



RAND WATER

Govan Mbeki Water Quality Report
1 Month

20 June 2020 to 22 July 2020

Date generated: 06 August 2020

							Descriptive Statistics		
Determinands	Measurement Units	Risks	SANS 241:2015 standard limits (1)	No of results	Required compliances to SANS 241:2015 spec(%)	Achieved compliances to SANS 241:2015 spec(%)	Mean	Standard Deviation	Mean + 3 Std deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	80	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	80	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	80	95.0%	100%	0	0.84	3
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	93.75%	0	0.25	1
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	81.25%	0	0.40	1
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	80	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	4	95.0%	100%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	80	95.0%	100%	22.49	2.22	29.15
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	6	95.0%	100%	148.33	6.06	166.50
Turbidity	(NTU)	Operational	≤ 1	80	95.0%	100%	0.32	0.06	0.51
Turbidity	(NTU)	Aesthetic	≤ 5	80	95.0%	100%	0.32	0.06	0.51
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	80	95.0%	100%	7.89	0.11	8.22
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	80	95.0%	100%	0.28	0.16	0.75
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	2	95.0%	100%	11.50	0.71	13.62
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	80	97.0%	100%	0.19	0.44	1.50
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	80	97.0%	100%	1.00	0.45	2.35
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	2	97.0%	100%	0.20	0.00	0.20
Nitrate	(mg / L as N)	Acute health	≤ 11	79	99.0%	100%	0.60	0.06	0.79
Nitrite	(mg / L as N)	Acute health	≤ 0.9	80	99.0%	100%	0.05	0.07	0.25
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	80	99.0%	100%	0.34	0.30	1.24
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	80	95.0%	100%	1.18	0.43	2.47
Sodium	(mg / L as Na)	Aesthetic	≤ 200	4	95.0%	100%	10.05	0.68	12.09
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	2	95.0%	100%	20.50	0.71	22.62
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	2	99.0%	100%	20.50	0.71	22.62
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	4	95.0%	100%	0.02	0.02	0.08
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	4	95.0%	100%	34.75	13.67	75.77
Antimony	(µg / L as Sb)	Chronic health	≤ 20	no data	97.0%	no data	.	no data	.
Arsenic	(µg / L as As)	Chronic health	≤ 10	4	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	4	97.0%	100%	41.75	5.38	57.88
Boron	(µg / L as B)	Chronic health	≤ 2400	4	97.0%	100%	8.15	1.45	12.51
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	4	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	4	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	4	97.0%	100%	8.00	0.00	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	4	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	4	97.0%	100%	30.25	26.32	109.22
Iron	(µg / L as Fe)	Aesthetic	≤ 300	4	95.0%	100%	30.25	26.32	109.22
Lead	(µg / L as Pb)	Chronic health	≤ 10	4	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	4	97.0%	100%	3.53	1.05	6.68
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	4	95.0%	100%	3.53	1.05	6.68
Mercury	(µg / L as Hg)	Chronic health	≤ 6	4	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	4	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	4	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	no data	97.0%	no data	.	no data	.
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	3	97.0%	100%	4.40	0.17	4.92
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	2	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	4	97.0%	100%	30.25	4.11	42.59
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	4	97.0%	100%	17.00	1.83	22.48
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.41	0.04	0.53
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	16	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	4	not applicable	100%	16.50	1.29	20.37
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	4	not applicable	100%	66.25	3.77	77.57
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	4	not applicable	100%	7.13	0.44	8.45
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	4	not applicable	100%	3.25	0.24	3.96
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	31	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	31	not applicable	100%	1.00	0.00	1.00

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	96.43%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	100%

- Notes
 (1) Specification SANS 241 date of effect : 1 July 2016
 (2) Measured at water treatment works exit points
 (3) (NO₂/0.9 + NO₃/11)
 (4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine
 (5) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)
 (6) Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006
 (7) Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec
 **** Determinands with no data are due to instrument breakdown****