



Gyroscopic Survey Report
for
KPK

Well Location	WELD COUNTY
Well Name	DORIS ACKERSON UNIT #4
Rig Number	
Survey Date	9/24/2014
Latitude	40.0678600°N
Longitude	104.8509700°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), 321.96Azim (deg)
Definitive Survey	DORIS ACKERSON UNIT #4 OUTFILL
Operator(s)	C KIRBY

Well Notes

API-05-123-09563

Well Name: DORIS ACKERSON UNIT #4
Survey: DORIS ACKERSON UNIT #4 OUTRUN
Survey Date: 9/24/2014

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
87.41	0.24	213.91	87.41	-0.06	-0.15	-0.10	0.28	0.18	213.91
98.12	0.31	239.72	98.12	-0.06	-0.19	-0.14	1.34	0.23	217.05
123.97	0.22	244.16	123.97	-0.04	-0.24	-0.25	0.39	0.35	225.28
148.59	0.27	237.78	148.59	-0.02	-0.29	-0.34	0.25	0.45	228.82
174.92	0.27	243.10	174.92	-0.01	-0.36	-0.45	0.10	0.57	231.35
199.02	0.16	221.98	199.02	0.00	-0.41	-0.52	0.58	0.66	231.90
223.15	0.14	245.59	223.15	0.00	-0.44	-0.57	0.26	0.72	231.99
247.73	0.15	290.26	247.73	0.03	-0.45	-0.63	0.45	0.77	234.56
272.04	0.28	271.98	272.04	0.10	-0.43	-0.71	0.60	0.84	238.86
297.99	0.16	276.03	297.98	0.17	-0.43	-0.81	0.48	0.92	242.36
322.88	0.08	349.24	322.88	0.20	-0.41	-0.85	0.62	0.94	244.50
348.10	0.17	10.42	348.09	0.24	-0.35	-0.85	0.39	0.92	247.40
374.16	0.22	10.40	374.16	0.30	-0.27	-0.83	0.19	0.87	252.23
395.97	0.18	14.85	395.97	0.35	-0.19	-0.82	0.21	0.84	256.66
421.26	0.10	22.06	421.26	0.38	-0.14	-0.80	0.32	0.81	260.30
447.36	0.15	28.09	447.36	0.41	-0.08	-0.77	0.23	0.78	263.73
473.46	0.20	10.03	473.46	0.45	-0.01	-0.75	0.28	0.75	269.33
498.80	0.21	25.09	498.80	0.50	0.08	-0.72	0.21	0.72	276.08
524.90	0.06	298.63	524.90	0.54	0.13	-0.71	0.82	0.72	280.06
546.66	0.07	81.02	546.66	0.54	0.13	-0.71	0.56	0.72	280.69
571.94	0.32	168.00	571.94	0.47	0.07	-0.68	1.26	0.69	275.73
598.00	0.29	113.48	598.00	0.35	-0.03	-0.61	1.07	0.61	267.34
623.98	0.18	122.42	623.98	0.25	-0.08	-0.51	0.45	0.52	261.48
649.05	0.31	138.51	649.05	0.15	-0.15	-0.43	0.58	0.46	251.02
673.58	0.36	157.46	673.58	0.01	-0.27	-0.36	0.49	0.45	233.13
697.79	0.40	169.83	697.78	-0.14	-0.42	-0.31	0.38	0.53	216.71
724.96	0.51	155.36	724.96	-0.34	-0.63	-0.25	0.59	0.67	201.54
747.64	0.46	162.50	747.63	-0.53	-0.81	-0.18	0.36	0.83	192.44
773.68	0.52	171.42	773.68	-0.73	-1.02	-0.13	0.38	1.03	187.17
799.41	0.56	175.42	799.41	-0.93	-1.26	-0.10	0.22	1.27	184.57
822.88	0.58	181.46	822.87	-1.12	-1.50	-0.09	0.27	1.50	183.62
849.21	0.60	160.68	849.20	-1.36	-1.76	-0.05	0.81	1.76	181.71
872.61	0.64	172.21	872.60	-1.59	-2.01	0.01	0.56	2.01	179.83
899.07	0.68	170.78	899.05	-1.85	-2.31	0.05	0.16	2.31	178.73
924.09	0.63	176.72	924.07	-2.10	-2.60	0.08	0.34	2.60	178.16

