

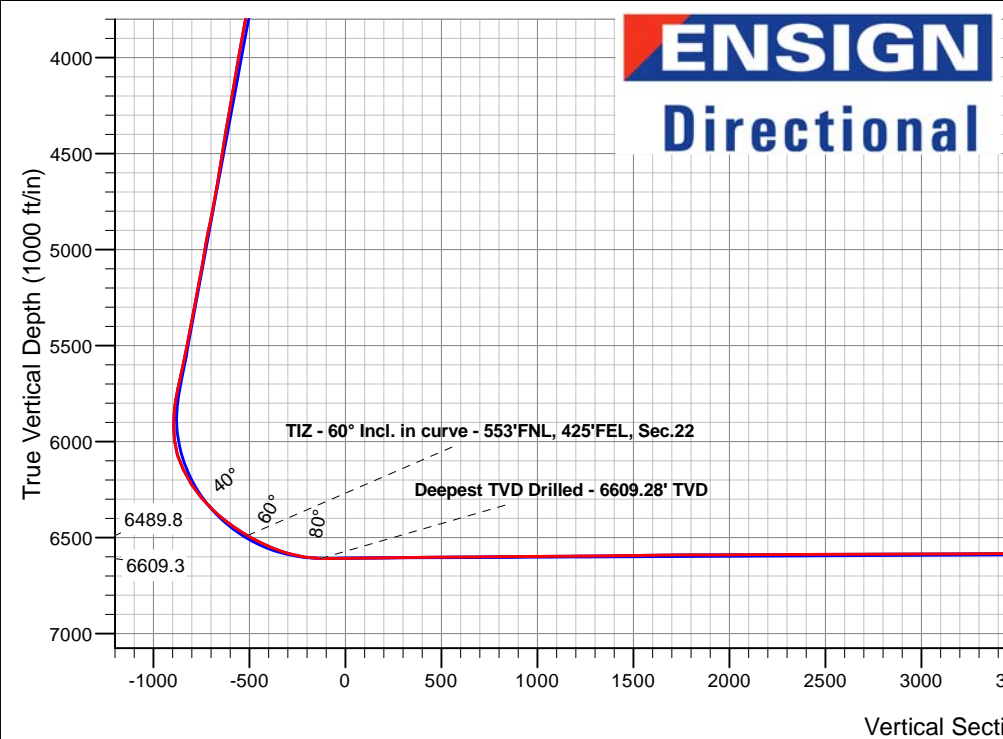
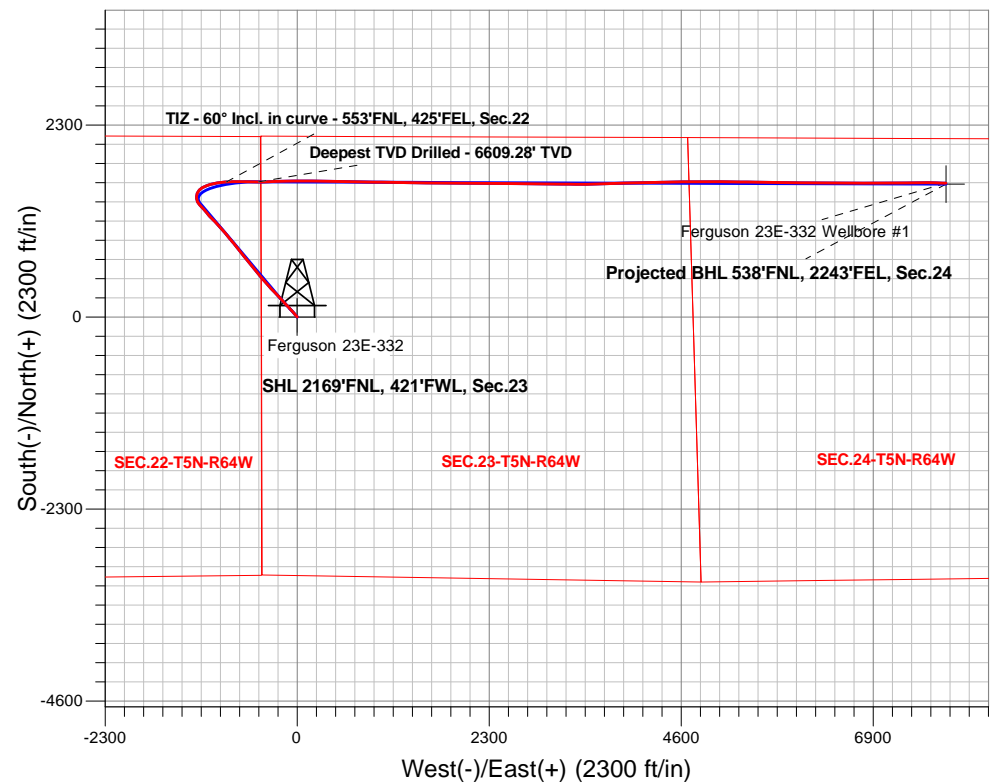
# PDC Energy Inc. DJ Basin

