



Gyroscopic Survey Report  
for  
K.P. KAUFFMAN  
1675 BROADWAY SUITE 2800  
DENVER, CO 80202

<b>Well Location</b>	WELD COUNTY, CO
<b>Well Name</b>	SHELDON R. SICKLER #4
<b>Rig Number</b>	FMC 134
<b>Survey Date</b>	6/12/2014
<b>Latitude</b>	40.0888500°N
<b>Longitude</b>	104.8697970°W
<b>North Reference</b>	True North
<b>Grid Correction</b>	None
<b>Depth Reference</b>	GROUND LEVEL (4947.00 ft)
<b>Calculation Method</b>	Minimum Curvature
<b>Section (VS) Ref</b>	0.00N (ft), 0.00E (ft), 249.39Azim (deg)
<b>Definitive Survey</b>	SHELDON R. SICKLER #4
<b>Operator(s)</b>	C JAQUES

**Well Notes**

**Well Name:** SHELDON R. SICKLER #4  
**Survey:** SHELDON R. SICKLER #4  
**Survey Date:** 6/12/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
101.19	0.42	221.69	101.19	0.33	-0.28	-0.25	0.41	0.37	221.69
124.09	0.41	221.29	124.09	0.48	-0.40	-0.36	0.02	0.54	221.63
149.68	0.62	240.60	149.68	0.69	-0.54	-0.54	1.03	0.76	224.96
174.12	0.60	234.86	174.11	0.95	-0.68	-0.76	0.26	1.02	228.21
199.56	0.65	247.65	199.55	1.22	-0.81	-1.00	0.58	1.29	231.05
224.84	0.67	248.97	224.83	1.51	-0.92	-1.27	0.08	1.57	234.21
248.41	0.64	248.77	248.40	1.78	-1.01	-1.52	0.11	1.83	236.34
274.64	0.65	251.03	274.63	2.08	-1.12	-1.80	0.10	2.12	238.22
299.94	0.65	248.96	299.92	2.37	-1.21	-2.07	0.09	2.40	239.62
323.90	0.67	250.09	323.89	2.64	-1.31	-2.33	0.10	2.67	240.64
349.04	0.66	251.47	349.03	2.93	-1.41	-2.61	0.08	2.96	241.64
373.80	0.64	246.22	373.79	3.21	-1.51	-2.87	0.25	3.24	242.26
399.36	0.67	248.87	399.35	3.51	-1.62	-3.14	0.17	3.53	242.70
424.12	0.65	247.09	424.10	3.79	-1.73	-3.40	0.12	3.81	243.10
449.24	0.57	243.83	449.21	4.06	-1.84	-3.64	0.36	4.08	243.26
474.36	0.43	241.44	474.34	4.27	-1.94	-3.84	0.56	4.30	243.23
499.47	0.43	235.37	499.45	4.46	-2.03	-4.00	0.18	4.48	243.03
524.51	0.38	232.05	524.48	4.63	-2.14	-4.14	0.22	4.66	242.68
549.74	0.34	217.09	549.72	4.77	-2.25	-4.25	0.40	4.81	242.12
574.95	0.30	201.40	574.92	4.87	-2.37	-4.32	0.38	4.92	241.25
599.64	0.31	186.19	599.62	4.95	-2.49	-4.35	0.33	5.01	240.15
624.74	0.37	189.75	624.71	5.02	-2.64	-4.37	0.25	5.11	238.83
649.53	0.43	180.27	649.51	5.09	-2.81	-4.38	0.34	5.21	237.29
674.37	0.52	173.22	674.34	5.15	-3.02	-4.37	0.45	5.31	235.36
699.87	0.62	172.70	699.84	5.21	-3.27	-4.34	0.39	5.43	232.99
724.96	0.69	173.47	724.93	5.28	-3.56	-4.30	0.28	5.58	230.44
749.67	0.70	167.75	749.64	5.34	-3.85	-4.26	0.29	5.74	227.85
774.40	0.95	168.49	774.37	5.39	-4.20	-4.18	0.99	5.93	224.87
798.64	1.15	175.81	798.60	5.49	-4.64	-4.12	1.01	6.21	221.63
824.56	1.10	174.69	824.52	5.63	-5.15	-4.08	0.22	6.57	218.41
849.31	1.18	178.77	849.26	5.78	-5.64	-4.06	0.44	6.95	215.72
873.92	1.18	180.13	873.87	5.95	-6.14	-4.05	0.11	7.36	213.39
899.79	1.10	181.72	899.73	6.14	-6.66	-4.06	0.32	7.80	211.36
924.46	1.12	179.32	924.40	6.31	-7.14	-4.06	0.20	8.21	209.65
949.58	1.07	171.84	949.52	6.45	-7.61	-4.03	0.60	8.61	207.87

