



Gyroscopic Survey Report
for
KPK

Well Location	WELD COUNTY, CO
Well Name	COULTER C SMITH #1
Rig Number	
Survey Date	9/16/2014
Latitude	40.0708700°N
Longitude	104.8461900°W
North Reference	True North
Grid Correction	None
Depth Reference	GL (0.00 ft)
Calculation Method	Minimum Curvature
Section (VS) Ref	0.00N (ft), 0.00E (ft), 136.71Azim (deg)
Definitive Survey	199430 COULTER C SMITH #1
Operator(s)	C KIRBY

Well Notes

API-05-123-09846

Survey Report

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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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
86.42	0.33	194.24	86.42	0.13	-0.24	-0.06	0.38	0.25	194.24
109.55	0.33	197.20	109.55	0.20	-0.37	-0.10	0.08	0.38	194.76
135.90	0.36	190.94	135.90	0.29	-0.52	-0.14	0.17	0.54	194.53
161.30	0.44	201.63	161.30	0.37	-0.69	-0.19	0.43	0.72	195.09
185.48	0.43	196.89	185.48	0.46	-0.86	-0.25	0.15	0.90	195.94
207.91	0.46	190.57	207.90	0.55	-1.03	-0.29	0.26	1.07	195.57
233.29	0.46	177.95	233.29	0.69	-1.24	-0.30	0.40	1.27	193.77
260.00	0.40	177.73	259.99	0.84	-1.44	-0.30	0.24	1.47	191.63
286.84	0.41	186.55	286.84	0.97	-1.62	-0.30	0.24	1.65	190.56
308.51	0.44	164.10	308.51	1.10	-1.78	-0.29	0.77	1.80	189.21
335.34	0.41	174.14	335.33	1.27	-1.97	-0.25	0.29	1.99	187.24
357.73	0.45	171.26	357.72	1.40	-2.14	-0.23	0.19	2.15	186.11
383.81	0.49	166.52	383.80	1.58	-2.35	-0.19	0.22	2.36	184.56
410.62	0.39	173.74	410.61	1.76	-2.56	-0.15	0.42	2.56	183.38
432.17	0.46	172.39	432.16	1.89	-2.71	-0.13	0.30	2.72	182.77
458.97	0.50	187.59	458.96	2.05	-2.94	-0.13	0.50	2.94	182.59
485.64	0.47	172.35	485.63	2.21	-3.16	-0.13	0.49	3.16	182.42
511.86	0.45	172.30	511.85	2.38	-3.37	-0.11	0.09	3.37	181.79
534.35	0.42	172.01	534.34	2.52	-3.54	-0.08	0.14	3.54	181.33
560.91	0.52	176.90	560.90	2.69	-3.75	-0.06	0.40	3.75	180.95
582.91	0.50	175.22	582.90	2.84	-3.95	-0.05	0.09	3.95	180.71
609.52	0.47	176.66	609.50	3.01	-4.17	-0.03	0.12	4.17	180.45
636.25	0.49	155.45	636.24	3.21	-4.39	0.02	0.67	4.39	179.72
659.21	0.59	155.37	659.19	3.41	-4.58	0.11	0.42	4.58	178.61
685.81	0.60	166.72	685.79	3.66	-4.84	0.20	0.44	4.84	177.64
708.29	0.63	169.83	708.27	3.86	-5.07	0.25	0.19	5.08	177.20
735.27	0.57	175.11	735.25	4.09	-5.35	0.29	0.29	5.36	176.95
761.53	0.53	168.37	761.51	4.30	-5.60	0.32	0.28	5.61	176.72
784.06	0.59	170.08	784.04	4.49	-5.82	0.36	0.27	5.83	176.44
811.02	0.63	167.94	810.99	4.73	-6.10	0.42	0.18	6.12	176.08
832.83	0.57	158.58	832.81	4.93	-6.32	0.48	0.54	6.34	175.64
859.69	0.52	156.40	859.66	5.17	-6.56	0.58	0.18	6.59	174.94
886.54	0.56	168.39	886.51	5.40	-6.80	0.66	0.44	6.83	174.49
908.59	0.51	172.29	908.56	5.57	-7.00	0.69	0.26	7.04	174.37
935.78	0.54	170.85	935.75	5.78	-7.25	0.73	0.11	7.29	174.27

