

# PDC Energy Inc. DJ Basin

KODAK SOUTH 11C

Kodak South PAD

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

Ground Elevation: 4743.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1408294.84	3177087.42	40.452427	-104.863665

Ensign 769 - RKB 28' Well @ 4771.0ft (Ensign 769 - RKB 28')



Kodak South PAD  
KODAK SOUTH 11C  
Kodak South 11C Final Surveys  
10:38, September 27 2023



Azimuths to True North  
Magnetic North: 7.82°

Magnetic Field  
Strength: 51784.0nT  
Dip Angle: 66.61°  
Date: 08/01/2023  
Model: HRGM

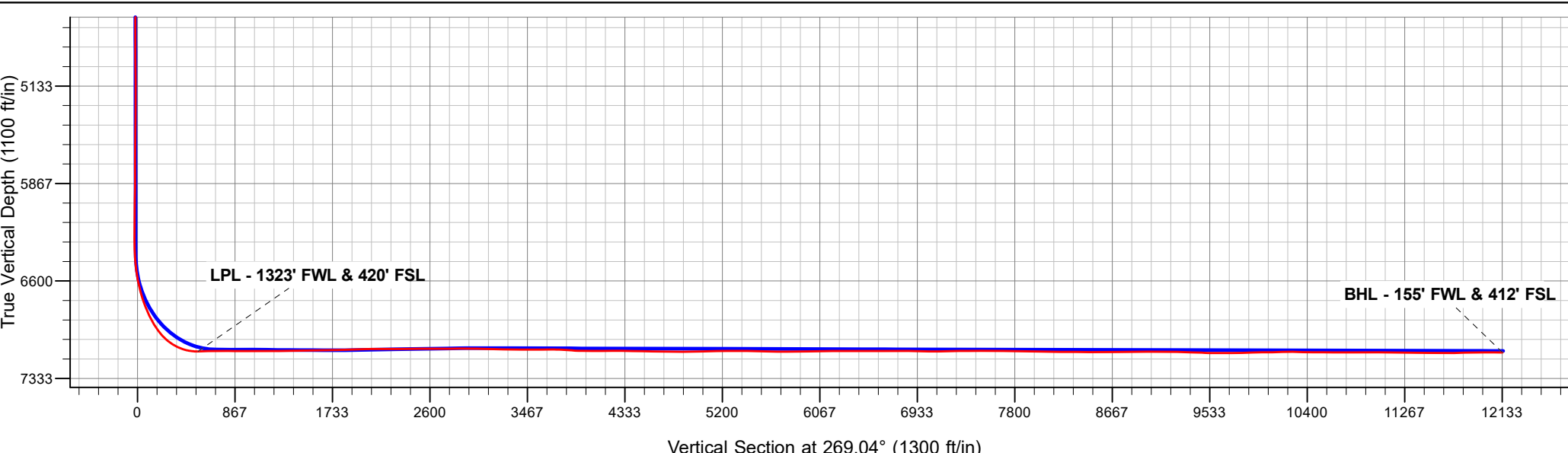
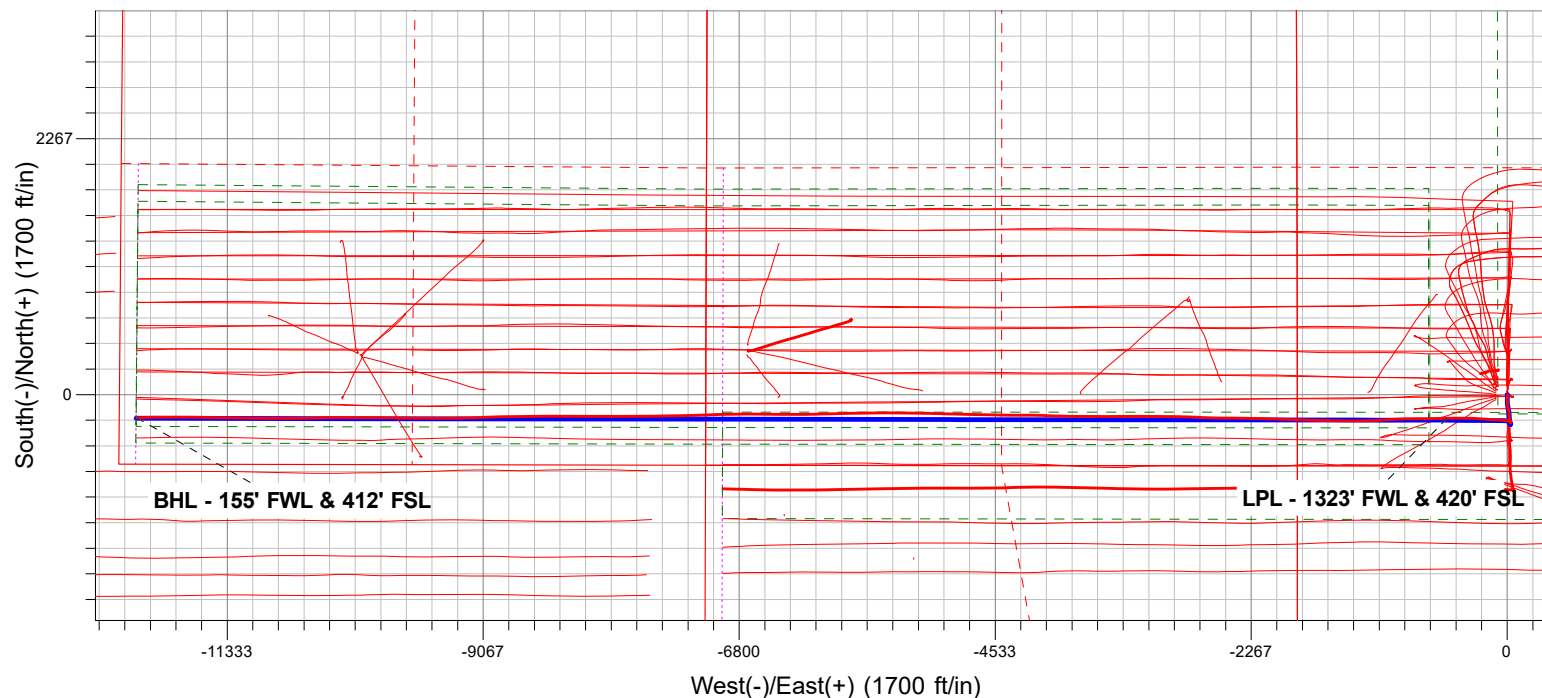
### ANNOTATIONS

