

Kungwini 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	23	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	59	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	59	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	127	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	23	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	23	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	23	100.0%	100.0%
Organic Determinants						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	23	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	14	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	23	100.0%	100.0%
Micro Elements						
Antimony	(ug / l as Sb)	< 10	≤ 50	23	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	23	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	23	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	23	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	23	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	23	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	23	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	22	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	23	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	23	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	23	100.0%	100.0%
Macro Elements & Miscellaneous Determinants						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	23	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	23	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	23	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	13	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	23	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	13	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	23	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	23	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	23	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	23	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	23	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	23	100.0%	100.0%
Sulphate	(mg / l as SO4)	< 400	≤ 600	13	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	23	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	127	100.0%	100.0%
Other Determinants as required by supply contract						
Free chlorine and monochloramine	(mg / l)	≥ 0.2 min 95% compliance		127	100.0%	
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	23	5.00	5.00	5.00	5.00	5.00	0.00
Conductivity	(mS / m)	< 150	59	18.00	18.00	21.05	24.66	31.00	3.61
pH	(pH units)	≥ 5 to ≤ 9.5	59	7.09	7.33	7.63	7.93	8.49	0.30
Turbidity	(NTU)	< 1	127	0.20	0.23	0.30	0.36	0.44	0.07
Total Dissolved Solids	(mg / l)	< 1000	23	94.00	119.23	136.70	154.17	189.11	17.47
Hardness	(mg / l as CaCO ₃)	> 20 to < 200	23	51.00	53.87	64.91	75.95	92.00	11.04
Taste	(FTN)	< 5	23	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	23	1.00	1.00	1.00	1.00	1.00	0.00
Organic Determinants									
Total Trihalomethanes	(ug / l)	< 200	23	22.14	46.01	66.42	86.82	96.70	20.41
Phenols as C ₆ H ₅ OH	(ug / l)	< 10	14	1.20	1.79	2.41	3.04	3.30	0.63
Dissolved Organic Carbon	(mg / l)	< 10	23	5.00	5.06	5.35	5.64	6.22	0.29
Micro Elements									
Antimony	(ug / l as Sb)	< 10	23	1.00	1.00	1.00	1.00	1.00	0.00
Arsenic	(ug / l as As)	< 10	23	1.00	1.00	1.23	1.76	2.80	0.53
Cadmium	(ug / l as Cd)	< 5	23	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	23	5.00	5.00	5.87	7.81	10.00	1.94
Cobalt	(ug / l as Co)	< 500	23	7.50	7.50	7.50	7.50	7.50	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	23	5.00	5.00	5.26	6.51	9.01	1.25
Lead	(ug / l as Pb)	< 20	23	4.00	4.00	4.00	4.00	4.00	0.00
Mercury	(ug / l as Hg)	< 1	22	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	23	7.50	7.50	7.50	7.50	7.50	0.00
Selenium	(ug / l as Se)	< 20	23	1.00	1.00	1.00	1.00	1.00	0.00
Vanadium	(ug / l as V)	< 200	23	15.00	15.00	15.00	15.00	15.00	0.00
Macro Elements & Miscellaneous Determinants									
Aluminium	(mg / l as Al)	< 0.3	23	0.005	0.005	0.025	0.048	0.093	0.023
Ammonia	(mg / l as N)	< 1	23	0.122	0.249	0.382	0.515	0.690	0.133
Calcium	(mg / l as Ca)	< 150	23	13.000	13.957	16.870	19.782	23.000	2.912
Chloride	(mg / l as Cl)	< 200	13	9.300	10.137	10.831	11.524	12.000	0.693
Copper	(mg / l as Cu)	< 1	23	0.005	0.005	0.010	0.022	0.047	0.012
Fluoride	(mg / l as F)	< 1	13	0.160	0.161	0.172	0.183	0.190	0.011
Iron	(mg / l as Fe)	< 0.2	23	0.003	0.003	0.023	0.060	0.136	0.038
Magnesium	(mg / l as Mg)	< 70	23	4.100	4.100	5.609	7.408	9.900	1.799
Manganese	(mg / l as Mn)	< 0.1	23	0.002	0.002	0.003	0.006	0.010	0.003
Nitrate & Nitrite	(mg / l as N)	< 10	23	0.010	0.047	0.269	0.491	0.520	0.222
Potassium	(mg / l as K)	< 50	23	0.155	0.760	1.600	2.441	3.000	0.840
Sodium	(mg / l as Na)	< 200	23	5.600	6.154	7.135	8.115	9.000	0.981
Sulphate	(mg / l as SO ₄)	< 400	13	14.000	14.000	14.769	15.696	17.000	0.927
Zinc	(mg / l as Zn)	< 5	23	0.004	0.004	0.039	0.076	0.130	0.037
Microbiological									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	127	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	127	0.52	1.29	1.76	2.22	2.52	0.46
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									