



SUMMIT
SLICKLINE INC.

Company: PDC ENERGY
Lease / Well: CYPRUS #1
County/Parish: WELD 123
State: COLORADO
Date: 2/10/2017
Rig: NA
Surveyor: JOHNNY RIDDLE
Job Number: 3608-05-123-24094
Instrument Number: 3123 **Type:** MEMORY
Proposed Direction: 0 **GL Elev:** 4889
Magnetic Declination 9.80 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	0.63	36.07	100.00	0.44	0.44	0.32	0.63	0.55	36.07°
200	0.69	13.51	199.99	1.47	1.47	0.79	0.26	1.67	28.13°
300	0.60	336.43	299.99	2.54	2.54	0.72	0.42	2.64	15.81°
400	1.41	275.95	399.97	3.15	3.15	-0.71	1.23	3.23	347.22°
500	0.53	283.32	499.96	3.38	3.38	-2.39	0.89	4.14	324.77°
600	0.60	282.15	599.95	3.60	3.60	-3.35	0.07	4.92	317.05°
700	0.42	285.52	699.95	3.81	3.81	-4.21	0.18	5.68	312.09°
800	0.60	322.92	799.94	4.32	4.32	-4.88	0.37	6.52	311.51°
900	0.96	298.84	899.93	5.14	5.14	-5.93	0.48	7.85	310.93°
1000	0.51	275.31	999.93	5.59	5.59	-7.11	0.53	9.04	308.17°
1100	0.92	305.05	1099.92	6.09	6.09	-8.21	0.54	10.22	306.57°
1200	0.55	327.67	1199.91	6.96	6.96	-9.12	0.46	11.47	307.33°
1300	0.54	282.53	1299.91	7.47	7.47	-9.84	0.42	12.35	307.19°
1400	0.87	285.73	1399.90	7.77	7.77	-11.03	0.33	13.50	305.17°
1500	1.02	294.35	1499.88	8.35	8.35	-12.57	0.21	15.09	303.58°
1600	1.17	295.40	1599.87	9.15	9.15	-14.31	0.15	16.98	302.61°
1700	1.25	294.91	1699.84	10.05	10.05	-16.22	0.08	19.08	301.78°
1800	0.93	289.96	1799.83	10.79	10.79	-17.97	0.33	20.96	300.97°
1900	0.47	277.07	1899.82	11.11	11.11	-19.14	0.48	22.13	300.14°
2000	0.52	278.30	1999.81	11.23	11.23	-20.00	0.05	22.93	299.32°
2100	0.47	284.10	2099.81	11.39	11.39	-20.84	0.07	23.75	298.66°
2200	0.32	271.70	2199.81	11.50	11.50	-21.52	0.17	24.40	298.12°
2300	0.33	283.71	2299.81	11.58	11.58	-22.08	0.07	24.93	297.67°
2400	0.46	289.84	2399.80	11.78	11.78	-22.74	0.14	25.61	297.40°
2500	0.88	281.43	2499.80	12.07	12.07	-23.87	0.43	26.75	296.83°
2600	1.27	278.95	2599.78	12.40	12.40	-25.71	0.39	28.55	295.74°
2700	1.50	297.66	2699.75	13.18	13.18	-27.97	0.50	30.92	295.23°
2800	1.02	307.67	2799.73	14.33	14.33	-29.83	0.53	33.09	295.65°
2900	0.89	294.81	2899.71	15.20	15.20	-31.24	0.25	34.74	295.94°
3000	0.99	335.40	2999.70	16.31	16.31	-32.31	0.66	36.19	296.79°
3100	0.57	314.01	3099.69	17.44	17.44	-33.02	0.50	37.35	297.84°
3200	0.31	80.48	3199.69	17.83	17.83	-33.11	0.79	37.61	298.30°
3300	0.59	90.33	3299.69	17.87	17.87	-32.33	0.29	36.94	298.93°
3400	0.78	155.95	3399.68	17.25	17.25	-31.54	0.76	35.95	298.67°
3500	0.43	289.14	3499.68	16.75	16.75	-31.62	1.12	35.78	297.91°
3600	1.21	288.76	3599.67	17.21	17.21	-32.97	0.78	37.19	297.57°
3700	0.94	284.06	3699.65	17.75	17.75	-34.77	0.28	39.04	297.05°
3800	1.11	309.12	3799.63	18.56	18.56	-36.31	0.47	40.78	297.07°
3900	1.38	289.24	3899.61	19.57	19.57	-38.20	0.51	42.92	297.12°
4000	0.76	286.94	3999.59	20.16	20.16	-39.97	0.62	44.77	296.76°
4100	0.65	297.22	4099.58	20.61	20.61	-41.11	0.17	45.99	296.63°
4200	0.60	309.28	4199.58	21.20	21.20	-42.02	0.14	47.07	296.77°
4300	0.58	320.52	4299.57	21.92	21.92	-42.75	0.12	48.04	297.15°
4400	0.46	313.94	4399.57	22.59	22.59	-43.36	0.13	48.89	297.52°
4500	0.17	299.76	4499.57	22.95	22.95	-43.78	0.30	49.43	297.66°
4600	0.16	295.57	4599.57	23.08	23.08	-44.03	0.02	49.71	297.66°
4700	0.31	285.10	4699.57	23.21	23.21	-44.42	0.16	50.12	297.59°
4800	0.39	274.79	4799.56	23.31	23.31	-45.02	0.10	50.70	297.37°

