



RAND WATER

Govan Mbeki Water Quality Report
1 Month

22 August 2020 to 21 September 2020

Date generated: 02 October 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	73	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	73	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	73	95.0%	100%	2	5.76	20
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	93.75%	0	0.50	2
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	64	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	8	95.0%	100%	5.50	0.53	7.10
Conductivity	(mS / m)	Aesthetic	≤ 170	73	95.0%	100%	20.45	0.82	22.90
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	8	95.0%	100%	140.63	1.77	145.93
Turbidity	(NTU)	Operational	≤ 1	73	95.0%	98.63%	0.30	0.11	0.63
Turbidity	(NTU)	Aesthetic	≤ 5	73	95.0%	100%	0.30	0.11	0.63
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	73	95.0%	100%	8.10	0.10	8.40
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	73	95.0%	100%	0.30	0.12	0.65
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	8	95.0%	100%	11.75	1.49	16.21
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	73	97.0%	100%	0.12	0.13	0.51
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	73	97.0%	100%	1.43	0.53	3.03
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	8	97.0%	100%	0.20	0.00	0.20
Nitrate	(mg / L as N)	Acute health	≤ 11	73	99.0%	100%	0.58	0.07	0.79
Nitrite	(mg / L as N)	Acute health	≤ 0.9	73	99.0%	100%	0.02	0.06	0.18
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	73	99.0%	100%	0.16	0.23	0.84
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	73	95.0%	100%	1.55	0.46	2.92
Sodium	(mg / L as Na)	Aesthetic	≤ 200	10	95.0%	100%	9.15	0.88	11.80
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	8	95.0%	100%	17.38	0.52	18.93
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	8	99.0%	100%	17.38	0.52	18.93
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	10	95.0%	100%	0.02	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	10	95.0%	100%	27.20	4.44	40.53
Antimony	(µg / L as Sb)	Chronic health	≤ 20	8	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	8	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	10	97.0%	100%	35.80	5.14	51.21
Boron	(µg / L as B)	Chronic health	≤ 2400	10	97.0%	100%	5.92	1.73	11.12
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	8	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	10	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	10	97.0%	100%	8.00	0.00	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	8	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	10	97.0%	100%	26.19	15.60	73.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	10	95.0%	100%	26.19	15.60	73.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	8	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	10	97.0%	100%	4.50	4.74	18.73
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	10	95.0%	100%	4.50	4.74	18.73
Mercury	(µg / L as Hg)	Chronic health	≤ 6	8	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	10	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	8	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	8	97.0%	100%	0.53	0.10	0.82
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	8	97.0%	100%	4.34	0.21	4.96
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	6	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	8	97.0%	100%	38.13	6.92	58.87
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	8	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	8	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	8	97.0%	100%	16.38	1.92	22.14
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	8	97.0%	100%	0.42	0.06	0.59
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	10	not applicable	100%	18.20	1.99	24.17
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	10	not applicable	100%	67.00	6.60	86.80
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	10	not applicable	100%	6.17	0.64	8.08
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	10	not applicable	100%	2.86	0.39	4.04
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	39	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	39	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%	99.05%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	99.77%

- 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****