



Gyroscopic Survey Report
for
KP KAUFMAN

Well Location	WELD
Well Name	HEIT, ANTONE C #B-1
Rig Number	NA NA
Survey Date	12/12/2014
Latitude	40.0491500°N
Longitude	104.8508400°W
North Reference	True North
Grid Correction	None
Depth Reference	GL (4954.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 297.75Azim (deg)
Definitive Survey	None
Operator(s)	P HOLBROOK

Well Notes

API-05-123-07879

Survey Report

Well Name: HEIT, ANTONE C #B-1
Survey: HEIT ANTONE C B#1 (05-123-07879)
Survey Date: 12/12/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	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
88.06	0.53	275.09	88.06	0.38	0.04	-0.41	0.61	0.41	275.09
98.96	0.53	278.58	98.96	0.47	0.05	-0.51	0.31	0.51	275.44
123.75	0.43	292.47	123.75	0.67	0.10	-0.71	0.60	0.72	278.12
148.92	0.63	319.80	148.91	0.90	0.24	-0.89	1.27	0.92	285.37
174.18	0.36	300.76	174.17	1.11	0.39	-1.04	1.25	1.11	290.52
199.11	0.33	311.94	199.11	1.25	0.48	-1.17	0.29	1.26	292.36
224.72	0.42	307.56	224.72	1.42	0.59	-1.29	0.34	1.42	294.36
246.06	0.49	317.81	246.05	1.58	0.70	-1.42	0.50	1.58	296.32
271.07	0.49	318.75	271.06	1.78	0.86	-1.56	0.03	1.78	298.89
296.54	0.40	324.25	296.53	1.96	1.01	-1.68	0.40	1.97	301.08
322.03	0.42	325.28	322.02	2.12	1.16	-1.79	0.09	2.13	303.04
347.13	0.43	306.08	347.12	2.30	1.30	-1.92	0.57	2.31	304.03
372.51	0.43	306.42	372.50	2.49	1.41	-2.07	0.01	2.51	304.20
397.94	0.51	308.85	397.93	2.70	1.54	-2.24	0.31	2.72	304.47
423.02	0.51	318.61	423.01	2.91	1.69	-2.40	0.35	2.93	305.17
448.46	0.47	322.83	448.45	3.11	1.86	-2.54	0.20	3.15	306.23
473.87	0.46	326.70	473.85	3.30	2.03	-2.66	0.13	3.34	307.36
498.83	0.44	321.88	498.81	3.47	2.19	-2.77	0.19	3.53	308.29
524.25	0.37	315.36	524.24	3.64	2.32	-2.89	0.31	3.71	308.81
549.68	0.40	301.91	549.67	3.81	2.43	-3.02	0.37	3.88	308.79
574.58	0.40	305.90	574.57	3.98	2.53	-3.17	0.11	4.05	308.58
599.98	0.50	304.44	599.96	4.18	2.64	-3.33	0.38	4.25	308.41
621.32	0.55	306.33	621.30	4.37	2.76	-3.49	0.27	4.45	308.28
646.09	0.51	304.15	646.08	4.60	2.89	-3.68	0.20	4.68	308.14
671.46	0.53	310.13	671.44	4.83	3.03	-3.86	0.22	4.91	308.09
697.08	0.53	312.40	697.06	5.06	3.18	-4.04	0.09	5.14	308.24
721.84	0.56	316.08	721.82	5.28	3.35	-4.21	0.17	5.38	308.50
747.18	0.45	320.22	747.16	5.49	3.51	-4.36	0.46	5.60	308.88
772.35	0.51	321.58	772.32	5.69	3.68	-4.49	0.23	5.80	309.31
796.66	0.45	318.27	796.64	5.87	3.83	-4.62	0.24	6.00	309.67
821.55	0.48	317.36	821.52	6.07	3.98	-4.76	0.12	6.21	309.93
846.68	0.48	311.55	846.66	6.27	4.13	-4.91	0.19	6.42	310.08
870.88	0.46	320.19	870.85	6.46	4.27	-5.05	0.31	6.61	310.25
899.95	0.48	325.43	899.93	6.67	4.46	-5.19	0.16	6.85	310.69
924.81	0.47	321.76	924.78	6.86	4.63	-5.32	0.13	7.05	311.07

