

Company: ANADARKO PETROLEUM

Well: VANCE 14-36

API #: 05-123-22207

Rig Name: PRODUCTION / CORETECH

State/County: COLORADO/WELD

Latitude: 40.175, Longitude: -104.841

Directions are relative to True North

VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB= GROUND LEVEL

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: msgyro\_7250-01-de\_01.ut

Minimum Curvature Method

Report Date/Time: 9/9/2013 / 10:58

Vaughn Energy Services

Henderson, Colorado

866-835-8333

Brian Brewbaker

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	0.708	335.456	99.997	0.562	-0.257	0.562	0.618	335.456	0.708
200.000	0.432	62.833	199.994	1.297	-0.178	1.297	1.309	352.186	0.813
300.000	0.291	304.096	299.993	1.611	-0.052	1.611	1.612	358.134	0.626
400.000	0.791	6.753	399.989	2.439	-0.181	2.439	2.445	355.744	0.706
500.000	0.987	313.975	499.978	3.722	-0.720	3.722	3.791	349.048	0.809
600.000	1.421	358.638	599.958	5.560	-1.370	5.560	5.726	346.161	0.999
700.000	1.751	347.493	699.920	8.291	-1.730	8.291	8.470	348.214	0.450
800.000	1.814	5.851	799.872	11.357	-1.899	11.357	11.515	350.505	0.572
900.000	2.448	13.961	899.803	15.004	-1.223	15.004	15.054	355.341	0.701
1000.000	3.267	13.650	999.677	19.845	-0.035	19.845	19.845	359.899	0.818
1100.000	3.024	359.511	1099.528	25.252	0.615	25.252	25.259	1.395	0.810
1200.000	3.193	2.521	1199.381	30.672	0.715	30.672	30.680	1.335	0.235
1300.000	2.902	358.820	1299.240	35.985	0.785	35.985	35.993	1.250	0.351
1400.000	2.818	357.471	1399.115	40.972	0.625	40.972	40.977	0.873	0.107
1500.000	2.734	344.111	1498.999	45.722	-0.137	45.722	45.722	359.828	0.651
1600.000	2.802	344.769	1598.882	50.374	-1.432	50.374	50.394	358.372	0.074
1700.000	2.988	350.420	1698.755	55.302	-2.508	55.302	55.359	357.404	0.341
1800.000	2.534	345.997	1798.638	60.018	-3.477	60.018	60.118	356.685	0.502
1900.000	2.481	343.887	1898.543	64.242	-4.612	64.242	64.408	355.894	0.106
2000.000	2.434	346.326	1998.451	68.385	-5.715	68.385	68.623	355.223	0.115
2100.000	2.240	348.663	2098.368	72.365	-6.601	72.365	72.665	354.788	0.216
2200.000	2.096	335.127	2198.297	75.940	-7.755	75.940	76.335	354.169	0.531
2300.000	1.869	356.602	2298.238	79.227	-8.621	79.227	79.695	353.790	0.772
2400.000	1.300	335.195	2398.200	81.885	-9.193	81.885	82.399	353.594	0.812
2500.000	1.625	7.655	2498.169	84.319	-9.480	84.319	84.851	353.585	0.875
2600.000	1.513	350.675	2598.132	87.027	-9.505	87.027	87.545	353.767	0.476
2700.000	1.338	22.853	2698.103	89.405	-9.265	89.405	89.884	354.083	0.808
2800.000	1.164	345.581	2798.081	91.464	-9.065	91.464	91.912	354.340	0.816
2900.000	0.888	344.785	2898.065	93.195	-9.521	93.195	93.680	354.167	0.276
3000.000	1.294	355.498	2998.046	95.069	-9.813	95.069	95.574	354.107	0.453
3100.000	1.099	346.304	3098.025	97.127	-10.129	97.127	97.654	354.046	0.273
3200.000	0.684	10.316	3198.013	98.646	-10.249	98.646	99.177	354.068	0.550
3300.000	0.495	359.190	3298.007	99.666	-10.148	99.666	100.181	354.186	0.221
3400.000	0.584	30.487	3398.003	100.537	-9.896	100.537	101.022	354.379	0.303