MD	TVD	Annotation
7446.0	7130.0	LPL - 1323' FWL & 420' FSL
19052.0	7139.1	BHL - 155' FWL & 412' FSL

### FINAL SURVEY

**Projected Bottom Hole Location**

**19052' MD / 7139.1' TVD**  
**89.02° INC / 269.28° AZM**  
**412' FSL / 155' FWL**



# **PDC Energy Inc. DJ Basin**

**SEC.26-T6N-R67W**

**Kodak South PAD**

**KODAK SOUTH 11C**

**Kodak South 11C**

**Design: Kodak South 11C Final Surveys**

## **Survey Report - Geographic**

**27 September, 2023**

# Ensign

## Survey Report - Geographic

<b>Company:</b> PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b> Well KODAK SOUTH 11C
<b>Project:</b> SEC.26-T6N-R67W	<b>TVD Reference:</b> Well @ 4771.0ft (Ensign 769 - RKB 28')
<b>Site:</b> Kodak South PAD	<b>MD Reference:</b> Well @ 4771.0ft (Ensign 769 - RKB 28')
<b>Well:</b> KODAK SOUTH 11C	<b>North Reference:</b> True
<b>Wellbore:</b> Kodak South 11C	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Kodak South 11C Final Surveys	<b>Database:</b> US_EDM

<b>Project</b> SEC.26-T6N-R67W	
<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	

<b>Site</b> Kodak South PAD		
<b>Site Position:</b>	<b>Northing:</b> 1,408,445.37 usft	<b>Latitude:</b> 40.452842
<b>From:</b> Lat/Long	<b>Easting:</b> 3,176,987.71 usft	<b>Longitude:</b> -104.864019
<b>Position Uncertainty:</b> 0.0 ft	<b>Slot Radius:</b> 13-3/16 "	<b>Grid Convergence:</b> 0.41 °

<b>Well</b> KODAK SOUTH 11C		
<b>Well Position</b> +N/-S 0.0 ft	<b>Northing:</b> 1,408,294.84 usft	<b>Latitude:</b> 40.452427
+E/-W 0.0 ft	<b>Easting:</b> 3,177,087.42 usft	<b>Longitude:</b> -104.863665
<b>Position Uncertainty</b> 0.0 ft	<b>Wellhead Elevation:</b> ft	<b>Ground Level:</b> 4,743.0 ft

<b>Wellbore</b> Kodak South 11C					
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HRGM	08/01/2023	7.82	66.61	51,783.97222097

<b>Design</b> Kodak South 11C 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	269.04	

<b>Survey Program</b>		<b>Date</b> 09/27/2023		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
161.0	19,052.0	Survey #1 (Kodak South 11C)	MWD	MWD - Standard

<b>Survey</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	1,408,294.84	3,177,087.42	40.452427	-104.863665	
161.0	0.79	61.62	161.0	0.5	1.0	1,408,295.38	3,177,088.39	40.452428	-104.863661	
253.0	0.97	51.78	253.0	1.3	2.1	1,408,296.17	3,177,089.56	40.452431	-104.863657	
344.0	0.53	229.14	344.0	1.5	2.4	1,408,296.37	3,177,089.84	40.452431	-104.863656	
461.0	2.55	189.24	460.9	-1.4	1.6	1,408,293.44	3,177,089.04	40.452423	-104.863659	
548.0	3.52	184.14	547.8	-6.0	1.1	1,408,288.86	3,177,088.57	40.452411	-104.863661	
633.0	3.96	184.91	632.6	-11.5	0.7	1,408,283.33	3,177,088.17	40.452395	-104.863662	
720.0	4.48	183.26	719.4	-17.9	0.2	1,408,276.95	3,177,087.76	40.452378	-104.863664	
810.0	7.74	177.81	808.9	-27.5	0.2	1,408,267.38	3,177,087.86	40.452352	-104.863664	
895.0	11.87	177.11	892.6	-41.9	0.9	1,408,252.93	3,177,088.63	40.452312	-104.863662	
980.0	14.33	179.39	975.4	-61.2	1.5	1,408,233.68	3,177,089.32	40.452259	-104.863660	
1,067.0	15.04	175.17	1,059.6	-83.2	2.5	1,408,211.67	3,177,090.54	40.452199	-104.863656	

