

Company: ANADARO PETROLEUM CORP

Lease/Well: VON FELDT/ #14-12

A.P.I.#: 05-123-22717

Rig Name: PRODUCTION/ CANARY

State/County: COLORADO/WELD

Latitude: 40.147, Longitude: -104.841

Directions are relative to True North

VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : KB= GROUND LEVEL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: run2-01-de_01.ut

Minimum Curvature Method

Report Date/Time: 10/1/2013 / 15:44

Vaughn Energy Services

Pinedale, Wyoming

866-835-8333

Jay Hinman

Von Feldt 14-12

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	****
100.000	0.654	248.629	99.998	-0.208	-0.532	-0.208	0.571	248.629	0.654
200.000	0.792	231.999	199.990	-0.842	-1.608	-0.842	1.815	242.372	0.250
300.000	0.806	246.420	299.980	-1.549	-2.798	-1.549	3.198	241.031	0.201
400.000	0.569	230.036	399.973	-2.149	-3.823	-2.149	4.385	240.657	0.306
500.000	0.521	243.306	499.969	-2.672	-4.609	-2.672	5.327	239.899	0.135
600.000	0.768	253.073	599.962	-3.071	-5.656	-3.071	6.436	241.500	0.270
700.000	1.687	264.861	699.938	-3.398	-7.763	-3.398	8.474	246.360	0.948
800.000	2.616	270.873	799.867	-3.495	-11.511	-3.495	12.030	253.110	0.956
900.000	3.271	282.675	899.735	-2.834	-16.576	-2.834	16.817	260.297	0.889
1000.000	3.175	288.413	999.577	-1.334	-21.987	-1.334	22.028	266.529	0.336
1100.000	3.042	280.900	1099.431	0.043	-27.220	0.043	27.220	270.090	0.428
1200.000	3.034	286.512	1199.290	1.297	-32.363	1.297	32.389	272.295	0.297
1300.000	2.659	282.308	1299.167	2.544	-37.167	2.544	37.254	273.915	0.430
1400.000	2.917	278.588	1399.049	3.418	-41.949	3.418	42.088	274.658	0.315
1500.000	2.617	275.922	1498.932	4.033	-46.736	4.033	46.910	274.933	0.327
1600.000	2.601	274.787	1598.828	4.458	-51.267	4.458	51.461	274.970	0.054
1700.000	2.500	272.413	1698.729	4.739	-55.707	4.739	55.909	274.863	0.146
1800.000	2.334	265.496	1798.640	4.671	-59.916	4.671	60.098	274.458	0.335
1900.000	2.149	263.250	1898.564	4.291	-63.808	4.291	63.952	273.847	0.205
2000.000	1.651	258.488	1998.509	3.783	-67.081	3.783	67.188	273.228	0.522
2100.000	1.527	257.968	2098.470	3.218	-69.796	3.218	69.870	272.640	0.124
2200.000	1.508	256.733	2198.435	2.638	-72.380	2.638	72.428	272.088	0.038
2300.000	1.118	264.571	2298.409	2.244	-74.632	2.244	74.666	271.722	0.429
2400.000	0.919	268.486	2398.393	2.130	-76.405	2.130	76.435	271.597	0.211
2500.000	0.818	251.293	2498.382	1.880	-77.882	1.880	77.905	271.383	0.278
2600.000	1.138	251.194	2598.367	1.331	-79.499	1.331	79.510	270.959	0.321
2700.000	1.117	251.208	2698.348	0.697	-81.362	0.697	81.365	270.491	0.021
2800.000	1.481	252.754	2798.322	0.000	-83.519	0.000	83.519	270.000	0.366
2900.000	1.307	258.319	2898.292	-0.614	-85.871	-0.614	85.873	269.590	0.220
3000.000	1.279	252.641	2998.267	-1.178	-88.053	-1.178	88.061	269.233	0.131
3100.000	0.998	259.033	3098.247	-1.677	-89.974	-1.677	89.989	268.932	0.308
3200.000	1.035	264.437	3198.231	-1.930	-91.727	-1.930	91.748	268.794	0.103
3300.000	1.074	260.554	3298.214	-2.172	-93.551	-2.172	93.576	268.670	0.082
3400.000	1.341	234.533	3398.193	-3.005	-95.429	-3.005	95.476	268.196	0.603

