



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

Well Location	SIDNEY STREAR #4
Well Name	SIDNEY STREAR #4
Rig Number	NABORS 92-0438
Survey Date	7/7/2014
Latitude	40.1177100°N
Longitude	104.8745010°W
North Reference	True North
Grid Correction	None
Depth Reference	GROUND LEVEL (4986.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 247.69Azim (deg)
Definitive Survey	SIDNEY STREAR #4
Operator(s)	C JAQUES

Well Notes

Survey Report

Well Name:		SIDNEY STREAR #4							
Survey:		SIDNEY STREAR #4							
Survey Date:		7/7/2014							
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
100.00	0.73	260.25	100.00	0.62	-0.11	-0.63	0.73	0.64	260.25
125.26	0.67	256.54	125.26	0.93	-0.17	-0.93	0.30	0.95	259.67
150.50	0.65	263.61	150.49	1.21	-0.22	-1.21	0.33	1.23	259.75
175.80	0.43	271.91	175.79	1.43	-0.23	-1.45	0.92	1.47	260.90
201.30	0.45	290.40	201.29	1.59	-0.19	-1.64	0.56	1.65	263.24
225.49	0.42	288.34	225.48	1.73	-0.13	-1.81	0.14	1.82	265.81
251.05	0.38	281.04	251.04	1.87	-0.09	-1.99	0.26	1.99	267.50
275.42	0.42	279.90	275.41	2.01	-0.06	-2.15	0.15	2.15	268.51
300.60	0.53	252.36	300.58	2.21	-0.08	-2.35	0.99	2.35	268.16
326.12	0.58	233.12	326.11	2.45	-0.19	-2.57	0.75	2.57	265.81
350.50	0.56	226.05	350.48	2.68	-0.34	-2.75	0.29	2.77	262.86
376.08	0.57	227.98	376.06	2.91	-0.52	-2.94	0.08	2.98	260.01
400.40	0.54	218.10	400.39	3.13	-0.69	-3.10	0.41	3.17	257.48
425.63	0.56	203.61	425.61	3.32	-0.89	-3.22	0.56	3.34	254.49
450.03	0.57	196.44	450.01	3.48	-1.12	-3.30	0.29	3.49	251.28
475.71	0.49	194.48	475.69	3.62	-1.35	-3.37	0.32	3.62	248.18
500.05	0.51	188.97	500.03	3.74	-1.56	-3.41	0.23	3.75	245.47
525.64	0.46	186.29	525.62	3.85	-1.77	-3.44	0.22	3.87	242.73
550.86	0.51	186.64	550.84	3.96	-1.98	-3.46	0.17	3.99	240.18
575.28	0.41	190.37	575.26	4.05	-2.18	-3.49	0.43	4.11	238.06
600.88	0.40	191.19	600.86	4.15	-2.35	-3.52	0.02	4.24	236.26
625.37	0.36	197.49	625.35	4.25	-2.51	-3.56	0.25	4.36	234.83
651.04	0.43	193.31	651.02	4.36	-2.68	-3.61	0.29	4.50	233.40
675.01	0.40	200.96	674.99	4.47	-2.85	-3.66	0.26	4.64	232.13
700.66	0.41	199.84	700.64	4.59	-3.02	-3.72	0.06	4.79	230.98
725.14	0.39	212.39	725.11	4.72	-3.17	-3.80	0.37	4.95	230.15
750.51	0.43	211.82	750.49	4.86	-3.32	-3.89	0.15	5.12	229.52
775.70	0.38	237.79	775.67	5.02	-3.45	-4.01	0.74	5.29	229.35
800.58	0.46	249.49	800.55	5.20	-3.53	-4.18	0.46	5.47	229.84
825.81	0.50	252.37	825.78	5.41	-3.60	-4.38	0.17	5.66	230.61
850.98	0.53	255.31	850.95	5.64	-3.66	-4.59	0.15	5.87	231.47
876.19	0.49	236.25	876.16	5.86	-3.75	-4.79	0.68	6.08	232.00
900.16	0.49	220.49	900.13	6.05	-3.88	-4.95	0.56	6.29	231.88
925.39	0.46	246.53	925.36	6.25	-4.00	-5.11	0.86	6.49	231.92
950.29	0.42	246.60	950.26	6.44	-4.08	-5.28	0.15	6.68	232.33