Survey Report

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Survey Date: 12/12/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
949.07	0.57	303.26	949.04	7.07	4.78	-5.48	0.79	7.27	311.08
973.95	0.50	320.60	973.92	7.29	4.93	-5.65	0.70	7.50	311.09
998.80	0.51	321.49	998.77	7.50	5.10	-5.79	0.06	7.71	311.38
1023.30	0.62	318.15	1023.26	7.72	5.28	-5.95	0.46	7.95	311.63
1047.93	0.56	307.26	1047.89	7.97	5.46	-6.13	0.52	8.21	311.67
1072.95	0.60	310.61	1072.91	8.21	5.61	-6.33	0.21	8.46	311.59
1097.27	0.69	316.63	1097.23	8.47	5.80	-6.52	0.46	8.73	311.66
1122.06	0.60	310.71	1122.02	8.74	6.00	-6.72	0.45	9.01	311.73
1146.88	0.70	317.75	1146.83	9.01	6.19	-6.92	0.52	9.29	311.81
1171.20	0.70	313.22	1171.15	9.29	6.40	-7.13	0.23	9.58	311.93
1195.98	0.63	315.53	1195.94	9.57	6.60	-7.34	0.29	9.87	312.00
1224.95	0.68	316.22	1224.90	9.88	6.84	-7.57	0.16	10.20	312.12
1249.00	0.70	316.67	1248.95	10.16	7.05	-7.77	0.08	10.49	312.24
1274.02	0.75	323.63	1273.97	10.45	7.30	-7.97	0.42	10.81	312.48
1298.79	0.59	322.31	1298.74	10.71	7.53	-8.14	0.67	11.09	312.75
1322.86	0.72	317.60	1322.81	10.97	7.74	-8.32	0.59	11.36	312.92
1347.84	0.73	315.46	1347.79	11.27	7.97	-8.54	0.12	11.68	313.02
1372.62	0.71	316.88	1372.57	11.56	8.19	-8.75	0.12	11.99	313.10
1396.55	0.67	320.91	1396.49	11.83	8.41	-8.94	0.26	12.27	313.23
1421.60	0.66	318.72	1421.54	12.10	8.63	-9.13	0.11	12.56	313.39
1446.43	0.78	324.43	1446.37	12.38	8.87	-9.32	0.57	12.87	313.59
1474.38	0.76	318.44	1474.32	12.72	9.17	-9.55	0.30	13.24	313.81
1499.40	0.72	315.73	1499.33	13.03	9.40	-9.77	0.21	13.56	313.89
1524.24	0.81	315.86	1524.17	13.34	9.64	-10.00	0.36	13.89	313.93
1548.90	0.84	313.22	1548.83	13.68	9.89	-10.26	0.21	14.24	313.95
1574.54	0.81	314.43	1574.47	14.03	10.14	-10.52	0.13	14.61	313.94
1599.94	1.06	310.29	1599.86	14.44	10.42	-10.83	1.02	15.03	313.89
1624.25	1.14	314.41	1624.17	14.89	10.73	-11.17	0.47	15.50	313.85
1645.67	1.15	311.90	1645.58	15.30	11.03	-11.49	0.23	15.92	313.83
1674.99	1.24	313.00	1674.90	15.89	11.44	-11.94	0.32	16.53	313.78
1699.27	1.35	312.24	1699.17	16.42	11.81	-12.34	0.47	17.08	313.74
1724.64	1.39	311.64	1724.54	17.01	12.21	-12.79	0.18	17.69	313.68
1749.92	1.38	311.36	1749.81	17.60	12.62	-13.25	0.06	18.30	313.61
1774.29	1.42	311.48	1774.17	18.18	13.01	-13.69	0.17	18.89	313.54
1799.53	1.43	309.53	1799.40	18.79	13.42	-14.17	0.20	19.52	313.44
1824.87	1.43	310.67	1824.73	19.41	13.83	-14.66	0.11	20.15	313.34