**Well Name:** SHELDON R. SICKLER #4  
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**Survey Date:** 6/12/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
975.00	1.36	188.62	974.92	6.65	-8.15	-4.04	1.79	9.09	206.36
999.66	1.23	190.06	999.58	6.93	-8.70	-4.13	0.56	9.63	205.38
1024.37	1.22	186.41	1024.29	7.18	-9.22	-4.20	0.32	10.14	204.50
1048.54	1.24	189.83	1048.45	7.43	-9.74	-4.28	0.31	10.63	203.71
1074.41	1.21	195.42	1074.32	7.73	-10.28	-4.40	0.47	11.18	203.17
1099.03	1.29	193.39	1098.93	8.04	-10.80	-4.53	0.36	11.71	202.76
1124.82	1.27	194.68	1124.71	8.37	-11.36	-4.67	0.14	12.28	202.36
1149.43	1.34	205.95	1149.32	8.74	-11.88	-4.87	1.07	12.84	202.27
1173.87	1.32	208.55	1173.75	9.15	-12.38	-5.12	0.26	13.40	202.48
1199.78	1.37	199.06	1199.65	9.58	-12.94	-5.37	0.88	14.01	202.54
1224.33	1.31	206.72	1224.19	9.97	-13.46	-5.59	0.76	14.58	202.55
1248.84	1.42	211.51	1248.70	10.42	-13.97	-5.88	0.65	15.16	202.80
1274.55	1.44	214.94	1274.40	10.94	-14.51	-6.23	0.34	15.79	203.23
1299.82	1.40	210.46	1299.66	11.44	-15.04	-6.57	0.46	16.41	203.59
1323.93	1.37	212.62	1323.77	11.90	-15.54	-6.87	0.25	16.99	203.86
1349.93	1.45	215.99	1349.75	12.42	-16.06	-7.23	0.44	17.62	204.24
1374.44	1.45	210.82	1374.26	12.93	-16.58	-7.57	0.53	18.23	204.55
1399.72	1.37	212.71	1399.53	13.42	-17.11	-7.90	0.37	18.84	204.78
1424.93	1.41	218.79	1424.73	13.92	-17.60	-8.26	0.61	19.44	205.13
1449.98	1.37	212.34	1449.78	14.43	-18.10	-8.61	0.65	20.04	205.44
1474.95	1.32	214.87	1474.74	14.90	-18.59	-8.93	0.31	20.62	205.67
1499.82	1.25	223.91	1499.60	15.39	-19.02	-9.29	0.86	21.16	206.03
1524.79	1.47	199.51	1524.57	15.84	-19.52	-9.58	2.47	21.74	206.15
1549.31	1.30	217.56	1549.08	16.28	-20.03	-9.86	1.91	22.33	206.20
1574.91	1.28	215.00	1574.67	16.76	-20.50	-10.20	0.23	22.89	206.45
1599.61	1.30	222.39	1599.36	17.24	-20.93	-10.55	0.68	23.44	206.74
1624.34	1.29	220.93	1624.09	17.73	-21.35	-10.92	0.14	23.98	207.09
1648.63	1.25	222.67	1648.37	18.21	-21.75	-11.28	0.22	24.50	207.41
1674.55	1.31	223.39	1674.29	18.73	-22.17	-11.67	0.22	25.06	207.76
1699.20	1.34	223.59	1698.93	19.24	-22.59	-12.06	0.13	25.61	208.11
1724.04	1.27	221.57	1723.76	19.75	-23.00	-12.45	0.33	26.16	208.42
1749.97	1.30	226.87	1749.68	20.27	-23.42	-12.85	0.47	26.72	208.76
1774.24	1.34	226.37	1773.95	20.79	-23.80	-13.26	0.17	27.25	209.12
1798.91	1.31	228.27	1798.62	21.32	-24.19	-13.68	0.22	27.79	209.49
1824.73	1.29	231.73	1824.43	21.87	-24.57	-14.13	0.31	28.34	209.90
1849.57	1.32	235.01	1849.26	22.42	-24.91	-14.58	0.32	28.86	210.35

