



Job Number: SVGJ-140772

Company: PDC

Lease/Well: Jacobucci 23-32

Location: Weld County, CO

Rig Name: MS Energy Wireline Truck #6000

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\2332.SVY

Date/Time: 25-Jun-14 / 10:14

Curve Name: Surface - 8242' 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	.34	96.77	100.00	-.03	.29	-.03	.30	96.77	.34
200.00	.35	46.55	200.00	.14	.81	.14	.82	80.20	.29
300.00	.49	17.68	300.00	.76	1.16	.76	1.39	56.91	.25
400.00	.55	351.95	399.99	1.64	1.23	1.64	2.05	36.76	.24
500.00	.69	336.71	499.99	2.67	.92	2.67	2.82	19.02	.22
600.00	.88	324.70	599.98	3.85	.24	3.85	3.86	3.54	.25
700.00	.89	308.29	699.96	4.96	-.82	4.96	5.02	350.66	.25
800.00	.79	309.27	799.95	5.87	-1.96	5.87	6.19	341.56	.10
900.00	1.09	305.01	899.94	6.86	-3.27	6.86	7.60	334.49	.31

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	1.23	306.88	999.92	8.05	-4.91	8.05	9.42	328.61	.15
1100.00	1.46	308.92	1099.89	9.49	-6.76	9.49	11.65	324.54	.23
1200.00	1.54	308.62	1199.86	11.13	-8.80	11.13	14.19	321.67	.08
1300.00	1.48	304.37	1299.82	12.70	-10.92	12.70	16.74	319.32	.13
1400.00	1.35	296.70	1399.79	13.96	-13.03	13.96	19.10	316.96	.23
1500.00	1.40	293.27	1499.76	14.97	-15.21	14.97	21.34	314.54	.10
1600.00	1.48	287.17	1599.73	15.83	-17.56	15.83	23.65	312.03	.17
1700.00	1.63	282.42	1699.70	16.52	-20.19	16.52	26.08	309.29	.20
1800.00	1.50	283.15	1799.66	17.12	-22.85	17.12	28.55	306.84	.13
1900.00	1.50	286.32	1899.62	17.79	-25.38	17.79	30.99	305.02	.08
2000.00	1.54	287.42	1999.59	18.56	-27.92	18.56	33.52	303.61	.05
2100.00	1.44	291.05	2099.55	19.41	-30.37	19.41	36.05	302.58	.14
2200.00	1.37	290.79	2199.52	20.29	-32.66	20.29	38.45	301.84	.07
2300.00	1.33	290.94	2299.50	21.13	-34.87	21.13	40.77	301.21	.04
2400.00	1.29	287.50	2399.47	21.88	-37.02	21.88	43.00	300.58	.09
2500.00	1.44	289.89	2499.44	22.64	-39.28	22.64	45.34	299.96	.16
2600.00	1.43	289.73	2599.41	23.49	-41.63	23.49	47.81	299.44	.01
2700.00	1.40	298.97	2699.38	24.51	-43.88	24.51	50.26	299.18	.23
2800.00	1.28	301.00	2799.35	25.67	-45.90	25.67	52.60	299.22	.13
2900.00	1.07	297.39	2899.33	26.68	-47.69	26.68	54.65	299.22	.22
3000.00	1.12	298.02	2999.31	27.57	-49.38	27.57	56.56	299.17	.05
3100.00	1.21	288.69	3099.29	28.36	-51.25	28.36	58.57	298.96	.21
3200.00	1.69	274.92	3199.26	28.83	-53.71	28.83	60.96	298.22	.59
3300.00	3.26	266.41	3299.17	28.78	-58.02	28.78	64.77	296.38	1.61
3400.00	4.35	271.79	3398.94	28.72	-64.65	28.72	70.74	293.95	1.15
3500.00	3.45	280.85	3498.71	29.40	-71.40	29.40	77.21	292.38	1.09
3600.00	2.42	288.00	3598.58	30.62	-76.36	30.62	82.27	291.85	1.09
3700.00	1.56	292.43	3698.52	31.79	-79.63	31.79	85.74	291.77	.87
3800.00	.99	299.39	3798.49	32.74	-81.64	32.74	87.96	291.85	.59

