

Job Number: []	State/Country: []
Company: []	Declination: []
Lease/Well: Mills-Wetzel #3H	Grid: []
Location: []	File name: D:\WINSERVE\MILLSWC.SVY
Rig Name: []	Date/Time: 27-Feb-11 / 05:24
RKB: []	Curve Name: D:\WINSERVE\JOBS\SURVEY-1.TXT
G.L. or M.S.L.: []	

Scientific Drilling

WINSERVE SURVEY CALCULATIONS  
 Minimum Curvature Method  
 Vertical Section Plane 318.28  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.10	213.96	100.00	-.07	-.05	-.02	.09	213.96	.10
200.00	.12	192.37	200.00	-.25	-.12	-.10	.27	205.89	.05
300.00	.18	107.27	300.00	-.40	.01	-.30	.40	178.89	.21
400.00	.16	56.46	400.00	-.37	.27	-.46	.46	143.14	.15
500.00	.11	93.92	500.00	-.29	.49	-.54	.57	121.24	.10
600.00	.06	58.88	600.00	-.27	.63	-.62	.68	113.64	.07
700.00	.08	239.21	700.00	-.28	.61	-.62	.67	114.83	.14
800.00	.08	148.17	800.00	-.38	.59	-.67	.70	122.72	.11
900.00	.19	179.77	900.00	-.60	.63	-.87	.87	133.94	.13
1000.00	.02	70.84	1000.00	-.76	.64	-1.00	1.00	139.88	.20
1100.00	.11	316.99	1100.00	-.69	.59	-.91	.91	139.16	.12
1200.00	.10	315.75	1200.00	-.55	.47	-.73	.73	139.86	.01
1300.00	.17	264.87	1300.00	-.51	.26	-.55	.57	152.86	.13
1400.00	.26	288.65	1400.00	-.45	-.10	-.26	.46	193.08	.12
1500.00	.29	29.14	1500.00	-.15	-.20	.02	.25	232.02	.42
1600.00	.71	73.70	1599.99	.24	.52	-.17	.58	65.11	.54
1700.00	1.13	93.15	1699.98	.36	2.10	-1.13	2.13	80.22	.52
1800.00	1.22	91.44	1799.96	.28	4.15	-2.55	4.16	86.12	.10
1900.00	1.37	88.13	1899.93	.29	6.41	-4.05	6.42	87.38	.17
2000.00	1.26	94.34	1999.91	.25	8.70	-5.60	8.70	88.36	.18
2100.00	1.65	102.60	2099.87	-.15	11.20	-7.57	11.20	90.76	.44
2200.00	1.74	120.80	2199.83	-1.24	13.91	-10.18	13.97	95.09	.54
2300.00	1.91	130.30	2299.78	-3.09	16.49	-13.28	16.77	100.63	.35
2400.00	2.30	119.00	2399.71	-5.15	19.51	-16.83	20.18	104.77	.57

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	
2500.00	2.40	105.80	2499.63	-6.69	23.28	-20.49	24.22	106.03	.55
2600.00	2.16	107.36	2599.55	-7.82	27.10	-23.87	28.20	106.10	.25
2700.00	1.87	119.91	2699.49	-9.20	30.31	-27.03	31.67	106.88	.53
2800.00	1.38	126.13	2799.45	-10.72	32.70	-29.76	34.41	108.15	.52
2900.00	.84	175.93	2899.43	-12.16	33.72	-31.52	35.85	109.83	1.06
3000.00	1.56	221.73	2999.41	-13.91	32.87	-32.25	35.69	112.94	1.15
3100.00	2.42	248.49	3099.35	-15.70	30.00	-31.68	33.86	117.63	1.24
3200.00	2.50	253.16	3199.26	-17.10	25.94	-30.03	31.07	123.40	.22
3300.00	2.90	256.76	3299.15	-18.32	21.39	-27.91	28.16	130.57	.43
3400.00	3.73	267.79	3398.98	-19.02	15.68	-24.63	24.65	140.50	1.04