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
1849.02	1.41	308.55	1848.87	20.00	14.21	-15.12	0.24	20.75	313.23
1874.36	1.45	308.90	1874.21	20.62	14.61	-15.61	0.17	21.38	313.10
1899.70	1.48	310.21	1899.54	21.25	15.02	-16.11	0.16	22.03	312.99
1923.70	1.42	311.82	1923.53	21.84	15.42	-16.57	0.28	22.63	312.94
1949.14	1.40	311.48	1948.96	22.45	15.84	-17.04	0.10	23.26	312.90
1974.42	1.42	311.72	1974.24	23.06	16.25	-17.50	0.07	23.88	312.87
1998.78	1.48	311.08	1998.59	23.66	16.66	-17.97	0.27	24.50	312.83
2023.72	1.38	312.72	2023.53	24.26	17.07	-18.43	0.44	25.12	312.81
2049.13	1.41	311.71	2048.92	24.86	17.49	-18.89	0.14	25.74	312.79
2073.30	1.41	316.16	2073.09	25.43	17.90	-19.32	0.45	26.34	312.82
2098.53	1.46	313.80	2098.31	26.03	18.35	-19.76	0.30	26.97	312.87
2123.56	1.47	315.70	2123.33	26.65	18.80	-20.22	0.20	27.61	312.91
2148.21	1.58	316.64	2147.97	27.27	19.27	-20.67	0.48	28.26	312.99
2174.43	1.52	316.83	2174.18	27.94	19.79	-21.16	0.25	28.97	313.08
2196.24	1.61	318.93	2195.98	28.50	20.23	-21.56	0.51	29.56	313.18
2221.44	1.62	317.50	2221.18	29.16	20.76	-22.03	0.17	30.27	313.30
2247.49	1.73	315.93	2247.21	29.88	21.31	-22.55	0.46	31.03	313.38
2274.27	1.68	316.29	2273.98	30.64	21.89	-23.11	0.21	31.83	313.45
2296.19	1.77	315.32	2295.89	31.27	22.36	-23.57	0.46	32.49	313.50
2321.14	1.68	317.67	2320.83	31.98	22.91	-24.08	0.48	33.24	313.56
2347.31	1.63	319.20	2346.99	32.69	23.47	-24.59	0.25	33.99	313.67
2373.36	1.62	318.36	2373.03	33.37	24.03	-25.07	0.10	34.73	313.78
2398.17	1.55	321.86	2397.83	34.01	24.55	-25.51	0.48	35.41	313.90
2423.47	1.59	323.32	2423.12	34.64	25.10	-25.93	0.22	36.09	314.07
2449.25	1.57	325.67	2448.89	35.27	25.68	-26.35	0.26	36.79	314.27
2473.97	1.56	327.22	2473.60	35.87	26.24	-26.72	0.18	37.45	314.49
2499.54	1.52	324.49	2499.16	36.47	26.81	-27.10	0.34	38.13	314.69
2524.97	1.62	328.56	2524.58	37.08	27.39	-27.49	0.61	38.81	314.90
2549.76	1.33	328.69	2549.36	37.63	27.94	-27.82	1.17	39.43	315.12
2571.12	1.38	329.33	2570.72	38.06	28.37	-28.08	0.25	39.92	315.30
2595.92	1.47	329.51	2595.51	38.59	28.90	-28.39	0.33	40.52	315.51
2621.22	1.17	337.98	2620.80	39.06	29.42	-28.66	1.41	41.07	315.76
2646.98	1.24	336.23	2646.55	39.48	29.92	-28.87	0.32	41.57	316.03
2671.61	1.20	332.88	2671.18	39.90	30.39	-29.09	0.33	42.07	316.25
2697.06	1.13	331.76	2696.63	40.32	30.85	-29.33	0.30	42.57	316.45
2722.58	1.07	336.25	2722.14	40.72	31.29	-29.55	0.40	43.04	316.64

