

Govan Mbeki Local 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	992	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	992	100.0%	0	0.26	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	992	99.9%	6	52.91	84
<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	89	100.0%	5.29	0.59	7.12
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	990	100.0%	20.15	1.85	26.11
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	141	100.0%	141.99	10.65	180.00
Turbidity	(NTU)	Operational	95.0%	≤1	985	100.0%	0.32	0.08	0.49
Turbidity	(NTU)	Aesthetic	95.0%	≤5	985	100.0%	0.32	0.08	0.49
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	986	100.0%	7.80	0.16	8.19
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	944	100.0%	0.16	0.14	0.44
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	89	100.0%	11.89	2.12	17.12
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	992	100.0%	0.26	0.46	2.20
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	984	100.0%	0.59	0.52	1.61
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	89	100.0%	0.19	0.01	0.23
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	953	100.0%	0.48	0.07	0.75
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	953	99.6%	0.11	0.15	0.57
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	953	99.6%	0.16	0.17	0.68
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	992	92.0%	0.85	0.54	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	115	100.0%	9.92	2.13	16.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	89	100.0%	14.13	1.60	18.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	89	100.0%	14.13	1.60	18.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	115	100.0%	0.02	0.02	0.06
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	115	100.0%	38.61	11.16	71.46
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	89	100.0%	0.54	0.26	1.19
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	85	100.0%	1.03	0.89	3.25
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	115	100.0%	39.15	9.02	60.00
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	115	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	89	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	115	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	115	100.0%	11.02	3.74	32.76
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	89	100.0%	7.50	5.48	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	115	100.0%	14.97	9.69	44.02
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	115	100.0%	14.97	9.69	44.02
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	89	100.0%	0.31	0.29	1.31
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	115	100.0%	10.05	0.35	11.86
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	115	100.0%	10.05	0.35	11.86
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	89	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	115	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	85	100.0%	0.92	0.87	4.48
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	89	100.0%	0.28	0.20	1.14
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	89	100.0%	3.89	0.69	6.27
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	69	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	89	100.0%	47.40	9.63	71.36
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	89	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	89	100.0%	1.77	0.94	3.72
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	89	100.0%	15.04	2.67	20.36
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	89	100.0%	0.43	0.07	0.61
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	115	100.0%	18.11	3.07	25
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	115	100.0%	68.03	11.45	93.00
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	115	100.0%	6.57	1.23	9.10
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	115	100.0%	3.72	0.30	4.39
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	451	100.0%	1.00	0.02	1.00
Taste	FTN	RWRD	95.0%	≤2	452	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%	100.00%
Acute health chemical	99.00%	99.74%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	98.64%

- 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)