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	0.461	43.129	3497.999	101.269	-9.362	101.269	101.701	354.718	0.168
3600.000	0.323	75.915	3597.997	101.631	-8.814	101.631	102.013	355.043	0.258
3700.000	0.286	62.585	3697.995	101.815	-8.319	101.815	102.154	355.329	0.080
3800.000	0.220	60.204	3797.994	102.026	-7.930	102.026	102.333	355.555	0.067
3900.000	0.280	126.194	3897.993	101.977	-7.566	101.977	102.257	355.757	0.277
4000.000	0.391	155.926	3997.992	101.521	-7.230	101.521	101.778	355.927	0.203
4100.000	0.877	183.233	4097.986	100.445	-7.134	100.445	100.698	355.938	0.559
4200.000	1.195	195.221	4197.969	98.674	-7.451	98.674	98.955	355.682	0.383
4300.000	1.606	184.356	4297.939	96.270	-7.831	96.270	96.588	355.350	0.488
4400.000	1.118	183.274	4397.911	93.899	-7.993	93.899	94.238	355.134	0.489
4500.000	1.010	187.325	4497.893	92.051	-8.161	92.051	92.412	354.933	0.131
4600.000	1.060	171.526	4597.877	90.262	-8.137	90.262	90.628	354.849	0.289
4700.000	1.661	182.565	4697.849	87.899	-8.066	87.899	88.268	354.757	0.653
4800.000	1.506	181.889	4797.811	85.138	-8.174	85.138	85.529	354.516	0.156
4900.000	1.243	169.667	4897.782	82.757	-8.023	82.757	83.145	354.463	0.392
5000.000	1.441	166.734	4997.755	80.466	-7.540	80.466	80.819	354.647	0.209
5100.000	0.963	171.882	5097.732	78.410	-7.133	78.410	78.734	354.802	0.489
5200.000	0.885	188.747	5197.719	76.815	-7.131	76.815	77.145	354.696	0.282
5300.000	0.726	189.761	5297.710	75.427	-7.356	75.427	75.785	354.430	0.160
5400.000	0.456	186.142	5397.704	74.408	-7.506	74.408	74.785	354.240	0.273
5500.000	0.351	193.459	5497.702	73.714	-7.620	73.714	74.107	354.098	0.116
5600.000	0.415	195.730	5597.699	73.068	-7.789	73.068	73.482	353.915	0.065
5700.000	0.397	199.159	5697.697	72.392	-8.001	72.392	72.833	353.693	0.030
5800.000	0.319	202.783	5797.695	71.808	-8.223	71.808	72.277	353.467	0.081
5900.000	0.117	337.332	5897.694	71.646	-8.370	71.646	72.133	353.337	0.410
6000.000	0.291	344.713	5997.694	71.985	-8.476	71.985	72.482	353.284	0.175
6100.000	0.277	339.391	6097.693	72.456	-8.628	72.456	72.968	353.209	0.030
6200.000	0.252	335.865	6197.692	72.883	-8.803	72.883	73.413	353.113	0.029
6300.000	0.502	354.410	6297.689	73.519	-8.936	73.519	74.061	353.070	0.274
6400.000	0.235	321.325	6397.687	74.115	-9.107	74.115	74.673	352.995	0.330
6500.000	0.504	310.318	6497.685	74.561	-9.571	74.561	75.172	352.685	0.277
6600.000	0.474	355.203	6597.682	75.258	-9.941	75.258	75.911	352.475	0.375
6700.000	0.706	335.134	6697.677	76.229	-10.235	76.229	76.913	352.353	0.307
6800.000	0.464	299.628	6797.672	76.988	-10.845	76.988	77.748	351.981	0.425
6900.000	0.591	287.393	6897.667	77.342	-11.689	77.342	78.220	351.406	0.169
7000.000	0.733	230.730	6997.662	77.091	-12.676	77.091	78.126	350.662	0.641
7100.000	0.897	248.296	7097.652	76.396	-13.899	76.396	77.650	349.689	0.297
7200.000	0.608	292.663	7197.644	76.311	-15.116	76.311	77.794	348.796	0.628
7250.000	0.400	267.591	7247.642	76.406	-15.535	76.406	77.969	348.507	0.597
HORIZONTAL DISPLACEMENT IS 77.969 FEET AT 348.507 DEGREES									