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MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
2747.45	1.13	336.56	2747.01	41.09	31.73	-29.74	0.22	43.49	316.86
2772.78	1.18	335.54	2772.33	41.49	32.19	-29.94	0.22	43.97	317.07
2798.00	1.18	333.20	2797.54	41.91	32.66	-30.17	0.19	44.46	317.27
2822.95	1.03	328.03	2822.49	42.31	33.08	-30.40	0.72	44.93	317.42
2848.25	1.05	331.69	2847.79	42.70	33.48	-30.63	0.27	45.38	317.54
2873.69	1.07	330.47	2873.22	43.09	33.89	-30.86	0.12	45.84	317.68
2898.43	1.09	323.85	2897.96	43.50	34.28	-31.11	0.51	46.30	317.77
2923.73	1.07	324.97	2923.26	43.92	34.67	-31.39	0.11	46.77	317.84
2949.26	1.11	328.30	2948.78	44.35	35.07	-31.66	0.30	47.25	317.93
2973.93	1.09	319.31	2973.44	44.77	35.45	-31.94	0.70	47.72	317.99
2999.24	1.14	322.31	2998.75	45.22	35.84	-32.25	0.30	48.21	318.02
3024.69	1.09	319.89	3024.20	45.67	36.22	-32.56	0.27	48.70	318.05
3049.25	1.15	322.81	3048.75	46.11	36.59	-32.85	0.34	49.18	318.08
3074.54	1.09	316.59	3074.04	46.57	36.97	-33.17	0.53	49.67	318.10
3099.99	1.05	317.54	3099.48	47.02	37.32	-33.50	0.17	50.15	318.09
3124.65	1.27	315.04	3124.14	47.49	37.68	-33.84	0.89	50.65	318.07
3145.89	1.22	314.55	3145.37	47.93	38.00	-34.17	0.22	51.11	318.04
3171.13	1.19	314.08	3170.61	48.44	38.37	-34.55	0.13	51.64	318.00
3199.16	1.21	312.74	3198.63	49.01	38.78	-34.97	0.12	52.22	317.95
3224.06	1.25	305.32	3223.52	49.53	39.11	-35.39	0.66	52.75	317.86
3248.99	1.19	305.43	3248.44	50.05	39.42	-35.82	0.25	53.26	317.74
3272.99	1.22	302.61	3272.44	50.56	39.70	-36.24	0.29	53.75	317.61
3297.87	1.30	296.14	3297.32	51.10	39.97	-36.72	0.64	54.27	317.43
3322.80	1.19	294.57	3322.24	51.64	40.20	-37.20	0.45	54.77	317.22
3346.94	1.27	296.46	3346.38	52.16	40.42	-37.67	0.37	55.26	317.02
3371.69	1.32	293.63	3371.12	52.72	40.66	-38.18	0.34	55.77	316.80
3396.72	1.35	291.52	3396.14	53.30	40.88	-38.72	0.23	56.31	316.56
3420.73	1.30	295.62	3420.15	53.85	41.11	-39.23	0.45	56.82	316.34
3449.50	1.41	293.81	3448.91	54.53	41.39	-39.85	0.41	57.45	316.09
3474.18	1.39	294.58	3473.58	55.14	41.64	-40.40	0.11	58.02	315.87
3499.14	1.45	296.83	3498.53	55.76	41.91	-40.96	0.30	58.60	315.66
3523.27	1.49	293.05	3522.66	56.37	42.17	-41.51	0.43	59.17	315.45
3547.97	1.39	292.92	3547.34	56.99	42.41	-42.08	0.40	59.75	315.22
3572.88	1.32	291.98	3572.25	57.58	42.63	-42.63	0.28	60.29	315.00
3596.82	1.19	289.95	3596.19	58.10	42.82	-43.12	0.58	60.77	314.80
3622.66	1.12	287.10	3622.02	58.61	42.99	-43.61	0.34	61.24	314.59