Survey Report

Well Name: SIDNEY STREAR #4
Survey: SIDNEY STREAR #4
Survey Date: 7/7/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
975.43	0.44	224.27	975.39	6.62	-4.19	-5.44	0.67	6.86	232.41
1000.59	0.31	232.04	1000.55	6.77	-4.30	-5.56	0.56	7.03	232.29
1025.83	0.35	233.18	1025.79	6.91	-4.39	-5.67	0.14	7.17	232.30
1051.09	0.34	226.86	1051.06	7.06	-4.48	-5.79	0.15	7.32	232.25
1076.15	0.26	247.75	1076.11	7.19	-4.56	-5.90	0.53	7.45	232.32
1101.39	0.32	258.50	1101.36	7.31	-4.59	-6.02	0.30	7.57	232.67
1126.14	0.34	270.15	1126.11	7.45	-4.60	-6.16	0.28	7.69	233.22
1150.21	0.45	275.69	1150.17	7.60	-4.60	-6.32	0.50	7.82	234.00
1175.44	0.51	280.41	1175.40	7.78	-4.56	-6.53	0.29	7.97	235.06
1200.60	0.42	266.43	1200.56	7.96	-4.55	-6.74	0.58	8.13	235.96
1225.74	0.62	259.70	1225.70	8.18	-4.58	-6.96	0.82	8.33	236.66
1250.17	0.64	265.88	1250.13	8.44	-4.61	-7.23	0.29	8.57	237.45
1275.74	0.71	271.15	1275.70	8.72	-4.62	-7.53	0.35	8.83	238.46
1301.01	0.57	254.07	1300.96	8.99	-4.65	-7.80	0.92	9.09	239.20
1325.02	0.66	253.75	1324.98	9.24	-4.72	-8.05	0.38	9.33	239.60
1350.26	0.59	246.99	1350.21	9.52	-4.82	-8.31	0.39	9.60	239.91
1375.43	0.62	248.47	1375.38	9.78	-4.92	-8.56	0.11	9.87	240.12
1400.65	0.52	252.34	1400.60	10.03	-5.00	-8.79	0.43	10.11	240.37
1425.42	0.45	249.92	1425.37	10.24	-5.07	-8.99	0.27	10.32	240.59
1450.68	0.41	254.95	1450.63	10.43	-5.13	-9.17	0.22	10.51	240.80
1476.05	0.44	261.94	1475.99	10.61	-5.16	-9.35	0.22	10.68	241.11
1501.18	0.44	266.76	1501.12	10.80	-5.18	-9.55	0.15	10.86	241.51
1525.05	0.48	269.23	1525.00	10.98	-5.19	-9.74	0.19	11.03	241.95
1550.97	0.49	265.52	1550.92	11.18	-5.20	-9.96	0.12	11.23	242.43
1575.83	0.51	270.41	1575.78	11.39	-5.21	-10.17	0.19	11.43	242.90
1600.10	0.57	269.11	1600.04	11.60	-5.21	-10.40	0.26	11.63	243.40
1626.06	0.65	267.78	1626.00	11.86	-5.21	-10.68	0.32	11.88	243.97
1650.85	0.64	262.84	1650.79	12.12	-5.24	-10.95	0.23	12.14	244.45
1675.65	0.66	261.60	1675.59	12.39	-5.27	-11.23	0.09	12.41	244.84
1700.37	0.61	243.42	1700.31	12.66	-5.35	-11.49	0.83	12.67	245.01
1725.99	0.67	249.61	1725.92	12.95	-5.47	-11.75	0.36	12.96	245.05
1751.15	0.63	243.94	1751.08	13.23	-5.58	-12.01	0.30	13.24	245.09
1775.95	0.62	236.26	1775.89	13.50	-5.71	-12.24	0.34	13.51	244.99
1800.80	0.47	246.01	1800.73	13.73	-5.83	-12.45	0.69	13.75	244.91
1825.25	0.46	243.45	1825.18	13.93	-5.91	-12.63	0.10	13.95	244.91
1850.15	0.47	240.27	1850.08	14.13	-6.01	-12.81	0.11	14.15	244.86

