



Job Number: SVGJ-140784
 Company: PDC
 Lease/Well: Jacobucci 33-32
 Location: Weld County, CO
 Rig Name: MS Slickline
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.50°
 Grid: East To True North
 File name: Y:\WINSER~1\2014SU~1\PDC\GJ\JACOBUC~1\3332.SVY
 Date/Time: 30-Jun-14 / 10:48
 Curve Name: Surface - 7800' 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	.26	268.76	100.00	.00	-.23	.00	.23	268.76	.26
200.00	.10	343.50	200.00	.07	-.48	.07	.48	278.78	.25
300.00	.26	293.59	300.00	.25	-.71	.25	.75	289.25	.21
400.00	.22	7.35	400.00	.53	-.89	.53	1.04	300.62	.29
500.00	.33	338.58	500.00	.99	-.98	.99	1.39	315.38	.17
600.00	.49	3.48	599.99	1.68	-1.05	1.68	1.99	327.93	.24
700.00	.30	16.74	699.99	2.36	-.95	2.36	2.55	338.01	.21
800.00	.33	348.09	799.99	2.89	-.94	2.89	3.04	342.05	.16
900.00	.40	21.09	899.99	3.50	-.87	3.50	3.61	346.03	.22

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	.09	2.36	999.99	3.90	-.74	3.90	3.97	349.24	.32
1100.00	.35	335.63	1099.99	4.26	-.86	4.26	4.35	348.53	.27
1200.00	.34	306.15	1199.99	4.71	-1.23	4.71	4.87	345.37	.18
1300.00	.60	288.99	1299.98	5.06	-1.97	5.06	5.43	338.78	.29
1400.00	.76	299.44	1399.97	5.56	-3.04	5.56	6.33	331.33	.20
1500.00	.81	279.49	1499.97	6.00	-4.31	6.00	7.39	324.29	.28
1600.00	.97	293.90	1599.95	6.46	-5.78	6.46	8.67	318.15	.27
1700.00	.93	279.76	1699.94	6.94	-7.36	6.94	10.11	313.32	.24
1800.00	1.09	290.15	1799.92	7.40	-9.05	7.40	11.69	309.29	.24
1900.00	1.05	280.53	1899.91	7.90	-10.84	7.90	13.42	306.07	.18
2000.00	1.34	285.20	1999.89	8.37	-12.87	8.37	15.36	303.04	.31
2100.00	1.19	290.28	2099.86	9.04	-14.98	9.04	17.49	301.12	.19
2200.00	1.27	283.83	2199.84	9.66	-17.03	9.66	19.58	299.58	.16
2300.00	1.51	287.06	2299.81	10.32	-19.36	10.32	21.94	298.05	.25
2400.00	1.55	299.10	2399.77	11.36	-21.80	11.36	24.58	297.52	.32
2500.00	1.20	305.83	2499.74	12.63	-23.83	12.63	26.97	297.92	.38
2600.00	1.33	301.02	2599.72	13.84	-25.68	13.84	29.17	298.33	.17
2700.00	1.49	305.46	2699.69	15.19	-27.73	15.19	31.62	298.72	.19
2800.00	1.03	300.28	2799.67	16.40	-29.57	16.40	33.81	299.02	.47
2900.00	.80	271.04	2899.65	16.87	-31.04	16.87	35.33	298.52	.51
3000.00	.76	254.25	2999.64	16.70	-32.38	16.70	36.43	297.29	.23
3100.00	.50	245.52	3099.64	16.34	-33.41	16.34	37.19	296.06	.28
3200.00	.62	219.80	3199.63	15.74	-34.15	15.74	37.61	294.75	.28
3300.00	.56	221.11	3299.63	14.96	-34.82	14.96	37.90	293.25	.06
3400.00	1.06	170.42	3399.62	13.68	-34.99	13.68	37.57	291.35	.83
3500.00	1.51	171.42	3499.59	11.46	-34.64	11.46	36.49	288.31	.45
3600.00	1.33	177.58	3599.56	9.00	-34.39	9.00	35.55	284.67	.24
3700.00	1.11	170.81	3699.54	6.89	-34.19	6.89	34.88	281.39	.26
3800.00	.79	173.94	3799.53	5.24	-33.96	5.24	34.36	278.78	.32

