



REPORTS FOR EKURHULENI MUNICIPALITY

21 NOVEMBER 2015 TO 22 DECEMBER 2015

DATE GENERATED : 05 JANUARY 2016

Ekurhuleni Municipality Water Quality Report

21 November 2015 to 22 December 2015

Date generated : 05 January 2016

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	60	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	170	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	169	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	288	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	170	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	64	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	64	100.0%	100.0%
Organic Determinants						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	68	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	34	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	68	100.0%	100.0%
Micro Elements						
Antimony	(ug / l as Sb)	< 10	≤ 50	65	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	65	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	65	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	65	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	65	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	60	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	65	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	65	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	65	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	65	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	65	100.0%	100.0%
Macro Elements & Miscellaneous Determinants						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	65	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	83	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	65	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	65	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	65	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	65	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	65	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	65	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	65	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	83	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	65	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	65	100.0%	100.0%
Sulphate	(mg / l as SO ₄)	< 400	≤ 600	65	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	65	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	288	100.0%	100.0%
Other Determinants as required by supply contract (3),(4)						
Free chlorine and monochloramine	(mg / l)	Chloraminated system: ≥ 0.1 min 95% compliance; Chlorinated system: ≥ 0.2 min 95% compliance		288	95.8%	

Notes :

- (1) Specification date of effect : July 2006
- (2) Guideline derived from SANS 241: 2005 operations alert and industry practices
- (3) Compliance for Free and monochloramine is against 0.2 mg/l for areas in the chlorinated system
- (4) Compliance for Free and monochloramine is against 0.1 mg/l for areas in the chloraminated system after 30 June 2014
- (5) Compliance for Standard Plate Count is against 100 cfu per 1ml before 30 June 2014 and 500 cfu per 1ml after 30 June 2014 mg/l for areas in the chloraminated system

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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	60	5.00	5.00	5.03	5.21	5.58	0.18
Conductivity	(mS / m)	< 150	170	19.00	19.94	21.17	22.40	24.86	1.23
pH	(pH units)	≥ 5 to ≤ 9.5	169	7.62	7.87	8.01	8.15	8.30	0.14
Turbidity	(NTU)	< 1	288	0.13	0.20	0.28	0.37	0.44	0.08
Total Dissolved Solids	(mg / l)	< 1000	170	135.00	139.13	146.03	152.93	166.73	6.90
Hardness	(mg / l as CaCO ₃)	> 20 to < 200	65	61.00	61.00	74.51	99.56	149.67	25.06
Taste	(FTN)	< 5	64	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	64	1.00	1.00	1.00	1.00	1.00	0.00
Organic Determinants									
Total Trihalomethanes	(ug / l)	< 200	68	31.00	36.24	45.72	55.20	74.17	9.48
Phenols as C ₆ H ₅ OH	(ug / l)	< 10	34	2.50	2.50	2.50	2.50	2.50	0.00
Dissolved Organic Carbon	(mg / l)	< 10	68	3.20	3.62	3.95	4.27	4.90	0.33
Micro Elements									
Antimony	(ug / l as Sb)	< 10	65	0.25	0.25	0.27	0.42	0.71	0.15
Arsenic	(ug / l as As)	< 10	65	0.05	0.15	0.48	0.81	1.20	0.33
Cadmium	(ug / l as Cd)	< 5	65	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	65	7.50	7.50	7.50	7.50	7.50	0.00
Cobalt	(ug / l as Co)	< 500	65	5.00	5.00	5.00	5.00	5.00	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	60	2.50	2.50	1.00	2.50	2.50	0.00
Lead	(ug / l as Pb)	< 20	65	0.10	0.10	0.12	0.22	0.40	0.09
Mercury	(ug / l as Hg)	< 1	65	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	65	5.00	5.00	5.00	5.00	5.00	0.00
Selenium	(ug / l as Se)	< 20	65	0.73	1.36	3.21	5.06	7.50	1.85
Vanadium	(ug / l as V)	< 200	65	5.00	5.00	5.00	5.00	5.00	0.00
Macro Elements & Miscellaneous Determinants									
Aluminium	(mg / l as Al)	< 0.3	65	0.013	0.013	0.016	0.031	0.062	0.015
Ammonia	(mg / l as N)	< 1	83	0.025	0.142	0.244	0.346	0.510	0.102
Calcium	(mg / l as Ca)	< 150	65	15.000	16.714	18.446	20.178	22.000	1.732
Chloride	(mg / l as Cl)	< 200	65	6.082	8.972	10.418	11.863	12.000	1.445
Copper	(mg / l as Cu)	< 1	65	0.005	0.005	0.007	0.012	0.023	0.005
Fluoride	(mg / l as F)	< 1	65	0.075	0.113	0.161	0.209	0.240	0.048
Iron	(mg / l as Fe)	< 0.2	65	0.003	0.004	0.010	0.016	0.026	0.006
Magnesium	(mg / l as Mg)	< 70	65	6.800	7.097	7.329	7.562	7.800	0.232
Manganese	(mg / l as Mn)	< 0.1	65	0.005	0.005	0.005	0.005	0.005	0.000
Nitrate & Nitrite	(mg / l as N)	< 10	83	0.050	0.050	0.132	0.269	0.544	0.137
Potassium	(mg / l as K)	< 50	65	2.400	2.400	2.862	3.774	5.599	0.913
Sodium	(mg / l as Na)	< 200	65	8.800	9.560	10.232	10.905	12.000	0.673
Sulphate	(mg / l as SO ₄)	< 400	65	6.918	11.378	13.608	15.838	18.000	2.230
Zinc	(mg / l as Zn)	< 5	65	0.008	0.008	0.019	0.042	0.087	0.023
Microbiological									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	288	0.0	0.0	0.0	0.0	0.0	0.0
Other Determinants as required by supply contract (3),(4)									
Free chlorine and monochloramine	(mg / l)	Chloraminated system: ≥ 0.1 min 95% compliance; Chlorinated system: ≥ 0.2 min 95% compliance	288	0.00	1.11	1.69	2.28	2.43	0.58
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									