



Job Number: SVGJ-141249
 Company: PDC
 Lease/Well: Peschel 43-20
 Location: Weld County, CO
 Rig Name: MS Energy Wireline
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.36°
 Grid: East To True North
 File name: S:\2014SU-1\PDC\GJ\PESCHEL\4320.SVY
 Date/Time: 14-Oct-14 / 14:45
 Curve Name: Surface - 6935' 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	.28	273.91	100.00	.02	-.24	.02	.24	273.91	.28
200.00	.40	263.80	200.00	.00	-.83	.00	.83	269.70	.13
300.00	.40	247.17	300.00	-.18	-1.50	-.18	1.51	263.27	.12
400.00	.26	267.60	399.99	-.32	-2.05	-.32	2.08	261.07	.18
500.00	.36	280.01	499.99	-.28	-2.59	-.28	2.60	263.88	.12
600.00	.75	270.98	599.99	-.21	-3.55	-.21	3.56	266.59	.40
700.00	.88	268.96	699.98	-.21	-4.97	-.21	4.98	267.53	.13
800.00	.74	245.65	799.97	-.49	-6.33	-.49	6.35	265.53	.35
900.00	.56	268.38	899.96	-.77	-7.41	-.77	7.45	264.03	.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	.72	277.52	999.96	-.71	-8.52	-.71	8.55	265.26	.19
1100.00	.95	255.93	1099.94	-.83	-9.95	-.83	9.98	265.26	.39
1200.00	.82	249.05	1199.93	-1.28	-11.42	-1.28	11.49	263.59	.17
1300.00	.93	250.13	1299.92	-1.81	-12.85	-1.81	12.98	261.96	.11
1400.00	1.08	258.34	1399.91	-2.28	-14.54	-2.28	14.71	261.08	.21
1500.00	1.32	269.68	1499.88	-2.48	-16.61	-2.48	16.79	261.52	.34
1600.00	1.31	279.35	1599.86	-2.30	-18.89	-2.30	19.03	263.06	.22
1700.00	1.00	293.45	1699.84	-1.77	-20.82	-1.77	20.89	265.15	.42
1800.00	1.39	303.65	1799.82	-.75	-22.63	-.75	22.64	268.11	.44
1900.00	1.19	317.46	1899.79	.69	-24.34	.69	24.35	271.63	.37
2000.00	1.29	314.28	1999.77	2.24	-25.85	2.24	25.94	274.96	.12
2100.00	1.58	332.42	2099.74	4.25	-27.29	4.25	27.62	278.85	.54
2200.00	1.58	333.23	2199.70	6.70	-28.55	6.70	29.33	283.21	.02
2300.00	1.91	323.61	2299.65	9.28	-30.16	9.28	31.55	287.09	.44
2400.00	1.94	333.04	2399.60	12.13	-31.92	12.13	34.14	290.80	.32
2500.00	1.94	333.90	2499.54	15.15	-33.43	15.15	36.70	294.39	.03
2600.00	1.56	333.05	2599.49	17.89	-34.79	17.89	39.12	297.21	.38
2700.00	1.71	320.82	2699.45	20.26	-36.35	20.26	41.61	299.13	.38
2800.00	1.64	327.75	2799.41	22.62	-38.06	22.62	44.27	300.73	.21
2900.00	1.37	332.35	2899.37	24.89	-39.37	24.89	46.58	302.30	.30
3000.00	1.17	341.41	2999.35	26.92	-40.26	26.92	48.43	303.77	.28
3100.00	1.09	329.41	3099.33	28.71	-41.06	28.71	50.10	304.96	.25
3200.00	1.07	345.31	3199.31	30.43	-41.79	30.43	51.69	306.06	.30
3300.00	.86	15.64	3299.30	32.05	-41.82	32.05	52.69	307.47	.54
3400.00	.72	354.29	3399.29	33.40	-41.68	33.40	53.41	308.71	.32
3500.00	.63	25.38	3499.28	34.52	-41.51	34.52	53.99	309.75	.37
3600.00	.63	13.38	3599.28	35.56	-41.14	35.56	54.38	310.83	.13
3700.00	.40	203.88	3699.28	35.77	-41.16	35.77	54.53	310.99	1.03
3800.00	1.05	218.08	3799.27	34.73	-41.86	34.73	54.40	309.68	.67

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	1.49	238.16	3899.24	33.32	-43.53	33.32	54.82	307.43	.62
4000.00	1.85	230.53	3999.20	31.61	-45.88	31.61	55.72	304.56	.42
4100.00	2.00	230.36	4099.14	29.47	-48.47	29.47	56.73	301.30	.15
4200.00	2.08	231.83	4199.08	27.24	-51.24	27.24	58.03	297.99	.10
4300.00	2.28	246.88	4299.01	25.34	-54.50	25.34	60.10	294.93	.60
4400.00	2.41	248.27	4398.92	23.78	-58.28	23.78	62.95	292.19	.14
4500.00	2.62	249.77	4498.83	22.21	-62.38	22.21	66.22	289.60	.22
4600.00	2.65	240.81	4598.72	20.29	-66.54	20.29	69.57	286.96	.41
4700.00	2.45	247.79	4698.62	18.35	-70.54	18.35	72.89	284.58	.37
4800.00	2.36	244.53	4798.54	16.66	-74.38	16.66	76.22	282.63	.16
4900.00	2.73	247.30	4898.44	14.86	-78.43	14.86	79.83	280.73	.39
5000.00	2.10	245.26	4998.35	13.17	-82.30	13.17	83.34	279.09	.64
5100.00	2.20	242.74	5098.28	11.52	-85.67	11.52	86.44	277.66	.14
5200.00	1.52	262.45	5198.23	10.47	-88.69	10.47	89.30	276.73	.92
5300.00	1.67	252.64	5298.19	9.86	-91.39	9.86	91.92	276.16	.31
5400.00	1.08	259.03	5398.16	9.25	-93.71	9.25	94.16	275.64	.61
5500.00	1.01	225.73	5498.14	8.45	-95.26	8.45	95.64	275.07	.60
5600.00	1.12	238.03	5598.12	7.32	-96.72	7.32	97.00	274.33	.25
5700.00	1.01	270.34	5698.11	6.81	-98.44	6.81	98.67	273.96	.60
5800.00	1.34	269.22	5798.09	6.80	-100.49	6.80	100.72	273.87	.33
5900.00	1.64	243.12	5898.05	6.13	-102.93	6.13	103.11	273.41	.73
6000.00	1.57	249.99	5998.02	5.02	-105.49	5.02	105.61	272.72	.20
6100.00	.50	270.96	6098.00	4.56	-107.22	4.56	107.32	272.43	1.12
6200.00	.56	175.55	6198.00	4.08	-107.62	4.08	107.69	272.17	.79
6300.00	.54	177.90	6297.99	3.12	-107.56	3.12	107.61	271.66	.03
6400.00	.37	110.39	6397.99	2.54	-107.24	2.54	107.27	271.35	.53
6500.00	.71	227.31	6497.99	2.00	-107.39	2.00	107.41	271.07	.94
6600.00	1.07	139.06	6597.98	.88	-107.24	.88	107.24	270.47	1.27
6700.00	.75	156.47	6697.96	-.43	-106.36	-.43	106.37	269.77	.42

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	.72	155.97	6797.96	-1.60	-105.85	-1.60	105.86	269.13	.03
6900.00	.87	121.85	6897.95	-2.58	-104.95	-2.58	104.98	268.59	.49
Last Survey Depth Recorded									
6935.00	.99	141.69	6932.94	-2.95	-104.53	-2.95	104.58	268.38	.98