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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
948.72	0.65	189.68	948.70	-2.30	-2.87	0.07	0.59	2.87	178.65
974.79	0.60	181.15	974.77	-2.51	-3.15	0.04	0.41	3.15	179.28
999.71	0.65	187.43	999.69	-2.71	-3.42	0.02	0.36	3.42	179.68
1024.13	0.71	170.30	1024.11	-2.94	-3.71	0.03	0.86	3.71	179.59
1048.96	0.79	209.89	1048.93	-3.14	-4.01	-0.03	2.07	4.01	180.47
1074.25	0.71	204.16	1074.23	-3.28	-4.30	-0.18	0.45	4.31	182.45
1098.48	0.65	194.65	1098.45	-3.43	-4.57	-0.28	0.52	4.58	183.51
1120.49	0.58	210.81	1120.46	-3.54	-4.79	-0.37	0.84	4.80	184.41
1148.69	0.63	200.44	1148.66	-3.68	-5.06	-0.50	0.43	5.08	185.61
1171.44	0.70	213.54	1171.41	-3.79	-5.29	-0.62	0.73	5.33	186.66
1199.52	0.69	199.64	1199.49	-3.93	-5.59	-0.77	0.60	5.65	187.83
1222.24	0.62	199.43	1222.21	-4.07	-5.84	-0.86	0.32	5.90	188.34
1245.72	0.55	204.46	1245.68	-4.19	-6.06	-0.94	0.35	6.13	188.86
1273.82	0.54	196.57	1273.78	-4.33	-6.31	-1.04	0.27	6.40	189.35
1296.47	0.43	201.41	1296.43	-4.44	-6.49	-1.10	0.53	6.59	189.62
1324.45	0.36	212.95	1324.41	-4.52	-6.66	-1.19	0.37	6.77	190.10
1347.14	0.46	223.58	1347.10	-4.55	-6.79	-1.29	0.56	6.91	190.75
1370.57	0.53	223.83	1370.53	-4.58	-6.94	-1.43	0.27	7.08	191.64
1398.61	0.48	228.41	1398.57	-4.61	-7.11	-1.61	0.23	7.29	192.73
1421.25	0.40	222.10	1421.21	-4.63	-7.23	-1.73	0.40	7.43	193.45
1448.88	0.38	234.13	1448.84	-4.64	-7.35	-1.87	0.30	7.59	194.24
1471.13	0.33	233.42	1471.08	-4.64	-7.43	-1.98	0.20	7.69	194.90
1498.46	0.40	254.52	1498.41	-4.60	-7.51	-2.13	0.55	7.81	195.87
1521.54	0.25	251.32	1521.49	-4.55	-7.55	-2.26	0.65	7.88	196.67
1548.02	0.31	261.25	1547.97	-4.50	-7.57	-2.38	0.28	7.94	197.47
1571.10	0.35	247.53	1571.05	-4.45	-7.61	-2.51	0.38	8.01	198.25
1598.49	0.26	244.56	1598.45	-4.41	-7.67	-2.64	0.31	8.11	199.01
1620.67	0.49	250.45	1620.62	-4.37	-7.72	-2.78	1.05	8.21	199.79
1648.08	0.32	231.07	1648.03	-4.33	-7.81	-2.95	0.81	8.35	200.68
1674.64	0.30	243.19	1674.59	-4.32	-7.89	-3.07	0.25	8.46	201.26
1697.55	0.14	233.66	1697.50	-4.31	-7.93	-3.15	0.71	8.53	201.63
1719.77	0.20	251.81	1719.72	-4.30	-7.96	-3.20	0.36	8.58	201.93
1747.20	0.31	264.60	1747.16	-4.24	-7.98	-3.33	0.45	8.65	202.62
1774.48	0.24	258.53	1774.43	-4.17	-8.00	-3.46	0.29	8.72	203.36
1796.77	0.40	254.55	1796.72	-4.12	-8.03	-3.58	0.72	8.79	204.00
1824.05	0.37	244.15	1824.00	-4.07	-8.09	-3.75	0.28	8.92	204.83



