



Company: PDC Energy
 Well: Purvis 10-2
 API: 05-123-13132
 Rig Name: Production / V.E.S.
 State/County: Colorado / Weld
 Latitude: 40.321, Longitude: -104.876
 Directions are relative to True North
 VS-Azi: 0.000 Degrees



FIELD COPY ONLY (NOT DEFINITIVE)

Depth Reference : RKB = Ground Level

DRILLOG GYRO SURVEY CALCULATIONS

Filename: survey.ut
 Minimum Curvature Method
 Report Date/Time: 3/5/2015 / 17:01

Vaughn Energy Services
 Henderson Colorado
 303-853-4976
 Norman Cowan

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	0.450	68.944	99.999	0.141	0.366	0.141	0.393	68.944	0.450
200.000	0.487	90.055	199.996	0.282	1.158	0.282	1.191	76.326	0.175
300.000	0.313	87.142	299.993	0.295	1.855	0.295	1.878	80.970	0.176
400.000	0.719	139.907	399.989	-0.171	2.531	-0.171	2.537	93.870	0.585
500.000	0.625	152.848	499.983	-1.137	3.184	-1.137	3.381	109.642	0.178
600.000	0.869	134.404	599.974	-2.152	3.975	-2.152	4.520	118.436	0.339
700.000	0.388	103.962	699.968	-2.764	4.845	-2.764	5.578	119.709	0.569
800.000	0.390	143.260	799.966	-3.119	5.377	-3.119	6.216	120.114	0.262
900.000	0.274	99.585	899.964	-3.431	5.816	-3.431	6.753	120.538	0.269
1000.000	0.682	112.409	999.961	-3.698	6.602	-3.698	7.567	119.253	0.420
1100.000	0.562	171.772	1099.956	-4.410	7.223	-4.410	8.463	121.409	0.625
1200.000	0.833	162.889	1199.948	-5.591	7.507	-5.591	9.360	126.677	0.291
1300.000	0.162	160.581	1299.944	-6.419	7.768	-6.419	10.077	129.568	0.671
1400.000	0.353	135.644	1399.943	-6.772	8.030	-6.772	10.504	130.143	0.217
1500.000	0.813	186.999	1499.938	-7.696	8.159	-7.696	11.216	133.330	0.654
1600.000	0.423	241.645	1599.933	-8.576	7.747	-8.576	11.557	137.906	0.665
1700.000	1.270	218.024	1699.921	-9.624	6.740	-9.624	11.750	144.997	0.898
1800.000	1.307	215.310	1799.896	-11.428	5.398	-11.428	12.639	154.718	0.072
1900.000	0.797	223.231	1899.879	-12.866	4.262	-12.866	13.553	161.671	0.530
2000.000	0.947	247.627	1999.867	-13.687	3.022	-13.687	14.016	167.549	0.397
2100.000	1.195	232.009	2099.850	-14.643	1.436	-14.643	14.713	174.399	0.381
2200.000	1.039	211.420	2199.832	-16.059	0.142	-16.059	16.059	179.495	0.428
2300.000	1.004	179.862	2299.816	-17.708	-0.329	-17.708	17.712	181.064	0.557
2400.000	1.216	206.430	2399.798	-19.535	-0.799	-19.535	19.551	182.342	0.550
2500.000	1.209	202.167	2499.776	-21.461	-1.669	-21.461	21.526	184.447	0.090
2600.000	0.992	209.801	2599.757	-23.189	-2.497	-23.189	23.323	186.146	0.261
2700.000	1.150	221.661	2699.740	-24.690	-3.594	-24.690	24.950	188.283	0.272
2800.000	1.087	273.040	2799.723	-25.389	-5.209	-25.389	25.918	191.593	0.971
2900.000	1.114	269.593	2899.705	-25.346	-7.127	-25.346	26.329	195.706	0.071
3000.000	0.958	261.211	2999.689	-25.481	-8.926	-25.481	26.999	199.305	0.217
3100.000	1.126	265.760	3099.672	-25.681	-10.732	-25.681	27.833	202.681	0.187
3200.000	0.939	246.270	3199.656	-26.083	-12.463	-26.083	28.908	205.539	0.395
3300.000	0.983	307.079	3299.644	-25.896	-13.897	-25.896	29.389	208.220	0.973
3400.000	0.861	299.049	3399.632	-25.014	-15.238	-25.014	29.290	211.349	0.178

