



**Company:** Anadarko Petroleum Corp.  
**Lease / Well:** Erickson Birkle P 25-6 JI  
**County/Parish:** WELD  
**State:** COLORADO  
**Date:** 11/15/2014  
**Rig:** NA  
**Surveyor:** SHON LANE  
**Job Number:** 580-512319710  
**Instrument Number:** 4015 **Type:** MEMORY  
**Proposed Direction:** 0 **GL Elev:** 4808  
**Magnetic Declination** 9.86 EAST TO TRUE NORTH  
**Calulation Method:** MINIMUM OF CURVATURE  
**Log Measured From:** GL

#### TIE-IN Coordinates

Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Coordinates	
				(+N/-S)	(+E/-W)
0	0.00	0.00	0.00	0.00	0.00

#### Directional Survey Report

Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Vertical Section	Coordinates (+N/-S)	Coordinates (+E/-W)	Dog-Leg / 100 ft.	Closure Distance	Closure Direction
100	0.30	66.11	100.00	0.11	0.11	0.24	0.30	0.26	66.11°
200	0.23	58.86	200.00	0.32	0.32	0.65	0.08	0.72	64.10°
300	0.48	218.46	300.00	0.09	0.09	0.56	0.70	0.57	80.74°
400	0.54	226.79	399.99	-0.56	-0.56	-0.04	0.10	0.56	184.32°
500	0.66	248.03	499.99	-1.10	-1.10	-0.92	0.25	1.43	219.97°
600	0.87	246.94	599.98	-1.61	-1.61	-2.15	0.21	2.69	233.20°
700	0.74	250.29	699.97	-2.13	-2.13	-3.46	0.14	4.06	238.43°
800	0.82	269.32	799.96	-2.35	-2.35	-4.78	0.27	5.33	243.82°
900	0.93	256.36	899.95	-2.55	-2.55	-6.29	0.23	6.78	247.91°
1000	0.87	257.25	999.94	-2.91	-2.91	-7.82	0.06	8.34	249.58°
1100	0.91	267.01	1099.92	-3.12	-3.12	-9.35	0.16	9.86	251.55°
1200	0.75	254.11	1199.91	-3.34	-3.34	-10.77	0.25	11.28	252.77°
1300	0.79	261.73	1299.90	-3.62	-3.62	-12.08	0.11	12.61	253.33°
1400	0.93	259.41	1399.89	-3.87	-3.87	-13.56	0.14	14.10	254.09°
1500	0.74	288.02	1499.88	-3.82	-3.82	-14.97	0.45	15.45	255.70°
1600	0.85	289.32	1599.87	-3.37	-3.37	-16.29	0.11	16.63	258.31°
1700	0.70	293.84	1699.86	-2.88	-2.88	-17.55	0.16	17.78	260.68°
1800	0.51	274.72	1799.86	-2.59	-2.59	-18.55	0.27	18.73	262.04°
1900	0.76	249.29	1899.85	-2.79	-2.79	-19.61	0.37	19.81	261.90°
2000	0.69	234.70	1999.85	-3.38	-3.38	-20.73	0.20	21.00	260.75°
2100	0.40	203.37	2099.84	-4.04	-4.04	-21.36	0.41	21.73	259.28°
2200	0.32	170.33	2199.84	-4.64	-4.64	-21.45	0.22	21.94	257.79°
2300	0.49	137.51	2299.84	-5.23	-5.23	-21.11	0.28	21.75	256.09°
2400	1.11	139.93	2399.83	-6.29	-6.29	-20.20	0.62	21.15	252.71°
2500	1.39	137.47	2499.80	-7.92	-7.92	-18.76	0.29	20.36	247.10°
2600	1.04	144.95	2599.78	-9.56	-9.56	-17.41	0.38	19.87	241.24°
2700	0.72	129.43	2699.77	-10.70	-10.70	-16.41	0.40	19.59	236.89°
2800	0.51	130.66	2799.76	-11.39	-11.39	-15.59	0.21	19.30	233.84°
2900	0.33	94.17	2899.76	-11.70	-11.70	-14.96	0.31	18.99	231.97°
3000	0.50	34.83	2999.76	-11.36	-11.36	-14.42	0.44	18.36	231.77°
3100	0.69	354.24	3099.75	-10.41	-10.41	-14.24	0.45	17.63	233.83°
3200	0.32	299.83	3199.75	-9.67	-9.67	-14.54	0.57	17.46	236.38°
3300	0.96	240.33	3299.74	-9.94	-9.94	-15.51	0.84	18.42	237.33°
3400	1.71	229.76	3399.71	-11.32	-11.32	-17.37	0.79	20.74	236.91°
3500	1.73	233.36	3499.67	-13.19	-13.19	-19.72	0.11	23.73	236.24°
3600	1.98	234.64	3599.62	-15.09	-15.09	-22.35	0.25	26.96	235.97°
3700	1.34	244.47	3699.58	-16.59	-16.59	-24.81	0.70	29.85	236.23°
3800	0.76	229.51	3799.56	-17.53	-17.53	-26.37	0.64	31.66	236.39°
3900	0.62	228.77	3899.55	-18.31	-18.31	-27.28	0.14	32.86	236.13°
4000	0.70	228.82	3999.54	-19.07	-19.07	-28.15	0.08	34.00	235.88°
4100	0.45	221.77	4099.54	-19.77	-19.77	-28.87	0.26	34.99	235.60°
4200	0.30	237.91	4199.54	-20.20	-20.20	-29.35	0.18	35.63	235.47°
4300	0.38	257.90	4299.54	-20.41	-20.41	-29.90	0.14	36.20	235.68°
4400	0.87	244.34	4399.53	-20.81	-20.81	-30.91	0.51	37.26	236.05°
4500	1.19	237.81	4499.51	-21.69	-21.69	-32.47	0.34	39.05	236.26°
4600	2.16	231.34	4599.47	-23.42	-23.42	-34.82	0.99	41.96	236.08°
4700	2.65	227.43	4699.38	-26.16	-26.16	-37.99	0.52	46.13	235.45°
4800	2.68	227.81	4799.27	-29.29	-29.29	-41.43	0.03	50.74	234.74°

