



Job Number: SVGJ-120544
 Company: PDC
 Lease/Well: Erickson 34-4
 Location: Weld County, CO
 Rig Name: MS Energy Wireline
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.63°
 Grid: East To True North
 File name: F:\SURVEY\2012SU-1\PDC\LORENZ\ERICKSON\34-4.SVY
 Date/Time: 15-May-12 / 10:27
 Curve Name: Surface - 7000' M.D. (Rate Gyro)

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	.62	258.57	100.00	-.11	-.53	-.11	.54	258.57	.62
200.00	.59	251.99	199.99	-.37	-1.55	-.37	1.59	256.45	.08
300.00	.44	257.59	299.99	-.62	-2.41	-.62	2.49	255.71	.16
400.00	.53	257.87	399.98	-.80	-3.24	-.80	3.34	256.22	.09
500.00	.59	260.20	499.98	-.98	-4.20	-.98	4.31	256.87	.06
600.00	.63	242.12	599.97	-1.32	-5.19	-1.32	5.36	255.70	.20
700.00	.62	235.69	699.97	-1.89	-6.13	-1.89	6.41	252.89	.07
800.00	.44	227.62	799.96	-2.45	-6.86	-2.45	7.28	250.34	.19
900.00	.40	252.45	899.96	-2.81	-7.47	-2.81	7.99	249.37	.18

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	.52	259.28	999.96	-3.00	-8.25	-3.00	8.78	250.00	.13
1100.00	.63	291.83	1099.95	-2.88	-9.21	-2.88	9.65	252.61	.34
1200.00	1.06	295.67	1199.94	-2.28	-10.55	-2.28	10.80	257.81	.43
1300.00	1.44	283.54	1299.92	-1.58	-12.61	-1.58	12.71	262.84	.46
1400.00	1.34	274.04	1399.89	-1.21	-15.00	-1.21	15.05	265.40	.25
1500.00	1.12	271.43	1499.87	-1.10	-17.14	-1.10	17.18	266.33	.23
1600.00	1.07	297.98	1599.85	-.64	-18.94	-.64	18.95	268.07	.51
1700.00	1.23	300.05	1699.83	.34	-20.70	.34	20.70	270.93	.17
1800.00	1.33	289.79	1799.80	1.27	-22.72	1.27	22.75	273.19	.25
1900.00	1.28	271.14	1899.78	1.68	-24.93	1.68	24.98	273.86	.43
2000.00	1.08	242.32	1999.76	1.27	-26.88	1.27	26.91	272.70	.62
2100.00	.97	204.72	2099.74	.06	-28.07	.06	28.07	270.12	.67
2200.00	.81	170.23	2199.73	-1.41	-28.30	-1.41	28.33	267.16	.55
2300.00	.82	166.85	2299.72	-2.80	-28.02	-2.80	28.16	264.30	.05
2400.00	1.03	180.54	2399.71	-4.39	-27.86	-4.39	28.21	261.04	.30
2500.00	1.46	177.42	2499.68	-6.57	-27.81	-6.57	28.58	256.72	.44
2600.00	1.44	158.51	2599.65	-9.01	-27.30	-9.01	28.74	251.74	.48
2700.00	.95	148.51	2699.63	-10.88	-26.40	-10.88	28.56	247.60	.53
2800.00	.78	149.87	2799.62	-12.18	-25.63	-12.18	28.37	244.58	.17
2900.00	.99	181.87	2899.61	-13.63	-25.31	-13.63	28.75	241.70	.53
3000.00	1.21	176.61	2999.59	-15.55	-25.28	-15.55	29.68	238.41	.24
3100.00	1.05	162.49	3099.57	-17.48	-24.94	-17.48	30.45	234.98	.32
3200.00	1.35	200.71	3199.55	-19.45	-25.08	-19.45	31.74	232.21	.84
3300.00	1.45	178.39	3299.52	-21.82	-25.46	-21.82	33.53	229.41	.55
3400.00	1.02	203.71	3399.50	-23.90	-25.79	-23.90	35.16	227.18	.68
3500.00	.89	235.31	3499.49	-25.16	-26.78	-25.16	36.74	226.79	.53
3600.00	1.09	262.24	3599.47	-25.73	-28.36	-25.73	38.29	227.79	.50
3700.00	1.03	301.12	3699.45	-25.39	-30.08	-25.39	39.36	229.83	.71
3800.00	.88	296.68	3799.44	-24.58	-31.53	-24.58	39.98	232.06	.17