# Ensign

## Survey Report - Geographic

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well KODAK SOUTH 11C
<b>Project:</b>	SEC.26-T6N-R67W	<b>TVD Reference:</b>	Well @ 4771.0ft (Ensign 769 - RKB 28')
<b>Site:</b>	Kodak South PAD	<b>MD Reference:</b>	Well @ 4771.0ft (Ensign 769 - RKB 28')
<b>Well:</b>	KODAK SOUTH 11C	<b>North Reference:</b>	True
<b>Wellbore:</b>	Kodak South 11C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Kodak South 11C Final Surveys	<b>Database:</b>	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,152.0	15.48	168.49	1,141.6	-105.3	5.7	1,408,189.59	3,177,093.89	40.452138	-104.863644
1,237.0	14.60	167.97	1,223.7	-126.9	10.2	1,408,168.03	3,177,098.54	40.452079	-104.863628
1,324.0	13.37	172.36	1,308.1	-147.6	13.8	1,408,147.36	3,177,102.31	40.452022	-104.863615
1,411.0	12.31	175.88	1,392.9	-166.8	15.8	1,408,128.15	3,177,104.45	40.451969	-104.863608
1,500.0	11.43	176.05	1,480.0	-185.1	17.1	1,408,109.90	3,177,105.87	40.451919	-104.863603
1,586.0	9.94	176.05	1,564.5	-201.0	18.2	1,408,094.00	3,177,107.09	40.451875	-104.863599
1,644.0	8.79	172.19	1,621.7	-210.4	19.2	1,408,084.63	3,177,108.10	40.451850	-104.863596
1,765.0	7.97	169.84	1,741.4	-227.8	21.9	1,408,067.23	3,177,110.96	40.451802	-104.863586
1,855.0	5.79	160.02	1,830.8	-238.2	24.6	1,408,056.84	3,177,113.69	40.451773	-104.863577
1,945.0	4.10	155.88	1,920.4	-245.4	27.4	1,408,049.66	3,177,116.61	40.451753	-104.863566
2,034.0	1.98	169.39	2,009.3	-249.8	29.0	1,408,045.25	3,177,118.22	40.451741	-104.863561
2,124.0	0.43	344.89	2,099.3	-251.0	29.2	1,408,044.05	3,177,118.43	40.451738	-104.863560
2,214.0	0.32	288.20	2,189.3	-250.6	28.9	1,408,044.45	3,177,118.10	40.451739	-104.863561
2,304.0	2.19	13.50	2,279.3	-248.9	29.0	1,408,046.21	3,177,118.25	40.451744	-104.863561
2,393.0	2.58	3.49	2,368.2	-245.2	29.6	1,408,049.86	3,177,118.74	40.451754	-104.863559
2,483.0	2.63	5.32	2,458.1	-241.1	29.9	1,408,053.94	3,177,119.03	40.451765	-104.863558
2,573.0	2.56	3.23	2,548.0	-237.1	30.2	1,408,058.01	3,177,119.30	40.451776	-104.863556
2,663.0	0.72	301.56	2,638.0	-234.8	29.8	1,408,060.31	3,177,118.92	40.451783	-104.863558
2,774.0	1.03	302.10	2,749.0	-233.9	28.4	1,408,061.19	3,177,117.47	40.451785	-104.863563
2,864.0	0.26	164.15	2,839.0	-233.6	27.7	1,408,061.42	3,177,116.84	40.451786	-104.863565
2,954.0	0.24	205.00	2,929.0	-234.0	27.7	1,408,061.05	3,177,116.82	40.451785	-104.863565
3,044.0	0.49	253.21	3,019.0	-234.3	27.3	1,408,060.77	3,177,116.37	40.451784	-104.863567
3,134.0	0.86	252.83	3,109.0	-234.6	26.3	1,408,060.45	3,177,115.36	40.451783	-104.863571
3,223.0	1.17	244.24	3,197.9	-235.2	24.8	1,408,059.85	3,177,113.91	40.451781	-104.863576
3,313.0	0.40	77.91	3,287.9	-235.5	24.3	1,408,059.51	3,177,113.39	40.451780	-104.863578
3,403.0	0.69	76.86	3,377.9	-235.3	25.1	1,408,059.71	3,177,114.23	40.451781	-104.863575
3,493.0	0.52	104.27	3,467.9	-235.3	26.0	1,408,059.74	3,177,115.15	40.451781	-104.863571
3,583.0	0.67	126.71	3,557.9	-235.7	26.9	1,408,059.33	3,177,115.97	40.451780	-104.863568
3,673.0	0.62	143.18	3,647.9	-236.4	27.6	1,408,058.63	3,177,116.69	40.451778	-104.863566
3,763.0	0.58	175.01	3,737.9	-237.3	27.9	1,408,057.79	3,177,117.03	40.451776	-104.863565
3,852.0	0.80	179.53	3,826.9	-238.3	27.9	1,408,056.72	3,177,117.08	40.451773	-104.863564
3,942.0	0.78	205.51	3,916.9	-239.5	27.7	1,408,055.53	3,177,116.83	40.451769	-104.863565
4,032.0	0.81	228.70	4,006.9	-240.5	26.9	1,408,054.56	3,177,116.09	40.451767	-104.863568
4,122.0	0.60	236.88	4,096.9	-241.2	26.1	1,408,053.87	3,177,115.23	40.451765	-104.863571
4,212.0	0.55	277.91	4,186.9	-241.4	25.3	1,408,053.67	3,177,114.40	40.451764	-104.863574
4,302.0	0.47	291.59	4,276.9	-241.2	24.5	1,408,053.86	3,177,113.63	40.451765	-104.863577
4,392.0	0.62	283.26	4,366.9	-240.9	23.7	1,408,054.10	3,177,112.81	40.451766	-104.863580
4,482.0	0.53	296.75	4,456.9	-240.6	22.8	1,408,054.39	3,177,111.97	40.451766	-104.863583
4,571.0	1.01	22.62	4,545.9	-239.7	22.8	1,408,055.30	3,177,111.89	40.451769	-104.863583
4,661.0	0.88	15.45	4,635.8	-238.3	23.2	1,408,056.70	3,177,112.37	40.451773	-104.863581
4,751.0	0.80	1.19	4,725.8	-237.0	23.4	1,408,058.00	3,177,112.56	40.451776	-104.863581
4,841.0	0.77	349.35	4,815.8	-235.8	23.3	1,408,059.22	3,177,112.45	40.451780	-104.863581
4,931.0	0.53	298.19	4,905.8	-235.0	22.9	1,408,060.01	3,177,111.97	40.451782	-104.863583
5,021.0	0.72	274.29	4,995.8	-234.8	21.9	1,408,060.24	3,177,111.04	40.451783	-104.863586
5,111.0	0.90	261.42	5,085.8	-234.8	20.7	1,408,060.17	3,177,109.77	40.451782	-104.863591
5,200.0	1.08	170.81	5,174.8	-235.8	20.1	1,408,059.23	3,177,109.22	40.451780	-104.863593
5,290.0	1.16	175.86	5,264.8	-237.5	20.3	1,408,057.49	3,177,109.44	40.451775	-104.863592
5,380.0	1.84	122.05	5,354.8	-239.2	21.6	1,408,055.82	3,177,110.74	40.451770	-104.863587
5,469.0	0.75	105.00	5,443.7	-240.1	23.4	1,408,054.92	3,177,112.52	40.451768	-104.863581
5,559.0	0.37	100.98	5,533.7	-240.3	24.2	1,408,054.72	3,177,113.37	40.451767	-104.863578
5,649.0	0.36	69.45	5,623.7	-240.3	24.8	1,408,054.77	3,177,113.92	40.451767	-104.863576
5,739.0	0.72	39.95	5,713.7	-239.7	25.4	1,408,055.31	3,177,114.55	40.451769	-104.863574
5,829.0	0.74	27.46	5,803.7	-238.8	26.0	1,408,056.26	3,177,115.17	40.451772	-104.863571
5,919.0	0.74	53.77	5,893.7	-237.9	26.8	1,408,057.13	3,177,115.90	40.451774	-104.863569
6,009.0	0.81	77.31	5,983.7	-237.4	27.9	1,408,057.62	3,177,116.99	40.451775	-104.863565