Well Name: **Ferguson 23E-332**

Surface Location: Ferguson 5N64W23F Pad Sec.23-T5N-R64W  
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone  
 Ground Elevation: 4575.0  
 +N/-S+E/-W Northing Easting Longitude Slot  
 0.0 0.0 1384996.03 3271629.52 40.386116 -104.524886  
 Original Well Elev WELL @ 4598.0ft (Original Well Elev)

## FINAL SURVEY

**Projected Bottom Hole Location**  
**15,644'MD 6558'TVD 1604'N & 7771'E of SHL**  
**90.00 degree Incl @ 91.40 degree AZM**



Ferguson 5N64W23F Pad Sec.23-T5N-R64W  
 Ferguson 23E-332  
 Ferguson 23E-332 Wellbore #1  
 13:52, March 02 2020

### ANNOTATIONS

TVD	MD	Annotation
6489.8	6998.0	TIZ - 60° Incl. in curve - 553'FNL, 425'FEL, Sec.22
6609.3	7407.0	Deepest TVD Drilled - 6609.28' TVD

### LEGEND

- Ferguson 23E-332, Ferguson 23E-332 Wellbore #1, Plan #2 (2-25-20) V0
- Ferguson 23E-332 Wellbore #1
- Survey #1



## **PDC Energy Inc. DJ Basin**

**SEC.23-T5N-R64W**

**Ferguson 5N64W23F Pad Sec.23-T5N-R64W**

**Ferguson 23E-332**

**Ferguson 23E-332 Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**02 March, 2020**



<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Ferguson 23E-332
<b>Project:</b>	SEC.23-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Site:</b>	Ferguson 5N64W23F Pad Sec.23-T5N-R64W	<b>MD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Well:</b>	Ferguson 23E-332	<b>North Reference:</b>	True
<b>Wellbore:</b>	Ferguson 23E-332 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Ferguson 23E-332 Wellbore #1	<b>Database:</b>	US_EDM

<b>Project</b>	SEC.23-T5N-R64W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Ferguson 5N64W23F Pad Sec.23-T5N-R64W				
<b>Site Position:</b>		<b>Northing:</b>	1,385,011.05 usft	<b>Latitude:</b>	40.386157
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,271,629.53 usft	<b>Longitude:</b>	-104.524886
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.63 °

<b>Well</b>	Ferguson 23E-332					
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,384,996.03 usft	<b>Latitude:</b>	40.386116
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	3,271,629.52 usft	<b>Longitude:</b>	-104.524886
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	0.0 ft	<b>Ground Level:</b>	4,575.0 ft

<b>Wellbore</b>	Ferguson 23E-332 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>
	HDGM	2/25/2020	7.98	66.85	52,055

<b>Design</b>	Ferguson 23E-332 Wellbore #1				
<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	78.43	

