

Govan Mbeki Local Municipality Water Quality Report - 12 Month

October 2016 to September 2017 Date generated: 03 October 2017

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	913	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	913	99.9%	0	6.65	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	905	99.8%	6	84.55	55
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	775	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	90	100.0%	5.10	0.48	6.33
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	912	100.0%	18.40	1.98	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	912	100.0%	130.90	11.55	157.70
Turbidity	(NTU)	Operational	95.0%	≤1	902	100.0%	0.28	0.10	0.47
Turbidity	(NTU)	Aesthetic	95.0%	≤5	902	100.0%	0.28	0.10	0.47
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	912	100.0%	7.88	0.17	8.43
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	859	100.0%	0.21	0.14	0.46
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	96	100.0%	9.88	2.17	15.05
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	912	100.0%	0.21	0.40	2.20
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	912	100.0%	0.86	0.54	1.70
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	96	100.0%	0.17	0.05	0.38
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	859	100.0%	0.58	0.19	0.97
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	859	100.0%	0.08	0.10	0.47
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	859	100.0%	0.14	0.12	0.57
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	912	97.7%	1.07	0.52	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	90	100.0%	7.71	1.37	11.11
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	96	100.0%	11.87	2.21	16.15
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	96	100.0%	11.87	2.21	16.15
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	90	100.0%	0.02	0.01	0.06
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	90	100.0%	33.92	9.60	56.44
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	90	100.0%	0.50	0.01	0.53
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	90	100.0%	0.82	0.60	2.49
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	90	100.0%	31.64	4.98	46.66
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	90	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	90	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	90	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	90	100.0%	10.20	0.95	14.33
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	90	100.0%	5.11	0.54	7.97
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	90	100.0%	20.59	9.72	46.33
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	90	100.0%	20.59	9.72	46.33
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	89	100.0%	0.28	0.40	1.58
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	90	100.0%	10.06	0.38	12.11
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	90	100.0%	10.06	0.38	12.11
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	90	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	90	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	90	100.0%	1.12	1.30	6.60
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	90	100.0%	0.23	0.19	0.61
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	90	100.0%	3.58	0.86	5.78
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	68	100.0%	4.93	0.55	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	89	100.0%	43.42	14.23	71.36
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	88	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	88	100.0%	1.92	0.97	4.33
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	88	100.0%	13.20	2.68	19.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	88	100.0%	0.39	0.09	0.56
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	183	100.0%	0.35	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	90	100.0%	17.36	1.96	21.11
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	90	100.0%	61.76	5.49	73.99
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	90	100.0%	5.31	0.62	6.44
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	90	100.0%	2.84	0.84	4.00
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	461	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	462	100.0%	1.00	0.00	1.00

Water quality risk indices		
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%	99.56%

- 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)