# Ensign

## Survey Report - Geographic

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well KODAK SOUTH 11C
<b>Project:</b>	SEC.26-T6N-R67W	<b>TVD Reference:</b>	Well @ 4771.0ft (Ensign 769 - RKB 28')
<b>Site:</b>	Kodak South PAD	<b>MD Reference:</b>	Well @ 4771.0ft (Ensign 769 - RKB 28')
<b>Well:</b>	KODAK SOUTH 11C	<b>North Reference:</b>	True
<b>Wellbore:</b>	Kodak South 11C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Kodak South 11C Final Surveys	<b>Database:</b>	US_EDM

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
6,098.0	0.73	65.49	6,072.7	-237.1	29.0	1,408,058.00	3,177,118.12	40.451776	-104.863561	
6,188.0	0.73	22.39	6,162.7	-236.3	29.7	1,408,058.77	3,177,118.85	40.451778	-104.863558	
6,278.0	0.57	348.64	6,252.7	-235.3	29.9	1,408,059.74	3,177,118.97	40.451781	-104.863558	
6,368.0	0.61	330.30	6,342.7	-234.5	29.5	1,408,060.59	3,177,118.64	40.451783	-104.863559	
6,458.0	3.85	279.34	6,432.6	-233.6	26.3	1,408,061.48	3,177,115.42	40.451786	-104.863570	
6,548.0	9.77	278.38	6,521.9	-232.0	15.8	1,408,063.01	3,177,104.86	40.451790	-104.863608	
6,638.0	14.69	277.65	6,609.9	-229.3	-3.1	1,408,065.51	3,177,085.96	40.451797	-104.863676	
6,728.0	17.86	273.44	6,696.2	-227.0	-28.2	1,408,067.67	3,177,060.86	40.451804	-104.863766	
6,818.0	23.95	273.30	6,780.3	-225.1	-60.2	1,408,069.32	3,177,028.80	40.451809	-104.863881	
6,907.0	29.53	273.62	6,859.7	-222.7	-100.2	1,408,071.46	3,176,988.83	40.451816	-104.864025	
6,997.0	36.34	274.34	6,935.2	-219.2	-149.0	1,408,074.54	3,176,940.02	40.451825	-104.864200	
7,087.0	45.67	273.38	7,003.1	-215.3	-207.8	1,408,078.04	3,176,881.14	40.451836	-104.864412	
7,177.0	57.59	273.53	7,058.8	-211.1	-278.1	1,408,081.79	3,176,810.81	40.451848	-104.864664	
7,266.0	68.40	269.16	7,099.2	-209.4	-357.3	1,408,082.93	3,176,731.66	40.451852	-104.864949	
7,356.0	80.47	271.01	7,123.3	-209.2	-443.8	1,408,082.48	3,176,645.13	40.451853	-104.865260	
7,446.0	91.00	269.16	7,130.0	-209.1	-533.4	1,408,081.96	3,176,555.51	40.451853	-104.865582	
<b>LPL - 1323' FWL &amp; 420' FSL</b>										
7,536.0	91.59	268.98	7,128.0	-210.5	-623.4	1,408,079.85	3,176,465.56	40.451849	-104.865905	
7,716.0	89.08	269.34	7,126.9	-213.2	-803.4	1,408,075.92	3,176,285.62	40.451842	-104.866552	
7,896.0	90.10	267.40	7,128.2	-218.3	-983.3	1,408,069.51	3,176,105.75	40.451828	-104.867198	
7,986.0	90.40	266.55	7,127.8	-223.0	-1,073.1	1,408,064.12	3,176,015.91	40.451815	-104.867521	
8,076.0	89.90	267.84	7,127.6	-227.4	-1,163.0	1,408,059.07	3,175,926.06	40.451803	-104.867844	
8,165.0	90.69	267.41	7,127.1	-231.1	-1,251.9	1,408,054.74	3,175,837.17	40.451792	-104.868163	
8,255.0	90.53	270.01	7,126.1	-233.1	-1,341.9	1,408,052.07	3,175,747.22	40.451787	-104.868487	
8,345.0	91.03	269.78	7,124.9	-233.3	-1,431.9	1,408,051.26	3,175,657.23	40.451786	-104.868810	