Survey Report

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Survey Date:		7/7/2014							
MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
1876.15	0.47	259.87	1876.08	14.34	-6.08	-13.01	0.62	14.36	244.94
1900.88	0.47	254.89	1900.81	14.54	-6.13	-13.21	0.17	14.56	245.11
1925.81	0.50	262.28	1925.74	14.75	-6.17	-13.41	0.28	14.76	245.30
1950.64	0.62	270.19	1950.57	14.98	-6.18	-13.65	0.59	14.99	245.64
1975.62	0.65	269.04	1975.54	15.23	-6.18	-13.93	0.13	15.24	246.06
2000.37	0.71	275.13	2000.30	15.50	-6.17	-14.22	0.37	15.50	246.54
2025.90	0.75	272.21	2025.82	15.79	-6.15	-14.55	0.23	15.79	247.08
2050.61	0.69	264.63	2050.53	16.08	-6.16	-14.86	0.45	16.08	247.48
2075.43	0.67	288.48	2075.35	16.34	-6.13	-15.14	1.14	16.34	247.97
2100.84	0.58	282.22	2100.75	16.56	-6.05	-15.41	0.43	16.56	248.56
2126.14	0.60	294.48	2126.06	16.75	-5.97	-15.66	0.51	16.76	249.13
2150.28	0.68	309.01	2150.19	16.91	-5.83	-15.89	0.75	16.92	249.86
2175.69	0.70	307.30	2175.60	17.06	-5.64	-16.13	0.10	17.08	250.73
2201.02	0.86	314.16	2200.92	17.21	-5.41	-16.39	0.74	17.26	251.72
2226.01	0.87	317.49	2225.92	17.35	-5.14	-16.65	0.20	17.42	252.84
2250.18	0.86	317.67	2250.08	17.48	-4.87	-16.89	0.04	17.58	253.91
2275.60	0.97	308.06	2275.50	17.65	-4.60	-17.19	0.74	17.80	255.02
2300.74	1.04	307.80	2300.63	17.87	-4.33	-17.54	0.30	18.07	256.14
2325.60	1.02	301.38	2325.49	18.11	-4.07	-17.91	0.47	18.37	257.18
2350.86	0.79	285.34	2350.74	18.38	-3.91	-18.27	1.36	18.68	257.92
2375.71	0.80	285.80	2375.60	18.66	-3.82	-18.60	0.05	18.99	258.40
2400.59	0.80	298.49	2400.47	18.90	-3.69	-18.92	0.71	19.27	258.97
2425.37	0.71	283.76	2425.25	19.14	-3.57	-19.22	0.85	19.55	259.48
2450.28	0.67	277.17	2450.16	19.39	-3.51	-19.51	0.37	19.83	259.79
2475.18	0.90	287.81	2475.05	19.66	-3.44	-19.84	1.10	20.14	260.17
2500.81	0.87	290.26	2500.69	19.96	-3.31	-20.22	0.20	20.49	260.71
2525.02	0.76	284.12	2524.89	20.22	-3.21	-20.54	0.57	20.79	261.13
2550.23	0.87	279.60	2550.10	20.52	-3.13	-20.89	0.50	21.13	261.47
2575.90	0.96	281.86	2575.77	20.86	-3.06	-21.30	0.39	21.51	261.83
2600.36	0.84	272.38	2600.22	21.20	-3.01	-21.68	0.79	21.88	262.10
2626.02	0.81	269.23	2625.88	21.53	-3.00	-22.05	0.21	22.25	262.25
2650.51	0.61	265.43	2650.36	21.82	-3.01	-22.35	0.84	22.55	262.32
2675.74	0.61	273.84	2675.59	22.07	-3.02	-22.61	0.35	22.81	262.40
2700.21	0.55	287.49	2700.06	22.27	-2.97	-22.86	0.61	23.05	262.59
2725.54	0.60	273.87	2725.40	22.49	-2.93	-23.10	0.57	23.29	262.78
2751.32	0.60	278.37	2751.18	22.72	-2.90	-23.37	0.18	23.55	262.93

