

Royal Bafokeng Municipality Water Quality Report

22 June 2011 to 22 July 2011

Date generated : 01 August 2011

Parameter	Units of measure	Specifications (based on SANS241: 2005)		No of results	Achieved compliance levels	
		Required compliance			Class I	Class II
		95% min to Class I	99% min to Class II			
SPECIFICATIONS						
Chemical and Physical properties						
Colour	(mg / l as Pt)	< 20	≤ 50	7	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	8	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	8	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	8	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	7	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	7	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	7	100.0%	100.0%
Organic Determinants						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	7	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	2	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	6	100.0%	100.0%
Micro Elements						
Antimony	(ug / l as Sb)	< 10	≤ 50	7	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	7	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	7	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	7	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	7	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	7	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	7	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	7	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	6	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	7	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	7	100.0%	100.0%
Macro Elements & Miscellaneous Determinants						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	7	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	7	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	7	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	3	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	7	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	3	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	7	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	7	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	7	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	7	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	7	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	7	100.0%	100.0%
Sulphate	(mg / l as SO4)	< 400	≤ 600	3	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	7	100.0%	100.0%
Microbiological						
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	minimum of 99% of the original and repeat/consecutive results shall be non-detected	7	100.0%	100.0%
Other Determinants as required by supply contract						
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance		8	87.5%	
Notes :						
(1) Specification date of effect : July 2006						
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices						

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Parameter	Units of measure	Specification	No of samples	Mean - 3 SD	Mean - 1 SD	Mean	Mean + 1 SD	Mean + 3 SD	Standard Deviation
Chemical and Physical properties									
Colour	(mg / l as Pt)	< 20	7	5.00	5.00	5.00	5.00	5.00	0.00
Conductivity	(mS / m)	< 150	8	47.00	47.44	48.63	49.81	50.00	1.19
pH	(pH units)	≥ 5 to ≤ 9.5	8	7.32	7.40	7.78	8.15	8.43	0.38
Turbidity	(NTU)	< 1	8	0.22	0.25	0.32	0.38	0.39	0.06
Total Dissolved Solids	(mg / l)	< 1000	7	260.00	278.69	297.14	315.00	315.00	18.45
Hardness	(mg / l as CaCO ₃)	> 20 to < 200	7	140.00	140.00	172.86	218.67	270.00	45.81
Taste	(FTN)	< 5	7	1.00	1.01	1.23	1.40	1.40	0.21
Odour	(TON)	< 5	7	1.00	1.01	1.23	1.40	1.40	0.21
Organic Determinants									
Total Trihalomethanes	(ug / l)	< 200	7	36.65	39.90	49.93	59.96	63.86	10.03
Phenols as C ₆ H ₅ OH	(ug / l)	< 10	2	3.30	3.30	3.40	3.50	3.50	0.14
Dissolved Organic Carbon	(mg / l)	< 10	6	4.10	4.35	4.90	5.40	5.40	0.55
Micro Elements									
Antimony	(ug / l as Sb)	< 10	7	1.00	1.00	1.00	1.00	1.00	0.00
Arsenic	(ug / l as As)	< 10	7	1.00	1.00	1.33	1.89	2.20	0.56
Cadmium	(ug / l as Cd)	< 5	7	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	7	5.00	5.00	5.71	7.60	10.00	1.89
Cobalt	(ug / l as Co)	< 500	7	7.50	7.50	7.50	7.50	7.50	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	7	5.00	5.00	5.00	5.00	5.00	0.00
Lead	(ug / l as Pb)	< 20	7	4.00	4.00	4.00	4.00	4.00	0.00
Mercury	(ug / l as Hg)	< 1	7	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	6	7.50	7.50	7.50	7.50	7.50	0.00
Selenium	(ug / l as Se)	< 20	7	1.00	1.00	1.00	1.00	1.00	0.00
Vanadium	(ug / l as V)	< 200	7	15.00	15.00	22.86	43.65	70.00	20.79
Macro Elements & Miscellaneous Determinants									
Aluminium	(mg / l as Al)	< 0.3	7	0.005	0.005	0.018	0.041	0.070	0.024
Ammonia	(mg / l as N)	< 1	7	0.122	0.122	0.158	0.256	0.380	0.098
Calcium	(mg / l as Ca)	< 150	7	32.000	32.000	37.286	47.347	60.000	10.062
Chloride	(mg / l as Cl)	< 200	3	49.000	49.354	52.000	54.000	54.000	2.646
Copper	(mg / l as Cu)	< 1	7	0.005	0.005	0.023	0.066	0.120	0.043
Fluoride	(mg / l as F)	< 1	3	0.450	0.450	0.470	0.496	0.500	0.026
Iron	(mg / l as Fe)	< 0.2	7	0.003	0.003	0.010	0.021	0.030	0.011
Magnesium	(mg / l as Mg)	< 70	7	14.000	14.000	19.143	25.127	30.000	5.984
Manganese	(mg / l as Mn)	< 0.1	7	0.002	0.002	0.004	0.008	0.010	0.004
Nitrate & Nitrite	(mg / l as N)	< 10	7	0.010	0.010	0.429	0.943	1.150	0.515
Potassium	(mg / l as K)	< 50	7	2.100	2.100	4.443	6.834	9.400	2.391
Sodium	(mg / l as Na)	< 200	7	23.000	23.000	27.714	36.311	47.000	8.597
Sulphate	(mg / l as SO ₄)	< 400	3	64.000	64.000	67.000	70.606	71.000	3.606
Zinc	(mg / l as Zn)	< 5	7	0.004	0.004	0.004	0.004	0.004	0.000
Microbiological									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	7	0.0	0.0	0	0.0	0.0	0.0
Other Determinants as required by supply contract									
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance	8	0.18	0.18	0.97	1.76	2.20	0.80
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									