<b>Survey Program</b>	<b>Date</b>	3/2/2020			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
155.0	15,644.0	Survey #1 (Ferguson 23E-332 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	
155.0	0.30	86.80	155.0	0.0	0.4	0.4	0.19	0.19	0.00	
250.0	0.20	106.50	250.0	0.0	0.8	0.8	0.14	-0.11	20.74	
345.0	0.10	262.00	345.0	-0.1	0.9	0.9	0.31	-0.11	163.68	
441.0	1.10	338.70	441.0	0.8	0.5	0.6	1.13	1.04	79.90	
536.0	2.10	337.80	536.0	3.2	-0.5	0.1	1.05	1.05	-0.95	
631.0	3.90	318.80	630.8	7.3	-3.3	-1.8	2.14	1.89	-20.00	
726.0	5.60	316.40	725.5	13.1	-8.6	-5.8	1.80	1.79	-2.53	
821.0	7.20	317.40	819.9	20.8	-15.9	-11.4	1.69	1.68	1.05	
916.0	9.10	318.30	913.9	30.8	-24.9	-18.2	2.00	2.00	0.95	

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Ferguson 23E-332
<b>Project:</b>	SEC.23-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Site:</b>	Ferguson 5N64W23F Pad Sec.23-T5N-R64W	<b>MD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Well:</b>	Ferguson 23E-332	<b>North Reference:</b>	True
<b>Wellbore:</b>	Ferguson 23E-332 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Ferguson 23E-332 Wellbore #1	<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)	
1,011.0	9.60	316.90	1,007.7	42.2	-35.3	-26.1	0.58	0.53	-1.47	
1,106.0	10.90	318.50	1,101.2	54.7	-46.7	-34.7	1.40	1.37	1.68	
1,201.0	12.00	319.00	1,194.3	68.9	-59.1	-44.1	1.16	1.16	0.53	
1,297.0	13.60	319.00	1,287.9	84.9	-73.0	-54.5	1.67	1.67	0.00	
1,392.0	14.80	317.90	1,380.0	102.4	-88.5	-66.2	1.29	1.26	-1.16	
1,487.0	15.70	316.50	1,471.6	120.7	-105.5	-79.1	1.02	0.95	-1.47	
1,581.0	17.20	317.20	1,561.8	140.1	-123.7	-93.1	1.61	1.60	0.74	
1,634.0	18.70	318.30	1,612.2	152.2	-134.7	-101.4	2.90	2.83	2.08	
1,754.0	17.74	315.78	1,726.2	179.7	-160.2	-120.9	1.03	-0.80	-2.10	
1,843.0	19.17	316.25	1,810.6	200.0	-179.8	-136.0	1.62	1.61	0.53	
1,932.0	20.59	317.12	1,894.3	222.0	-200.5	-151.9	1.63	1.60	0.98	
2,022.0	22.08	317.33	1,978.1	246.0	-222.8	-168.9	1.66	1.66	0.23	
2,111.0	21.22	316.26	2,060.8	270.0	-245.2	-186.1	1.06	-0.97	-1.20	