Directional Survey Report									
Measured Depth (ft.)	Inclination	Azimuth Bearing	Vertical Depth	Vertical Section	Coordinates (+N/-S) (+E/-W)		Dog-Leg / 100 ft.	Closure Distance	Closure Direction
4900	2.26	225.72	4899.18	-32.24	-32.24	-44.57	0.43	55.01	234.12°
5000	1.62	224.08	4999.12	-34.63	-34.63	-46.97	0.64	58.35	233.60°
5100	1.31	226.61	5099.09	-36.43	-36.43	-48.78	0.32	60.88	233.25°
5200	1.17	227.39	5199.07	-37.91	-37.91	-50.36	0.14	63.04	233.03°
5300	1.09	224.59	5299.05	-39.28	-39.28	-51.78	0.10	64.99	232.82°
5400	0.87	216.73	5399.03	-40.56	-40.56	-52.90	0.26	66.66	232.52°
5500	0.90	219.50	5499.02	-41.78	-41.78	-53.86	0.05	68.16	232.20°
5600	0.56	192.65	5599.01	-42.86	-42.86	-54.46	0.47	69.31	231.80°
5700	0.59	186.43	5699.01	-43.85	-43.85	-54.63	0.07	70.05	231.25°
5800	0.69	183.55	5799.00	-44.96	-44.96	-54.72	0.11	70.83	230.59°
5900	0.39	217.56	5899.00	-45.83	-45.83	-54.97	0.43	71.57	230.18°
6000	0.32	267.14	5998.99	-46.12	-46.12	-55.45	0.30	72.12	230.25°
6100	0.51	279.95	6098.99	-46.05	-46.05	-56.17	0.21	72.64	230.65°
6200	0.39	265.38	6198.99	-46.00	-46.00	-56.95	0.16	73.21	231.07°
6300	0.49	285.86	6298.99	-45.91	-45.91	-57.70	0.18	73.74	231.49°
6400	0.66	314.95	6398.98	-45.39	-45.39	-58.52	0.33	74.06	232.20°
6500	0.47	304.10	6498.98	-44.75	-44.75	-59.27	0.22	74.27	232.94°
6600	0.87	287.68	6598.97	-44.29	-44.29	-60.33	0.44	74.84	233.71°
6700	0.86	291.06	6698.96	-43.79	-43.79	-61.75	0.05	75.70	234.66°
6800	0.37	267.01	6798.95	-43.54	-43.54	-62.78	0.54	76.40	235.26°
6900	0.62	253.82	6898.95	-43.71	-43.71	-63.62	0.27	77.19	235.51°
7000	0.71	265.59	6998.94	-43.91	-43.91	-64.76	0.16	78.24	235.86°
7100	0.26	269.59	7098.94	-43.96	-43.96	-65.60	0.45	78.96	236.18°
7200	0.43	319.21	7198.94	-43.67	-43.67	-66.07	0.33	79.20	236.54°
7300	0.35	317.21	7298.93	-43.16	-43.16	-66.52	0.08	79.30	237.02°
7400	0.47	346.18	7398.93	-42.54	-42.54	-66.83	0.24	79.22	237.52°
7500	0.28	34.99	7498.93	-41.94	-41.94	-66.79	0.35	78.87	237.87°
7600	0.20	64.37	7598.93	-41.67	-41.67	-66.49	0.14	78.47	237.93°
7700	0.34	114.89	7698.93	-41.72	-41.72	-66.06	0.26	78.13	237.73°

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