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	0.891	275.761	3499.620	-24.571	-16.668	-24.571	29.691	214.152	0.355
3600.000	0.866	278.818	3599.608	-24.377	-18.189	-24.377	30.415	216.728	0.053
3700.000	0.820	327.972	3699.599	-23.655	-19.315	-23.655	30.538	219.233	0.702
3800.000	0.434	352.978	3799.593	-22.672	-19.741	-22.672	30.062	221.046	0.465
3900.000	0.997	2.059	3899.585	-21.427	-19.756	-21.427	29.145	222.676	0.573
4000.000	0.321	6.536	3999.577	-20.280	-19.692	-20.280	28.268	224.158	0.678
4100.000	0.403	14.948	4099.575	-19.662	-19.570	-19.662	27.741	224.866	0.097
4200.000	1.014	343.088	4199.568	-18.476	-19.737	-18.476	27.035	226.889	0.704
4300.000	1.236	352.286	4299.548	-16.561	-20.139	-16.561	26.074	230.568	0.286
4400.000	0.711	345.819	4399.534	-14.890	-20.436	-14.890	25.285	233.921	0.535
4500.000	1.070	5.399	4499.522	-13.359	-20.500	-13.359	24.468	236.910	0.466
4600.000	0.768	4.570	4599.509	-11.761	-20.359	-11.761	23.511	239.986	0.303
4700.000	0.824	1.299	4699.499	-10.374	-20.289	-10.374	22.787	242.918	0.072
4800.000	0.965	14.333	4799.487	-8.840	-20.064	-8.840	21.925	246.222	0.246
4900.000	0.867	356.424	4899.474	-7.269	-19.903	-7.269	21.189	249.936	0.301
5000.000	0.784	347.702	4999.464	-5.845	-20.096	-5.845	20.929	253.782	0.151
5100.000	0.658	347.963	5099.456	-4.615	-20.361	-4.615	20.878	257.230	0.126
5200.000	0.055	341.478	5199.454	-4.008	-20.496	-4.008	20.885	258.936	0.604
5300.000	0.874	327.844	5299.449	-3.317	-20.917	-3.317	21.179	260.990	0.821
5400.000	0.240	287.245	5399.445	-2.609	-21.523	-2.609	21.681	263.088	0.709
5500.000	0.365	215.948	5499.443	-2.805	-21.911	-2.805	22.090	262.705	0.367
5600.000	0.795	184.802	5599.438	-3.755	-22.156	-3.755	22.472	260.382	0.518
5700.000	1.242	160.826	5699.423	-5.470	-21.858	-5.470	22.532	255.950	0.609
5800.000	1.263	169.788	5799.399	-7.579	-21.306	-7.579	22.614	250.419	0.197
5900.000	1.858	155.272	5899.362	-10.137	-20.433	-10.137	22.809	243.614	0.710
6000.000	0.948	166.974	5999.331	-12.416	-19.568	-12.416	23.174	237.605	0.949
6100.000	1.797	147.509	6099.302	-14.544	-18.539	-14.544	23.563	231.886	0.956
6200.000	1.030	169.502	6199.271	-16.750	-17.534	-16.750	24.248	226.309	0.926
6300.000	1.252	212.436	6299.253	-18.556	-17.956	-18.556	25.821	224.059	0.860
6400.000	1.049	194.707	6399.233	-20.363	-18.774	-20.363	27.697	222.675	0.407
6500.000	0.652	193.744	6499.222	-21.801	-19.142	-21.801	29.012	221.283	0.397
6600.000	1.141	212.745	6599.210	-23.192	-19.816	-23.192	30.505	220.511	0.566
6700.000	1.493	233.836	6699.184	-24.799	-21.406	-24.799	32.760	220.801	0.593
6800.000	2.315	245.787	6799.128	-26.396	-24.300	-26.396	35.878	222.633	0.908
6880.000	3.077	249.158	6879.039	-27.822	-27.780	-27.822	39.317	224.957	0.973

<div> HORIZONTAL DISPLACEMENT IS 39.317 FEET AT 224.957 DEGREES </div>