2,201.0	20.18	315.83	2,145.0	292.9	-267.3	-203.1	1.17	-1.16	-0.48	
2,291.0	21.15	317.50	2,229.2	316.0	-289.1	-219.9	1.26	1.08	1.86	
2,381.0	20.81	316.68	2,313.3	339.6	-311.0	-236.6	0.50	-0.38	-0.91	
2,471.0	21.07	319.21	2,397.3	363.4	-332.6	-252.9	1.05	0.29	2.81	
2,561.0	22.37	319.97	2,480.9	388.8	-354.2	-269.0	1.48	1.44	0.84	
2,651.0	21.87	318.45	2,564.3	414.5	-376.3	-285.5	0.84	-0.56	-1.69	
2,741.0	21.54	317.34	2,647.9	439.2	-398.6	-302.4	0.59	-0.37	-1.23	
2,831.0	22.56	320.36	2,731.4	464.6	-420.8	-319.1	1.69	1.13	3.36	
2,920.0	20.96	319.19	2,814.0	489.8	-442.1	-334.9	1.86	-1.80	-1.31	
3,010.0	22.76	320.99	2,897.5	515.5	-463.6	-350.8	2.13	2.00	2.00	
3,099.0	21.45	319.72	2,980.0	541.3	-485.0	-366.5	1.57	-1.47	-1.43	
3,189.0	21.32	318.49	3,063.8	566.1	-506.4	-382.6	0.52	-0.14	-1.37	
3,279.0	21.84	321.84	3,147.5	591.5	-527.6	-398.3	1.49	0.58	3.72	
3,369.0	21.51	320.40	3,231.1	617.4	-548.5	-413.5	0.70	-0.37	-1.60	
3,459.0	21.22	322.11	3,314.9	643.0	-569.0	-428.5	0.76	-0.32	1.90	
3,549.0	22.09	321.80	3,398.6	669.1	-589.5	-443.3	0.97	0.97	-0.34	
3,639.0	21.13	321.47	3,482.3	695.1	-610.1	-458.2	1.08	-1.07	-0.37	
3,728.0	23.60	322.14	3,564.6	721.7	-631.0	-473.4	2.79	2.78	0.75	
3,818.0	23.58	322.58	3,647.0	750.3	-653.0	-489.2	0.20	-0.02	0.49	
3,908.0	23.79	321.63	3,729.5	778.8	-675.2	-505.3	0.48	0.23	-1.06	
3,998.0	22.88	321.29	3,812.1	806.7	-697.4	-521.4	1.02	-1.01	-0.38	
4,088.0	20.45	320.71	3,895.7	832.5	-718.3	-536.7	2.71	-2.70	-0.64	
4,177.0	21.19	320.40	3,978.9	856.9	-738.4	-551.5	0.84	0.83	-0.35	
4,267.0	19.53	320.14	4,063.3	881.0	-758.4	-566.3	1.85	-1.84	-0.29	
4,357.0	20.97	320.80	4,147.7	905.0	-778.2	-580.9	1.62	1.60	0.73	
4,447.0	19.27	320.36	4,232.2	929.0	-797.9	-595.3	1.90	-1.89	-0.49	
4,537.0	20.42	318.24	4,316.9	952.1	-817.8	-610.2	1.51	1.28	-2.36	
4,626.0	18.40	319.35	4,400.8	974.3	-837.3	-624.9	2.31	-2.27	1.25	
4,716.0	18.89	322.24	4,486.1	996.6	-855.5	-638.2	1.16	0.54	3.21	
4,806.0	19.81	321.32	4,571.0	1,020.1	-873.9	-651.6	1.08	1.02	-1.02	
4,896.0	21.19	320.39	4,655.3	1,044.5	-893.8	-666.2	1.58	1.53	-1.03	

