



RAND WATER

Govan Mbeki Water Quality Report
1 Month

23 January 2021 to 19 February 2021

Date generated: 10 March 2021

							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	69	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	69	95.0%	100%	0	1.01	3
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	69	95.0%	100%	6	15.17	52
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
<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%	5.75	0.89	8.41
Conductivity	(mS / m)	Aesthetic	≤ 170	69	95.0%	100%	23.59	2.12	29.96
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	8	95.0%	100%	167.50	8.86	194.09
Turbidity	(NTU)	Operational	≤ 1	69	95.0%	100%	0.42	0.14	0.83
Turbidity	(NTU)	Aesthetic	≤ 5	69	95.0%	100%	0.42	0.14	0.83
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	69	95.0%	100%	7.75	0.09	8.01
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	69	95.0%	100%	0.13	0.08	0.36
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	8	95.0%	100%	13.63	2.33	20.60
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	69	97.0%	100%	0.16	0.33	1.13
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	69	97.0%	100%	0.44	0.35	1.48
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	17	97.0%	100%	0.24	0.08	0.48
Nitrate	(mg / L as N)	Acute health	≤ 11	70	99.0%	100%	0.85	0.25	1.60
Nitrite	(mg / L as N)	Acute health	≤ 0.9	64	99.0%	100%	0.12	0.11	0.46
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	68	99.0%	100%	0.34	0.24	1.07
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	69	95.0%	92.75%	0.58	0.41	1.81
Sodium	(mg / L as Na)	Aesthetic	≤ 200	9	95.0%	100%	12.61	3.86	24.18
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	8	95.0%	100%	15.38	1.85	20.92
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	8	99.0%	100%	15.38	1.85	20.92
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	9	95.0%	100%	0.01	0.01	0.06
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	9	95.0%	100%	12.79	6.73	32.98
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%	0.85	0.06	1.03
Barium	(µg / L as Ba)	Chronic health	≤ 700	9	97.0%	100%	48.22	7.63	71.11
Boron	(µg / L as B)	Chronic health	≤ 2400	8	97.0%	100%	5.31	2.14	11.74
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	8	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	9	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	9	97.0%	100%	4.04	1.48	8.48
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	9	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	9	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	8	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	9	97.0%	100%	2.64	0.70	4.75
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	9	95.0%	100%	2.64	0.70	4.75
Mercury	(µg / L as Hg)	Chronic health	≤ 6	8	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	9	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	8	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	8	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	8	97.0%	100%	4.96	0.72	7.11
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%	97.63	20.58	159.38
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%	18.88	3.14	28.29
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	8	97.0%	100%	0.66	0.12	1.02
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	.	no data	.
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	9	not applicable	100%	22.89	4.26	35.66
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	9	not applicable	100%	91.89	28.73	178.08
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	9	not applicable	100%	8.39	4.41	21.63
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	9	not applicable	100%	4.79	1.86	10.37
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	37	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	37	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%	100%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	98.80%

- 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****