

**Govan Mbeki Local Municipality Water Quality Report - 12 Month**

23 May 2017 to 22 May 2018 Date generated: 01 June 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	989	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	989	100.0%	0	0.27	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	989	99.9%	6	52.99	84
<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	809	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	86	100.0%	5.16	0.40	6.15
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	987	100.0%	19.56	1.76	24.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	138	100.0%	138.22	8.67	160.00
Turbidity	(NTU)	Operational	95.0%	≤1	981	100.0%	0.31	0.09	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	981	100.0%	0.31	0.09	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	983	100.0%	7.77	0.15	8.28
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	941	100.0%	0.15	0.13	0.44
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	92	100.0%	11.52	1.95	16.09
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	989	100.0%	0.26	0.46	2.20
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	989	100.0%	0.54	0.50	1.61
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	92	100.0%	0.19	0.04	0.37
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	950	100.0%	0.51	0.10	0.87
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	950	99.6%	0.11	0.15	0.58
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	949	99.6%	0.17	0.17	0.68
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	989	91.7%	0.80	0.54	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	106	100.0%	9.54	2.03	16.00
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	92	100.0%	13.77	1.29	16.27
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	92	100.0%	13.77	1.29	16.27
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	106	100.0%	0.02	0.02	0.06
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	106	100.0%	38.99	11.53	72.45
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	86	100.0%	0.54	0.26	1.19
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	86	100.0%	0.86	0.81	3.25
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	106	100.0%	36.99	8.75	60.00
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	106	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	86	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	106	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	106	100.0%	11.00	3.85	34.20
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	86	100.0%	5.22	0.85	8.90
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	106	100.0%	16.60	10.13	44.65
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	106	100.0%	16.60	10.13	44.65
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	86	100.0%	0.24	0.15	1.03
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	106	100.0%	10.04	0.27	11.90
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	106	100.0%	10.04	0.27	11.90
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	86	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	106	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	86	100.0%	1.19	1.45	6.64
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	86	100.0%	0.25	0.23	1.13
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	86	100.0%	3.86	0.69	6.29
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	64	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	86	100.0%	49.20	8.92	71.45
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	85	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	85	100.0%	1.58	0.90	3.73
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	85	100.0%	14.90	2.59	19.16
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	85	100.0%	0.43	0.07	0.58
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	186	100.0%	0.32	0.02	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	106	100.0%	17.53	2.83	24
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	106	100.0%	65.34	10.46	90.95
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	106	100.0%	6.22	1.14	9.10
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	106	100.0%	3.71	0.31	4.40
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	450	100.0%	1.00	0.02	1.00
Taste	FTN	RWRD	95.0%	≤2	451	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%	98.58%

- 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) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)
  - (8) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)