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Ferguson 23E-332
<b>Project:</b>	SEC.23-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Site:</b>	Ferguson 5N64W23F Pad Sec.23-T5N-R64W	<b>MD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Well:</b>	Ferguson 23E-332	<b>North Reference:</b>	True
<b>Wellbore:</b>	Ferguson 23E-332 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Ferguson 23E-332 Wellbore #1	<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)	
4,985.0	19.41	320.11	4,738.8	1,068.2	-913.6	-680.7	2.00	-2.00	-0.31	
5,075.0	21.33	315.75	4,823.2	1,091.4	-934.6	-696.7	2.72	2.13	-4.84	
5,165.0	20.19	314.87	4,907.3	1,114.1	-957.0	-714.1	1.31	-1.27	-0.98	
5,254.0	16.98	313.21	4,991.7	1,133.9	-977.4	-730.1	3.66	-3.61	-1.87	
5,344.0	17.50	315.70	5,077.6	1,152.6	-996.4	-745.0	1.00	0.58	2.77	
5,433.0	17.95	314.95	5,162.4	1,171.8	-1,015.5	-759.8	0.57	0.51	-0.84	
5,523.0	21.74	317.80	5,247.0	1,194.0	-1,036.5	-775.9	4.34	4.21	3.17	
5,613.0	21.94	321.11	5,330.6	1,219.4	-1,058.2	-792.1	1.39	0.22	3.68	
5,702.0	21.60	320.85	5,413.2	1,245.1	-1,079.0	-807.4	0.40	-0.38	-0.29	
5,792.0	21.90	318.60	5,496.8	1,270.5	-1,100.6	-823.4	0.98	0.33	-2.50	
5,881.0	23.65	319.15	5,578.9	1,296.4	-1,123.2	-840.4	1.98	1.97	0.62	
5,970.0	23.02	317.02	5,660.6	1,322.7	-1,146.8	-858.2	1.18	-0.71	-2.39	
6,060.0	20.90	315.84	5,744.1	1,347.1	-1,170.0	-876.0	2.41	-2.36	-1.31	
6,149.0	23.29	332.39	5,826.6	1,374.1	-1,189.2	-889.4	7.46	2.69	18.60	
6,239.0	23.24	347.54	5,909.4	1,407.2	-1,201.3	-894.6	6.63	-0.06	16.83	
6,329.0	26.22	0.64	5,991.2	1,444.5	-1,204.9	-890.7	6.91	3.31	14.56	
6,419.0	30.01	20.91	6,070.7	1,485.5	-1,196.6	-874.3	11.36	4.21	22.52	
6,508.0	30.32	44.65	6,147.9	1,522.4	-1,172.8	-843.6	13.34	0.35	26.67	
6,598.0	33.91	59.92	6,224.3	1,551.2	-1,135.0	-800.8	9.83	3.99	16.97	
6,688.0	40.81	70.06	6,295.8	1,573.9	-1,085.6	-747.8	10.25	7.67	11.27	
6,778.0	47.18	74.40	6,360.6	1,592.8	-1,026.0	-685.7	7.83	7.08	4.82	
6,868.0	53.31	80.31	6,418.1	1,607.8	-958.6	-616.6	8.47	6.81	6.57	
6,957.0	57.69	87.38	6,468.6	1,615.5	-885.7	-543.7	8.19	4.92	7.94	
6,998.0	60.00	87.08	6,489.8	1,617.2	-850.7	-509.0	5.67	5.63	-0.73	
<b>TIZ - 60° Incl. in curve - 553'FNL, 425'FEL, Sec.22</b>										
7,047.0	62.76	86.74	6,513.3	1,619.5	-807.7	-466.5	5.67	5.63	-0.69	
7,137.0	67.13	89.28	6,551.4	1,622.3	-726.3	-386.1	5.49	4.86	2.82	
7,227.0	73.27	90.76	6,581.8	1,622.3	-641.7	-303.2	7.00	6.82	1.64	
7,317.0	80.87	90.53	6,602.0	1,621.3	-554.0	-217.6	8.45	8.44	-0.26	
7,407.0	89.79	89.51	6,609.3	1,621.2	-464.4	-129.8	9.98	9.91	-1.13	
<b>Deepest TVD Drilled - 6609.28' TVD</b>										
7,497.0	90.66	89.00	6,608.9	1,622.4	-374.4	-41.4	1.12	0.97	-0.57	
7,535.0	90.56	88.58	6,608.5	1,623.2	-336.4	-4.0	1.14	-0.26	-1.11	
7,625.0	90.88	89.26	6,607.4	1,624.9	-246.4	84.5	0.83	0.36	0.76	
7,714.0	91.05	89.13	6,605.9	1,626.2	-157.5	171.9	0.24	0.19	-0.15	
7,804.0	90.69	89.07	6,604.5	1,627.6	-67.5	260.3	0.41	-0.40	-0.07	
7,894.0	90.26	89.41	6,603.8	1,628.8	22.5	348.7	0.61	-0.48	0.38	
7,984.0	90.42	88.98	6,603.2	1,630.0	112.5	437.2	0.51	0.18	-0.48	
8,074.0	90.51	89.49	6,602.5	1,631.2	202.5	525.6	0.58	0.10	0.57	
8,164.0	90.40	91.77	6,601.8	1,630.2	292.5	613.5	2.54	-0.12	2.53	
8,254.0	90.42	91.61	6,601.2	1,627.6	382.4	701.1	0.18	0.02	-0.18	
8,344.0	90.44	92.01	6,600.5	1,624.8	472.4	788.7	0.44	0.02	0.44	
8,433.0	90.42	91.14	6,599.8	1,622.3	561.3	875.3	0.98	-0.02	-0.98	