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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
958.31	0.53	155.51	958.27	5.97	-7.45	0.79	0.64	7.49	173.96
986.08	0.53	162.43	986.04	6.21	-7.69	0.88	0.23	7.75	173.47
1008.55	0.46	174.64	1008.51	6.37	-7.88	0.92	0.59	7.94	173.33
1036.33	0.53	183.09	1036.29	6.55	-8.12	0.92	0.37	8.17	173.51
1059.50	0.51	168.01	1059.47	6.71	-8.33	0.94	0.59	8.38	173.56
1086.57	0.49	173.84	1086.53	6.90	-8.56	0.98	0.20	8.62	173.49
1109.77	0.46	161.57	1109.73	7.07	-8.75	1.02	0.45	8.81	173.36
1132.97	0.49	182.28	1132.93	7.22	-8.94	1.04	0.74	9.00	173.34
1159.78	0.47	178.80	1159.74	7.38	-9.16	1.04	0.13	9.22	173.51
1183.25	0.49	177.22	1183.21	7.53	-9.36	1.05	0.12	9.42	173.61
1210.19	0.50	187.11	1210.15	7.69	-9.59	1.04	0.32	9.64	173.81
1233.53	0.45	182.16	1233.49	7.82	-9.78	1.02	0.26	9.84	174.03
1261.21	0.51	198.17	1261.17	7.96	-10.01	0.98	0.52	10.06	174.40
1283.83	0.40	184.16	1283.79	8.06	-10.18	0.94	0.67	10.23	174.70
1311.53	0.48	198.64	1311.49	8.18	-10.39	0.90	0.49	10.43	175.05
1334.11	0.38	177.71	1334.06	8.28	-10.55	0.87	0.82	10.59	175.27
1361.77	0.41	195.78	1361.73	8.40	-10.74	0.85	0.47	10.78	175.48
1385.11	0.33	165.17	1385.07	8.50	-10.89	0.84	0.91	10.92	175.57
1411.79	0.37	176.26	1411.74	8.64	-11.05	0.87	0.29	11.08	175.50
1436.11	0.40	187.94	1436.06	8.75	-11.21	0.86	0.35	11.25	175.60
1457.82	0.43	179.68	1457.77	8.86	-11.37	0.85	0.30	11.40	175.71
1484.98	0.41	186.89	1484.93	9.00	-11.57	0.84	0.20	11.60	175.84
1507.67	0.34	175.97	1507.62	9.10	-11.72	0.84	0.46	11.75	175.92
1534.19	0.37	194.60	1534.13	9.21	-11.88	0.82	0.45	11.91	176.05
1561.32	0.40	196.41	1561.27	9.30	-12.06	0.77	0.13	12.08	176.34
1583.47	0.38	187.67	1583.42	9.39	-12.20	0.74	0.29	12.23	176.54
1610.60	0.35	149.32	1610.55	9.53	-12.36	0.77	0.89	12.39	176.44
1633.45	0.34	152.28	1633.39	9.66	-12.48	0.84	0.08	12.51	176.17
1659.12	0.27	141.53	1659.07	9.79	-12.60	0.91	0.36	12.63	175.88
1686.36	0.26	150.27	1686.30	9.92	-12.70	0.98	0.15	12.74	175.59
1708.34	0.30	144.30	1708.29	10.02	-12.79	1.04	0.21	12.83	175.37
1736.06	0.27	157.56	1736.01	10.15	-12.91	1.10	0.26	12.96	175.11
1758.19	0.28	142.35	1758.14	10.25	-13.00	1.16	0.33	13.05	174.92
1784.79	0.30	140.25	1784.74	10.39	-13.10	1.24	0.10	13.16	174.60
1811.29	0.27	126.84	1811.24	10.52	-13.19	1.33	0.28	13.26	174.23
1833.04	0.22	135.85	1832.99	10.61	-13.25	1.40	0.29	13.33	173.96