Survey Report

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Survey Date: 7/7/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
2775.32	0.64	264.37	2775.17	22.96	-2.89	-23.63	0.66	23.80	263.02
2800.25	0.68	257.24	2800.10	23.24	-2.94	-23.91	0.35	24.09	262.99
2825.76	0.77	261.45	2825.61	23.55	-3.00	-24.23	0.44	24.41	262.95
2850.24	0.57	260.61	2850.09	23.83	-3.04	-24.51	0.85	24.70	262.93
2875.90	0.46	244.52	2875.75	24.06	-3.11	-24.73	0.69	24.92	262.84
2901.63	0.45	262.52	2901.47	24.26	-3.16	-24.92	0.56	25.12	262.76
2925.64	0.45	260.12	2925.48	24.44	-3.19	-25.11	0.08	25.31	262.75
2950.13	0.46	278.63	2949.97	24.62	-3.19	-25.30	0.60	25.50	262.80
2975.96	0.57	272.57	2975.81	24.82	-3.17	-25.53	0.49	25.73	262.92
3000.34	0.60	273.62	3000.18	25.05	-3.16	-25.78	0.11	25.97	263.01
3025.61	0.60	263.59	3025.45	25.29	-3.17	-26.04	0.41	26.23	263.07
3051.19	0.50	266.24	3051.03	25.53	-3.19	-26.28	0.40	26.48	263.08
3075.30	0.39	248.66	3075.13	25.71	-3.22	-26.46	0.73	26.66	263.05
3100.41	0.36	285.28	3100.25	25.86	-3.23	-26.62	0.94	26.82	263.07
3125.57	0.48	285.70	3125.41	26.00	-3.18	-26.80	0.47	26.99	263.22
3150.82	0.55	286.07	3150.66	26.18	-3.12	-27.02	0.25	27.20	263.41
3175.60	0.65	277.24	3175.43	26.40	-3.07	-27.27	0.55	27.44	263.57
3200.86	0.59	260.59	3200.69	26.65	-3.08	-27.54	0.74	27.71	263.63
3226.15	0.35	266.93	3225.98	26.85	-3.10	-27.74	0.99	27.92	263.62
3250.20	0.32	280.72	3250.03	26.97	-3.09	-27.88	0.35	28.05	263.67
3275.50	0.33	276.77	3275.33	27.09	-3.07	-28.03	0.10	28.19	263.75
3301.10	0.53	292.35	3300.93	27.24	-3.02	-28.21	0.87	28.37	263.90
3326.06	0.70	288.54	3325.89	27.44	-2.92	-28.46	0.71	28.61	264.13
3350.55	0.55	258.49	3350.38	27.67	-2.90	-28.72	1.44	28.86	264.23
3375.44	0.54	237.78	3375.26	27.90	-2.99	-28.93	0.79	29.09	264.11
3400.44	0.56	287.65	3400.26	28.11	-3.01	-29.15	1.85	29.30	264.10
3425.22	0.29	294.39	3425.04	28.25	-2.95	-29.32	1.09	29.47	264.25
3450.96	0.47	267.92	3450.78	28.39	-2.93	-29.49	0.96	29.63	264.33
3475.84	0.62	269.96	3475.66	28.61	-2.93	-29.72	0.62	29.87	264.37
3500.52	0.49	281.49	3500.35	28.82	-2.91	-29.96	0.70	30.10	264.45
3525.17	0.20	232.14	3524.99	28.95	-2.92	-30.10	1.57	30.24	264.46
3550.10	0.20	288.32	3549.92	29.03	-2.93	-30.17	0.76	30.32	264.45
3575.54	0.31	293.53	3575.36	29.11	-2.89	-30.28	0.44	30.42	264.55
3601.09	0.33	295.23	3600.91	29.21	-2.83	-30.41	0.09	30.54	264.68
3625.48	0.08	202.75	3625.30	29.27	-2.82	-30.48	1.41	30.61	264.72
3651.03	0.08	317.04	3650.85	29.29	-2.82	-30.50	0.55	30.63	264.72

