



Job Number: SVGJ-141332
 Company: PDC
 Lease/Well: Bailey 33-1
 Location: Weld County, CO
 Rig Name: MS Energy Wireline
 RKB: 0'
 G.L. or M.S.L.: GL

State/Country: Colorado/USA
 Declination: 8.29°
 Grid: East To True North
 File name: Y:\WINSER~1\2014SU~1\PDC\GJ\BAILEY\331.SVY
 Date/Time: 17-Nov-14 / 10:08
 Curve Name: Surface - 6784' 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	.24	94.51	100.00	-.02	.21	-.02	.21	94.51	.24
200.00	.36	107.88	200.00	-.13	.72	-.13	.73	100.23	.14
300.00	.58	91.24	299.99	-.24	1.52	-.24	1.54	98.85	.26
400.00	.25	90.80	399.99	-.25	2.25	-.25	2.26	96.37	.33
500.00	.18	87.49	499.99	-.25	2.62	-.25	2.63	95.38	.07
600.00	.11	179.92	599.99	-.34	2.78	-.34	2.80	96.90	.21
700.00	.25	214.24	699.99	-.61	2.66	-.61	2.72	102.99	.17
800.00	.38	191.09	799.99	-1.12	2.47	-1.12	2.71	114.37	.18
900.00	.31	155.99	899.99	-1.69	2.52	-1.69	3.03	123.91	.22

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	.14	137.87	999.99	-2.03	2.71	-2.03	3.38	126.85	.18
1100.00	.25	300.92	1099.99	-2.01	2.60	-2.01	3.29	127.65	.39
1200.00	.53	276.48	1199.98	-1.84	1.96	-1.84	2.69	133.30	.32
1300.00	.57	284.91	1299.98	-1.66	1.01	-1.66	1.95	148.60	.09
1400.00	.78	274.66	1399.97	-1.48	-.14	-1.48	1.49	185.57	.24
1500.00	.92	284.26	1499.96	-1.23	-1.60	-1.23	2.02	232.55	.20
1600.00	.83	282.11	1599.95	-.88	-3.09	-.88	3.21	254.15	.10
1700.00	.83	326.83	1699.94	-.12	-4.19	-.12	4.19	268.38	.63
1800.00	1.18	5.59	1799.93	1.51	-4.49	1.51	4.74	288.63	.74
1900.00	1.39	27.07	1899.90	3.62	-3.84	3.62	5.27	313.33	.52
2000.00	1.58	50.51	1999.87	5.57	-2.22	5.57	6.00	338.29	.63
2100.00	1.83	66.13	2099.82	7.10	.30	7.10	7.10	2.46	.53
2200.00	2.34	75.86	2199.76	8.24	3.74	8.24	9.05	24.43	.62
2300.00	2.68	85.90	2299.66	8.91	8.06	8.91	12.01	42.13	.55
2400.00	2.90	94.43	2399.54	8.88	12.91	8.88	15.67	55.48	.47
2500.00	2.69	104.29	2499.43	8.11	17.71	8.11	19.47	65.40	.52
2600.00	2.40	111.14	2599.33	6.77	21.93	6.77	22.95	72.84	.42
2700.00	2.36	115.74	2699.24	5.12	25.74	5.12	26.25	78.75	.20
2800.00	2.38	116.26	2799.16	3.31	29.46	3.31	29.64	83.59	.03
2900.00	2.60	115.56	2899.06	1.41	33.37	1.41	33.40	87.58	.22
3000.00	2.55	124.02	2998.96	-.81	37.26	-.81	37.26	91.25	.38
3100.00	2.54	128.93	3098.86	-3.45	40.82	-3.45	40.97	94.83	.22
3200.00	2.37	131.66	3198.77	-6.22	44.09	-6.22	44.53	98.02	.21
3300.00	2.14	124.34	3298.69	-8.64	47.18	-8.64	47.96	100.38	.37
3400.00	1.98	122.69	3398.63	-10.63	50.17	-10.63	51.29	101.96	.17
3500.00	1.59	123.35	3498.58	-12.33	52.79	-12.33	54.21	103.14	.39
3600.00	1.27	126.05	3598.55	-13.74	54.84	-13.74	56.54	104.07	.33
3700.00	1.14	125.11	3698.53	-14.96	56.55	-14.96	58.50	104.82	.13
3800.00	.90	113.06	3798.51	-15.84	58.09	-15.84	60.21	105.26	.32

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	.77	114.43	3898.50	-16.43	59.42	-16.43	61.65	105.46	.13
4000.00	.73	99.68	3998.49	-16.81	60.66	-16.81	62.95	105.49	.20
4100.00	1.01	70.64	4098.48	-16.63	62.12	-16.63	64.31	104.99	.51
4200.00	1.02	60.44	4198.47	-15.90	63.73	-15.90	65.68	104.01	.18
4300.00	1.23	47.05	4298.45	-14.73	65.29	-14.73	66.93	102.71	.34
4400.00	1.37	52.04	4398.42	-13.26	67.01	-13.26	68.31	101.19	.18
4500.00	2.31	68.76	4498.37	-11.80	69.84	-11.80	70.82	99.59	1.07
4600.00	2.49	69.03	4598.28	-10.29	73.74	-10.29	74.46	97.94	.18
4700.00	2.51	67.08	4698.19	-8.66	77.79	-8.66	78.27	96.35	.09
4800.00	2.70	64.03	4798.08	-6.77	81.92	-6.77	82.20	94.73	.24
4900.00	2.67	67.28	4897.97	-4.84	86.19	-4.84	86.32	93.22	.16
5000.00	2.25	62.94	4997.88	-3.05	90.08	-3.05	90.14	91.94	.46
5100.00	1.77	64.09	5097.82	-1.48	93.22	-1.48	93.23	90.91	.48
5200.00	1.71	59.69	5197.77	-.05	95.90	-.05	95.90	90.03	.15
5300.00	1.65	68.94	5297.73	1.22	98.53	1.22	98.54	89.29	.28
5400.00	1.06	103.96	5397.70	1.51	100.77	1.51	100.78	89.14	.99
5500.00	.16	139.57	5497.70	1.18	101.76	1.18	101.77	89.34	.93
5600.00	.56	264.31	5597.69	1.03	101.36	1.03	101.37	89.42	.66
5700.00	.85	286.40	5697.69	1.19	100.17	1.19	100.17	89.32	.39
5800.00	1.60	313.61	5797.66	2.36	98.44	2.36	98.47	88.63	.93
5900.00	2.41	329.73	5897.60	5.14	96.37	5.14	96.51	86.95	.98
6000.00	2.26	331.67	5997.52	8.69	94.38	8.69	94.78	84.74	.17
6100.00	2.11	333.64	6097.45	12.07	92.62	12.07	93.41	82.57	.17
6200.00	1.94	346.41	6197.39	15.37	91.41	15.37	92.69	80.46	.48
6300.00	1.99	350.58	6297.33	18.73	90.73	18.73	92.64	78.34	.15
6400.00	1.97	358.27	6397.27	22.16	90.39	22.16	93.07	76.23	.27
6500.00	1.81	6.27	6497.21	25.45	90.51	25.45	94.02	74.30	.31
6600.00	1.55	28.96	6597.17	28.20	91.34	28.20	95.59	72.84	.71
6700.00	1.92	40.09	6697.12	30.66	93.07	30.66	97.99	71.76	.50

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	
Last Survey Depth Recorded									
6784.00	1.86	34.53	6781.08	32.86	94.75	32.86	100.29	70.87	.23