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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
1860.26	0.20	138.42	1860.21	10.71	-13.33	1.47	0.08	13.41	173.70
1883.21	0.28	127.78	1883.15	10.80	-13.39	1.54	0.39	13.48	173.43
1908.95	0.22	145.42	1908.90	10.91	-13.47	1.62	0.37	13.57	173.15
1936.04	0.19	125.20	1935.99	11.01	-13.54	1.68	0.28	13.64	172.91
1958.12	0.14	111.20	1958.07	11.07	-13.57	1.74	0.29	13.68	172.69
1985.19	0.04	78.72	1985.13	11.11	-13.58	1.78	0.40	13.70	172.52
2007.30	0.06	347.35	2007.24	11.10	-13.57	1.79	0.32	13.69	172.49
2034.35	0.19	301.32	2034.30	11.05	-13.53	1.75	0.58	13.64	172.64
2061.59	0.17	302.23	2061.53	10.96	-13.49	1.67	0.07	13.59	172.93
2083.94	0.19	313.28	2083.88	10.89	-13.44	1.62	0.17	13.54	173.14
2111.62	0.31	305.49	2111.57	10.78	-13.37	1.52	0.45	13.46	173.50
2133.94	0.31	306.38	2133.88	10.66	-13.30	1.43	0.02	13.37	173.88
2161.61	0.38	317.98	2161.55	10.49	-13.19	1.30	0.36	13.25	174.35
2184.71	0.23	292.01	2184.65	10.37	-13.11	1.21	0.88	13.17	174.72
2211.43	0.35	297.00	2211.38	10.25	-13.05	1.09	0.47	13.10	175.23
2233.99	0.30	307.09	2233.93	10.12	-12.99	0.98	0.34	13.02	175.69
2261.07	0.32	320.14	2261.01	9.98	-12.89	0.87	0.27	12.91	176.12
2282.97	0.30	305.77	2282.91	9.86	-12.80	0.79	0.36	12.83	176.48
2310.04	0.29	333.28	2309.98	9.72	-12.70	0.70	0.53	12.72	176.86
2331.93	0.30	345.17	2331.87	9.62	-12.60	0.66	0.28	12.61	177.01
2359.04	0.39	7.57	2358.98	9.50	-12.44	0.65	0.59	12.45	177.00
2386.00	0.34	359.68	2385.94	9.38	-12.27	0.66	0.25	12.28	176.90
2408.02	0.36	6.95	2407.95	9.29	-12.13	0.67	0.21	12.15	176.83
2435.02	0.41	29.09	2434.95	9.21	-11.96	0.73	0.58	11.99	176.51
2457.05	0.43	36.28	2456.99	9.17	-11.83	0.82	0.26	11.85	176.05
2484.02	0.42	40.19	2483.96	9.14	-11.67	0.94	0.13	11.71	175.39
2510.44	0.57	38.67	2510.37	9.11	-11.49	1.08	0.59	11.54	174.61
2536.72	0.62	44.41	2536.65	9.09	-11.29	1.27	0.28	11.36	173.60
2559.47	0.57	41.59	2559.40	9.07	-11.12	1.43	0.23	11.21	172.69
2585.77	0.64	43.84	2585.70	9.05	-10.91	1.62	0.26	11.03	171.58
2607.71	0.65	56.17	2607.64	9.07	-10.76	1.80	0.63	10.91	170.48
2634.31	0.67	55.60	2634.24	9.11	-10.58	2.06	0.08	10.78	169.00
2661.75	0.71	65.26	2661.68	9.19	-10.42	2.34	0.45	10.68	167.33
2684.55	0.76	74.74	2684.48	9.31	-10.32	2.62	0.58	10.65	165.77
2711.40	0.75	77.48	2711.32	9.48	-10.24	2.96	0.14	10.66	163.86
2734.27	0.81	87.45	2734.19	9.67	-10.20	3.27	0.64	10.71	162.22