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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
1846.96	0.28	229.53	1846.91	-4.05	-8.16	-3.85	0.53	9.03	205.28
1873.58	0.29	211.36	1873.53	-4.08	-8.26	-3.94	0.34	9.15	205.48
1896.46	0.18	204.90	1896.41	-4.12	-8.34	-3.98	0.48	9.25	205.52
1923.82	0.22	198.32	1923.77	-4.17	-8.43	-4.02	0.15	9.34	205.48
1945.93	0.12	189.60	1945.88	-4.21	-8.50	-4.04	0.46	9.41	205.41
1973.17	0.22	228.65	1973.12	-4.23	-8.56	-4.08	0.55	9.48	205.48
1999.75	0.28	235.54	1999.69	-4.23	-8.63	-4.17	0.25	9.59	205.80
2022.66	0.21	244.97	2022.61	-4.21	-8.68	-4.26	0.37	9.67	206.12
2049.99	0.32	235.46	2049.94	-4.20	-8.74	-4.36	0.43	9.77	206.52
2072.10	0.36	228.46	2072.05	-4.20	-8.83	-4.47	0.29	9.89	206.84
2099.29	0.30	230.20	2099.24	-4.21	-8.93	-4.59	0.24	10.04	207.19
2121.38	0.33	209.69	2121.33	-4.23	-9.02	-4.66	0.53	10.15	207.33
2148.68	0.10	244.63	2148.63	-4.26	-9.10	-4.72	0.94	10.25	207.43
2171.43	0.08	327.32	2171.38	-4.24	-9.10	-4.75	0.52	10.26	207.57
2197.65	0.09	256.70	2197.60	-4.21	-9.09	-4.78	0.38	10.27	207.74
2224.28	0.13	336.78	2224.23	-4.17	-9.06	-4.81	0.55	10.26	207.97
2246.53	0.11	327.86	2246.47	-4.13	-9.02	-4.83	0.12	10.23	208.18
2272.63	0.20	320.63	2272.58	-4.06	-8.96	-4.88	0.33	10.20	208.54
2299.47	0.17	345.35	2299.42	-3.97	-8.89	-4.91	0.31	10.16	208.94
2321.11	0.20	331.91	2321.06	-3.91	-8.83	-4.94	0.25	10.11	209.24
2347.73	0.18	324.53	2347.67	-3.82	-8.75	-4.99	0.12	10.07	209.68
2374.47	0.11	356.96	2374.42	-3.76	-8.69	-5.01	0.39	10.03	209.98
2396.10	0.11	14.85	2396.04	-3.72	-8.65	-5.01	0.16	9.99	210.08
2422.84	0.04	31.01	2422.79	-3.71	-8.61	-5.00	0.27	9.96	210.12
2449.43	0.14	45.34	2449.38	-3.70	-8.58	-4.97	0.36	9.92	210.07
2471.18	0.14	31.74	2471.12	-3.69	-8.54	-4.94	0.15	9.87	210.02
2497.80	0.13	292.17	2497.75	-3.65	-8.50	-4.95	0.76	9.84	210.19
2523.83	0.09	274.59	2523.78	-3.61	-8.49	-4.99	0.20	9.85	210.46
2546.04	0.18	240.07	2545.99	-3.59	-8.51	-5.04	0.52	9.89	210.65
2572.64	0.19	260.38	2572.59	-3.57	-8.53	-5.12	0.24	9.95	210.96
2598.89	0.29	253.92	2598.83	-3.52	-8.56	-5.23	0.41	10.03	211.40
2621.25	0.34	265.38	2621.20	-3.46	-8.58	-5.35	0.36	10.11	211.93
2647.98	0.41	254.08	2647.93	-3.38	-8.61	-5.52	0.38	10.23	212.65
2673.90	0.49	261.21	2673.84	-3.29	-8.66	-5.72	0.36	10.37	213.44
2696.23	0.57	258.39	2696.17	-3.20	-8.69	-5.92	0.38	10.52	214.25
2723.01	0.88	262.42	2722.96	-3.04	-8.75	-6.25	1.17	10.75	215.55

