	3,922.2	0.45	-0.26	-0.37	
11,446.0	90.24	89.70	7,062.3	-680.3	3,973.4	4,016.8	0.25	0.24	-0.05	
11,541.0	90.43	89.64	7,061.7	-679.8	4,068.4	4,111.4	0.21	0.20	-0.06	
11,635.0	90.15	90.11	7,061.3	-679.6	4,162.4	4,205.1	0.58	-0.30	0.50	
11,730.0	90.59	89.85	7,060.7	-679.6	4,257.4	4,299.7	0.54	0.46	-0.27	
11,825.0	89.97	89.89	7,060.2	-679.3	4,352.4	4,394.3	0.65	-0.65	0.04	
11,920.0	90.34	89.36	7,059.9	-678.7	4,447.4	4,489.0	0.68	0.39	-0.56	
12,109.0	90.29	89.83	7,058.9	-677.4	4,636.4	4,677.1	0.25	-0.03	0.25	
12,204.0	90.27	89.17	7,058.4	-676.6	4,731.4	4,771.7	0.70	-0.02	-0.69	
12,394.0	90.14	90.10	7,057.7	-675.3	4,921.4	4,960.9	0.49	-0.07	0.49	
12,489.0	90.60	89.44	7,057.1	-675.0	5,016.3	5,055.6	0.85	0.48	-0.69	

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Steamboat 14N
<b>Project:</b>	SEC.34-T4N-R66W	<b>TVD Reference:</b>	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
<b>Site:</b>	Steamboat 4N66W34 1-16 Pad	<b>MD Reference:</b>	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
<b>Well:</b>	Steamboat 14N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Steamboat 14N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Steamboat 14N Final Surveys	<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)	
12,584.0	90.25	90.02	7,056.4	-674.5	5,111.3	5,150.2	0.71	-0.37	0.61	
12,679.0	89.91	89.69	7,056.3	-674.3	5,206.3	5,244.8	0.50	-0.36	-0.35	
12,774.0	89.40	89.71	7,056.9	-673.8	5,301.3	5,339.4	0.54	-0.54	0.02	
12,868.0	90.03	89.80	7,057.3	-673.4	5,395.3	5,433.0	0.68	0.67	0.10	
12,963.0	90.22	89.55	7,057.1	-672.8	5,490.3	5,527.6	0.33	0.20	-0.26	
13,058.0	90.07	90.09	7,056.9	-672.5	5,585.3	5,622.3	0.59	-0.16	0.57	
13,153.0	89.71	89.98	7,057.1	-672.6	5,680.3	5,716.9	0.40	-0.38	-0.12	
13,249.0	89.87	89.65	7,057.4	-672.3	5,776.3	5,812.6	0.38	0.17	-0.34	
13,343.0	90.10	89.29	7,057.4	-671.4	5,870.3	5,906.1	0.45	0.24	-0.38	
13,438.0	89.36	89.10	7,057.9	-670.1	5,965.3	6,000.7	0.80	-0.78	-0.20	
13,627.0	88.92	89.14	7,060.7	-667.2	6,154.3	6,188.7	0.23	-0.23	0.02	
13,722.0	90.13	88.96	7,061.5	-665.6	6,249.3	6,283.2	1.29	1.27	-0.19	
13,817.0	89.90	89.37	7,061.5	-664.2	6,344.2	6,377.7	0.49	-0.24	0.43	
13,912.0	90.43	88.82	7,061.2	-662.7	6,439.2	6,472.3	0.80	0.56	-0.58	
14,101.0	90.08	89.13	7,060.4	-659.3	6,628.2	6,660.3	0.25	-0.19	0.16	
14,196.0	89.97	89.11	7,060.3	-657.9	6,723.2	6,754.8	0.12	-0.12	-0.02	
14,290.0	89.93	89.29	7,060.4	-656.6	6,817.2	6,848.3	0.20	-0.04	0.19	
14,385.0	89.90	89.47	7,060.6	-655.5	6,912.2	6,942.9	0.19	-0.03	0.19	
14,479.0	90.18	89.14	7,060.5	-654.4	7,006.2	7,036.4	0.46	0.30	-0.35	
14,574.0	89.99	89.21	7,060.4	-653.0	7,101.2	7,131.0	0.21	-0.20	0.07	
14,669.0	89.78	89.42	7,060.5	-651.9	7,196.1	7,225.5	0.31	-0.22	0.22	
14,764.0	90.06	89.04	7,060.7	-650.6	7,291.1	7,320.1	0.50	0.29	-0.40	
14,859.0	90.25	89.18	7,060.4	-649.1	7,386.1	7,414.6	0.25	0.20	0.15	
14,954.0	89.80	89.28	7,060.4	-647.9	7,481.1	7,509.1	0.49	-0.47	0.11	
15,029.0	89.77	89.30	7,060.7	-646.9	7,556.1	7,583.8	0.05	-0.04	0.03	
15,058.0	89.77	89.30	7,060.8	-646.6	7,585.1	7,612.6	0.00	0.00	0.00	
<b>14N BHL - 861' FSL &amp; 156' FEL</b>										

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
873.9	872.5	Fox Hills Aq Base				
3,843.3	3,776.5	Parkman				
4,288.0	4,211.5	Sussex				
4,961.0	4,871.5	Shannon				
7,154.8	6,966.5	Sharon Springs				
7,238.6	7,006.5	Niobrara A				
7,535.9	7,074.5	Niobrara B				

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Steamboat 14N
<b>Project:</b>	SEC.34-T4N-R66W	<b>TVD Reference:</b>	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
<b>Site:</b>	Steamboat 4N66W34 1-16 Pad	<b>MD Reference:</b>	Well @ 4833.5ft (Patterson 272 RKB - 28.5')
<b>Well:</b>	Steamboat 14N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Steamboat 14N Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Steamboat 14N Final Surveys	<b>Database:</b>	US_EDM

**Design Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,401.7	7,055.2	-696.6	-68.4	14N EP - 832' FSL & 2500' FEL
15,058.0	7,060.8	-646.6	7,585.1	14N BHL - 861' FSL & 156' FEL

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