

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

23 October 2017 to 22 October 2018

Date generated: 05 November 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	985	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	985	100.0%	0	0.27	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	985	100.0%	5	28.82	91
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	817	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	88	100.0%	5.38	0.73	7.57
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	984	100.0%	20.69	2.33	27.68
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	140	100.0%	144.21	10.55	175.86
Turbidity	(NTU)	Operational	95.0%	≤1	979	100.0%	0.30	0.08	0.55
Turbidity	(NTU)	Aesthetic	95.0%	≤5	979	100.0%	0.30	0.08	0.55
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	980	100.0%	7.85	0.18	8.40
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	938	100.0%	0.17	0.15	0.60
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	84	100.0%	12.12	1.93	17.91
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	985	100.0%	0.25	0.46	1.63
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	982	100.0%	0.63	0.55	2.28
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	84	100.0%	0.19	0.01	0.22
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	935	100.0%	0.47	0.07	0.67
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	947	99.6%	0.10	0.15	0.56
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	924	99.6%	0.16	0.17	0.66
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	985	92.0%	0.87	0.57	2.59
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	123	100.0%	10.14	1.95	15.99
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	83	100.0%	14.82	1.52	19.37
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	83	100.0%	14.82	1.52	19.37
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	123	100.0%	0.09	0.26	0.86
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	123	100.0%	39.33	10.55	70.99
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	81	100.0%	0.55	0.28	1.39
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	88	100.0%	1.52	1.99	7.49
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	123	100.0%	42.24	7.48	64.67
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	123	100.0%	22.40	6.25	41.15
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	87	100.0%	2.31	0.47	3.71
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	123	100.0%	13.46	3.63	24.34
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	123	100.0%	10.49	3.04	19.61
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	88	100.0%	11.60	7.40	33.79
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	123	100.0%	14.81	9.40	43.00
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	123	100.0%	14.81	9.40	43.00
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	88	100.0%	1.04	1.99	7.02
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	123	100.0%	9.09	2.90	17.79
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	123	100.0%	9.09	2.90	17.79
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	81	100.0%	0.79	0.09	1.06
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	123	100.0%	9.23	1.81	14.67
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	88	100.0%	1.66	2.09	7.94
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	81	100.0%	0.30	0.22	0.97
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	88	100.0%	3.76	0.57	5.48
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	68	100.0%	4.71	0.71	6.85
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	88	100.0%	43.68	9.51	72.20
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	88	100.0%	1.90	3.39	12.07
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	88	100.0%	3.18	2.96	12.08
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	88	100.0%	14.92	2.32	21.87
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	88	100.0%	0.44	0.08	0.67
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	193	100.0%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	123	100.0%	18.46	2.75	26.69579653
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	123	100.0%	69.88	10.08	100.12
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	123	100.0%	6.86	1.03	9.94
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	123	100.0%	3.63	0.31	4.55
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	449	100.0%	1.00	0.02	1.06
Taste	FTN	RWRD	95.0%	≤2	449	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%	99.73%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	98.65%

**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)