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	.92	151.07	3899.51	3.86	-33.50	3.86	33.72	276.57	.36
4000.00	.73	155.58	3999.50	2.57	-32.85	2.57	32.95	274.48	.20
4100.00	.97	148.30	4099.49	1.27	-32.14	1.27	32.17	272.27	.26
4200.00	.77	151.96	4199.48	-.04	-31.38	-.04	31.38	269.93	.21
4300.00	.99	146.63	4299.47	-1.35	-30.59	-1.35	30.62	267.46	.23
4400.00	1.52	159.50	4399.45	-3.32	-29.65	-3.32	29.84	263.61	.60
4500.00	1.64	165.09	4499.41	-5.94	-28.82	-5.94	29.42	258.35	.20
4600.00	2.03	165.28	4599.36	-9.04	-28.00	-9.04	29.42	252.11	.39
4700.00	1.76	126.41	4699.31	-11.66	-26.31	-11.66	28.78	246.09	1.29
4800.00	1.47	100.12	4799.27	-12.80	-23.81	-12.80	27.04	241.74	.79
4900.00	1.04	92.14	4899.24	-13.06	-21.64	-13.06	25.28	238.89	.46
5000.00	.98	99.67	4999.23	-13.24	-19.89	-13.24	23.90	236.36	.15
5100.00	.88	91.69	5099.21	-13.40	-18.28	-13.40	22.67	233.76	.16
5200.00	.52	92.39	5199.21	-13.45	-17.06	-13.45	21.72	231.76	.36
5300.00	.29	139.63	5299.20	-13.66	-16.45	-13.66	21.38	230.29	.39
5400.00	.39	134.16	5399.20	-14.09	-16.04	-14.09	21.35	228.71	.11
5500.00	.42	109.53	5499.20	-14.45	-15.45	-14.45	21.15	226.92	.18
5600.00	.26	100.86	5599.20	-14.61	-14.88	-14.61	20.86	225.52	.17
5700.00	.14	172.73	5699.20	-14.78	-14.64	-14.78	20.80	224.74	.25
5800.00	.22	153.44	5799.20	-15.07	-14.54	-15.07	20.94	223.98	.10
5900.00	.27	135.03	5899.20	-15.41	-14.29	-15.41	21.01	222.84	.09
6000.00	.21	69.95	5999.20	-15.51	-13.95	-15.51	20.86	221.97	.26
6100.00	.08	54.71	6099.20	-15.41	-13.72	-15.41	20.63	221.68	.13
6200.00	.11	56.57	6199.20	-15.31	-13.58	-15.31	20.47	221.57	.03
6300.00	.10	78.58	6299.20	-15.24	-13.42	-15.24	20.31	221.35	.04
6400.00	.41	344.04	6399.19	-14.88	-13.43	-14.88	20.05	222.06	.43
6500.00	1.02	317.16	6499.19	-13.89	-14.13	-13.89	19.81	225.51	.68
6600.00	1.10	316.35	6599.17	-12.54	-15.40	-12.54	19.86	230.85	.08
6700.00	1.16	290.98	6699.15	-11.48	-17.01	-11.48	20.52	235.98	.50

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	.47	316.26	6799.14	-10.82	-18.24	-10.82	21.21	239.31	.76
6900.00	.85	275.58	6899.13	-10.46	-19.26	-10.46	21.91	241.50	.58
7000.00	1.08	286.03	6999.12	-10.12	-20.90	-10.12	23.23	244.16	.29
7100.00	1.10	270.49	7099.10	-9.85	-22.77	-9.85	24.81	246.60	.30
7200.00	1.22	259.84	7199.08	-10.03	-24.78	-10.03	26.73	247.95	.25
7300.00	1.09	256.24	7299.06	-10.45	-26.75	-10.45	28.72	248.66	.15
7400.00	.74	224.16	7399.05	-11.14	-28.12	-11.14	30.25	248.39	.61
7500.00	.77	123.99	7499.04	-11.98	-28.02	-11.98	30.47	246.85	1.16
7600.00	1.06	127.19	7599.03	-12.91	-26.72	-12.91	29.68	244.21	.29
7700.00	1.06	168.66	7699.01	-14.38	-25.80	-14.38	29.54	240.87	.75

Last Survey Depth Recorded									
7800.00	1.30	188.38	7798.99	-16.41	-25.79	-16.41	30.56	237.53	.47