

Ekurhuleni Municipality Water Quality Report - 12 Month

23 October 2017 to 22 October 2018

Date generated: 05 November 2018

Determinand	Measurement units	Risk	Required compliance to SANS 241: 2015 standard (%)	SANS 241: 2015 standard limits (1)	No of results	Achieved Compliance to SANS 241: 2015 Spec(%)	Descriptive statistics		
							Mean	Standard Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	3 780	99.8%	0	0.29	1
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	3 780	99.9%	0	3.46	10
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	3 780	100.0%	4	52.92	162
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	817	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	262	100.0%	5.41	0.93	8.20
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	2 322	100.0%	20.15	1.69	25.21
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	357	100.0%	140.29	9.13	167.67
Turbidity	(NTU)	Operational	95.0%	≤1	2 521	99.8%	0.32	0.27	1.13
Turbidity	(NTU)	Aesthetic	95.0%	≤5	2 521	99.9%	0.32	0.27	1.13
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	2 322	100.0%	7.95	0.16	8.44
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	2 160	100.0%	0.30	0.16	0.79
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	284	100.0%	10.77	0.85	13.32
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	3 779	100.0%	0.19	0.27	1.01
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	3 248	100.0%	1.57	0.54	3.18
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	281	100.0%	0.19	0.00	0.20
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	2 243	100.0%	0.46	0.05	0.62
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	2 273	100.0%	0.05	0.06	0.23
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	2 199	100.0%	0.09	0.07	0.30
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	3 779	97.7%	1.54	0.60	3.32
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	270	100.0%	9.10	1.39	13.26
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	270	100.0%	14.49	1.20	18.10
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	270	100.0%	14.49	1.20	18.10
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	270	100.0%	0.07	0.22	0.73
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	270	100.0%	36.21	16.20	84.82
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	239	100.0%	0.51	0.18	1.07
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	259	100.0%	1.71	2.28	8.56
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	270	100.0%	39.60	7.39	61.77
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	270	100.0%	24.83	33.13	124.21
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	259	100.0%	2.31	0.45	3.67
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	270	100.0%	13.44	3.63	24.34
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	270	100.0%	10.98	5.70	28.08
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	262	100.0%	11.26	7.35	33.30
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	269	100.0%	18.08	18.22	72.73
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	269	100.0%	18.08	18.22	72.73
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	261	100.0%	1.24	2.32	8.20
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	270	100.0%	9.34	4.65	23.29
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	270	100.0%	9.34	4.65	23.29
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	239	100.0%	0.78	0.14	1.18
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	270	100.0%	9.22	1.82	14.67
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	259	100.0%	1.92	2.37	9.01
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	239	100.0%	0.28	0.27	1.07
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	262	100.0%	3.76	0.57	5.46
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	279	100.0%	4.68	0.73	6.88
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	262	100.0%	38.77	8.96	65.65
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	262	100.0%	2.02	3.49	12.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	262	100.0%	3.12	3.11	12.44
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	262	100.0%	14.03	2.23	20.71
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	262	100.0%	0.41	0.08	0.64
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	193	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	270	100.0%	17.55	3.44	27.86425732
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	270	98.9%	67.09	13.27	106.92
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	268	100.0%	6.73	2.14	13.17
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	270	100.0%	3.65	0.86	6.22
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	664	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	664	100.0%	1.00	0.00	1.00

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	99.86%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	99.98%
Operational	95.00%	99.43%

Notes:

- (1) Specification date of effect : 1 July 2016
- (2) Free chlorine : Results from chloraminated system
- (3) Monochloramine : Results are from the chloraminated systems
- (4) Residual disinfectant : Results from chloraminated system
- (5) Measured at water treatment works exit points
- (6) Customer request: Results not included in the risk indices compliance calculations
- (7) (NO₂/0.9 + NO₃/11)
- (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)