



Anadarko Petroleum Corporation

Riverbend

Riverbend 14 Pad

Riverbend 26-14 (111407) - Slot 26-14

26-14

Survey: 26-14

Survey Report - Geographic

13 December, 2011

Survey Report - Geographic

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Riverbend 26-14 (111407) - Slot 26-14
Project:	Riverbend	TVD Reference:	KB @ 4966.00ft (Original Well Elev)
Site:	Riverbend 14 Pad	MD Reference:	KB @ 4966.00ft (Original Well Elev)
Well:	Riverbend 26-14 (111407)	North Reference:	True
Wellbore:	26-14	Survey Calculation Method:	Minimum Curvature
Design:	26-14	Database:	EDM5000

Project	Riverbend		
Map System:	Universal Transverse Mercator	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	Riverbend 14 Pad				
Site Position:		Northing:	14,547,138.00 usft	Latitude:	40.055934°N
From:	Lat/Long	Easting:	1,683,122.87 usft	Longitude:	104.847381°W
Position Uncertainty:	0.00 ft	Slot Radius:	13.20 in	Grid Convergence:	0.10 °

Well	Riverbend 26-14 (111407) - Slot 26-14					
Well Position	+N/-S	0.00 ft	Northing:	14,547,198.00 usft	Latitude:	40.056099°N
	+E/-W	0.00 ft	Easting:	1,683,122.62 usft	Longitude:	104.847382°W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,951.00 ft

Wellbore	26-14				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	02/22/12	8.79	66.73	52,868

Design	26-14				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	333.76	

Survey Program	Date	12/12/11			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
196.60	8,223.00	26-14 (26-14)	MWD	MWD - Standard	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,547,198.00	1,683,122.62	40.056099°N	104.847382°W
1.51	0.00	217.88	1.51	0.00	0.00	14,547,198.00	1,683,122.62	40.056099°N	104.847382°W
Chikuma Harry S #2 (VE) at TD									
196.60	0.31	217.88	196.60	-0.42	-0.33	14,547,197.58	1,683,122.30	40.056098°N	104.847383°W
259.40	0.88	313.17	259.40	-0.22	-0.78	14,547,197.78	1,683,121.84	40.056098°N	104.847385°W
320.90	1.89	323.88	320.88	0.92	-1.72	14,547,198.92	1,683,120.90	40.056101°N	104.847388°W
382.70	3.38	327.70	382.61	3.28	-3.30	14,547,201.28	1,683,119.32	40.056108°N	104.847394°W
443.20	4.31	330.38	442.97	6.77	-5.38	14,547,204.76	1,683,117.23	40.056117°N	104.847401°W
504.20	5.10	333.50	503.77	11.18	-7.72	14,547,209.17	1,683,114.88	40.056130°N	104.847409°W
565.10	5.89	334.07	564.39	16.42	-10.29	14,547,214.40	1,683,112.30	40.056144°N	104.847419°W
625.40	7.38	335.48	624.28	22.72	-13.25	14,547,220.70	1,683,109.33	40.056161°N	104.847429°W
686.40	8.61	334.78	684.69	30.42	-16.82	14,547,228.39	1,683,105.74	40.056182°N	104.847442°W

Survey Report - Geographic

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Project:	Riverbend	TVD Reference:	KB @ 4966.00ft (Original Well Elev)
Site:	Riverbend 14 Pad	MD Reference:	KB @ 4966.00ft (Original Well Elev)
Well:	Riverbend 26-14 (111407)	North Reference:	True
Wellbore:	26-14	Survey Calculation Method:	Minimum Curvature
Design:	26-14	Database:	EDM5000