8,435.0	90.41	271.79	7,123.8	-232.1	-1,521.9	1,408,051.85	3,175,567.25	40.451790	-104.869133	
8,525.0	91.16	272.05	7,122.6	-229.1	-1,611.8	1,408,054.22	3,175,477.29	40.451798	-104.869457	
8,615.0	90.96	271.86	7,120.9	-226.0	-1,701.8	1,408,056.64	3,175,387.33	40.451806	-104.869780	
8,705.0	91.32	271.43	7,119.1	-223.4	-1,791.7	1,408,058.58	3,175,297.37	40.451814	-104.870103	
8,795.0	91.92	271.12	7,116.6	-221.4	-1,881.6	1,408,059.94	3,175,207.42	40.451819	-104.870426	
8,885.0	90.71	272.19	7,114.5	-218.8	-1,971.6	1,408,061.89	3,175,117.47	40.451826	-104.870749	
8,974.0	91.79	272.50	7,112.5	-215.2	-2,060.5	1,408,064.89	3,175,028.54	40.451836	-104.871069	
9,064.0	89.08	271.48	7,111.9	-212.0	-2,150.4	1,408,067.37	3,174,938.59	40.451845	-104.871392	
9,154.0	89.81	270.24	7,112.7	-210.7	-2,240.4	1,408,068.08	3,174,848.60	40.451848	-104.871715	
9,244.0	90.89	270.79	7,112.2	-209.9	-2,330.4	1,408,068.24	3,174,758.60	40.451851	-104.872039	
9,334.0	90.06	271.50	7,111.4	-208.1	-2,420.4	1,408,069.39	3,174,668.61	40.451855	-104.872362	
9,424.0	90.99	270.42	7,110.6	-206.6	-2,510.3	1,408,070.25	3,174,578.62	40.451860	-104.872685	
9,514.0	90.14	271.28	7,109.7	-205.2	-2,600.3	1,408,070.94	3,174,488.63	40.451863	-104.873009	
9,604.0	89.44	272.82	7,110.1	-202.0	-2,690.3	1,408,073.52	3,174,398.67	40.451872	-104.873332	
9,693.0	89.97	271.83	7,110.5	-198.4	-2,779.2	1,408,076.49	3,174,309.73	40.451882	-104.873651	
9,783.0	90.34	271.06	7,110.3	-196.1	-2,869.2	1,408,078.11	3,174,219.74	40.451888	-104.873975	
9,873.0	90.51	270.50	7,109.6	-194.9	-2,959.2	1,408,078.69	3,174,129.75	40.451891	-104.874298	
9,963.0	89.48	271.88	7,109.6	-193.1	-3,049.1	1,408,079.92	3,174,039.76	40.451897	-104.874621	
10,053.0	88.48	270.66	7,111.2	-191.1	-3,139.1	1,408,081.26	3,173,949.79	40.451902	-104.874944	
10,143.0	87.42	269.05	7,114.4	-191.3	-3,229.0	1,408,080.39	3,173,859.85	40.451901	-104.875268	
10,233.0	89.77	269.62	7,116.6	-192.3	-3,319.0	1,408,078.70	3,173,769.90	40.451898	-104.875591	
10,323.0	90.11	269.05	7,116.7	-193.4	-3,409.0	1,408,077.01	3,173,679.92	40.451895	-104.875914	
10,413.0	90.08	270.66	7,116.6	-193.6	-3,499.0	1,408,076.14	3,173,589.93	40.451895	-104.876238	
10,503.0	90.22	269.74	7,116.3	-193.3	-3,589.0	1,408,075.81	3,173,499.93	40.451896	-104.876561	
10,593.0	90.35	270.12	7,115.9	-193.4	-3,679.0	1,408,075.05	3,173,409.93	40.451895	-104.876884	
10,682.0	87.27	271.41	7,117.7	-192.2	-3,767.9	1,408,075.60	3,173,320.97	40.451899	-104.877204	
10,772.0	86.72	271.01	7,122.5	-190.3	-3,857.8	1,408,076.85	3,173,231.10	40.451904	-104.877527	
10,862.0	89.07	271.32	7,125.8	-188.5	-3,947.7	1,408,078.04	3,173,141.18	40.451909	-104.877850	
10,952.0	89.64	271.19	7,126.8	-186.5	-4,037.7	1,408,079.36	3,173,051.19	40.451914	-104.878173	
11,042.0	90.30	272.02	7,126.8	-184.0	-4,127.6	1,408,081.24	3,172,961.21	40.451921	-104.878497	