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3676.60	0.45	333.78	3676.42	29.30	-2.72	-30.56	1.45	30.68	264.92
3700.52	0.15	34.93	3700.34	29.28	-2.61	-30.58	1.68	30.69	265.13
3726.08	0.33	137.42	3725.90	29.23	-2.64	-30.51	1.54	30.62	265.06
3750.48	0.24	150.07	3750.30	29.20	-2.73	-30.44	0.48	30.56	264.87
3776.05	0.49	45.98	3775.87	29.09	-2.70	-30.33	2.31	30.45	264.91
3801.27	0.59	113.84	3801.09	28.90	-2.68	-30.14	2.40	30.26	264.92
3825.99	0.63	139.79	3825.81	28.77	-2.83	-29.93	1.12	30.07	264.59
3851.06	0.41	123.68	3850.87	28.68	-2.99	-29.77	1.05	29.92	264.27
3876.12	0.38	111.56	3875.94	28.57	-3.07	-29.62	0.35	29.78	264.09
3900.02	0.35	168.32	3899.84	28.53	-3.17	-29.53	1.44	29.70	263.88
3925.07	0.49	140.23	3924.89	28.51	-3.32	-29.45	0.99	29.64	263.56
3950.28	0.46	146.63	3950.10	28.46	-3.49	-29.33	0.26	29.53	263.21
3976.48	0.55	169.29	3976.29	28.46	-3.70	-29.24	0.83	29.48	262.78
4000.36	0.47	162.72	4000.18	28.49	-3.91	-29.19	0.43	29.45	262.37
4026.07	0.51	151.95	4025.88	28.49	-4.11	-29.11	0.40	29.40	261.96
4050.47	0.36	161.76	4050.28	28.49	-4.28	-29.03	0.71	29.35	261.62
4076.18	0.43	167.44	4075.99	28.51	-4.45	-28.99	0.33	29.33	261.27
4100.23	0.63	145.46	4100.03	28.49	-4.65	-28.89	1.15	29.26	260.87
4125.89	0.39	149.20	4125.70	28.45	-4.84	-28.77	0.93	29.17	260.46
4150.41	0.55	171.25	4150.22	28.47	-5.02	-28.71	0.98	29.15	260.07
4176.18	0.74	157.43	4175.98	28.50	-5.30	-28.63	0.96	29.11	259.51
4200.61	0.83	149.53	4200.41	28.47	-5.60	-28.48	0.55	29.02	258.88
4225.92	0.65	159.88	4225.72	28.45	-5.89	-28.33	0.86	28.94	258.25
4250.34	0.86	159.11	4250.14	28.46	-6.19	-28.22	0.85	28.89	257.62
4276.14	0.78	142.84	4275.93	28.42	-6.51	-28.05	0.95	28.79	256.93
4300.67	0.77	151.84	4300.47	28.36	-6.79	-27.87	0.50	28.68	256.30
4325.57	1.05	166.54	4325.36	28.38	-7.16	-27.74	1.46	28.64	255.53
4351.45	1.06	150.83	4351.23	28.39	-7.60	-27.56	1.12	28.59	254.59
4375.37	0.88	154.23	4375.15	28.35	-7.96	-27.38	0.79	28.51	253.79
4401.26	1.15	161.57	4401.04	28.35	-8.39	-27.21	1.14	28.47	252.87
4425.71	0.95	155.71	4425.48	28.36	-8.80	-27.05	0.92	28.44	251.97
4450.23	0.92	135.21	4450.00	28.28	-9.13	-26.82	1.36	28.33	251.21
4475.62	0.86	137.85	4475.39	28.14	-9.42	-26.55	0.30	28.17	250.47
4500.16	0.56	146.27	4499.93	28.05	-9.65	-26.36	1.30	28.07	249.89
4525.47	0.55	133.71	4525.23	27.98	-9.84	-26.20	0.48	27.99	249.42
4550.34	0.31	163.28	4550.11	27.94	-9.98	-26.10	1.27	27.94	249.07

**Well Name:** SIDNEY STREAR #4**Survey:** SIDNEY STREAR #4**Survey Date:** 7/7/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS 7100ft	Closure Distance ft	Closure Direction deg
4576.18	0.51	160.53	4575.95	27.95	-10.16	-26.04	0.78	27.95	248.68
4600.08	0.44	124.71	4599.84	27.90	-10.31	-25.93	1.26	27.91	248.31
4625.07	0.40	159.24	4624.83	27.85	-10.45	-25.82	1.01	27.85	247.97
4644.53	0.50	115.58	4644.29	27.80	-10.55	-25.72	1.80	27.80	247.69