



Job Number: SVGJ-141372
 Company: PDC
 Lease/Well: SLW Ranch 14-7
 Location: Weld County, CO
 Rig Name: MS Energy Wireline
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.25°
 Grid: East To True North
 File name: S:\2014SU~1\PDC\GJ\SLWRAN~1\147.SVY
 Date/Time: 04-Dec-14 / 10:54
 Curve Name: Surface - 3273' 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	.31	131.49	100.00	-.18	.20	-.18	.27	131.49	.31
200.00	.08	165.71	200.00	-.43	.42	-.43	.60	135.24	.25
300.00	.32	163.22	300.00	-.76	.52	-.76	.92	145.64	.24
400.00	.24	116.28	400.00	-1.12	.79	-1.12	1.37	144.87	.23
500.00	.26	169.52	500.00	-1.44	1.02	-1.44	1.76	144.69	.22
600.00	.20	121.24	600.00	-1.75	1.21	-1.75	2.13	145.39	.20
700.00	.36	160.38	699.99	-2.14	1.46	-2.14	2.59	145.60	.24
800.00	.21	114.67	799.99	-2.51	1.74	-2.51	3.05	145.34	.26
900.00	.16	179.05	899.99	-2.73	1.90	-2.73	3.32	145.06	.20

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	.20	113.42	999.99	-2.93	2.07	-2.93	3.59	144.85	.20
1100.00	.13	215.95	1099.99	-3.10	2.16	-3.10	3.77	145.10	.26
1200.00	.17	148.36	1199.99	-3.31	2.17	-3.31	3.96	146.77	.17
1300.00	.15	340.25	1299.99	-3.32	2.20	-3.32	3.98	146.39	.32
1400.00	.17	239.92	1399.99	-3.27	2.03	-3.27	3.85	148.13	.25
1500.00	.07	214.89	1499.99	-3.39	1.87	-3.39	3.87	151.15	.11
1600.00	.32	268.10	1599.99	-3.45	1.55	-3.45	3.79	155.75	.28
1700.00	.25	226.92	1699.99	-3.61	1.12	-3.61	3.78	162.82	.21
1800.00	.38	268.13	1799.99	-3.77	.63	-3.77	3.82	170.58	.25
1900.00	.27	256.34	1899.99	-3.84	.07	-3.84	3.84	179.03	.13
2000.00	.57	260.58	1999.98	-3.97	-.65	-3.97	4.03	189.35	.30
2100.00	.66	283.16	2099.98	-3.92	-1.71	-3.92	4.28	203.50	.26
2200.00	1.14	270.38	2199.97	-3.79	-3.26	-3.79	5.00	220.74	.52
2300.00	1.29	271.02	2299.94	-3.76	-5.38	-3.76	6.56	235.06	.15
2400.00	1.29	274.83	2399.92	-3.64	-7.63	-3.64	8.45	244.46	.09
2500.00	1.24	275.63	2499.89	-3.44	-9.83	-3.44	10.41	250.69	.05
2600.00	.87	273.30	2599.88	-3.29	-11.66	-3.29	12.12	254.23	.37
2700.00	.74	276.95	2699.87	-3.17	-13.06	-3.17	13.44	256.35	.14
2800.00	.73	271.29	2799.86	-3.08	-14.34	-3.08	14.67	257.88	.07
2900.00	.84	282.95	2899.85	-2.90	-15.69	-2.90	15.96	259.52	.19
3000.00	.79	289.98	2999.84	-2.50	-17.05	-2.50	17.23	261.66	.11
3100.00	.78	351.23	3099.83	-1.59	-17.80	-1.59	17.88	264.89	.80
3200.00	.72	14.53	3199.82	-.31	-17.75	-.31	17.75	268.99	.31
Last Survey Depth Recorded									
3273.00	.85	33.97	3272.82	.58	-17.33	.58	17.34	271.92	.40