# Ensign

## Survey Report - Geographic

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well KODAK SOUTH 11C
<b>Project:</b>	SEC.26-T6N-R67W	<b>TVD Reference:</b>	Well @ 4771.0ft (Ensign 769 - RKB 28')
<b>Site:</b>	Kodak South PAD	<b>MD Reference:</b>	Well @ 4771.0ft (Ensign 769 - RKB 28')
<b>Well:</b>	KODAK SOUTH 11C	<b>North Reference:</b>	True
<b>Wellbore:</b>	Kodak South 11C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Kodak South 11C Final Surveys	<b>Database:</b>	US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,132.0	91.02	271.39	7,125.8	-181.3	-4,217.6	1,408,083.27	3,172,871.24	40.451928	-104.878820
11,222.0	88.80	270.31	7,125.9	-180.0	-4,307.6	1,408,083.96	3,172,781.25	40.451932	-104.879143
11,312.0	89.29	270.21	7,127.4	-179.6	-4,397.6	1,408,083.72	3,172,691.27	40.451933	-104.879467
11,402.0	89.52	268.91	7,128.4	-180.3	-4,487.6	1,408,082.38	3,172,601.28	40.451931	-104.879790
11,491.0	89.00	271.59	7,129.5	-179.9	-4,576.5	1,408,082.13	3,172,512.30	40.451932	-104.880110
11,580.0	89.16	271.49	7,131.0	-177.5	-4,665.5	1,408,083.89	3,172,423.33	40.451939	-104.880429
11,671.0	89.07	270.28	7,132.4	-176.1	-4,756.5	1,408,084.64	3,172,332.34	40.451942	-104.880756
11,761.0	90.05	272.26	7,133.0	-174.1	-4,846.4	1,408,085.99	3,172,242.36	40.451948	-104.881079
11,941.0	91.82	272.88	7,130.1	-166.0	-5,026.2	1,408,092.77	3,172,062.52	40.451970	-104.881726
12,061.0	90.42	270.18	7,127.8	-162.8	-5,146.1	1,408,095.11	3,171,942.58	40.451979	-104.882156
12,151.0	90.58	269.55	7,127.0	-163.0	-5,236.1	1,408,094.25	3,171,852.59	40.451978	-104.882480
12,241.0	89.89	271.21	7,126.6	-162.4	-5,326.1	1,408,094.20	3,171,762.60	40.451980	-104.882803
12,331.0	89.57	270.91	7,127.0	-160.8	-5,416.1	1,408,095.22	3,171,672.60	40.451984	-104.883127
12,421.0	88.73	269.13	7,128.4	-160.7	-5,506.1	1,408,094.61	3,171,582.62	40.451984	-104.883450
12,511.0	88.80	269.37	7,130.3	-161.9	-5,596.1	1,408,092.78	3,171,492.66	40.451981	-104.883773
12,601.0	89.48	268.94	7,131.7	-163.2	-5,686.1	1,408,090.81	3,171,402.69	40.451977	-104.884096
12,690.0	90.37	268.83	7,131.8	-165.0	-5,775.0	1,408,088.44	3,171,313.72	40.451972	-104.884416
12,780.0	90.75	269.01	7,130.9	-166.7	-5,865.0	1,408,086.10	3,171,223.76	40.451968	-104.884740
12,870.0	91.09	268.26	7,129.5	-168.8	-5,955.0	1,408,083.31	3,171,133.82	40.451962	-104.885063
12,960.0	90.25	269.21	7,128.4	-170.8	-6,045.0	1,408,080.68	3,171,043.86	40.451956	-104.885386
13,050.0	90.90	268.53	7,127.5	-172.6	-6,134.9	1,408,078.26	3,170,953.90	40.451951	-104.885709
13,140.0	89.71	268.75	7,127.0	-174.7	-6,224.9	1,408,075.48	3,170,863.95	40.451945	-104.886033
13,230.0	89.48	270.41	7,127.7	-175.4	-6,314.9	1,408,074.17	3,170,773.96	40.451943	-104.886356
13,320.0	89.87	270.20	7,128.2	-174.9	-6,404.9	1,408,074.00	3,170,683.96	40.451945	-104.886679
13,409.0	90.58	270.76	7,127.8	-174.1	-6,493.9	1,408,074.11	3,170,594.97	40.451947	-104.886999
13,499.0	90.48	270.99	7,127.0	-172.8	-6,583.9	1,408,074.84	3,170,504.97	40.451950	-104.887323
13,589.0	90.08	270.24	7,126.5	-171.8	-6,673.9	1,408,075.16	3,170,414.98	40.451953	-104.887646