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
1874.93	1.33	237.49	1874.61	22.99	-25.23	-15.07	0.23	29.39	210.85
1899.80	1.29	235.17	1899.48	23.54	-25.55	-15.55	0.27	29.91	211.32
1924.13	1.42	242.41	1923.80	24.11	-25.84	-16.04	0.88	30.42	211.82
1949.68	1.38	239.97	1949.34	24.73	-26.15	-16.59	0.29	30.96	212.39
1973.60	1.32	238.34	1973.26	25.28	-26.43	-17.07	0.29	31.47	212.85
1999.13	1.42	250.12	1998.78	25.89	-26.70	-17.62	1.17	31.98	213.42
2024.57	1.43	245.02	2024.21	26.52	-26.94	-18.20	0.50	32.51	214.04
2049.05	1.37	245.08	2048.69	27.11	-27.19	-18.74	0.25	33.02	214.58
2074.60	1.37	241.05	2074.23	27.72	-27.46	-19.28	0.38	33.56	215.07
2098.51	1.57	238.25	2098.13	28.32	-27.77	-19.81	0.88	34.12	215.50
2124.04	1.33	244.35	2123.66	28.96	-28.09	-20.38	1.10	34.70	215.96
2149.53	1.32	247.03	2149.13	29.54	-28.33	-20.91	0.25	35.21	216.43
2173.89	1.40	240.04	2173.49	30.12	-28.59	-21.43	0.77	35.73	216.85
2199.41	1.38	239.76	2199.00	30.73	-28.90	-21.96	0.08	36.30	217.24
2224.97	1.44	247.66	2224.55	31.36	-29.18	-22.53	0.80	36.86	217.67
2249.97	1.46	243.43	2249.54	31.99	-29.44	-23.10	0.43	37.42	218.13
2274.41	1.44	244.55	2273.98	32.60	-29.71	-23.66	0.14	37.98	218.53
2299.94	1.40	244.40	2299.50	33.23	-29.98	-24.23	0.13	38.55	218.95
2324.09	1.44	246.33	2323.64	33.83	-30.23	-24.78	0.26	39.09	219.34
2349.76	1.42	244.95	2349.30	34.47	-30.50	-25.36	0.16	39.66	219.75
2374.83	1.43	246.87	2374.36	35.09	-30.75	-25.93	0.19	40.22	220.14
2399.48	1.49	249.42	2399.00	35.72	-30.98	-26.51	0.38	40.78	220.55
2423.86	1.54	251.97	2423.38	36.37	-31.20	-27.12	0.33	41.34	221.00
2448.96	1.46	240.70	2448.47	37.02	-31.46	-27.72	1.21	41.93	221.39
2474.44	1.50	257.10	2473.94	37.67	-31.69	-28.33	1.67	42.51	221.79
2499.50	1.48	256.88	2499.00	38.32	-31.84	-28.96	0.11	43.04	222.29
2524.73	1.33	256.39	2524.22	38.93	-31.98	-29.56	0.61	43.55	222.75
2549.77	1.45	256.52	2549.25	39.53	-32.12	-30.15	0.52	44.06	223.19
2574.88	1.37	271.30	2574.35	40.13	-32.19	-30.77	1.48	44.53	223.70
2599.89	1.26	262.74	2599.35	40.67	-32.22	-31.34	0.91	44.94	224.21
2623.96	1.20	266.33	2623.42	41.17	-32.27	-31.85	0.41	45.34	224.63
2648.45	1.32	270.93	2647.90	41.68	-32.28	-32.39	0.66	45.73	225.10
2674.88	1.07	273.25	2674.33	42.19	-32.26	-32.94	0.98	46.11	225.60
2699.84	1.03	280.20	2699.28	42.59	-32.21	-33.39	0.53	46.39	226.04
2723.88	1.03	285.97	2723.32	42.95	-32.11	-33.82	0.43	46.63	226.48
2748.95	0.95	278.91	2748.39	43.31	-32.01	-34.24	0.59	46.87	226.92

