



Job Number: SVGJ-141228
 Company: PDC
 Lease/Well: Loustalet 24-25
 Location: Weld County, CO
 Rig Name: MS Energy Wireline
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.27°
 Grid: East To True North
 File name: S:\2014SU~1\PDC\GJ\LOUSTA~1\2425.SVY
 Date/Time: 08-Oct-14 / 10:42
 Curve Name: Surface - 6413' 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	.55	277.67	100.00	.06	-.48	.06	.48	277.67	.55
200.00	.55	246.67	199.99	-.06	-1.39	-.06	1.39	267.45	.29
300.00	.14	224.38	299.99	-.34	-1.92	-.34	1.95	259.97	.42
400.00	.39	301.94	399.99	-.25	-2.29	-.25	2.31	263.86	.38
500.00	.37	239.36	499.99	-.23	-2.86	-.23	2.87	265.38	.40
600.00	.08	243.01	599.99	-.43	-3.20	-.43	3.23	262.39	.29
700.00	.36	305.43	699.99	-.28	-3.52	-.28	3.53	265.50	.33
800.00	.50	262.48	799.99	-.15	-4.21	-.15	4.21	267.93	.34
900.00	.35	234.27	899.98	-.39	-4.89	-.39	4.90	265.47	.25

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	.36	315.29	999.98	-.34	-5.36	-.34	5.37	266.34	.46
1100.00	.56	288.31	1099.98	.03	-6.04	.03	6.04	270.33	.29
1200.00	.32	274.66	1199.97	.21	-6.78	.21	6.79	271.78	.26
1300.00	.56	313.75	1299.97	.57	-7.41	.57	7.44	274.41	.37
1400.00	.67	274.53	1399.97	.96	-8.35	.96	8.40	276.53	.43
1500.00	.53	232.28	1499.96	.72	-9.30	.72	9.33	274.42	.45
1600.00	.59	256.81	1599.96	.32	-10.17	.32	10.17	271.79	.25
1700.00	.82	242.11	1699.95	-.13	-11.30	-.13	11.30	269.32	.29
1800.00	.90	214.73	1799.94	-1.11	-12.38	-1.11	12.43	264.86	.41
1900.00	.92	197.82	1899.93	-2.52	-13.07	-2.52	13.31	259.07	.27
2000.00	1.33	192.53	1999.91	-4.42	-13.57	-4.42	14.27	251.95	.42
2100.00	1.42	178.48	2099.88	-6.79	-13.79	-6.79	15.37	243.77	.35
2200.00	1.20	188.81	2199.85	-9.07	-13.92	-9.07	16.61	236.92	.32
2300.00	1.49	189.27	2299.82	-11.38	-14.29	-11.38	18.27	231.45	.29
2400.00	1.18	184.49	2399.80	-13.69	-14.58	-13.69	20.00	226.79	.33
2500.00	1.25	202.80	2499.78	-15.73	-15.08	-15.73	21.79	223.80	.39
2600.00	1.37	193.25	2599.75	-17.89	-15.78	-17.89	23.86	221.40	.25
2700.00	1.02	180.42	2699.73	-19.95	-16.06	-19.95	25.61	218.83	.44
2800.00	.90	188.12	2799.71	-21.62	-16.17	-21.62	27.00	216.81	.18
2900.00	1.11	187.33	2899.70	-23.35	-16.41	-23.35	28.54	215.09	.21
3000.00	1.12	173.32	2999.68	-25.29	-16.42	-25.29	30.15	213.00	.27
3100.00	1.45	210.58	3099.66	-27.35	-16.95	-27.35	32.17	211.79	.88
3200.00	2.80	217.16	3199.58	-30.38	-19.07	-30.38	35.87	212.11	1.37
3300.00	3.23	227.07	3299.45	-34.25	-22.61	-34.25	41.04	213.43	.67
3400.00	2.64	219.51	3399.32	-37.94	-26.13	-37.94	46.07	214.56	.70
3500.00	2.25	222.73	3499.22	-41.16	-28.93	-41.16	50.31	215.10	.41
3600.00	2.68	220.92	3599.13	-44.37	-31.79	-44.37	54.59	215.62	.44
3700.00	2.52	215.86	3699.03	-47.92	-34.61	-47.92	59.11	215.84	.28
3800.00	1.37	214.83	3798.97	-50.68	-36.58	-50.68	62.51	215.82	1.15

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	1.12	223.67	3898.95	-52.37	-37.94	-52.37	64.67	215.92	.31
4000.00	.68	184.20	3998.93	-53.67	-38.66	-53.67	66.14	215.77	.74
4100.00	.86	123.48	4098.93	-54.67	-38.08	-54.67	66.63	214.86	.79
4200.00	.78	112.51	4198.92	-55.35	-36.82	-55.35	66.48	213.64	.18
4300.00	1.15	132.60	4298.90	-56.29	-35.46	-56.29	66.52	212.21	.50
4400.00	1.78	120.89	4398.87	-57.77	-33.38	-57.77	66.72	210.02	.69
4500.00	1.73	122.37	4498.82	-59.37	-30.78	-59.37	66.87	207.40	.07
4600.00	2.47	144.64	4598.76	-61.94	-28.25	-61.94	68.08	204.52	1.09
4700.00	2.89	147.74	4698.65	-65.83	-25.66	-65.83	70.65	201.30	.44
4800.00	2.46	146.61	4798.54	-69.75	-23.13	-69.75	73.49	198.35	.43
4900.00	1.98	152.40	4898.46	-73.07	-21.15	-73.07	76.07	196.15	.53
5000.00	1.62	154.95	4998.41	-75.88	-19.75	-75.88	78.41	194.59	.37
5100.00	1.39	135.97	5098.38	-78.04	-18.31	-78.04	80.16	193.21	.55
5200.00	1.02	145.04	5198.36	-79.64	-16.96	-79.64	81.42	192.02	.42
5300.00	1.03	142.95	5298.34	-81.08	-15.91	-81.08	82.63	191.10	.04
5400.00	1.19	142.11	5398.32	-82.62	-14.73	-82.62	83.92	190.11	.16
5500.00	1.07	126.40	5498.30	-83.99	-13.34	-83.99	85.05	189.02	.33
5600.00	.72	132.04	5598.29	-84.97	-12.12	-84.97	85.83	188.12	.36
5700.00	.64	105.84	5698.28	-85.54	-11.12	-85.54	86.26	187.41	.32
5800.00	.64	40.75	5798.28	-85.27	-10.22	-85.27	85.88	186.83	.69
5900.00	.59	3.34	5898.27	-84.33	-9.82	-84.33	84.90	186.64	.40
6000.00	.97	22.53	5998.26	-83.04	-9.47	-83.04	83.58	186.50	.46
6100.00	1.49	9.05	6098.24	-80.97	-8.94	-80.97	81.47	186.30	.59
6200.00	1.47	356.75	6198.21	-78.41	-8.81	-78.41	78.90	186.41	.32
6300.00	1.83	5.01	6298.17	-75.54	-8.74	-75.54	76.04	186.60	.43
6400.00	2.67	353.91	6398.09	-71.63	-8.85	-71.63	72.18	187.04	.94
Last Survey Depth Recorded									
6413.00	2.70	354.74	6411.07	-71.02	-8.91	-71.02	71.58	187.15	.38