



RAND WATER

Govan Mbeki Water Quality Report
1 Month

23 December 2020 to 22 January 2021

Date generated: 08 February 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	93	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	93	95.0%	100%	0	0.10	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	93	95.0%	100%	19	91.00	292
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	25	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	25	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%	7.63	0.74	9.86
Conductivity	(mS / m)	Aesthetic	≤ 170	93	95.0%	100%	23.72	3.70	34.83
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	9	95.0%	100%	157.22	13.94	199.06
Turbidity	(NTU)	Operational	≤ 1	93	95.0%	100%	0.37	0.11	0.71
Turbidity	(NTU)	Aesthetic	≤ 5	93	95.0%	100%	0.37	0.11	0.71
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	93	95.0%	100%	7.82	0.12	8.17
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	93	95.0%	100%	0.19	0.15	0.64
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	8	95.0%	100%	13.88	3.94	25.71
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	93	97.0%	100%	0.24	0.41	1.47
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	93	97.0%	100%	0.59	0.45	1.94
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	8	97.0%	100%	0.26	0.06	0.45
Nitrate	(mg / L as N)	Acute health	≤ 11	93	99.0%	100%	0.54	0.09	0.79
Nitrite	(mg / L as N)	Acute health	≤ 0.9	91	99.0%	100%	0.13	0.09	0.40
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	93	99.0%	100%	0.20	0.11	0.54
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	93	95.0%	96.77%	0.81	0.46	2.18
Sodium	(mg / L as Na)	Aesthetic	≤ 200	10	95.0%	100%	10.38	1.90	16.07
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	8	95.0%	100%	15.13	1.64	20.05
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	8	99.0%	100%	15.13	1.64	20.05
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	10	95.0%	100%	0.00	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	9	95.0%	100%	33.00	7.58	55.75
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%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	10	97.0%	100%	37.60	3.98	49.53
Boron	(µg / L as B)	Chronic health	≤ 2400	10	97.0%	100%	5.05	3.84	16.58
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	10	97.0%	100%	0.64	0.30	1.54
Copper	(µg / L as Cu)	Chronic health	≤ 2000	10	97.0%	100%	5.01	3.49	15.47
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	3	99.0%	100%	6.10	1.91	11.82
Iron	(µg / L as Fe)	Chronic health	≤ 2000	10	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	10	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	10	97.0%	100%	2.22	0.41	3.44
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	10	95.0%	100%	2.22	0.41	3.44
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	10	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%	3.51	0.39	4.70
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%	64.25	15.27	110.05
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%	17.00	2.33	23.99
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	8	97.0%	100%	0.53	0.09	0.80
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	10	not applicable	100%	17.00	0.82	19.45
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	10	not applicable	100%	67.10	2.85	75.64
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	10	not applicable	100%	6.01	0.41	7.23
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	10	not applicable	100%	3.06	0.16	3.55
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%	100%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	99.44%

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****