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
2774.03	0.92	281.23	2773.46	43.66	-31.94	-34.64	0.19	47.12	227.32
2799.12	1.00	284.86	2798.55	44.01	-31.85	-35.05	0.42	47.36	227.74
2823.83	0.96	282.28	2823.26	44.36	-31.75	-35.46	0.25	47.59	228.16
2848.88	0.88	283.86	2848.31	44.70	-31.66	-35.85	0.35	47.83	228.55
2873.97	0.92	289.97	2873.39	45.01	-31.54	-36.22	0.42	48.03	228.95
2899.06	0.97	286.55	2898.48	45.33	-31.41	-36.62	0.31	48.25	229.37
2923.99	0.94	284.33	2923.40	45.67	-31.30	-37.02	0.19	48.48	229.78
2949.20	0.94	289.07	2948.61	46.00	-31.18	-37.41	0.31	48.71	230.19
2974.27	0.88	291.53	2973.67	46.30	-31.05	-37.79	0.29	48.91	230.59
2998.95	0.88	295.22	2998.36	46.57	-30.90	-38.13	0.23	49.08	230.99
3024.04	0.94	297.82	3023.44	46.84	-30.72	-38.49	0.32	49.25	231.41
3049.12	0.93	300.29	3048.51	47.11	-30.52	-38.85	0.17	49.40	231.85
3074.20	0.96	296.27	3073.59	47.38	-30.32	-39.22	0.29	49.57	232.29
3099.25	0.95	301.50	3098.64	47.65	-30.12	-39.58	0.36	49.74	232.73
3124.97	0.93	293.41	3124.36	47.93	-29.93	-39.95	0.52	49.92	233.16
3148.87	1.05	299.71	3148.25	48.21	-29.74	-40.32	0.70	50.10	233.58
3174.75	1.08	301.60	3174.13	48.51	-29.50	-40.73	0.17	50.29	234.09
3199.08	1.11	297.50	3198.46	48.81	-29.27	-41.14	0.35	50.49	234.57
3224.84	1.01	294.18	3224.21	49.14	-29.06	-41.57	0.45	50.72	235.04
3248.74	0.98	295.65	3248.11	49.43	-28.88	-41.95	0.17	50.93	235.45
3274.68	1.10	292.52	3274.05	49.76	-28.69	-42.38	0.50	51.18	235.90
3299.05	1.09	289.66	3298.41	50.11	-28.52	-42.81	0.23	51.44	236.33
3324.84	1.12	293.30	3324.20	50.48	-28.34	-43.28	0.29	51.73	236.78
3349.57	1.25	294.56	3348.92	50.85	-28.13	-43.74	0.53	52.01	237.25
3374.26	1.31	292.72	3373.60	51.24	-27.91	-44.25	0.30	52.32	237.75
3398.96	1.26	288.01	3398.29	51.66	-27.72	-44.77	0.47	52.65	238.23
3424.29	1.26	290.05	3423.62	52.09	-27.54	-45.29	0.18	53.01	238.70
3449.11	1.36	293.86	3448.43	52.50	-27.33	-45.82	0.55	53.35	239.19
3474.56	1.32	289.92	3473.87	52.94	-27.10	-46.37	0.39	53.71	239.69
3498.70	1.23	288.01	3498.01	53.36	-26.93	-46.88	0.41	54.06	240.12
3524.21	1.20	287.23	3523.52	53.78	-26.77	-47.39	0.12	54.43	240.54
3548.86	1.18	285.82	3548.16	54.19	-26.62	-47.88	0.16	54.79	240.93
3574.72	1.33	289.35	3574.01	54.63	-26.45	-48.42	0.68	55.18	241.36
3599.71	1.35	286.99	3598.99	55.09	-26.27	-48.98	0.24	55.58	241.80
3624.41	1.36	280.91	3623.69	55.57	-26.12	-49.55	0.58	56.01	242.20
3649.12	1.39	279.35	3648.39	56.08	-26.02	-50.13	0.20	56.48	242.57