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2749.03	1.02	262.35	2748.96	-2.82	-8.80	-6.68	0.55	11.05	217.18
2771.35	1.09	266.69	2771.29	-2.60	-8.84	-7.08	0.47	11.33	218.70
2797.28	1.23	266.54	2797.21	-2.30	-8.87	-7.61	0.54	11.69	220.61
2823.98	1.53	266.82	2823.91	-1.93	-8.91	-8.25	1.14	12.14	222.79
2846.26	1.33	266.37	2846.17	-1.62	-8.94	-8.80	0.88	12.55	224.55
2872.22	1.29	269.56	2872.13	-1.27	-8.96	-9.40	0.32	12.99	226.35
2898.81	1.32	267.00	2898.71	-0.91	-8.98	-10.00	0.24	13.44	228.08
2920.41	1.30	269.05	2920.30	-0.62	-9.00	-10.50	0.23	13.83	229.40
2946.48	1.13	267.36	2946.36	-0.29	-9.02	-11.05	0.67	14.26	230.79
2972.76	1.12	269.84	2972.64	0.02	-9.03	-11.57	0.19	14.68	232.03
2998.17	1.19	265.11	2998.05	0.32	-9.05	-12.08	0.47	15.10	233.16
3024.30	1.07	269.92	3024.17	0.61	-9.08	-12.60	0.60	15.53	234.23
3049.63	0.98	259.41	3049.50	0.86	-9.12	-13.05	0.81	15.92	235.06
3074.97	0.97	265.40	3074.83	1.08	-9.17	-13.48	0.41	16.30	235.76
3096.08	0.88	260.92	3095.95	1.26	-9.21	-13.82	0.55	16.61	236.30
3121.55	1.08	259.79	3121.41	1.46	-9.29	-14.25	0.76	17.00	236.90
3147.73	0.85	267.96	3147.58	1.69	-9.34	-14.68	1.02	17.40	237.54
3173.74	0.95	266.59	3173.59	1.93	-9.36	-15.09	0.40	17.75	238.19
3199.18	0.97	259.20	3199.02	2.15	-9.41	-15.51	0.49	18.14	238.75
3220.98	1.09	265.48	3220.83	2.34	-9.46	-15.90	0.76	18.50	239.24
3246.40	1.08	268.69	3246.24	2.62	-9.48	-16.38	0.24	18.93	239.92
3272.41	1.18	267.28	3272.25	2.92	-9.50	-16.89	0.41	19.38	240.64
3299.17	1.12	264.73	3299.00	3.22	-9.54	-17.43	0.30	19.87	241.30
3323.64	1.13	262.72	3323.47	3.48	-9.59	-17.90	0.16	20.31	241.82
3349.61	1.34	269.04	3349.43	3.79	-9.63	-18.46	0.96	20.82	242.45
3371.62	1.32	267.47	3371.43	4.09	-9.65	-18.97	0.18	21.28	243.05
3396.98	1.43	268.11	3396.79	4.45	-9.67	-19.58	0.43	21.83	243.71
3423.02	1.26	266.02	3422.82	4.80	-9.70	-20.19	0.65	22.39	244.33
3449.77	1.33	267.43	3449.56	5.14	-9.73	-20.79	0.28	22.96	244.91
3474.32	1.30	266.07	3474.10	5.47	-9.77	-21.35	0.17	23.48	245.42
3496.19	1.34	267.90	3495.97	5.76	-9.79	-21.86	0.27	23.95	245.87
3522.13	1.27	271.60	3521.90	6.12	-9.80	-22.45	0.44	24.49	246.43
3547.36	1.37	279.73	3547.12	6.52	-9.74	-23.02	0.84	25.00	247.08
3573.39	1.24	288.87	3573.15	6.98	-9.59	-23.60	0.94	25.47	247.87
3599.29	1.24	300.01	3599.05	7.48	-9.36	-24.10	0.93	25.86	248.77
3624.60	1.32	303.85	3624.35	8.01	-9.06	-24.58	0.46	26.20	249.76