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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
2761.72	0.88	82.91	2761.64	9.92	-10.16	3.67	0.36	10.81	160.13
2783.91	0.77	83.78	2783.82	10.11	-10.13	3.99	0.51	10.88	158.50
2806.96	0.84	88.09	2806.87	10.31	-10.10	4.31	0.39	10.99	156.89
2833.51	0.73	82.96	2833.42	10.54	-10.08	4.67	0.48	11.11	155.13
2861.00	0.82	80.91	2860.91	10.75	-10.03	5.04	0.34	11.22	153.31
2883.91	0.73	87.28	2883.82	10.94	-9.99	5.35	0.54	11.33	151.85
2910.58	0.84	80.14	2910.48	11.16	-9.95	5.71	0.54	11.47	150.16
2933.23	0.88	84.27	2933.13	11.35	-9.91	6.04	0.34	11.60	148.61
2959.91	0.88	84.83	2959.81	11.61	-9.87	6.45	0.03	11.79	146.81
2986.80	0.92	84.97	2986.69	11.87	-9.83	6.87	0.14	11.99	145.03
3009.05	0.97	85.34	3008.94	12.10	-9.80	7.24	0.22	12.18	143.54
3035.32	0.99	80.97	3035.20	12.36	-9.74	7.68	0.29	12.41	141.74
3057.77	0.95	84.02	3057.65	12.58	-9.69	8.06	0.29	12.61	140.26
3084.62	0.87	84.77	3084.50	12.84	-9.65	8.48	0.28	12.85	138.69
3110.64	0.89	85.45	3110.52	13.09	-9.62	8.88	0.06	13.09	137.28
3133.21	0.91	82.11	3133.08	13.30	-9.58	9.23	0.25	13.31	136.06
3159.95	0.89	79.40	3159.83	13.54	-9.51	9.65	0.17	13.55	134.60
3186.05	0.88	86.78	3185.92	13.78	-9.46	10.05	0.44	13.80	133.29
3208.48	0.86	81.67	3208.34	13.99	-9.43	10.38	0.36	14.03	132.24
3234.62	0.90	85.89	3234.48	14.23	-9.39	10.78	0.29	14.30	131.04
3261.44	0.92	85.60	3261.30	14.49	-9.36	11.21	0.07	14.60	129.86
3283.85	0.97	78.29	3283.70	14.71	-9.30	11.57	0.59	14.85	128.80
3310.00	0.95	79.54	3309.85	14.94	-9.22	12.00	0.11	15.13	127.54
3336.72	0.86	79.92	3336.57	15.17	-9.14	12.41	0.35	15.42	126.37
3357.76	0.84	74.27	3357.60	15.33	-9.08	12.72	0.41	15.62	125.51
3384.94	0.89	76.78	3384.79	15.52	-8.97	13.11	0.22	15.89	124.38
3411.79	0.84	78.26	3411.63	15.73	-8.89	13.51	0.20	16.17	123.34
3433.58	0.91	77.46	3433.42	15.90	-8.82	13.83	0.35	16.40	122.51
3460.35	0.84	78.01	3460.18	16.11	-8.73	14.23	0.28	16.69	121.53
3482.85	0.74	81.70	3482.68	16.28	-8.67	14.53	0.48	16.93	120.83
3508.96	0.65	83.84	3508.79	16.47	-8.63	14.85	0.35	17.18	120.17
3535.02	0.65	78.94	3534.85	16.64	-8.59	15.14	0.21	17.41	119.57
3560.85	0.54	80.09	3560.68	16.78	-8.54	15.41	0.41	17.61	119.00
3583.48	0.44	79.76	3583.31	16.89	-8.51	15.60	0.43	17.77	118.61
3610.17	0.50	80.55	3610.00	17.01	-8.47	15.81	0.19	17.94	118.17
3636.08	0.43	86.38	3635.91	17.13	-8.44	16.02	0.32	18.11	117.80

