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An assessment and evaluation of dissolved methane concentrations at a natural gas extraction site in the Free State Province, South Africa

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BH01 (parameter n=8, distance from gas well = 153 m)							
Symbol	**Min**	**Max**	**Mean**	**Median**	**Range**	**SD**	**CV (%)**
NH_4	0.071	0.480	0.152	0.071	0.409	1.49	98.32
As	0.001	0.010	0.003	0.001	0.009	0.003	125.04
Ba	1.110	0.350	0.254	0.260	0.240	0.071	28.10
Bo	0.100	0.460	0.203	0.190	0.360	0.112	55.48
Br	0.071	7.000	3.110	2.960	6.929	2.246	72.20
Ca	40.000	121.000	89.375	92.500	81.000	23.040	25.78
Cl	151.000	329.000	269.375	284.500	178.000	57.607	21.39
C_2H_6	0.009	0.009	0.009	0.009	0.000	0.000	0.00
DiC	33.000	48.100	42.425	44.110	15.100	5.805	13.68
CH_4	0.005	0.190	0.047	0.005	0.185	0.067	144.07
DoC	0.071	16.000	3.657	0.071	15.929	6.252	170.98
O_2	5.600	12.320	8.481	8.400	6.720	2.289	26.99
EC	90.200	176.700	146.975	148.000	86.500	26.577	18.08
Pb	0.001	0.034	0.005	0.001	0.033	0.012	227.65
Li	0.020	0.034	0.028	0.030	0.014	0.006	20.39
Mn	0.020	0.640	0.192	0.085	0.620	0.228	119.22
K	1.100	2.600	1.768	1.685	1.500	0.486	27.50
pH	7.300	8.000	7.563	7.550	0.700	0.220	2.91
Rb	0.001	0.055	0.022	0.020	0.054	0.022	97.10
Na	140.000	190.000	163.875	160.500	50.000	17.545	10.71
Sr	0.560	1.770	1.258	1.300	1.210	0.367	29.19
SO_4	29.000	65.000	38.625	37.000	36.000	11.843	30.66
TSS	0.707	604.000	169.802	133.500	603.293	200.382	118.01
U	0.003	0.010	0.004	0.003	0.007	0.003	60.05

BH03 (parameter n=7, distance from gas well = 677 m)							
Symbol	**Min**	**Max**	**Mean**	**Median**	**Range**	**SD**	**CV (%)**
NH_4	0.012	0.550	0.158	0.100	0.538	0.182	115.36
As	0.001	0.004	0.001	0.001	0.003	0.001	77.50
Ba	0.110	0.250	0.189	0.200	0.140	0.047	24.77
Bo	0.130	0.500	0.223	0.190	0.370	0.130	58.55
Br	0.071	2.970	0.851	0.071	2.899	1.130	132.90
Ca	23.000	89.000	50.857	55.000	66.000	26.009	51.14
Cl	28.000	100.000	65.714	78.000	72.000	31.711	48.26
C_2H_6	0.009	0.009	0.009	0.009	0.000	0.000	0.00
DiC	27.000	43.000	33.551	32.000	16.000	5.331	15.89
CH_4	0.005	0.818	0.236	0.140	0.813	0.276	111.81
DoC	0.071	15.360	4.639	1.000	15.289	6.209	133.84
O_2	4.490	11.980	7.656	6.400	7.490	2.685	35.07
EC	52.700	300.000	104.157	81.200	247.300	88.009	84.50
Pb	0.001	0.001	0.001	0.001	0.000	0.000	0.00
Li	0.015	0.030	0.024	0.025	0.015	0.006	24.85
Mn	0.014	0.290	0.114	0.070	0.276	0.092	80.52
K	0.870	1.900	1.244	1.100	1.030	0.380	30.53
pH	7.300	8.200	7.686	7.600	0.900	0.302	3.93
Rb	0.001	0.025	0.008	0.007	0.024	0.009	111.69
Na	77.000	110.000	92.857	93.000	33.000	10.107	10.88
Sr	0.530	1.300	0.807	0.720	0.770	0.296	36.65
SO_4	13.500	67.000	36.471	32.000	53.500	19.785	54.25
TSS	0.707	326.000	132.672	50.000	325.293	145.898	109.97
U	0.003	0.003	0.003	0.003	0.000	0.000	0.00