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
3674.81	1.39	279.35	3674.08	56.62	-25.92	-50.75	0.02	56.98	242.94
3699.18	1.56	282.11	3698.44	57.16	-25.80	-51.36	0.77	57.48	243.33
3724.54	1.50	279.62	3723.79	57.73	-25.67	-52.03	0.36	58.02	243.73
3749.00	1.47	279.67	3748.24	58.28	-25.57	-52.65	0.10	58.53	244.10
3774.65	1.46	282.18	3773.88	58.84	-25.44	-53.29	0.26	59.06	244.48
3799.56	1.35	282.35	3798.78	59.35	-25.31	-53.89	0.41	59.54	244.84
3823.96	1.32	292.20	3823.17	59.80	-25.15	-54.43	0.95	59.96	245.21
3849.50	1.23	293.78	3848.71	60.21	-24.92	-54.96	0.40	60.34	245.61
3873.54	1.26	297.36	3872.74	60.57	-24.70	-55.43	0.35	60.68	245.98
3899.54	1.26	300.15	3898.74	60.95	-24.42	-55.93	0.24	61.03	246.41
3924.33	1.15	311.58	3923.52	61.23	-24.12	-56.35	1.07	61.30	246.83
3949.75	0.99	312.99	3948.94	61.45	-23.80	-56.70	0.62	61.49	247.23
3973.85	0.97	320.92	3973.03	61.61	-23.50	-56.98	0.57	61.64	247.59
3999.29	0.96	318.82	3998.47	61.75	-23.17	-57.26	0.14	61.77	247.97
4024.98	0.92	322.64	4024.16	61.89	-22.85	-57.53	0.30	61.90	248.34
4049.31	0.82	327.15	4048.48	61.98	-22.55	-57.74	0.49	61.98	248.67
4074.83	0.72	336.50	4074.00	62.03	-22.25	-57.90	0.64	62.03	248.98
4099.88	0.68	352.19	4099.05	62.00	-21.95	-57.98	0.78	62.00	249.26
4124.25	0.57	10.85	4123.42	61.91	-21.69	-57.98	0.94	61.91	249.49
4149.74	0.59	24.47	4148.91	61.75	-21.45	-57.90	0.55	61.75	249.67
4174.12	0.60	13.66	4173.29	61.59	-21.21	-57.82	0.46	61.59	249.85
4199.57	0.57	14.27	4198.73	61.44	-20.96	-57.76	0.11	61.45	250.05
4224.52	0.48	39.25	4223.68	61.28	-20.76	-57.66	0.97	61.29	250.20
4249.71	0.43	39.45	4248.87	61.11	-20.60	-57.53	0.20	61.11	250.30
4273.80	0.34	37.82	4272.96	60.96	-20.48	-57.43	0.37	60.97	250.38
4299.35	0.37	37.68	4298.51	60.83	-20.35	-57.33	0.10	60.84	250.46
4324.00	0.36	62.93	4323.16	60.68	-20.25	-57.22	0.65	60.70	250.51
4349.02	0.36	63.39	4348.18	60.53	-20.18	-57.08	0.02	60.54	250.53
4373.92	0.32	58.62	4373.08	60.38	-20.11	-56.95	0.20	60.40	250.55
4399.09	0.33	62.94	4398.25	60.24	-20.04	-56.82	0.12	60.26	250.57
4424.09	0.36	74.27	4423.25	60.09	-19.99	-56.68	0.30	60.10	250.58
4449.08	0.33	80.52	4448.24	59.94	-19.95	-56.53	0.20	59.95	250.56
4474.85	0.37	97.67	4474.01	59.79	-19.95	-56.38	0.43	59.81	250.51
4498.59	0.51	99.55	4497.75	59.64	-19.98	-56.20	0.59	59.65	250.43
4524.30	0.49	104.27	4523.46	59.45	-20.03	-55.98	0.17	59.46	250.32
4549.58	0.54	103.05	4548.73	59.26	-20.08	-55.76	0.21	59.27	250.20



Well Name: SHELDON R. SICKLER #4

Survey: SHELDON R. SICKLER #4

Survey Date: 6/12/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
4574.77	0.60	102.46	4573.92	59.05	-20.13	-55.52	0.24	59.06	250.07
4599.49	0.65	108.94	4598.64	58.83	-20.21	-55.26	0.35	58.84	249.91
4624.30	0.71	121.42	4623.45	58.63	-20.33	-54.99	0.64	58.63	249.71
4648.96	0.34	250.81	4648.11	58.61	-20.44	-54.93	3.90	58.61	249.59
4674.48	0.28	140.59	4673.63	58.67	-20.51	-54.97	1.99	58.67	249.54
4699.84	0.32	128.17	4698.99	58.61	-20.60	-54.87	0.32	58.61	249.42
4704.85	0.46	155.23	4704.00	58.60	-20.63	-54.85	4.54	58.60	249.39