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
747.40	9.01	334.60	744.97	38.86	-20.82	14,547,236.83	1,683,101.74	40.056206°N	104.847456°W
807.90	9.49	335.48	804.68	47.68	-24.92	14,547,245.64	1,683,097.62	40.056230°N	104.847471°W
869.80	9.80	336.09	865.71	57.14	-29.17	14,547,255.09	1,683,093.35	40.056256°N	104.847486°W
910.00	10.11	336.71	905.30	63.51	-31.96	14,547,261.46	1,683,090.56	40.056273°N	104.847496°W
963.00	10.28	337.37	957.46	72.15	-35.61	14,547,270.09	1,683,086.88	40.056297°N	104.847509°W
1,008.00	10.20	337.28	1,001.75	79.53	-38.70	14,547,277.46	1,683,083.79	40.056317°N	104.847520°W
1,097.00	12.79	337.98	1,088.95	95.93	-45.44	14,547,293.86	1,683,077.02	40.056362°N	104.847544°W
1,185.00	12.92	336.27	1,174.75	113.97	-53.05	14,547,311.88	1,683,069.38	40.056412°N	104.847571°W
1,274.00	14.81	332.01	1,261.15	133.12	-62.39	14,547,331.02	1,683,060.00	40.056464°N	104.847605°W
1,361.00	14.02	331.00	1,345.42	152.16	-72.72	14,547,350.04	1,683,049.64	40.056517°N	104.847642°W
1,451.00	13.49	331.17	1,432.83	170.89	-83.07	14,547,368.75	1,683,039.26	40.056568°N	104.847679°W
1,540.00	13.80	331.30	1,519.32	189.30	-93.17	14,547,387.14	1,683,029.13	40.056619°N	104.847715°W
1,631.00	14.02	330.65	1,607.65	208.42	-103.78	14,547,406.25	1,683,018.48	40.056671°N	104.847753°W
1,719.00	13.80	328.98	1,693.07	226.71	-114.42	14,547,424.51	1,683,007.82	40.056721°N	104.847791°W
1,809.00	13.18	328.27	1,780.59	244.64	-125.35	14,547,442.42	1,682,996.86	40.056771°N	104.847830°W
1,899.00	14.81	329.28	1,867.92	263.25	-136.62	14,547,461.02	1,682,985.55	40.056822°N	104.847870°W
1,989.00	13.80	326.78	1,955.12	282.12	-148.38	14,547,479.87	1,682,973.76	40.056874°N	104.847912°W
2,076.00	14.41	330.38	2,039.50	300.21	-159.41	14,547,497.94	1,682,962.70	40.056923°N	104.847951°W
2,165.00	14.02	328.89	2,125.78	319.07	-170.45	14,547,516.78	1,682,951.62	40.056975°N	104.847991°W
2,255.00	14.90	335.50	2,212.93	338.94	-180.89	14,547,536.63	1,682,941.15	40.057030°N	104.848028°W
2,344.00	14.11	332.71	2,299.10	358.99	-190.61	14,547,556.66	1,682,931.40	40.057085°N	104.848063°W
2,433.00	14.28	339.00	2,385.38	378.88	-199.51	14,547,576.54	1,682,922.46	40.057139°N	104.848095°W
2,521.00	13.89	338.69	2,470.74	398.85	-207.24	14,547,596.50	1,682,914.70	40.057194°N	104.848122°W
2,611.00	13.10	336.49	2,558.25	418.27	-215.24	14,547,615.90	1,682,906.67	40.057247°N	104.848151°W
2,701.00	14.41	339.61	2,645.67	438.12	-223.21	14,547,635.74	1,682,898.66	40.057302°N	104.848179°W
2,791.00	13.01	336.18	2,733.11	457.89	-231.20	14,547,655.49	1,682,890.64	40.057356°N	104.848208°W
2,880.00	11.82	333.59	2,820.02	475.21	-239.30	14,547,672.80	1,682,882.51	40.057404°N	104.848237°W