3500.00	4.70	271.22	3498.71	-19.06	8.33	-19.77	20.80	156.38	1.00
3600.00	5.18	278.47	3598.34	-18.31	-.23	-13.51	18.31	180.71	.79
3700.00	5.33	275.80	3697.92	-17.17	-9.31	-6.62	19.53	208.47	.29
3800.00	5.49	276.94	3797.47	-16.12	-18.68	.40	24.68	229.20	.19
3900.00	5.28	282.05	3897.03	-14.59	-27.93	7.70	31.51	242.42	.52
4000.00	5.21	296.14	3996.62	-11.63	-36.51	15.62	38.31	252.34	1.29
4100.00	5.27	306.07	4096.20	-6.92	-44.29	24.31	44.83	261.12	.91
4200.00	4.38	306.06	4195.85	-1.97	-51.09	32.53	51.13	267.79	.89
4300.00	3.48	297.39	4295.61	1.67	-56.88	39.10	56.90	271.69	1.08
4400.00	2.55	286.42	4395.47	3.70	-61.70	43.83	61.82	273.43	1.09
4500.00	.81	255.08	4495.43	4.15	-64.52	46.03	64.65	273.68	1.91
4600.00	.34	183.96	4595.42	3.67	-65.22	46.15	65.33	273.22	.77
4700.00	.43	165.02	4695.42	3.01	-65.15	45.60	65.22	272.65	.15
4800.00	.86	159.98	4795.42	1.94	-64.79	44.57	64.82	271.72	.43
4900.00	1.37	144.90	4895.40	.26	-63.85	42.69	63.85	270.23	.58
5000.00	1.31	147.25	4995.37	-1.68	-62.54	40.37	62.57	268.46	.08
5100.00	.87	149.73	5095.35	-3.30	-61.54	38.50	61.63	266.93	.44
5200.00	.89	145.23	5195.34	-4.59	-60.72	36.98	60.89	265.68	.07
5300.00	1.04	146.15	5295.32	-5.98	-59.77	35.31	60.07	264.28	.15
5400.00	1.04	144.92	5395.31	-7.48	-58.74	33.51	59.22	262.74	.02
5500.00	1.04	137.19	5495.29	-8.89	-57.60	31.70	58.29	261.23	.14
5506.54	1.03	138.48	5501.83	-8.97	-57.52	31.58	58.22	261.13	.39
5616.00	.61	139.35	5611.28	-10.15	-56.49	30.02	57.40	259.81	.38
5679.00	.68	117.31	5674.28	-10.58	-55.94	29.33	56.93	259.29	.41
5743.00	.59	104.25	5738.27	-10.83	-55.29	28.70	56.34	258.91	.27
5806.00	.67	131.50	5801.27	-11.16	-54.70	28.07	55.82	258.47	.49
5870.00	.51	170.39	5865.26	-11.69	-54.37	27.46	55.61	257.87	.66
5934.00	.26	182.50	5929.26	-12.11	-54.33	27.11	55.66	257.43	.41
5997.00	.48	145.01	5992.26	-12.47	-54.18	26.75	55.60	257.04	.50
6061.00	.44	117.32	6056.26	-12.80	-53.81	26.25	55.31	256.61	.35
6125.00	.11	216.72	6120.26	-12.97	-53.63	26.01	55.17	256.41	.74
6189.00	.28	116.08	6184.26	-13.08	-53.52	25.85	55.10	256.26	.50
6252.00	.27	38.53	6247.26	-13.04	-53.29	25.74	54.86	256.25	.55
6284.00	.31	87.52	6279.26	-12.97	-53.16	25.69	54.72	256.29	.76
6316.00	.21	95.41	6311.26	-12.98	-53.01	25.60	54.58	256.25	.33

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S		Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
				FT	FT		Distance FT	Direction Deg	
6348.00	.92	240.90	6343.26	-13.11	-53.18	25.61	54.77	256.16	3.44
6380.00	2.52	239.19	6375.24	-13.59	-54.01	25.80	55.69	255.88	5.00
