



**Company:** PDC Energy  
**Lease / Well:** State 22-28  
**County/Parish:** WELD 123  
**State:** COLORADO  
**Date:** 4/14/2015  
**Rig:** NA  
**Surveyor:** SHON LANE  
**Job Number:** 1301-0512320374  
**Instrument Number:** 3123 **Type:** MEMORY  
**Proposed Direction:** 0 **GL Elev:** 4720  
**Magnetic Declination** 9.62 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	201.50	100.00	-0.24	-0.24	-0.10	0.30	0.26	201.50°
200	0.22	205.45	200.00	-0.66	-0.66	-0.27	0.08	0.72	202.56°
300	0.15	181.67	300.00	-0.96	-0.96	-0.36	0.10	1.03	200.50°
400	0.25	225.12	400.00	-1.25	-1.25	-0.52	0.17	1.35	202.56°
500	0.36	200.25	500.00	-1.70	-1.70	-0.78	0.17	1.87	204.74°
600	0.46	200.47	599.99	-2.37	-2.37	-1.03	0.10	2.58	203.53°
700	0.37	191.62	699.99	-3.06	-3.06	-1.24	0.11	3.30	202.00°
800	0.43	228.50	799.99	-3.63	-3.63	-1.58	0.26	3.96	203.58°
900	0.14	311.95	899.99	-3.79	-3.79	-1.95	0.44	4.27	207.27°
1000	0.31	284.39	999.99	-3.64	-3.64	-2.31	0.20	4.31	212.35°
1100	0.19	240.55	1099.99	-3.66	-3.66	-2.71	0.22	4.56	216.57°
1200	0.15	249.88	1199.99	-3.79	-3.79	-2.98	0.05	4.82	218.23°
1300	0.34	264.77	1299.98	-3.86	-3.86	-3.40	0.20	5.14	221.39°
1400	0.27	255.94	1399.98	-3.94	-3.94	-3.92	0.08	5.56	224.87°
1500	0.16	295.10	1499.98	-3.94	-3.94	-4.28	0.18	5.82	227.37°
1600	0.47	255.08	1599.98	-3.99	-3.99	-4.80	0.36	6.24	230.30°
1700	0.50	271.78	1699.98	-4.08	-4.08	-5.63	0.14	6.96	234.10°
1800	0.38	269.02	1799.97	-4.07	-4.07	-6.40	0.12	7.59	237.55°
1900	0.66	260.07	1899.97	-4.18	-4.18	-7.30	0.29	8.41	240.24°
2000	0.42	244.66	1999.97	-4.43	-4.43	-8.20	0.28	9.32	241.61°
2100	0.68	290.70	2099.96	-4.38	-4.38	-9.09	0.49	10.09	244.27°
2200	0.47	318.92	2199.96	-3.86	-3.86	-9.91	0.35	10.64	248.72°
2300	0.43	300.92	2299.95	-3.36	-3.36	-10.50	0.15	11.03	252.27°
2400	0.04	144.71	2399.95	-3.19	-3.19	-10.80	0.47	11.27	253.53°
2500	0.27	263.94	2499.95	-3.25	-3.25	-11.02	0.29	11.49	253.58°
2600	0.29	300.97	2599.95	-3.14	-3.14	-11.47	0.18	11.89	254.68°
2700	0.28	285.33	2699.95	-2.95	-2.95	-11.92	0.08	12.28	256.12°
2800	0.29	254.44	2799.95	-2.95	-2.95	-12.40	0.15	12.75	256.62°
2900	0.11	122.96	2899.95	-3.07	-3.07	-12.56	0.37	12.93	256.27°
3000	0.14	339.50	2999.95	-3.01	-3.01	-12.53	0.24	12.88	256.50°
3100	0.07	142.05	3099.95	-2.94	-2.94	-12.53	0.21	12.87	256.79°
3200	0.63	24.48	3199.95	-2.49	-2.49	-12.27	0.67	12.52	258.53°
3300	0.52	27.05	3299.94	-1.58	-1.58	-11.83	0.11	11.94	262.37°
3400	0.37	54.55	3399.94	-0.99	-0.99	-11.36	0.26	11.41	265.00°
3500	0.47	47.28	3499.94	-0.53	-0.53	-10.80	0.11	10.81	267.20°
3600	0.39	49.82	3599.93	-0.03	-0.03	-10.24	0.08	10.24	269.83°
3700	0.32	61.41	3699.93	0.32	0.32	-9.73	0.10	9.74	271.90°
3800	0.42	85.68	3799.93	0.48	0.48	-9.12	0.18	9.13	273.04°
3900	0.74	63.34	3899.92	0.80	0.80	-8.18	0.39	8.22	275.60°
4000	0.81	61.18	3999.91	1.43	1.43	-6.98	0.08	7.13	281.59°
4100	1.92	64.82	4099.88	2.49	2.49	-4.85	1.11	5.45	297.15°
4200	2.01	77.08	4199.83	3.59	3.59	-1.62	0.43	3.94	335.70°
4300	2.17	80.63	4299.76	4.29	4.29	1.96	0.21	4.72	24.50°
4400	1.99	91.26	4399.69	4.56	4.56	5.56	0.42	7.19	50.63°
4500	1.80	78.99	4499.64	4.82	4.82	8.84	0.45	10.07	61.38°
4600	1.72	84.48	4599.59	5.27	5.27	11.87	0.19	12.99	66.08°
4700	1.60	75.22	4699.55	5.77	5.77	14.72	0.29	15.81	68.60°
4800	1.86	71.78	4799.51	6.63	6.63	17.61	0.28	18.81	69.36°

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	1.62	83.61	4899.46	7.30	7.30	20.55	0.43	21.81	70.46°
5000	0.94	86.31	4999.43	7.51	7.51	22.78	0.68	23.98	71.76°
5100	0.43	42.56	5099.43	7.84	7.84	23.85	0.70	25.10	71.81°
5200	0.67	27.12	5199.42	8.63	8.63	24.37	0.28	25.85	70.50°
5300	0.40	47.40	5299.42	9.39	9.39	24.89	0.33	26.61	69.34°
5400	0.74	158.56	5399.41	9.02	9.02	25.39	0.96	26.94	70.43°
5500	0.91	141.07	5499.40	7.81	7.81	26.12	0.30	27.26	73.36°
5600	1.22	137.78	5599.39	6.40	6.40	27.34	0.32	28.07	76.82°
5700	1.52	146.08	5699.36	4.51	4.51	28.79	0.36	29.14	81.10°
5800	1.48	150.24	5799.32	2.29	2.29	30.17	0.12	30.26	85.66°
5900	1.41	136.03	5899.29	0.28	0.28	31.67	0.36	31.67	89.49°
6000	1.73	125.79	5999.26	-1.49	-1.49	33.75	0.42	33.78	92.52°
6100	1.70	130.72	6099.21	-3.34	-3.34	36.09	0.15	36.25	95.28°
6200	1.36	125.25	6199.17	-4.99	-4.99	38.19	0.37	38.51	97.44°
6300	1.75	127.77	6299.14	-6.61	-6.61	40.36	0.40	40.90	99.30°
6400	1.28	129.56	6399.10	-8.26	-8.26	42.43	0.47	43.23	101.01°
6500	1.32	139.24	6499.08	-9.84	-9.84	44.05	0.22	45.13	102.59°
6600	1.29	146.14	6599.05	-11.65	-11.65	45.42	0.16	46.89	104.38°

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