

Govan Mbeki Local Municipality Water Quality Report - 12 Month

23 January 2018 to 22 January 2019 Date generated: 11 February 2019

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	1 001	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	1 001	100.0%	0	0.27	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	1 001	100.0%	5	29.67	94
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	841	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	92	100.0%	5.34	0.72	7.48
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	1 000	100.0%	21.06	2.19	27.63
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	145	100.0%	145.83	9.26	173.61
Turbidity	(NTU)	Operational	95.0%	≤1	995	100.0%	0.31	0.08	0.55
Turbidity	(NTU)	Aesthetic	95.0%	≤5	995	100.0%	0.31	0.08	0.55
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	999	100.0%	7.90	0.15	8.36
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	952	100.0%	0.16	0.15	0.62
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	92	100.0%	12.04	1.74	17.27
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	1 001	100.0%	0.22	0.42	1.48
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	999	100.0%	0.63	0.54	2.26
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	92	100.0%	0.20	0.03	0.28
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	962	100.0%	0.49	0.07	0.68
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	962	100.0%	0.09	0.09	0.36
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	961	100.0%	0.14	0.10	0.44
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	1 001	92.6%	0.85	0.55	2.51
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	128	100.0%	10.29	1.77	15.62
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	92	100.0%	14.93	1.30	18.83
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	92	100.0%	14.93	1.30	18.83
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	128	100.0%	0.09	0.25	0.84
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	128	100.0%	35.70	9.70	64.79
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	276	100.0%	0.58	0.35	1.63
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	92	100.0%	2.06	2.57	9.76
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	128	100.0%	44.36	5.58	61.09
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	128	100.0%	17.72	9.29	45.60
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	91	100.0%	1.97	0.67	3.98
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	128	100.0%	10.94	4.93	25.73
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	128	100.0%	9.92	2.28	16.74
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	92	100.0%	15.11	7.07	36.32
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	128	100.0%	14.37	9.02	41.44
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	128	100.0%	14.37	9.02	41.44
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	92	100.0%	1.95	2.60	9.76
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	128	100.0%	7.38	3.76	18.65
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	128	100.0%	7.38	3.76	18.65
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	276	100.0%	0.80	0.05	0.94
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	128	100.0%	7.97	2.47	15.36
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	92	100.0%	2.72	2.61	10.54
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	275	100.0%	0.39	0.32	1.35
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	92	100.0%	3.80	0.57	5.52
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	70	100.0%	4.20	0.99	7.16
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	92	100.0%	41.20	8.54	66.83
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	92	100.0%	4.32	4.68	18.37
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	92	100.0%	5.35	3.89	17.01
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	92	100.0%	14.84	2.10	21.12
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	92	100.0%	0.48	0.09	0.75
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	195	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	128	100.0%	18.62	2.47	26.01487797
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	128	100.0%	70.59	9.02	97.67
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	128	100.0%	6.94	0.91	9.67
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	128	100.0%	3.46	0.37	4.56
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	457	100.0%	1.00	0.02	1.06
Taste	FTN	RWRD	95.0%	≤2	457	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%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	98.76%

- 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)