6411.00	4.02	239.38	6406.19	-14.49	-55.53	26.14	57.39	255.37	4.84
6443.00	5.24	240.01	6438.08	-15.80	-57.76	26.65	59.88	254.71	3.82
6475.00	6.90	241.15	6469.90	-17.45	-60.71	27.37	63.17	253.96	5.20
6507.00	8.94	246.34	6501.60	-19.38	-64.67	28.57	67.51	253.32	6.75
6538.00	10.54	249.89	6532.15	-21.32	-69.54	30.37	72.74	252.96	5.51
6570.00	13.67	250.48	6563.43	-23.59	-75.85	32.87	79.44	252.72	9.79
6602.00	18.05	249.88	6594.21	-26.56	-84.08	36.13	88.17	252.47	13.70
6634.00	21.99	248.85	6624.27	-30.43	-94.32	40.06	99.11	252.12	12.36
6666.00	25.57	250.66	6653.55	-34.88	-106.43	44.80	112.00	251.86	11.42
6698.00	28.90	251.59	6682.00	-39.61	-120.29	50.49	126.64	251.77	10.49
6730.00	32.08	252.37	6709.57	-44.63	-135.73	57.02	142.88	251.80	10.01
6761.00	35.16	252.97	6735.38	-49.74	-152.11	64.11	160.04	251.89	9.99
6793.00	38.02	254.24	6761.07	-55.11	-170.41	72.27	179.10	252.08	9.24
6825.00	39.38	254.86	6786.04	-60.44	-189.70	81.13	199.09	252.33	4.42
6857.00	41.00	255.55	6810.49	-65.71	-209.66	90.48	219.72	252.60	5.25
6889.00	43.31	256.93	6834.21	-70.81	-230.52	100.55	241.15	252.92	7.78
6921.00	46.73	258.45	6856.83	-75.63	-252.63	111.67	263.71	253.33	11.20
6952.00	48.72	259.31	6877.68	-80.05	-275.14	123.35	286.55	253.78	6.74
6984.00	50.06	260.92	6898.51	-84.22	-299.07	136.17	310.70	254.27	5.67
7016.00	51.97	261.75	6918.64	-87.96	-323.66	149.74	335.40	254.80	6.30
7048.00	54.16	262.08	6937.87	-91.56	-348.98	163.90	360.79	255.30	6.89
7080.00	55.65	262.29	6956.27	-95.12	-374.92	178.51	386.80	255.76	4.69
7112.00	57.36	263.24	6973.92	-98.48	-401.39	193.62	413.29	256.22	5.89
7144.00	59.26	264.49	6990.73	-101.38	-428.46	209.46	440.29	256.69	6.80
7175.00	61.10	266.04	7006.15	-103.60	-455.26	225.65	466.90	257.18	7.35
7207.00	63.07	267.15	7021.13	-105.28	-483.49	243.18	494.82	257.72	6.88
7239.00	64.14	268.53	7035.36	-106.36	-512.13	261.43	523.06	258.27	5.11
7270.00	65.89	270.10	7048.45	-106.69	-540.23	279.88	550.66	258.83	7.28
7302.00	66.91	272.62	7061.26	-105.99	-569.54	299.91	579.32	259.46	7.89
7334.00	66.85	275.57	7073.83	-103.89	-598.89	321.01	607.83	260.16	8.48
7366.00	67.09	278.80	7086.35	-100.21	-628.10	343.20	636.04	260.94	9.32
7398.00	67.06	282.58	7098.82	-94.74	-657.05	366.55	663.85	261.80	10.88
7429.00	67.60	286.08	7110.77	-87.66	-684.76	390.27	690.35	262.70	10.56
7461.00	68.22	289.22	7122.81	-78.67	-713.01	415.79	717.34	263.70	9.30
7493.00	68.39	292.05	7134.64	-68.19	-740.84	442.12	743.97	264.74	8.23
7524.00	68.75	294.86	7145.97	-56.71	-767.30	468.31	769.40	265.77	8.52