BH04 (parameter n=8, distance from gas well = 778 m)							
Symbol	Min	Max	Mean	Median	Range	SD	CV (%)
NH_4	0.610	1.300	0.940	0.950	0.690	0.216	23.01
As	0.001	0.007	0.002	0.001	0.006	0.002	125.71
Ba	0.510	0.800	0.601	0.565	0.290	0.089	14.81
Bo	0.048	0.180	0.126	0.130	0.132	0.040	31.60
Br	0.071	4.700	2.546	2.205	4.629	1.511	59.34
Ca	98.000	144.000	125.875	129.000	46.000	17.083	13.57
Cl	394.000	570.000	478.750	483.000	176.000	50.199	10.49
C_2H_6	0.009	0.009	0.009	0.009	0.000	0.000	0.00
DiC	40.000	69.000	45.885	42.130	29.000	9.717	21.18
CH_4	0.005	0.340	0.118	0.005	0.335	0.159	94.02
DoC	0.071	21.380	5.233	0.586	21.309	7.800	149.05
O_2	3.600	11.300	7.498	7.050	7.700	2.838	37.85
EC	192.500	216.000	204.875	207.000	23.500	8.861	4.33
Pb	0.001	0.008	0.002	0.001	0.007	0.002	131.99
Li	0.060	0.080	0.070	0.070	0.020	0.008	11.08
Mn	0.870	1.600	1.188	1.170	0.730	0.222	18.70
K	1.100	4.400	2.721	2.500	3.300	0.992	36.44
pH	7.200	7.900	7.613	7.650	0.700	0.223	2.93
Rb	0.001	0.070	0.030	0.034	0.069	0.023	75.98
Na	191.000	225.000	203.250	201.500	34.000	9.968	4.90
Sr	2.700	4.200	3.434	3.385	1.500	0.518	15.10
SO_4	24.000	91.000	37.625	28.500	67.000	22.303	59.28
TSS	0.707	400.000	144.927	113.500	399.293	158.684	109.49
U	0.003	0.003	0.003	0.003	0.000	0.000	0.00

BH05 (parameter n=8, distance from gas well = 792 m)							
Symbol	Min	Max	Mean	Median	Range	SD	CV (%)
NH_4	0.600	0.800	0.704	0.710	0.200	0.072	10.19
As	0.001	0.008	0.002	0.001	0.007	0.003	135.91
Ba	0.540	3.500	1.089	0.760	2.960	0.983	90.26
Bo	0.004	0.110	0.062	0.068	0.106	0.035	56.83
Br	0.071	4.600	2.187	2.100	4.529	1.735	79.34
Ca	119.000	186.000	153.875	156.000	67.000	25.632	16.66
Cl	392.000	513.000	487.250	502.000	121.000	39.528	8.11
C_2H_6	0.009	0.760	0.103	0.009	0.751	0.266	258.10
DiC	25.000	49.000	35.860	36.600	24.000	7.474	20.84
CH_4	0.005	3.160	0.548	0.090	3.155	1.090	193.85
DoC	0.071	32.040	6.953	1.536	31.969	11.095	159.57
O_2	3.670	14.190	7.208	6.400	10.520	3.418	47.42
EC	167.100	222.000	196.950	197.850	54.900	22.188	11.27
Pb	0.001	0.008	0.002	0.001	0.007	0.002	131.99
Li	0.006	0.010	0.007	0.007	0.004	0.001	20.46
Mn	1.300	4.200	2.705	2.925	2.900	1.037	38.32
K	1.900	7.440	3.393	2.550	5.540	1.833	54.04
pH	7.100	7.500	7.300	7.300	0.400	0.169	2.32
Rb	0.001	0.072	0.015	0.002	0.071	0.026	178.08
Na	121.000	161.000	140.250	138.500	40.000	12.624	9.00
Sr	0.880	1.700	1.208	1.200	0.820	0.270	22.36
SO_4	16.500	84.000	35.563	30.000	67.500	20.594	57.91
TSS	0.707	400.000	166.427	135.500	399.293	168.121	101.02
U	0.003	0.003	0.003	0.003	0.000	0.000	0.00

BH08 (parameter n=8, distance from gas well = 854 m)							
Symbol	**Min**	**Max**	**Mean**	**Median**	**Range**	**SD**	**CV (%)**
NH_4	0.071	0.130	0.078	0.071	0.059	0.021	26.62
As	0.001	0.013	0.004	0.001	0.012	0.005	135.90
Ba	0.097	0.160	0.113	0.100	0.063	0.022	19.86
Bo	0.004	0.140	0.074	0.083	0.136	0.044	59.15
Br	0.071	78.000	12.290	3.185	77.929	26.591	216.36
Ca	150.000	322.000	207.625	195.000	172.000	51.926	25.01
Cl	183.000	679.000	457.750	444.500	496.000	144.183	31.50
C_2H_6	0.009	0.009	0.009	0.009	0.000	0.000	0.00
DiC	35.000	49.000	40.465	38.350	14.000	4.697	11.61
CH_4	0.005	0.005	0.005	0.005	0.000	0.000	0.00
DoC	0.071	44.000	6.653	0.071	43.929	15.396	231.41
O_2	3.940	12.000	7.268	7.370	8.060	2.322	31.95
EC	210.000	325.000	246.050	231.500	115.000	40.770	16.57
Pb	0.001	0.001	0.001	0.001	0.000	0.000	0.00
Li	0.057	0.090	0.072	0.073	0.033	0.011	14.77
Mn	0.002	0.024	0.011	0.010	0.022	0.006	58.66
K	5.300	13.000	6.896	5.500	7.700	2.792	40.49
pH	7.200	7.800	7.400	7.400	0.600	0.193	2.60
Rb	0.001	0.075	0.025	0.017	0.074	0.026	104.24
Na	131.000	192.000	156.125	147.500	61.000	23.931	15.33
Sr	1.990	4.000	2.798	2.550	2.010	0.651	23.26
SO_4	144.000	264.000	191.500	193.500	120.000	39.907	20.84
TSS	0.707	330.000	151.427	137.500	329.293	155.143	102.45
U	0.003	0.003	0.003	0.003	0.000	0.000	0.00