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	.99	300.73	3898.48	33.60	-83.13	33.60	89.67	292.01	.02
4000.00	1.00	300.14	3998.46	34.48	-84.63	34.48	91.38	292.17	.01
4100.00	.82	327.26	4098.45	35.52	-85.77	35.52	92.84	292.50	.46
4200.00	.49	40.28	4198.45	36.45	-85.88	36.45	93.30	293.00	.82
4300.00	.51	51.48	4298.44	37.05	-85.26	37.05	92.96	293.49	.10
4400.00	.37	96.46	4398.44	37.29	-84.59	37.29	92.44	293.79	.36
4500.00	.38	143.30	4498.44	36.99	-84.07	36.99	91.85	293.75	.30
4600.00	.28	131.07	4598.44	36.57	-83.69	36.57	91.33	293.60	.12
4700.00	.36	161.34	4698.43	36.11	-83.40	36.11	90.88	293.41	.18
4800.00	.88	161.70	4798.43	35.08	-83.06	35.08	90.16	292.90	.52
4900.00	.87	166.81	4898.42	33.61	-82.65	33.61	89.22	292.13	.08
5000.00	1.02	174.48	4998.40	31.99	-82.39	31.99	88.38	291.22	.20
5100.00	1.18	168.33	5098.38	30.09	-82.09	30.09	87.43	290.13	.20
5200.00	1.41	147.64	5198.36	28.05	-81.23	28.05	85.93	289.05	.52
5300.00	1.53	131.90	5298.33	26.11	-79.57	26.11	83.75	288.17	.42
5400.00	1.51	130.67	5398.29	24.36	-77.58	24.36	81.32	287.44	.04
5500.00	1.52	132.36	5498.26	22.61	-75.60	22.61	78.91	286.65	.05
5600.00	1.31	140.19	5598.23	20.84	-73.89	20.84	76.77	285.75	.28
5700.00	1.20	148.93	5698.20	19.07	-72.62	19.07	75.08	284.71	.22
5800.00	1.21	154.21	5798.18	17.22	-71.62	17.22	73.66	283.52	.11
5900.00	.77	180.49	5898.17	15.60	-71.16	15.60	72.85	282.36	.62
6000.00	.35	175.29	5998.16	14.62	-71.14	14.62	72.63	281.61	.42
6100.00	.16	58.59	6098.16	14.39	-71.00	14.39	72.44	281.46	.45
6200.00	.45	21.86	6198.16	14.82	-70.73	14.82	72.27	281.84	.34
6300.00	.75	4.05	6298.15	15.84	-70.54	15.84	72.30	282.66	.35
6400.00	.86	345.13	6398.14	17.22	-70.69	17.22	72.76	283.69	.29
6500.00	.91	343.07	6498.13	18.71	-71.11	18.71	73.53	284.74	.06
6600.00	.99	336.22	6598.12	20.26	-71.69	20.26	74.50	285.78	.14
6700.00	1.09	30.29	6698.10	21.87	-71.56	21.87	74.83	286.99	.95

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	1.45	36.09	6798.08	23.71	-70.34	23.71	74.22	288.63	.38
6900.00	1.94	39.19	6898.03	26.05	-68.52	26.05	73.30	290.81	.50
7000.00	2.39	42.52	6997.96	28.89	-66.04	28.89	72.09	293.63	.47
7100.00	2.56	46.12	7097.87	31.98	-63.02	31.98	70.67	296.90	.23
7200.00	3.10	47.94	7197.75	35.34	-59.41	35.34	69.12	300.75	.55
7300.00	3.47	52.56	7297.58	38.99	-55.00	38.99	67.41	305.33	.45
7400.00	3.91	52.78	7397.38	42.89	-49.88	42.89	65.78	310.69	.44
7500.00	4.54	44.61	7497.10	47.77	-44.38	47.77	65.21	317.11	.87
7600.00	5.53	42.71	7596.72	54.13	-38.34	54.13	66.33	324.69	1.00
7700.00	5.58	47.46	7696.25	60.96	-31.48	60.96	68.61	332.68	.46
7800.00	5.70	56.48	7795.77	66.99	-23.76	66.99	71.08	340.47	.89
7900.00	6.20	63.28	7895.23	72.16	-14.80	72.16	73.66	348.41	.86
8000.00	6.07	68.28	7994.66	76.54	-5.06	76.54	76.71	356.22	.55
8100.00	4.83	79.54	8094.21	79.26	3.99	79.26	79.36	2.88	1.63
8200.00	3.37	100.57	8193.95	79.49	11.02	79.49	80.25	7.89	2.07

Last Survey Depth Recorded									
8242.00	3.04	101.76	8235.89	79.03	13.32	79.03	80.15	9.57	.80