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Ferguson 23E-332
<b>Project:</b>	SEC.23-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Site:</b>	Ferguson 5N64W23F Pad Sec.23-T5N-R64W	<b>MD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Well:</b>	Ferguson 23E-332	<b>North Reference:</b>	True
<b>Wellbore:</b>	Ferguson 23E-332 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Ferguson 23E-332 Wellbore #1	<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)
8,523.0	90.43	90.83	6,599.1	1,620.8	651.3	963.2	0.34	0.01	-0.34
8,613.0	90.52	90.98	6,598.4	1,619.3	741.3	1,051.1	0.19	0.10	0.17
8,703.0	90.40	91.68	6,597.7	1,617.2	831.3	1,138.8	0.79	-0.13	0.78
8,792.0	90.55	90.59	6,596.9	1,615.5	920.3	1,225.6	1.24	0.17	-1.22
8,882.0	90.65	90.65	6,596.0	1,614.5	1,010.2	1,313.6	0.13	0.11	0.07
8,970.0	90.62	90.60	6,595.0	1,613.6	1,098.2	1,399.6	0.07	-0.03	-0.06
9,059.0	90.71	90.31	6,594.0	1,612.8	1,187.2	1,486.6	0.34	0.10	-0.33
9,149.0	90.67	90.67	6,592.9	1,612.1	1,277.2	1,574.6	0.40	-0.04	0.40
9,239.0	90.75	90.68	6,591.8	1,611.0	1,367.2	1,662.6	0.09	0.09	0.01
9,329.0	90.61	90.78	6,590.7	1,609.9	1,457.2	1,750.5	0.19	-0.16	0.11
9,418.0	90.03	91.06	6,590.2	1,608.4	1,546.2	1,837.4	0.72	-0.65	0.31
9,508.0	90.04	91.08	6,590.2	1,606.8	1,636.2	1,925.2	0.02	0.01	0.02
9,597.0	90.21	90.87	6,590.0	1,605.2	1,725.2	2,012.1	0.30	0.19	-0.24
9,686.0	90.27	90.06	6,589.6	1,604.5	1,814.1	2,099.1	0.91	0.07	-0.91
9,775.0	90.13	90.73	6,589.3	1,603.9	1,903.1	2,186.2	0.77	-0.16	0.75
9,865.0	90.12	90.86	6,589.1	1,602.7	1,993.1	2,274.1	0.14	-0.01	0.14
9,955.0	90.31	89.89	6,588.8	1,602.1	2,083.1	2,362.1	1.10	0.21	-1.08
10,044.0	90.37	90.07	6,588.2	1,602.1	2,172.1	2,449.3	0.21	0.07	0.20
10,135.0	90.32	89.80	6,587.7	1,602.2	2,263.1	2,538.5	0.30	-0.05	-0.30
10,225.0	90.28	90.27	6,587.2	1,602.1	2,353.1	2,626.7	0.52	-0.04	0.52
10,314.0	90.30	90.55	6,586.8	1,601.5	2,442.1	2,713.7	0.32	0.02	0.31
10,404.0	90.10	91.03	6,586.4	1,600.3	2,532.1	2,801.6	0.58	-0.22	0.53
10,494.0	90.07	90.95	6,586.3	1,598.7	2,622.1	2,889.5	0.09	-0.03	-0.09
10,584.0	90.28	90.38	6,586.0	1,597.7	2,712.1	2,977.4	0.67	0.23	-0.63
10,673.0	90.21	90.80	6,585.7	1,596.8	2,801.1	3,064.4	0.48	-0.08	0.47
10,763.0	90.11	91.07	6,585.4	1,595.3	2,891.1	3,152.3	0.32	-0.11	0.30
10,852.0	90.22	90.68	6,585.1	1,593.9	2,980.1	3,239.2	0.46	0.12	-0.44
10,942.0	90.31	90.26	6,584.7	1,593.2	3,070.1	3,327.2	0.48	0.10	-0.47
11,032.0	90.28	90.49	6,584.3	1,592.6	3,160.1	3,415.3	0.26	-0.03	0.26
11,122.0	90.21	90.61	6,583.9	1,591.7	3,250.1	3,503.3	0.15	-0.08	0.13
11,211.0	90.35	90.53	6,583.4	1,590.9	3,339.0	3,590.3	0.18	0.16	-0.09
11,301.0	90.38	90.09	6,582.9	1,590.4	3,429.0	3,678.4	0.49	0.03	-0.49
11,390.0	90.23	88.62	6,582.4	1,591.4	3,518.0	3,765.7	1.66	-0.17	-1.65
11,480.0	90.09	88.43	6,582.1	1,593.7	3,608.0	3,854.3	0.26	-0.16	-0.21
11,570.0	90.42	87.37	6,581.7	1,597.0	3,697.9	3,943.1	1.23	0.37	-1.18
11,659.0	90.22	88.45	6,581.3	1,600.2	3,786.9	4,030.9	1.23	-0.22	1.21
11,748.0	90.33	88.17	6,580.8	1,602.9	3,875.8	4,118.6	0.34	0.12	-0.31
11,839.0	90.34	88.05	6,580.3	1,605.9	3,966.8	4,208.3	0.13	0.01	-0.13
11,929.0	90.30	88.23	6,579.8	1,608.8	4,056.7	4,297.0	0.20	-0.04	0.20
12,019.0	90.20	88.72	6,579.4	1,611.2	4,146.7	4,385.6	0.56	-0.11	0.54
12,109.0	90.14	88.43	6,579.1	1,613.4	4,236.7	4,474.2	0.33	-0.07	-0.32
12,199.0	90.21	88.27	6,578.9	1,616.0	4,326.6	4,562.8	0.19	0.08	-0.18
12,289.0	90.26	88.38	6,578.5	1,618.6	4,416.6	4,651.5	0.13	0.06	0.12
12,377.0	90.38	88.63	6,578.0	1,620.9	4,504.6	4,738.1	0.32	0.14	0.28