2,970.00	12.70	331.70	2,907.97	492.18	-248.09	14,547,689.75	1,682,873.69	40.057450°N	104.848268°W
3,060.00	14.11	334.69	2,995.52	510.81	-257.47	14,547,708.37	1,682,864.27	40.057502°N	104.848302°W
3,149.00	13.18	334.60	3,082.00	529.78	-266.46	14,547,727.33	1,682,855.25	40.057554°N	104.848334°W
3,239.00	13.71	339.79	3,169.54	549.06	-274.55	14,547,746.59	1,682,847.13	40.057607°N	104.848363°W
3,327.00	12.00	340.71	3,255.33	567.48	-281.17	14,547,765.00	1,682,840.48	40.057657°N	104.848387°W
3,418.00	12.48	336.80	3,344.26	585.45	-288.17	14,547,782.96	1,682,833.45	40.057707°N	104.848412°W
3,507.00	13.89	338.60	3,430.92	604.24	-295.86	14,547,801.73	1,682,825.73	40.057758°N	104.848439°W
3,593.00	12.92	339.48	3,514.57	622.85	-303.00	14,547,820.33	1,682,818.56	40.057809°N	104.848465°W
3,683.00	14.90	332.80	3,601.93	642.57	-311.81	14,547,840.03	1,682,809.71	40.057863°N	104.848496°W
3,774.00	12.92	332.10	3,690.26	661.97	-321.92	14,547,859.42	1,682,799.56	40.057917°N	104.848532°W
3,862.00	14.72	328.10	3,775.71	680.16	-332.44	14,547,877.59	1,682,789.02	40.057967°N	104.848570°W
3,952.00	12.79	329.11	3,863.13	698.41	-343.59	14,547,895.82	1,682,777.83	40.058017°N	104.848610°W
4,041.00	11.51	328.80	3,950.13	714.46	-353.25	14,547,911.86	1,682,768.15	40.058061°N	104.848644°W
4,130.00	10.20	328.10	4,037.54	728.75	-362.02	14,547,926.13	1,682,759.36	40.058100°N	104.848676°W
4,218.00	7.69	339.17	4,124.47	740.87	-368.23	14,547,938.24	1,682,753.12	40.058133°N	104.848698°W
4,306.00	7.38	341.90	4,211.71	751.75	-372.08	14,547,949.11	1,682,749.26	40.058163°N	104.848712°W
4,395.00	5.80	342.91	4,300.12	761.48	-375.18	14,547,958.83	1,682,746.14	40.058190°N	104.848723°W
4,483.00	2.98	10.81	4,387.86	767.98	-376.05	14,547,965.33	1,682,745.25	40.058208°N	104.848726°W
4,573.00	2.59	3.69	4,477.75	772.30	-375.48	14,547,969.66	1,682,745.82	40.058220°N	104.848724°W
4,661.00	0.62	81.30	4,565.72	774.36	-374.89	14,547,971.72	1,682,746.41	40.058225°N	104.848722°W
4,748.00	0.62	120.19	4,652.71	774.20	-374.01	14,547,971.55	1,682,747.28	40.058225°N	104.848718°W
4,837.00	1.32	163.48	4,741.70	772.97	-373.31	14,547,970.33	1,682,747.99	40.058222°N	104.848716°W
4,928.00	1.49	172.49	4,832.68	770.79	-372.85	14,547,968.15	1,682,748.45	40.058216°N	104.848714°W
5,018.00	1.41	178.99	4,922.65	768.53	-372.68	14,547,965.88	1,682,748.63	40.058209°N	104.848714°W
5,108.00	1.32	186.29	5,012.62	766.39	-372.77	14,547,963.75	1,682,748.53	40.058203°N	104.848714°W
5,197.00	1.10	193.58	5,101.60	764.54	-373.09	14,547,961.90	1,682,748.23	40.058198°N	104.848715°W
5,285.00	0.88	204.00	5,189.59	763.10	-373.56	14,547,960.46	1,682,747.75	40.058194°N	104.848717°W
5,376.00	0.88	208.17	5,280.58	761.85	-374.17	14,547,959.20	1,682,747.14	40.058191°N	104.848719°W

