



Job Number: SVGJ-140254

Company: PDC

Lease/Well: Derrek 1

Location: Weld County, CO

Rig Name: MS Slickline

RKB: 0'

G.L. or M.S.L.: GL

State/Country: Colorado/USA

Declination: 8.51°

Grid: East To True North

File name: S:\2014SU~1\PDC\GJ\DERREK\1.SVY

Date/Time: 07-Mar-14 / 09:24

Curve Name: Surface - 7200' M.D. (Rate Gyro)

MS SURVEY

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method

Vertical Section Plane .00

Vertical Section Referenced to Wellhead

Rectangular Coordinates Referenced to Wellhead

<i>Measured Depth FT</i>	<i>Incl Angle Deg</i>	<i>Drift Direction Deg</i>	<i>True Vertical Depth</i>	<i>N-S FT</i>	<i>E-W FT</i>	<i>Vertical Section FT</i>	<i>C L O S U R E</i>		<i>Dogleg Severity Deg/100</i>
							<i>Distance FT</i>	<i>Direction Deg</i>	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.11	179.52	100.00	-.10	.00	-.10	.10	179.51	.11
200.00	.45	250.55	200.00	-.32	-.37	-.32	.49	228.80	.43
300.00	.46	306.89	300.00	-.21	-1.06	-.21	1.08	258.66	.43
400.00	.16	281.27	399.99	.06	-1.52	.06	1.52	272.10	.32
500.00	.49	206.48	499.99	-.30	-1.85	-.30	1.87	260.78	.47
600.00	.24	260.13	599.99	-.72	-2.24	-.72	2.35	252.24	.40
700.00	.19	125.99	699.99	-.85	-2.31	-.85	2.47	249.80	.40
800.00	.57	191.64	799.99	-1.44	-2.28	-1.44	2.70	237.80	.52
900.00	.39	141.66	899.99	-2.19	-2.17	-2.19	3.08	224.73	.44

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1000.00	.43	147.41	999.98	-2.77	-1.76	-2.77	3.28	212.35	.06
1100.00	.33	173.36	1099.98	-3.38	-1.52	-3.38	3.70	204.26	.20
1200.00	.10	169.01	1199.98	-3.75	-1.47	-3.75	4.03	201.44	.23
1300.00	.37	302.63	1299.98	-3.66	-1.73	-3.66	4.05	205.27	.44
1400.00	.40	299.45	1399.98	-3.31	-2.30	-3.31	4.03	214.80	.04
1500.00	.40	241.63	1499.98	-3.31	-2.91	-3.31	4.41	221.38	.39
1600.00	.34	207.31	1599.97	-3.74	-3.36	-3.74	5.02	221.93	.23
1700.00	.31	193.78	1699.97	-4.26	-3.56	-4.26	5.55	219.84	.08
1800.00	.30	194.01	1799.97	-4.78	-3.69	-4.78	6.04	217.63	.01
1900.00	.41	307.54	1899.97	-4.82	-4.03	-4.82	6.28	219.94	.60
2000.00	.69	356.28	1999.97	-4.00	-4.36	-4.00	5.91	227.45	.52
2100.00	.36	347.66	2099.96	-3.09	-4.46	-3.09	5.43	235.30	.34
2200.00	.57	5.63	2199.96	-2.29	-4.48	-2.29	5.03	242.95	.25
2300.00	.82	321.53	2299.95	-1.23	-4.88	-1.23	5.03	255.82	.57
2400.00	.90	334.34	2399.94	.04	-5.66	.04	5.66	270.36	.21
2500.00	.49	340.15	2499.93	1.15	-6.15	1.15	6.25	280.56	.42
2600.00	1.02	300.78	2599.92	2.00	-7.06	2.00	7.34	285.85	.71
2700.00	1.00	331.54	2699.91	3.23	-8.24	3.23	8.85	291.39	.54
2800.00	.79	303.98	2799.90	4.38	-9.22	4.38	10.21	295.39	.47
2900.00	1.23	331.04	2899.88	5.70	-10.32	5.70	11.79	298.94	.64
3000.00	.96	343.35	2999.86	7.44	-11.08	7.44	13.35	303.91	.36
3100.00	1.28	328.97	3099.84	9.20	-11.89	9.20	15.04	307.74	.42
3200.00	.97	291.13	3199.83	10.47	-13.26	10.47	16.89	308.29	.79
3300.00	1.37	302.37	3299.81	11.41	-15.06	11.41	18.89	307.16	.46
3400.00	1.15	312.20	3399.78	12.73	-16.81	12.73	21.08	307.13	.31
3500.00	1.27	307.92	3499.76	14.08	-18.43	14.08	23.19	307.39	.15
3600.00	.90	323.70	3599.74	15.40	-19.77	15.40	25.05	307.91	.47
3700.00	.66	311.96	3699.73	16.41	-20.66	16.41	26.39	308.47	.29
3800.00	.47	354.04	3799.73	17.21	-21.13	17.21	27.25	309.16	.44