13,679.0	90.38	269.78	7,126.2	-171.8	-6,763.9	1,408,074.53	3,170,324.98	40.451953	-104.887969
13,768.0	88.57	268.78	7,127.0	-172.9	-6,852.8	1,408,072.77	3,170,236.00	40.451950	-104.888289
13,858.0	88.84	268.72	7,129.0	-174.9	-6,942.8	1,408,070.16	3,170,146.07	40.451944	-104.888612
13,948.0	89.54	268.18	7,130.3	-177.3	-7,032.8	1,408,067.08	3,170,056.13	40.451938	-104.888936
14,038.0	90.52	268.27	7,130.3	-180.1	-7,122.7	1,408,063.65	3,169,966.20	40.451930	-104.889259
14,128.0	91.95	267.88	7,128.3	-183.1	-7,212.6	1,408,059.98	3,169,876.29	40.451921	-104.889582
14,218.0	90.72	269.06	7,126.2	-185.5	-7,302.6	1,408,056.94	3,169,786.37	40.451915	-104.889905
14,308.0	89.37	268.77	7,126.1	-187.2	-7,392.6	1,408,054.59	3,169,696.41	40.451910	-104.890228
14,398.0	90.15	268.37	7,126.5	-189.5	-7,482.5	1,408,051.70	3,169,606.45	40.451904	-104.890552
14,488.0	89.35	269.54	7,126.9	-191.1	-7,572.5	1,408,049.41	3,169,516.49	40.451899	-104.890875
14,577.0	90.52	269.66	7,127.0	-191.7	-7,661.5	1,408,048.15	3,169,427.50	40.451897	-104.891195
14,667.0	89.18	269.96	7,127.3	-192.0	-7,751.5	1,408,047.20	3,169,337.51	40.451897	-104.891518
14,757.0	89.91	270.07	7,128.0	-192.0	-7,841.5	1,408,046.58	3,169,247.51	40.451897	-104.891842
14,847.0	88.26	269.79	7,129.4	-192.1	-7,931.5	1,408,045.83	3,169,157.53	40.451896	-104.892165
14,937.0	88.85	270.02	7,131.7	-192.3	-8,021.5	1,408,045.03	3,169,067.56	40.451896	-104.892488
15,027.0	89.25	269.97	7,133.2	-192.3	-8,111.4	1,408,044.38	3,168,977.58	40.451896	-104.892812
15,117.0	89.58	269.80	7,134.1	-192.4	-8,201.4	1,408,043.55	3,168,887.59	40.451895	-104.893135
15,206.0	90.46	270.19	7,134.1	-192.4	-8,290.4	1,408,042.90	3,168,798.59	40.451895	-104.893455
15,296.0	88.91	269.51	7,134.6	-192.7	-8,380.4	1,408,042.02	3,168,708.60	40.451894	-104.893778
15,386.0	89.47	270.29	7,135.8	-192.8	-8,470.4	1,408,041.22	3,168,618.61	40.451894	-104.894101
15,476.0	90.25	270.27	7,136.0	-192.4	-8,560.4	1,408,041.01	3,168,528.61	40.451895	-104.894425
15,566.0	91.05	270.00	7,135.0	-192.2	-8,650.4	1,408,040.58	3,168,438.62	40.451895	-104.894748
15,656.0	90.72	269.48	7,133.6	-192.6	-8,740.4	1,408,039.53	3,168,348.64	40.451894	-104.895072
15,745.0	90.33	268.92	7,132.8	-193.8	-8,829.4	1,408,037.65	3,168,259.66	40.451891	-104.895391
15,835.0	90.05	268.43	7,132.5	-195.9	-8,919.4	1,408,034.92	3,168,169.71	40.451885	-104.895715
15,925.0	90.00	267.59	7,132.5	-199.0	-9,009.3	1,408,031.15	3,168,079.79	40.451876	-104.896038
16,015.0	89.35	267.57	7,133.0	-202.8	-9,099.2	1,408,026.70	3,167,989.90	40.451866	-104.896361
16,105.0	89.43	267.97	7,133.9	-206.3	-9,189.2	1,408,022.56	3,167,900.00	40.451856	-104.896684

# Ensign

## Survey Report - Geographic

<b>Company:</b> PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b> Well KODAK SOUTH 11C
<b>Project:</b> SEC.26-T6N-R67W	<b>TVD Reference:</b> Well @ 4771.0ft (Ensign 769 - RKB 28')
<b>Site:</b> Kodak South PAD	<b>MD Reference:</b> Well @ 4771.0ft (Ensign 769 - RKB 28')
<b>Well:</b> KODAK SOUTH 11C	<b>North Reference:</b> True
<b>Wellbore:</b> Kodak South 11C	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> Kodak South 11C Final Surveys	<b>Database:</b> US_EDM