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Ferguson 23E-332
<b>Project:</b>	SEC.23-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Site:</b>	Ferguson 5N64W23F Pad Sec.23-T5N-R64W	<b>MD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Well:</b>	Ferguson 23E-332	<b>North Reference:</b>	True
<b>Wellbore:</b>	Ferguson 23E-332 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Ferguson 23E-332 Wellbore #1	<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)	
12,467.0	90.48	89.70	6,577.3	1,622.2	4,594.6	4,826.6	1.19	0.11	1.19	
12,557.0	90.40	90.41	6,576.6	1,622.1	4,684.6	4,914.7	0.79	-0.09	0.79	
12,646.0	90.17	90.69	6,576.2	1,621.3	4,773.5	5,001.7	0.41	-0.26	0.31	
12,736.0	90.36	89.94	6,575.8	1,620.8	4,863.5	5,089.8	0.86	0.21	-0.83	
12,826.0	90.23	90.78	6,575.3	1,620.2	4,953.5	5,177.9	0.94	-0.14	0.93	
12,916.0	90.43	90.14	6,574.8	1,619.5	5,043.5	5,265.9	0.75	0.22	-0.71	
13,006.0	90.38	90.48	6,574.2	1,619.0	5,133.5	5,353.9	0.38	-0.06	0.38	
13,095.0	90.13	90.69	6,573.8	1,618.1	5,222.5	5,441.0	0.37	-0.28	0.24	
13,185.0	90.17	90.48	6,573.5	1,617.2	5,312.5	5,528.9	0.24	0.04	-0.23	
13,275.0	90.12	89.95	6,573.3	1,616.9	5,402.5	5,617.0	0.59	-0.06	-0.59	
13,366.0	90.09	90.60	6,573.1	1,616.4	5,493.5	5,706.1	0.72	-0.03	0.71	
13,456.0	90.52	90.68	6,572.6	1,615.4	5,583.5	5,794.1	0.49	0.48	0.09	
13,546.0	90.51	91.62	6,571.8	1,613.6	5,673.5	5,881.8	1.04	-0.01	1.04	
13,636.0	90.41	90.13	6,571.1	1,612.2	5,763.5	5,969.7	1.66	-0.11	-1.66	
13,726.0	90.27	90.51	6,570.6	1,611.7	5,853.5	6,057.8	0.45	-0.16	0.42	
13,815.0	90.34	90.07	6,570.1	1,611.3	5,942.5	6,144.9	0.50	0.08	-0.49	
13,905.0	90.18	90.77	6,569.7	1,610.6	6,032.5	6,232.9	0.80	-0.18	0.78	
13,995.0	90.10	90.10	6,569.5	1,609.9	6,122.5	6,321.0	0.75	-0.09	-0.74	
14,085.0	89.79	91.04	6,569.6	1,609.0	6,212.5	6,408.9	1.10	-0.34	1.04	
14,175.0	89.33	92.20	6,570.3	1,606.5	6,302.4	6,496.6	1.39	-0.51	1.29	
14,264.0	90.37	91.59	6,570.5	1,603.6	6,391.4	6,583.1	1.35	1.17	-0.69	
14,353.0	90.53	90.14	6,569.8	1,602.2	6,480.3	6,670.0	1.64	0.18	-1.63	
14,443.0	90.58	89.58	6,568.9	1,602.4	6,570.3	6,758.2	0.62	0.06	-0.62	