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3647.48	1.20	278.06	3646.84	59.09	43.09	-44.10	0.80	61.66	314.34
3672.38	1.07	273.27	3671.73	59.55	43.14	-44.59	0.65	62.05	314.06
3698.72	1.13	266.07	3698.06	59.99	43.14	-45.09	0.57	62.41	313.73
3723.82	1.08	261.06	3723.16	60.39	43.09	-45.57	0.43	62.72	313.39
3748.78	1.02	262.77	3748.12	60.76	43.02	-46.03	0.27	63.00	313.07
3774.33	0.93	251.94	3773.66	61.09	42.93	-46.45	0.79	63.25	312.74
3795.08	0.86	254.72	3794.41	61.33	42.84	-46.76	0.43	63.41	312.49
3824.93	0.83	247.37	3824.26	61.63	42.69	-47.17	0.38	63.62	312.15
3846.43	0.69	251.05	3845.76	61.81	42.59	-47.44	0.68	63.75	311.92
3871.36	0.73	231.92	3870.69	61.98	42.45	-47.71	0.96	63.86	311.66
3896.87	0.60	230.08	3896.19	62.10	42.26	-47.94	0.52	63.90	311.40
3922.50	0.58	214.99	3921.82	62.17	42.07	-48.12	0.61	63.91	311.16
3947.07	0.59	200.78	3946.39	62.17	41.84	-48.23	0.59	63.85	310.94
3972.09	0.64	207.34	3971.41	62.15	41.60	-48.34	0.35	63.78	310.71
3997.36	0.65	202.97	3996.68	62.14	41.34	-48.46	0.20	63.70	310.47
4021.63	0.64	198.83	4020.94	62.10	41.09	-48.56	0.20	63.61	310.23
4046.70	0.74	204.57	4046.01	62.07	40.81	-48.67	0.46	63.52	309.98
4071.99	0.79	193.84	4071.30	62.02	40.49	-48.78	0.60	63.40	309.69
4096.15	0.73	194.08	4095.46	61.95	40.18	-48.86	0.23	63.26	309.43
4121.40	0.80	199.84	4120.71	61.88	39.86	-48.96	0.39	63.13	309.15
4146.54	0.87	199.75	4145.84	61.83	39.51	-49.08	0.28	63.01	308.84
4170.94	0.87	187.20	4170.24	61.74	39.16	-49.17	0.78	62.85	308.53
4195.92	0.88	194.52	4195.21	61.63	38.78	-49.24	0.45	62.68	308.22
4224.99	0.81	197.27	4224.28	61.54	38.37	-49.36	0.30	62.52	307.86
4249.96	0.92	189.94	4249.25	61.45	38.00	-49.44	0.64	62.36	307.55
4274.41	1.00	190.76	4273.70	61.33	37.60	-49.52	0.34	62.17	307.21
4299.35	1.00	194.06	4298.63	61.21	37.18	-49.61	0.23	61.99	306.85
4324.35	1.01	194.03	4323.63	61.11	36.75	-49.72	0.04	61.83	306.47
4348.65	0.99	190.16	4347.93	61.00	36.34	-49.81	0.28	61.65	306.11
4373.55	0.92	185.98	4372.82	60.86	35.93	-49.86	0.40	61.46	305.77
4398.70	1.03	182.68	4397.97	60.69	35.50	-49.90	0.48	61.24	305.43
4422.99	1.26	188.64	4422.26	60.51	35.02	-49.95	1.09	61.00	305.04
4447.87	1.19	186.18	4447.13	60.32	34.49	-50.02	0.38	60.75	304.59
4472.87	1.29	187.84	4472.13	60.13	33.95	-50.08	0.45	60.51	304.14
4497.12	1.23	178.82	4496.37	59.91	33.42	-50.11	0.86	60.24	303.70
4522.00	1.54	175.82	4521.24	59.61	32.82	-50.08	1.28	59.88	303.24

Well Name: HEIT, ANTONE C #B-1
Survey: HEIT ANTONE C B#1 (05-123-07879)
Survey Date: 12/12/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
4546.99	1.44	182.86	4546.22	59.30	32.18	-50.07	0.84	59.52	302.72
4571.14	1.52	184.67	4570.36	59.04	31.55	-50.12	0.40	59.22	302.20
4596.23	1.54	180.69	4595.44	58.76	30.89	-50.15	0.43	58.90	301.63
4624.56	1.49	176.61	4623.76	58.40	30.14	-50.13	0.41	58.49	301.01
4648.99	1.43	174.64	4648.19	58.07	29.52	-50.08	0.33	58.13	300.51
4673.37	1.58	169.70	4672.56	57.69	28.88	-49.99	0.81	57.74	300.02
4696.89	1.51	172.28	4696.06	57.31	28.26	-49.89	0.42	57.34	299.53
4722.39	1.56	174.84	4721.56	56.93	27.58	-49.82	0.34	56.94	298.97
4749.05	1.05	188.25	4748.21	56.65	26.98	-49.82	2.21	56.66	298.44
4773.28	1.30	185.75	4772.44	56.48	26.49	-49.88	1.03	56.48	297.97
4784.00	1.20	189.71	4783.16	56.40	26.26	-49.91	1.24	56.40	297.75