



**SUMMIT**  
SLICKLINE INC.

**Company:** PDC ENERGY  
**Lease / Well:** J&L FARMS 13-29  
**County/Parish:** WELD 123  
**State:** COLORADO  
**Date:** 9/13/2016  
**Rig:** NA  
**Surveyor:** SHON LANE  
**Job Number:** 2726-05123-20482  
**Instrument Number:** 3123 **Type:** MEMORY  
**Proposed Direction:** 0 **GL Elev:** 4658  
**Magnetic Declination** 9.56 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	0.58	243.27	100.00	-0.23	-0.23	-0.45	0.58	0.51	243.27°
200	0.39	266.57	199.99	-0.48	-0.48	-1.24	0.27	1.33	249.07°
300	0.32	328.96	299.99	-0.26	-0.26	-1.73	0.37	1.75	261.55°
400	0.38	320.70	399.99	0.24	0.24	-2.08	0.08	2.10	276.55°
500	0.43	324.46	499.99	0.80	0.80	-2.51	0.06	2.63	287.70°
600	0.34	325.53	599.99	1.35	1.35	-2.90	0.09	3.20	295.01°
700	0.29	28.47	699.99	1.82	1.82	-2.94	0.33	3.46	301.71°
800	0.17	312.55	799.98	2.14	2.14	-2.93	0.30	3.63	306.14°
900	0.26	57.32	899.98	2.36	2.36	-2.85	0.35	3.70	309.67°
1000	0.21	22.57	999.98	2.66	2.66	-2.59	0.15	3.71	315.73°
1100	0.19	359.40	1099.98	2.99	2.99	-2.52	0.08	3.91	319.88°
1200	0.23	13.25	1199.98	3.35	3.35	-2.48	0.06	4.17	323.55°
1300	0.24	33.47	1299.98	3.72	3.72	-2.31	0.08	4.38	328.12°
1400	0.44	89.80	1399.98	3.90	3.90	-1.81	0.37	4.30	335.03°
1500	0.51	59.91	1499.98	4.12	4.12	-1.05	0.25	4.25	345.76°
1600	0.49	70.84	1599.97	4.49	4.49	-0.26	0.10	4.49	356.72°
1700	0.47	84.99	1699.97	4.66	4.66	0.56	0.12	4.69	6.80°
1800	0.15	117.92	1799.97	4.64	4.64	1.08	0.35	4.76	13.11°
1900	0.30	70.85	1899.97	4.66	4.66	1.44	0.23	4.88	17.20°
2000	0.29	103.10	1999.97	4.69	4.69	1.94	0.16	5.07	22.44°
2100	0.37	34.60	2099.96	4.90	4.90	2.37	0.38	5.44	25.79°
2200	0.42	341.28	2199.96	5.51	5.51	2.43	0.36	6.02	23.81°
2300	0.76	29.51	2299.96	6.44	6.44	2.64	0.57	6.96	22.32°
2400	0.56	22.66	2399.95	7.46	7.46	3.16	0.21	8.10	22.92°
2500	0.47	45.21	2499.95	8.20	8.20	3.64	0.22	8.97	23.90°
2600	0.71	49.39	2599.94	8.90	8.90	4.40	0.24	9.92	26.30°
2700	0.62	23.28	2699.93	9.80	9.80	5.08	0.31	11.04	27.42°
2800	0.46	41.00	2799.93	10.60	10.60	5.56	0.23	11.97	27.68°
2900	0.49	68.75	2899.93	11.05	11.05	6.22	0.23	12.68	29.37°
3000	0.55	43.67	2999.92	11.56	11.56	6.95	0.23	13.48	31.02°
3100	0.25	52.50	3099.92	12.04	12.04	7.45	0.31	14.16	31.77°
3200	0.23	162.17	3199.92	11.98	11.98	7.69	0.39	14.23	32.70°
3300	0.30	147.97	3299.92	11.56	11.56	7.89	0.10	14.00	34.30°
3400	0.33	124.60	3399.92	11.18	11.18	8.27	0.13	13.90	36.48°
3500	0.85	62.60	3499.91	11.36	11.36	9.16	0.75	14.59	38.89°
3600	1.00	56.28	3599.90	12.18	12.18	10.55	0.18	16.11	40.88°
3700	0.91	50.92	3699.89	13.17	13.17	11.89	0.13	17.74	42.08°
3800	0.86	64.84	3799.87	13.99	13.99	13.18	0.22	19.22	43.31°
3900	0.45	89.39	3899.87	14.31	14.31	14.26	0.49	20.20	44.89°
4000	0.41	190.73	3999.87	13.96	13.96	14.58	0.67	20.19	46.24°
4100	0.90	215.77	4099.86	12.97	12.97	14.06	0.56	19.13	47.29°
4200	1.80	211.52	4199.83	11.00	11.00	12.78	0.90	16.86	49.28°
4300	1.24	214.79	4299.79	8.77	8.77	11.34	0.57	14.33	52.27°
4400	0.95	207.75	4399.78	7.15	7.15	10.33	0.32	12.57	55.33°
4500	0.42	95.44	4499.77	6.38	6.38	10.31	1.18	12.13	58.26°
4600	0.63	70.53	4599.77	6.53	6.53	11.20	0.31	12.96	59.75°
4700	0.14	329.19	4699.77	6.82	6.82	11.65	0.67	13.50	59.67°
4800	1.12	227.68	4799.76	6.26	6.26	10.87	1.16	12.54	60.04°

Directional Survey Report									
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4900	1.51	221.17	4899.73	4.61	4.61	9.28	0.42	10.36	63.55°
5000	1.56	220.53	4999.70	2.59	2.59	7.52	0.05	7.96	71.02°
5100	0.54	187.24	5099.68	1.09	1.09	6.58	1.15	6.67	80.63°
5200	0.67	90.63	5199.68	0.61	0.61	7.11	0.91	7.13	85.08°
5300	2.13	50.90	5299.65	1.78	1.78	9.13	1.67	9.30	78.99°
5400	2.14	45.84	5399.58	4.25	4.25	11.91	0.19	12.65	70.37°
5500	1.83	46.65	5499.52	6.65	6.65	14.41	0.31	15.87	65.25°
5600	1.15	43.57	5599.48	8.47	8.47	16.27	0.68	18.34	62.50°
5700	0.76	32.24	5699.47	9.76	9.76	17.31	0.43	19.87	60.59°
5800	0.53	3.58	5799.46	10.78	10.78	17.70	0.39	20.72	58.65°
5900	0.42	340.09	5899.46	11.59	11.59	17.60	0.22	21.07	56.64°
6000	0.42	309.80	5999.46	12.17	12.17	17.19	0.22	21.06	54.72°
6100	0.47	303.80	6099.45	12.63	12.63	16.57	0.07	20.83	52.69°
6200	0.68	289.91	6199.45	13.06	13.06	15.67	0.25	20.40	50.20°
6300	1.08	291.51	6299.44	13.61	13.61	14.24	0.40	19.69	46.30°
6400	0.71	279.52	6399.42	14.05	14.05	12.75	0.41	18.98	42.21°
6500	0.22	153.68	6499.42	13.98	13.98	12.22	0.86	18.57	41.16°
6600	0.54	112.19	6599.42	13.63	13.63	12.75	0.40	18.66	43.07°
6650	0.64	126.35	6649.42	13.38	13.38	13.19	0.35	18.79	44.59°

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