7556.00	69.03	298.19	7157.50	-43.38	-794.01	496.03	795.19	266.87	9.75
7588.00	69.90	301.42	7168.72	-28.48	-820.01	524.45	820.50	268.01	9.84
7619.00	71.01	303.73	7179.10	-12.75	-844.62	552.57	844.72	269.13	7.88
7651.00	71.21	306.06	7189.46	4.57	-869.45	582.02	869.46	270.30	6.92
7683.00	71.71	308.56	7199.63	22.95	-893.58	611.80	893.87	271.47	7.57
7715.00	72.52	310.57	7209.46	42.35	-917.05	641.90	918.03	272.64	6.49
7747.00	72.20	310.94	7219.16	62.26	-940.15	672.14	942.21	273.79	1.49

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth			Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
				N-S FT	E-W FT		Distance FT	Direction Deg	
7779.00	73.67	311.33	7228.55	82.38	-963.19	702.49	966.71	274.89	4.74
7810.00	75.39	312.35	7236.82	102.31	-985.45	732.17	990.75	275.93	6.39
7842.00	76.66	314.83	7244.55	123.72	-1007.94	763.12	1015.50	277.00	8.50
7874.00	76.90	317.08	7251.87	146.11	-1029.59	794.24	1039.91	278.08	6.89
7906.00	76.59	317.74	7259.20	169.04	-1050.67	825.39	1064.18	279.14	2.23
7938.00	77.28	320.02	7266.44	192.53	-1071.17	856.56	1088.33	280.19	7.27
7969.00	78.90	321.11	7272.84	215.95	-1090.44	886.86	1111.61	281.20	6.26
8001.00	80.97	321.50	7278.43	240.54	-1110.13	918.32	1135.89	282.23	6.58
8033.00	83.61	322.24	7282.72	265.48	-1129.71	949.97	1160.48	283.22	8.56
8065.00	84.73	323.74	7285.97	290.90	-1148.87	981.70	1185.13	284.21	5.83
8097.00	86.81	324.58	7288.33	316.77	-1167.56	1013.44	1209.76	285.18	7.01
8128.00	89.50	325.10	7289.33	342.10	-1185.40	1044.22	1233.77	286.10	8.84
8160.00	90.91	325.07	7289.22	368.34	-1203.71	1075.99	1258.81	287.01	4.41
8224.00	88.99	322.97	7289.27	420.13	-1241.31	1139.66	1310.48	288.70	4.45
8288.00	88.15	323.67	7290.87	471.44	-1279.52	1203.39	1363.61	290.23	1.71
8351.00	87.38	325.74	7293.33	522.81	-1315.90	1265.95	1415.95	291.67	3.50
8415.00	88.22	327.11	7295.78	576.09	-1351.26	1329.25	1468.94	293.09	2.51
8479.00	89.23	327.45	7297.21	629.92	-1385.85	1392.45	1522.29	294.44	1.67
8542.00	90.20	327.52	7297.52	683.05	-1419.71	1454.64	1575.48	295.69	1.54
8606.00	91.04	327.47	7296.83	737.02	-1454.10	1517.81	1630.22	296.88	1.31
8670.00	91.65	326.95	7295.32	790.81	-1488.75	1581.01	1685.75	297.98	1.25
8734.00	92.28	326.50	7293.13	844.28	-1523.84	1644.28	1742.10	298.99	1.21
8797.00	90.70	327.13	7291.49	896.99	-1558.31	1706.56	1798.03	299.93	2.70
8860.00	90.27	326.98	7290.96	949.85	-1592.57	1768.82	1854.32	300.81	.72
8924.00	90.40	326.92	7290.58	1003.50	-1627.48	1832.09	1911.98	301.66	.22