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3658.59	0.35	90.10	3658.42	17.23	-8.44	16.17	0.35	18.24	117.56
3684.97	0.30	100.13	3684.80	17.34	-8.45	16.32	0.30	18.38	117.38
3710.50	0.26	107.91	3710.32	17.45	-8.48	16.44	0.22	18.50	117.29
3736.70	0.35	101.37	3736.52	17.56	-8.51	16.57	0.37	18.63	117.19
3757.92	0.32	105.64	3757.75	17.66	-8.54	16.69	0.18	18.75	117.10
3783.46	0.31	142.20	3783.28	17.79	-8.62	16.80	0.78	18.88	117.15
3809.53	0.34	148.24	3809.35	17.94	-8.74	16.89	0.17	19.02	117.36
3835.09	0.40	153.21	3834.92	18.10	-8.88	16.97	0.26	19.15	117.64
3861.35	0.39	181.90	3861.17	18.25	-9.05	17.01	0.74	19.27	118.03
3882.51	0.36	155.35	3882.33	18.37	-9.19	17.03	0.82	19.35	118.34
3908.76	0.48	180.70	3908.58	18.52	-9.37	17.06	0.83	19.47	118.77
3935.03	0.43	173.59	3934.86	18.68	-9.58	17.07	0.27	19.58	119.29
3960.43	0.50	194.65	3960.25	18.82	-9.78	17.06	0.72	19.66	119.83
3986.69	0.52	187.65	3986.51	18.95	-10.01	17.01	0.25	19.74	120.47
4008.51	0.46	175.53	4008.33	19.08	-10.20	17.01	0.54	19.83	120.94
4034.17	0.53	192.13	4033.99	19.23	-10.41	16.99	0.60	19.93	121.51
4060.09	0.52	201.85	4059.91	19.35	-10.64	16.92	0.34	19.99	122.16
4086.38	0.56	201.94	4086.19	19.45	-10.87	16.83	0.14	20.03	122.86
4107.70	0.45	216.01	4107.51	19.51	-11.03	16.74	0.76	20.05	123.39
4133.98	0.53	205.29	4133.79	19.57	-11.23	16.63	0.46	20.06	124.03
4159.54	0.55	215.02	4159.35	19.64	-11.44	16.51	0.37	20.08	124.72
4185.85	0.53	215.44	4185.66	19.69	-11.64	16.36	0.08	20.08	125.43
4207.78	0.61	223.06	4207.59	19.72	-11.81	16.22	0.48	20.07	126.05
4233.35	0.50	215.59	4233.16	19.75	-12.00	16.07	0.50	20.05	126.75
4259.63	0.54	231.86	4259.43	19.76	-12.17	15.90	0.57	20.02	127.42
4285.97	0.42	217.15	4285.78	19.77	-12.32	15.75	0.63	19.99	128.04
4311.45	0.45	228.38	4311.25	19.78	-12.46	15.61	0.35	19.98	128.59
4333.48	0.55	241.45	4333.29	19.75	-12.57	15.46	0.68	19.92	129.12
4359.64	0.38	236.22	4359.45	19.70	-12.68	15.28	0.68	19.85	129.69
4385.11	0.51	261.01	4384.91	19.62	-12.74	15.09	0.92	19.75	130.18
4410.89	0.47	265.97	4410.69	19.49	-12.77	14.87	0.24	19.60	130.65
4436.59	0.41	285.73	4436.39	19.35	-12.75	14.68	0.63	19.44	130.98
4461.48	0.67	279.38	4461.28	19.16	-12.70	14.45	1.09	19.24	131.32
4483.05	0.58	290.38	4482.85	18.96	-12.65	14.22	0.70	19.03	131.64
4511.51	0.87	271.46	4511.30	18.68	-12.59	13.87	1.30	18.73	132.22
4536.76	0.73	268.62	4536.56	18.44	-12.59	13.52	0.55	18.47	132.95



Well Name: COULTER C SMITH #1
Survey: 199430 COULTER C SMITH #1
Survey Date: 9/16/2014

MD ft	Inc deg	Azim deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	Closure Distance ft	Closure Direction deg
4561.54	0.61	281.59	4561.34	18.22	-12.57	13.23	0.79	18.25	133.52
4585.26	0.45	291.76	4585.05	18.04	-12.51	13.03	0.77	18.06	133.84
4608.79	0.74	290.62	4608.58	17.82	-12.42	12.80	1.23	17.83	134.14
4634.00	0.87	279.72	4633.79	17.52	-12.33	12.46	0.81	17.53	134.71
4661.38	0.67	261.43	4661.16	17.26	-12.32	12.09	1.16	17.26	135.53
4686.15	0.62	264.23	4685.94	17.09	-12.35	11.81	0.23	17.09	136.28
4711.06	0.42	313.81	4710.84	16.92	-12.30	11.61	1.91	16.92	136.65
4723.85	0.35	296.20	4723.63	16.84	-12.25	11.54	1.06	16.84	136.71