Survey Report - Geographic

Company:	Anadarko Petroleum Corporation	Local Co-ordinate Reference:	Well Riverbend 26-14 (111407) - Slot 26-14
Project:	Riverbend	TVD Reference:	KB @ 4966.00ft (Original Well Elev)
Site:	Riverbend 14 Pad	MD Reference:	KB @ 4966.00ft (Original Well Elev)
Well:	Riverbend 26-14 (111407)	North Reference:	True
Wellbore:	26-14	Survey Calculation Method:	Minimum Curvature
Design:	26-14	Database:	EDM5000

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,465.00	0.88	219.99	5,369.57	760.72	-374.94	14,547,958.08	1,682,746.38	40.058188°N	104.848722°W
5,553.00	0.79	224.08	5,457.56	759.77	-375.79	14,547,957.12	1,682,745.53	40.058185°N	104.848725°W
5,644.00	0.62	238.80	5,548.55	759.06	-376.65	14,547,956.41	1,682,744.67	40.058183°N	104.848728°W
5,732.00	0.70	238.58	5,636.54	758.53	-377.52	14,547,955.88	1,682,743.81	40.058182°N	104.848731°W
5,821.00	0.70	232.60	5,725.54	757.92	-378.41	14,547,955.27	1,682,742.91	40.058180°N	104.848734°W
5,911.00	0.70	226.80	5,815.53	757.21	-379.25	14,547,954.56	1,682,742.08	40.058178°N	104.848737°W
5,999.00	0.70	200.00	5,903.52	756.34	-379.83	14,547,953.68	1,682,741.50	40.058176°N	104.848739°W
6,088.00	0.00	203.29	5,992.52	755.83	-380.01	14,547,953.17	1,682,741.32	40.058174°N	104.848740°W
6,178.00	0.40	189.80	6,082.52	755.52	-380.06	14,547,952.86	1,682,741.26	40.058174°N	104.848740°W
6,266.00	0.48	175.47	6,170.52	754.85	-380.09	14,547,952.19	1,682,741.24	40.058172°N	104.848740°W
6,355.00	0.62	177.50	6,259.52	753.99	-380.04	14,547,951.34	1,682,741.29	40.058169°N	104.848740°W
6,445.00	0.88	184.48	6,349.51	752.82	-380.07	14,547,950.16	1,682,741.26	40.058166°N	104.848740°W
6,533.00	1.10	166.91	6,437.49	751.32	-379.93	14,547,948.67	1,682,741.40	40.058162°N	104.848740°W
6,623.00	1.58	162.07	6,527.47	749.30	-379.35	14,547,946.65	1,682,741.98	40.058157°N	104.848738°W
6,711.00	1.71	152.18	6,615.43	746.98	-378.37	14,547,944.33	1,682,742.97	40.058150°N	104.848734°W
6,739.44	1.83	150.01	6,643.86	746.21	-377.94	14,547,943.56	1,682,743.40	40.058148°N	104.848732°W
26-14 Legal Window - 26-14 BH									
6,801.00	2.11	146.21	6,705.38	744.42	-376.82	14,547,941.77	1,682,744.53	40.058143°N	104.848728°W
6,891.00	2.11	141.11	6,795.32	741.75	-374.86	14,547,939.11	1,682,746.49	40.058136°N	104.848721°W
6,978.00	2.29	140.01	6,882.26	739.17	-372.74	14,547,936.53	1,682,748.62	40.058129°N	104.848714°W
7,069.00	1.32	136.98	6,973.21	737.02	-370.85	14,547,934.38	1,682,750.51	40.058123°N	104.848707°W
7,156.00	0.48	122.70	7,060.20	736.09	-369.86	14,547,933.45	1,682,751.50	40.058120°N	104.848704°W
7,246.00	1.10	119.58	7,150.19	735.46	-368.79	14,547,932.82	1,682,752.57	40.058119°N	104.848700°W
7,333.00	0.40	111.89	7,237.18	734.93	-367.78	14,547,932.30	1,682,753.58	40.058117°N	104.848696°W
7,423.00	0.40	63.68	7,327.18	734.95	-367.21	14,547,932.32	1,682,754.15	40.058117°N	104.848694°W
7,514.00	0.31	250.27	7,418.18	735.01	-367.16	14,547,932.38	1,682,754.20	40.058117°N	104.848694°W
7,605.00	0.79	285.60	7,509.18	735.10	-367.99	14,547,932.46	1,682,753.37	40.058118°N	104.848697°W
7,694.00	0.70	285.21	7,598.17	735.40	-369.11	14,547,932.77	1,682,752.25	40.058118°N	104.848701°W
7,784.00	0.22	268.51	7,688.17	735.54	-369.81	14,547,932.91	1,682,751.55	40.058119°N	104.848703°W
7,874.00	0.40	215.99	7,778.17	735.28	-370.17	14,547,932.65	1,682,751.19	40.058118°N	104.848705°W
8,013.00	0.79	264.51	7,917.16	734.80	-371.41	14,547,932.16	1,682,749.95	40.058117°N	104.848709°W
8,223.00	0.79	264.51	8,127.14	734.52	-374.29	14,547,931.88	1,682,747.07	40.058116°N	104.848719°W
Proj to TD at 8223 MD/8127 TVD									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
8,223.00	8,127.14	734.52	-374.29	Proj to TD at 8223 MD/8127 TVD

Checked By: _____ Approved By: _____ Date: _____