

Ekurhuleni Municipality Water Quality Report - 12 Month

21 July 2017 to 20 July 2018 Date generated: 03 August 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	3 799	99.8%	0	0.29	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	3 799	99.9%	0	3.45	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	3 799	100.0%	3	52.12	52
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	800	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	267	100.0%	5.28	0.82	8.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	2 341	100.0%	19.70	2.08	24.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	363	100.0%	138.54	8.18	165.00
Turbidity	(NTU)	Operational	95.0%	≤1	2 539	99.4%	0.34	0.51	0.49
Turbidity	(NTU)	Aesthetic	95.0%	≤5	2 539	99.9%	0.34	0.51	0.49
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	2 342	100.0%	7.92	0.16	8.30
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	2 179	100.0%	0.30	0.16	0.60
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	289	100.0%	10.51	1.02	13.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	3 798	100.0%	0.19	0.29	1.46
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	3 261	100.0%	1.56	0.55	2.14
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	286	100.0%	0.19	0.00	0.20
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	2 266	100.0%	0.46	0.07	0.82
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	2 292	100.0%	0.05	0.06	0.31
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	2 266	100.0%	0.09	0.06	0.39
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	3 798	97.7%	1.54	0.60	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	273	100.0%	8.80	1.44	12.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	284	100.0%	14.01	1.20	17.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	284	100.0%	14.01	1.20	17.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	273	100.0%	0.02	0.03	0.06
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	273	100.0%	34.76	15.78	92.76
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	267	100.0%	0.52	0.15	0.96
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	263	100.0%	1.03	1.03	5.14
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	273	100.0%	36.47	8.00	57.28
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	273	100.0%	27.62	32.03	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	267	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	273	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	273	100.0%	11.93	15.40	27.12
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	267	100.0%	7.53	5.61	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	272	100.0%	18.67	18.78	89.87
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	272	100.0%	18.67	18.78	89.87
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	267	100.0%	0.43	0.78	3.81
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	273	100.0%	10.38	3.80	16.72
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	273	100.0%	10.38	3.80	16.72
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	267	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	273	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	263	100.0%	0.96	1.04	5.80
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	267	100.0%	0.26	0.26	1.54
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	267	100.0%	3.81	0.56	5.60
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	281	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	267	100.0%	41.46	8.73	59.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	267	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	267	100.0%	1.60	0.89	3.43
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	267	100.0%	13.85	2.29	18.34
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	267	100.0%	0.39	0.06	0.53
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	189	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	273	100.0%	17.54	3.56	24.28
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	273	98.9%	66.10	13.50	91.56
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	271	100.0%	6.47	2.18	9.10
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	273	100.0%	3.76	0.83	4.70
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	669	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	669	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%	99.97%
Operational	95.00%	99.36%

- 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)