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
3900.00	.13	37.28	3899.73	17.70	-21.10	17.70	27.55	309.99	.39
4000.00	.70	349.36	3999.72	18.39	-21.15	18.39	28.03	311.02	.62
4100.00	.89	324.80	4099.71	19.63	-21.71	19.63	29.27	312.12	.39
4200.00	1.20	303.74	4199.70	20.85	-23.03	20.85	31.06	312.15	.49
4300.00	1.29	314.28	4299.67	22.21	-24.70	22.21	33.22	311.96	.25
4400.00	1.08	323.83	4399.65	23.76	-26.07	23.76	35.27	312.35	.29
4500.00	1.19	332.99	4499.63	25.45	-27.09	25.45	37.17	313.20	.21
4600.00	1.79	2.65	4599.60	27.93	-27.49	27.93	39.19	315.45	.96
4700.00	1.94	354.21	4699.55	31.18	-27.59	31.18	41.63	318.49	.31
4800.00	1.60	341.00	4799.50	34.18	-28.22	34.18	44.32	320.46	.53
4900.00	1.46	3.09	4899.46	36.77	-28.60	36.77	46.59	322.12	.60
5000.00	1.23	347.76	4999.44	39.09	-28.76	39.09	48.53	323.66	.43
5100.00	.83	334.55	5099.42	40.80	-29.30	40.80	50.23	324.31	.46
5200.00	.54	34.68	5199.42	41.84	-29.34	41.84	51.10	324.96	.73
5300.00	.49	35.62	5299.41	42.57	-28.83	42.57	51.41	325.90	.05
5400.00	.80	49.29	5399.40	43.38	-28.05	43.38	51.65	327.11	.34
5500.00	.69	59.50	5499.40	44.14	-27.00	44.14	51.74	328.54	.17
5600.00	.72	21.89	5599.39	45.02	-26.25	45.02	52.12	329.76	.46
5700.00	.76	97.96	5699.38	45.52	-25.36	45.52	52.10	330.88	.91
5800.00	.27	133.58	5799.38	45.26	-24.53	45.26	51.48	331.55	.56
5900.00	.22	185.05	5899.38	44.91	-24.37	44.91	51.10	331.51	.22
6000.00	.21	206.36	5999.38	44.55	-24.47	44.55	50.83	331.22	.08
6100.00	.21	59.58	6099.38	44.48	-24.40	44.48	50.73	331.26	.40
6200.00	.13	81.48	6199.38	44.59	-24.13	44.59	50.70	331.58	.10
6300.00	.46	18.88	6299.38	44.99	-23.88	44.99	50.93	332.04	.42
6400.00	.16	356.12	6399.37	45.51	-23.76	45.51	51.34	332.43	.32
6500.00	.67	4.46	6499.37	46.23	-23.73	46.23	51.96	332.83	.51
6600.00	.12	43.81	6599.37	46.89	-23.61	46.89	52.50	333.27	.58
6700.00	.13	96.23	6699.37	46.95	-23.42	46.95	52.47	333.48	.11

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
6800.00	.32	60.96	6799.37	47.07	-23.07	47.07	52.42	333.89	.23
6900.00	.22	34.09	6899.37	47.37	-22.72	47.37	52.53	334.38	.16
7000.00	.14	124.56	6999.37	47.46	-22.51	47.46	52.52	334.63	.26
7100.00	.15	207.79	7099.37	47.27	-22.47	47.27	52.34	334.58	.19
Last Survey Depth Recorded									
7200.00	.45	27.46	7199.36	47.51	-22.35	47.51	52.50	334.81	.60