Directional Survey Report									
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					(+N/-S)	(+E/-W)			
4900	0.72	277.81	4899.56	23.42	23.42	-45.98	0.33	51.60	296.99°
5000	0.78	291.58	4999.55	23.76	23.76	-47.24	0.19	52.88	296.70°
5100	0.74	294.23	5099.54	24.27	24.27	-48.46	0.05	54.20	296.61°
5200	0.65	279.23	5199.54	24.63	24.63	-49.61	0.20	55.39	296.40°
5300	0.66	275.38	5299.53	24.78	24.78	-50.74	0.05	56.47	296.03°
5400	0.78	280.73	5399.52	24.96	24.96	-51.98	0.14	57.66	295.65°
5500	0.87	260.21	5499.51	24.95	24.95	-53.40	0.31	58.94	295.05°
5600	1.25	250.60	5599.49	24.46	24.46	-55.18	0.42	60.36	293.91°
5700	1.45	254.15	5699.47	23.75	23.75	-57.42	0.22	62.14	292.47°
5800	1.60	260.70	5799.43	23.18	23.18	-60.02	0.23	64.34	291.12°
5900	2.06	269.32	5899.38	22.94	22.94	-63.19	0.53	67.23	289.95°
6000	2.22	274.08	5999.31	23.05	23.05	-66.92	0.24	70.78	289.01°
6100	2.37	275.09	6099.23	23.37	23.37	-70.91	0.16	74.67	288.24°
6200	2.76	274.26	6199.13	23.74	23.74	-75.37	0.39	79.02	287.48°
6300	3.04	277.68	6299.00	24.27	24.27	-80.40	0.33	83.99	286.80°
6400	2.87	294.47	6398.87	25.66	25.66	-85.31	0.88	89.09	286.74°
6500	2.39	323.24	6498.77	28.37	28.37	-88.84	1.39	93.26	287.71°
6600	2.69	335.42	6598.67	32.17	32.17	-91.06	0.62	96.58	289.46°
6700	2.94	340.12	6698.55	36.72	36.72	-92.91	0.34	99.90	291.56°
6800	3.44	343.53	6798.40	42.01	42.01	-94.63	0.53	103.54	293.94°
6900	3.40	347.17	6898.22	47.78	47.78	-96.14	0.22	107.36	296.42°
7000	2.74	359.35	6998.07	53.06	53.06	-96.83	0.92	110.41	298.72°
7100	1.89	4.66	7097.99	57.09	57.09	-96.72	0.88	112.31	300.55°
7200	1.47	17.54	7197.95	59.96	59.96	-96.20	0.56	113.35	301.93°

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