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
16,195.0	88.78	270.04	7,135.4	-207.9	-9,279.1	1,408,020.35	3,167,810.04	40.451851	-104.897007
16,285.0	88.48	269.18	7,137.5	-208.5	-9,369.1	1,408,019.09	3,167,720.08	40.451850	-104.897331
16,375.0	87.84	270.79	7,140.4	-208.5	-9,459.0	1,408,018.42	3,167,630.13	40.451850	-104.897654
16,465.0	89.80	270.08	7,142.2	-207.9	-9,549.0	1,408,018.46	3,167,540.15	40.451851	-104.897977
16,555.0	89.77	269.77	7,142.6	-208.0	-9,639.0	1,408,017.69	3,167,450.16	40.451851	-104.898301
16,645.0	90.53	270.74	7,142.4	-207.6	-9,729.0	1,408,017.45	3,167,360.16	40.451852	-104.898624
16,734.0	91.25	270.58	7,141.0	-206.6	-9,818.0	1,408,017.84	3,167,271.17	40.451855	-104.898944
16,824.0	92.06	270.45	7,138.4	-205.7	-9,908.0	1,408,018.00	3,167,181.21	40.451857	-104.899267
16,914.0	90.04	271.24	7,136.7	-204.4	-9,997.9	1,408,018.68	3,167,091.24	40.451860	-104.899590
17,004.0	90.66	270.71	7,136.2	-202.9	-10,087.9	1,408,019.57	3,167,001.24	40.451864	-104.899914
17,094.0	91.74	270.38	7,134.3	-202.0	-10,177.9	1,408,019.78	3,166,911.26	40.451867	-104.900237
17,184.0	89.12	270.48	7,133.6	-201.4	-10,267.9	1,408,019.81	3,166,821.28	40.451868	-104.900560
17,273.0	89.11	269.46	7,135.0	-201.4	-10,356.9	1,408,019.12	3,166,732.29	40.451868	-104.900880
17,363.0	89.58	268.68	7,136.0	-202.9	-10,446.8	1,408,017.01	3,166,642.32	40.451864	-104.901203
17,453.0	89.31	268.05	7,136.9	-205.4	-10,536.8	1,408,013.80	3,166,552.38	40.451857	-104.901526
17,543.0	89.83	267.86	7,137.6	-208.6	-10,626.7	1,408,009.94	3,166,462.47	40.451848	-104.901850
17,632.0	89.83	270.04	7,137.8	-210.3	-10,715.7	1,408,007.67	3,166,373.50	40.451843	-104.902169
17,722.0	90.53	270.34	7,137.5	-210.0	-10,805.7	1,408,007.33	3,166,283.51	40.451844	-104.902493
17,812.0	89.24	271.05	7,137.7	-208.9	-10,895.7	1,408,007.77	3,166,193.51	40.451847	-104.902816
17,902.0	90.02	270.51	7,138.3	-207.7	-10,985.7	1,408,008.35	3,166,103.52	40.451850	-104.903139
17,992.0	90.78	270.34	7,137.7	-207.0	-11,075.7	1,408,008.37	3,166,013.52	40.451852	-104.903463
18,082.0	89.18	270.38	7,137.7	-206.4	-11,165.7	1,408,008.29	3,165,923.52	40.451853	-104.903786
18,172.0	90.01	270.49	7,138.3	-205.7	-11,255.7	1,408,008.33	3,165,833.52	40.451855	-104.904110
18,262.0	88.33	270.91	7,139.6	-204.6	-11,345.7	1,408,008.78	3,165,743.54	40.451858	-104.904433
18,351.0	89.21	271.15	7,141.6	-203.0	-11,434.6	1,408,009.75	3,165,654.57	40.451862	-104.904753
18,441.0	89.55	270.63	7,142.5	-201.6	-11,524.6	1,408,010.50	3,165,564.57	40.451866	-104.905076
18,531.0	90.48	270.78	7,142.5	-200.5	-11,614.6	1,408,010.96	3,165,474.58	40.451869	-104.905399
18,621.0	90.54	269.92	7,141.7	-200.0	-11,704.6	1,408,010.86	3,165,384.58	40.451870	-104.905723
18,711.0	91.45	269.90	7,140.1	-200.1	-11,794.6	1,408,010.08	3,165,294.60	40.451870	-104.906046
18,800.0	90.31	269.63	7,138.8	-200.5	-11,883.6	1,408,009.07	3,165,205.62	40.451869	-104.906366
18,890.0	90.93	269.31	7,137.8	-201.3	-11,973.6	1,408,007.59	3,165,115.64	40.451866	-104.906689
18,980.0	89.02	269.28	7,137.8	-202.4	-12,063.6	1,408,005.84	3,165,025.66	40.451863	-104.907013
19,052.0	89.02	269.28	7,139.1	-203.3	-12,153.5	1,408,004.42	3,164,935.68	40.451861	-104.907271
<b>BHL - 155' FWL &amp; 412' FSL</b>									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
7,446.0	7,130.0	-209.1	-533.4	LPL - 1323' FWL & 420' FSL	
19,052.0	7,139.1	-203.3	-12,135.5	BHL - 155' FWL & 412' FSL	

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