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N-S FT	+E-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
3500.000	1.459	216.778	3498.163	-4.704	-97.144	-4.704	97.258	267.228	0.447
3600.000	1.511	204.587	3598.130	-6.922	-98.455	-6.922	98.698	265.978	0.320
3700.000	1.450	208.883	3698.097	-9.230	-99.615	-9.230	100.041	264.707	0.127
3800.000	1.230	182.713	3798.070	-11.410	-100.277	-11.410	100.924	263.509	0.644
3900.000	1.121	187.582	3898.049	-13.452	-100.457	-13.452	101.353	262.373	0.148
4000.000	1.216	173.071	3998.028	-15.476	-100.458	-15.476	101.643	261.242	0.310
4100.000	1.136	170.180	4098.007	-17.506	-100.161	-17.506	101.679	260.086	0.100
4200.000	1.194	189.553	4197.987	-19.510	-100.165	-19.510	102.047	258.978	0.396
4300.000	1.956	202.709	4297.949	-22.112	-100.996	-22.112	103.389	257.651	0.838
4400.000	2.417	208.911	4397.876	-25.532	-102.675	-25.532	105.802	256.036	0.518
4500.000	2.468	211.665	4497.785	-29.210	-104.824	-29.210	108.818	254.429	0.128
4600.000	2.514	213.932	4597.691	-32.863	-107.179	-32.863	112.104	252.954	0.109
4700.000	2.401	204.276	4697.599	-36.592	-109.265	-36.592	115.229	251.485	0.429
4800.000	2.313	197.347	4797.515	-40.427	-110.727	-40.427	117.877	249.942	0.298
4900.000	2.396	191.833	4897.430	-44.399	-111.758	-44.399	120.254	248.333	0.241
5000.000	2.174	187.268	4997.351	-48.326	-112.426	-48.326	122.373	246.740	0.287
5100.000	2.074	188.313	5097.282	-51.998	-112.928	-51.998	124.324	245.276	0.107
5200.000	2.006	187.693	5197.219	-55.523	-113.424	-55.523	126.284	243.917	0.072
5300.000	1.715	186.934	5297.166	-58.743	-113.839	-58.743	128.101	242.705	0.292
5400.000	1.289	181.822	5397.131	-61.352	-114.055	-61.352	129.509	241.723	0.446
5500.000	1.313	184.866	5497.106	-63.617	-114.188	-63.617	130.714	240.877	0.073
5600.000	0.795	161.957	5597.089	-65.419	-114.070	-65.419	131.497	240.166	0.658
5700.000	1.034	165.598	5697.076	-66.953	-113.631	-66.953	131.889	239.493	0.246
5800.000	0.574	148.888	5797.066	-68.255	-113.148	-68.255	132.141	238.900	0.512
5900.000	1.015	150.599	5897.056	-69.456	-112.454	-69.456	132.174	238.299	0.442
6000.000	1.137	155.256	5997.039	-71.128	-111.604	-71.128	132.343	237.490	0.150
6100.000	0.764	158.451	6097.025	-72.649	-110.944	-72.649	132.614	236.782	0.377
6200.000	0.969	125.488	6197.014	-73.760	-110.011	-73.760	132.450	236.159	0.529
6300.000	1.358	141.546	6296.993	-75.178	-108.586	-75.178	132.071	235.304	0.504
6400.000	1.295	131.501	6396.967	-76.855	-107.003	-76.855	131.743	234.312	0.240
6500.000	1.512	134.022	6496.936	-78.521	-105.208	-78.521	131.279	233.265	0.226
6600.000	2.126	136.260	6596.886	-80.778	-102.976	-80.778	130.879	231.888	0.618
6700.000	1.931	123.753	6696.823	-83.054	-100.293	-83.054	130.218	230.371	0.483
6800.000	2.082	123.533	6796.762	-84.994	-97.378	-84.994	129.254	228.885	0.151
6900.000	2.221	119.492	6896.692	-86.951	-94.178	-86.951	128.179	227.285	0.206
7000.000	2.695	124.993	6996.599	-89.253	-90.565	-89.253	127.154	225.418	0.529
7100.000	2.711	112.858	7096.489	-91.520	-86.460	-91.520	125.902	223.371	0.571
7200.000	2.341	116.435	7196.392	-93.348	-82.452	-93.348	124.548	221.453	0.401
7300.000	2.581	104.972	7296.300	-94.839	-78.448	-94.839	123.079	219.596	0.546
7400.000	2.125	84.926	7396.217	-95.257	-74.426	-95.257	120.884	218.001	0.934
7500.000	1.297	67.032	7496.172	-94.651	-71.537	-94.651	118.644	217.082	0.976
7600.000	0.988	35.150	7596.153	-93.505	-69.999	-93.505	116.803	216.819	0.694
7700.000	1.897	18.584	7696.121	-91.231	-68.975	-91.231	114.370	217.091	0.992
HORIZONTAL DISPLACEMENT IS 114.370 FEET AT 217.091 DEGREES									