14,533.0	90.49	89.95	6,568.1	1,602.8	6,660.3	6,846.5	0.42	-0.10	0.41	
14,622.0	90.63	89.96	6,567.2	1,602.9	6,749.3	6,933.7	0.16	0.16	0.01	
14,712.0	90.66	89.55	6,566.2	1,603.3	6,839.3	7,021.9	0.46	0.03	-0.46	
14,801.0	90.70	88.56	6,565.1	1,604.7	6,928.3	7,109.4	1.11	0.04	-1.11	
14,891.0	90.66	89.85	6,564.1	1,606.0	7,018.3	7,197.8	1.43	-0.04	1.43	
14,981.0	90.63	89.11	6,563.1	1,606.8	7,108.3	7,286.1	0.82	-0.03	-0.82	
15,070.0	90.56	89.16	6,562.1	1,608.1	7,197.3	7,373.6	0.10	-0.08	0.06	
15,160.0	90.82	88.97	6,561.0	1,609.6	7,287.2	7,462.0	0.36	0.29	-0.21	
15,249.0	90.76	89.23	6,559.8	1,611.0	7,376.2	7,549.5	0.30	-0.07	0.29	
15,339.0	90.52	90.02	6,558.8	1,611.6	7,466.2	7,637.7	0.92	-0.27	0.88	
15,429.0	90.19	91.48	6,558.3	1,610.4	7,556.2	7,725.7	1.66	-0.37	1.62	
15,519.0	90.08	92.09	6,558.0	1,607.6	7,646.2	7,813.2	0.69	-0.12	0.68	
15,608.0	89.97	91.46	6,558.0	1,604.9	7,735.1	7,899.8	0.72	-0.12	-0.71	
15,622.0	90.00	91.40	6,558.0	1,604.5	7,749.1	7,913.5	0.48	0.21	-0.43	
15,644.0	90.00	91.40	6,558.0	1,604.0	7,771.1	7,934.9	0.00	0.00	0.00	

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Ferguson 23E-332
<b>Project:</b>	SEC.23-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Site:</b>	Ferguson 5N64W23F Pad Sec.23-T5N-R64W	<b>MD Reference:</b>	WELL @ 4598.0ft (Original Well Elev)
<b>Well:</b>	Ferguson 23E-332	<b>North Reference:</b>	True
<b>Wellbore:</b>	Ferguson 23E-332 Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Ferguson 23E-332 Wellbore #1	<b>Database:</b>	US_EDM

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 2169'FNL, 421'FWL - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,384,996.04	3,271,629.52	40.386116	-104.524886
Projected BHL 538'FNL - survey misses target center by 16.1ft at 15644.0ft MD (6558.0 TVD, 1604.0 N, 7771.1 E) - Point	0.00	0.00	6,568.0	1,591.6	7,773.9	1,386,672.98	3,279,385.09	40.390482	-104.496979

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
6,998.0	6,489.8	1,617.2	-850.7	TIZ - 60° Incl. in curve - 553'FNL, 425'FEL, Sec.22
7,407.0	6,609.3	1,621.2	-464.4	Deepest TVD Drilled - 6609.28' TVD

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