8988.00	90.60	327.95	7290.03	1057.43	-1661.92	1895.27	1969.81	302.47	1.64
9051.00	90.94	328.64	7289.18	1111.03	-1695.03	1957.30	2026.70	303.24	1.22
9114.00	91.11	328.55	7288.05	1164.79	-1727.85	2019.27	2083.79	303.98	.31
9178.00	89.80	328.70	7287.54	1219.43	-1761.17	2082.23	2142.13	304.70	2.06
9241.00	89.40	328.40	7287.98	1273.17	-1794.04	2144.22	2199.90	305.36	.79
9305.00	89.03	327.88	7288.86	1327.52	-1827.82	2207.27	2259.03	305.99	1.00
9368.00	88.99	328.12	7289.95	1380.94	-1861.20	2269.35	2317.55	306.57	.39
9432.00	89.56	329.17	7290.76	1435.59	-1894.50	2332.30	2376.98	307.15	1.87
9496.00	90.24	329.74	7290.87	1490.71	-1927.02	2395.09	2436.31	307.72	1.39
9559.00	90.97	329.90	7290.21	1545.16	-1958.69	2456.81	2494.80	308.27	1.19
9623.00	92.15	329.89	7288.46	1600.51	-1990.78	2519.48	2554.38	308.80	1.84
9686.00	91.78	329.83	7286.30	1654.96	-2022.40	2581.16	2613.23	309.29	.59
9750.00	90.40	328.21	7285.09	1709.82	-2055.33	2644.02	2673.55	309.76	3.32
9814.00	90.23	328.19	7284.73	1764.21	-2089.06	2707.06	2734.34	310.18	.27
9877.00	92.05	329.66	7283.48	1818.15	-2121.57	2768.96	2794.05	310.60	3.71
9940.00	91.31	329.51	7281.63	1872.46	-2153.45	2830.71	2853.67	311.01	1.20
10004.00	91.24	330.45	7280.21	1927.86	-2185.46	2893.37	2914.25	311.42	1.47
10068.00	90.34	330.90	7279.33	1983.65	-2216.80	2955.87	2974.74	311.82	1.57
10131.00	90.70	331.89	7278.76	2038.96	-2246.96	3017.22	3034.17	312.22	1.67
10195.00	90.34	331.62	7278.17	2095.34	-2277.25	3079.46	3094.56	312.62	.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	
10258.00	89.29	331.68	7278.38	2150.78	-2307.16	3140.75	3154.18	312.99	1.67
10322.00	88.83	331.76	7279.43	2207.13	-2337.48	3202.99	3214.85	313.36	.73
10385.00	89.03	331.40	7280.60	2262.53	-2367.46	3264.29	3274.74	313.70	.65
10449.00	89.56	331.67	7281.39	2318.79	-2397.96	3326.58	3335.71	314.04	.93
10513.00	90.37	331.67	7281.43	2375.12	-2428.33	3388.84	3396.76	314.37	1.27
10576.00	90.81	332.28	7280.78	2430.73	-2457.93	3450.04	3456.86	314.68	1.19
10640.00	89.56	332.97	7280.58	2487.56	-2487.36	3512.05	3517.80	315.00	2.23
10704.00	89.23	332.30	7281.25	2544.40	-2516.77	3574.04	3578.84	315.31	1.17
10768.00	89.13	331.63	7282.17	2600.88	-2546.85	3636.22	3640.20	315.60	1.06
10831.00	89.10	330.88	7283.14	2656.11	-2577.14	3697.60	3700.89	315.86	1.19
10895.00	89.13	330.57	7284.13	2711.93	-2608.43	3760.09	3762.78	316.11	.49
10959.00	89.90	329.59	7284.67	2767.40	-2640.36	3822.74	3824.92	316.35	1.95
<b>Projection to TD</b>									
11015.00	89.90	329.59	7284.77	2815.70	-2668.70	3877.65	3879.45	316.54	.00