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3649.85	1.31	308.32	3649.59	8.56	-8.72	-25.05	0.41	26.52	250.80
3674.57	1.34	311.84	3674.30	9.12	-8.36	-25.48	0.35	26.82	251.85
3696.02	1.27	313.23	3695.75	9.60	-8.03	-25.84	0.35	27.06	252.75
3721.39	1.18	311.38	3721.11	10.14	-7.66	-26.24	0.39	27.34	253.72
3746.09	1.07	320.09	3745.80	10.62	-7.32	-26.58	0.81	27.57	254.61
3771.56	0.99	323.78	3771.28	11.08	-6.96	-26.87	0.41	27.75	255.48
3796.93	0.99	323.53	3796.64	11.51	-6.60	-27.13	0.03	27.92	256.32
3821.70	0.87	326.12	3821.41	11.92	-6.27	-27.36	0.50	28.07	257.08
3847.18	1.02	329.90	3846.88	12.34	-5.92	-27.58	0.64	28.21	257.89
3872.54	1.00	329.08	3872.24	12.78	-5.53	-27.81	0.11	28.35	258.75
3897.34	0.95	330.13	3897.03	13.20	-5.17	-28.02	0.22	28.49	259.55
3922.78	1.07	336.73	3922.47	13.63	-4.77	-28.22	0.65	28.62	260.41
3948.20	1.11	342.08	3947.89	14.09	-4.31	-28.39	0.44	28.72	261.36
3972.90	1.11	349.85	3972.59	14.53	-3.85	-28.50	0.61	28.76	262.31
3998.25	1.31	350.42	3997.93	15.00	-3.32	-28.60	0.77	28.79	263.37
4023.62	1.34	353.01	4023.29	15.51	-2.74	-28.68	0.27	28.81	264.53
4048.56	1.41	348.03	4048.22	16.04	-2.16	-28.78	0.55	28.86	265.72
4074.08	1.59	352.24	4073.73	16.62	-1.50	-28.89	0.82	28.93	267.03
4099.53	1.54	352.69	4099.17	17.22	-0.81	-28.98	0.19	28.99	268.40
4124.20	1.53	351.73	4123.84	17.79	-0.15	-29.07	0.11	29.07	269.70
4149.43	1.58	355.86	4149.05	18.37	0.53	-29.15	0.48	29.15	271.03
4174.29	1.69	353.45	4173.91	18.97	1.23	-29.21	0.54	29.24	272.41
4198.01	1.76	349.71	4197.62	19.59	1.94	-29.32	0.56	29.38	273.78
4221.65	1.72	354.83	4221.25	20.21	2.65	-29.42	0.68	29.53	275.14
4247.66	1.87	353.23	4247.24	20.90	3.46	-29.50	0.63	29.70	276.69
4272.39	1.90	359.26	4271.96	21.57	4.27	-29.55	0.81	29.86	278.22
4297.67	1.82	2.67	4297.23	22.21	5.09	-29.54	0.54	29.98	279.78
4322.51	1.94	13.26	4322.05	22.77	5.89	-29.43	1.47	30.01	281.33
4348.77	2.25	26.48	4348.30	23.27	6.79	-29.09	2.18	29.88	283.13
4374.83	2.58	27.87	4374.33	23.73	7.76	-28.59	1.28	29.63	285.19
4399.90	3.02	33.58	4399.37	24.17	8.81	-27.96	2.07	29.32	287.49
4422.01	3.19	36.46	4421.45	24.52	9.79	-27.28	1.06	28.98	289.74
4446.93	3.41	39.49	4446.33	24.86	10.92	-26.39	1.13	28.56	292.48
4473.24	3.48	43.43	4472.59	25.15	12.10	-25.35	0.94	28.09	295.53
4499.59	3.51	45.94	4498.89	25.35	13.25	-24.22	0.59	27.60	298.68
4524.77	3.62	46.29	4524.02	25.51	14.33	-23.09	0.46	27.17	301.84



Well Name: DORIS ACKERSON UNIT #4
Survey: DORIS ACKERSON UNIT #4 OUTFUN
Survey Date: 9/24/2014

MD	Inc	Azim	TVD	VS	+N/-S	+E/-W	DLS	Closure	Closure
ft	deg	deg	ft	ft	ft	ft	°/100ft	Distance	Direction
								ft	deg
4546.87	3.56	49.59	4546.08	25.61	15.26	-22.06	0.98	26.82	304.68
4572.57	3.07	52.23	4571.74	25.64	16.20	-20.91	2.00	26.45	307.77
4598.76	3.05	57.21	4597.89	25.57	17.00	-19.77	1.02	26.08	310.70
4623.91	2.97	58.84	4623.00	25.44	17.70	-18.65	0.48	25.71	313.51
4646.27	2.94	58.64	4645.33	25.30	18.30	-17.66	0.12	25.44	316.01
4673.43	3.12	63.47	4672.46	25.07	18.99	-16.41	1.14	25.10	319.18
4695.61	3.28	60.58	4694.60	24.86	19.58	-15.32	1.05	24.86	321.96