BH09 (parameter n=8, distance from gas well = 986 m)							
Symbol	**Min**	**Max**	**Mean**	**Median**	**Range**	**SD**	**CV (%)**
NH_4	0.071	0.130	0.078	0.071	0.059	0.021	85.24
As	0.001	0.013	0.004	0.001	0.012	0.005	175.09
Ba	0.097	0.160	0.113	0.100	0.063	0.022	12.21
Bo	0.004	0.140	0.074	0.083	0.136	0.044	46.25
Br	0.071	78.000	12.290	3.185	77.929	26.591	68.81
Ca	150.000	322.000	207.625	195.000	172.000	51.926	17.81
Cl	183.000	679.000	457.750	444.500	496.000	144.183	10.98
C_2H_6	0.009	0.009	0.009	0.009	0.000	0.000	0.00
DiC	35.000	49.000	40.465	38.350	14.000	4.697	14.24
CH_4	0.087	1.485	0.569	0.320	1.398	0.521	91.48
DoC	0.071	44.000	6.653	0.071	43.929	15.396	142.62
O_2	3.940	12.000	7.268	7.370	8.060	2.322	35.64
EC	210.000	325.000	246.050	231.500	115.000	40.770	9.73
Pb	0.001	0.001	0.001	0.001	0.000	0.000	0.00
Li	0.057	0.090	0.072	0.073	0.033	0.011	11.42
Mn	0.002	0.024	0.011	0.010	0.022	0.006	37.07
K	5.300	13.000	6.896	5.500	7.700	2.792	19.67
pH	7.200	7.800	7.400	7.400	0.600	0.193	2.92
Rb	0.001	0.075	0.025	0.017	0.074	0.026	115.85
Na	131.000	192.000	156.125	147.500	61.000	23.931	7.86
Sr	1.990	4.000	2.798	2.550	2.010	0.651	12.84
SO_4	144.000	264.000	191.500	193.500	120.000	39.907	37.61
TSS	0.707	330.000	151.427	137.500	329.293	155.143	91.25
U	0.003	0.003	0.003	0.003	0.000	0.000	8.50

BH07 (parameter n=8, distance from gas well = 1524 m)							
Symbol	Min	Max	Mean	Median	Range	SD	CV (%)
NH_4	0.089	1.600	0.416	0.250	1.511	0.497	119.51
As	0.001	0.001	0.001	0.001	0.000	0.000	0.00
Ba	0.081	0.180	0.118	0.100	0.099	0.040	33.71
Bo	0.004	0.030	0.014	0.009	0.026	0.012	83.01
Br	0.071	4.500	1.767	1.185	4.429	1.783	100.93
Ca	132.000	184.000	156.375	159.000	52.000	17.904	11.45
Cl	272.000	338.000	297.375	293.500	66.000	20.535	6.91
C_2H_6	0.009	0.009	0.009	0.009	0.000	0.000	0.00
DiC	49.000	74.000	56.635	55.280	25.000	7.375	13.02
CH_4	0.012	0.280	0.112	0.083	0.269	0.101	89.79
DoC	0.071	23.450	6.142	0.786	23.379	8.751	142.48
O_2	4.110	12.940	7.270	6.600	8.830	2.704	37.19
EC	154.200	174.100	165.988	169.000	19.900	7.711	4.65
Pb	0.001	0.004	0.002	0.001	0.003	0.001	71.27
Li	0.020	0.040	0.026	0.024	0.020	0.007	26.48
Mn	0.084	0.220	0.154	0.150	0.136	0.043	28.16
K	0.800	1.400	1.159	1.200	0.600	0.194	16.72
pH	7.000	7.300	7.088	7.050	0.300	0.113	1.59
Rb	0.001	0.057	0.025	0.028	0.056	0.022	89.29
Na	57.000	65.000	60.625	60.500	8.000	2.774	4.58
Sr	1.300	1.900	1.626	1.655	0.600	0.191	11.73
SO_4	31.000	73.000	44.500	39.500	42.000	14.590	32.79
TSS	0.707	255.000	110.302	95.000	254.293	113.345	102.76
U	0.003	0.010	0.004	0.003	0.007	0.002	61.24