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	1.26	279.00	3899.42	-24.06	-33.30	-24.06	41.09	234.15	.50
4000.00	1.21	283.47	3999.40	-23.65	-35.42	-23.65	42.58	236.27	.11
4100.00	1.62	298.48	4099.37	-22.73	-37.69	-22.73	44.01	238.91	.55
4200.00	1.12	299.91	4199.34	-21.56	-39.77	-21.56	45.24	241.54	.50
4300.00	1.02	277.30	4299.32	-20.96	-41.50	-20.96	46.50	243.20	.43
4400.00	.53	260.73	4399.31	-20.93	-42.84	-20.93	47.68	243.97	.53
4500.00	.90	228.75	4499.31	-21.52	-43.89	-21.52	48.88	243.88	.53
4600.00	1.02	238.34	4599.29	-22.50	-45.24	-22.50	50.53	243.55	.20
4700.00	.98	203.23	4699.28	-23.76	-46.33	-23.76	52.07	242.86	.60
4800.00	1.38	198.51	4799.26	-25.68	-47.05	-25.68	53.61	241.37	.41
4900.00	1.58	191.05	4899.22	-28.18	-47.70	-28.18	55.40	239.43	.28
5000.00	2.14	168.58	4999.17	-31.36	-47.59	-31.36	57.00	236.62	.91
5100.00	2.77	158.13	5099.08	-35.43	-46.32	-35.43	58.32	232.59	.77
5200.00	3.04	157.33	5198.95	-40.12	-44.40	-40.12	59.85	227.90	.27
5300.00	2.44	166.18	5298.84	-44.64	-42.87	-44.64	61.89	223.84	.73
5400.00	.93	155.07	5398.79	-47.44	-42.02	-47.44	63.38	221.53	1.54
5500.00	.22	74.21	5498.79	-48.12	-41.49	-48.12	63.54	220.77	.92
5600.00	.70	96.89	5598.78	-48.14	-40.70	-48.14	63.05	220.21	.50
5700.00	.40	159.38	5698.78	-48.54	-39.97	-48.54	62.89	219.47	.63
5800.00	.99	156.66	5798.77	-49.66	-39.51	-49.66	63.46	218.50	.59
5900.00	1.00	148.12	5898.76	-51.20	-38.71	-51.20	64.18	217.09	.15
6000.00	.84	158.53	5998.74	-52.62	-37.98	-52.62	64.89	215.82	.23
6100.00	1.02	201.81	6098.73	-54.13	-38.04	-54.13	66.16	215.10	.71
6200.00	1.28	181.99	6198.71	-56.07	-38.41	-56.07	67.97	214.41	.47
6300.00	1.05	198.70	6298.69	-58.06	-38.74	-58.06	69.80	213.71	.41
6400.00	1.14	216.59	6398.67	-59.72	-39.63	-59.72	71.68	213.56	.35
6500.00	.82	224.09	6498.66	-61.04	-40.72	-61.04	73.37	213.71	.34
6600.00	.64	246.40	6598.65	-61.77	-41.73	-61.77	74.55	214.04	.33
6700.00	.34	331.47	6698.65	-61.74	-42.38	-61.74	74.88	214.47	.70

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	349.12	6798.65	-61.20	-42.58	-61.20	74.56	214.83	.10
6900.00	.27	4.69	6898.65	-60.69	-42.61	-60.69	74.16	215.07	.09
Last Survey Depth Recorded									
7000.00	.36	38.48	6998.64	-60.21	-42.40	-60.21	73.64	215.15	.20