



RAND WATER
Govan Mbeki Water Quality Report
1 Month

22 April 2020 to 22 May 2020

Date generated: 08 June 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	93	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	93	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	93	95.0%	100%	2	5.16	17
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	66	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	13	95.0%	100%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	93	95.0%	100%	22.70	1.75	27.95
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	12	95.0%	100%	160.83	14.59	204.60
Turbidity	(NTU)	Operational	≤ 1	87	95.0%	100%	0.28	0.06	0.45
Turbidity	(NTU)	Aesthetic	≤ 5	87	95.0%	100%	0.28	0.06	0.45
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	93	95.0%	100%	7.89	0.11	8.21
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	93	95.0%	100%	0.11	0.11	0.45
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	13	95.0%	100%	16.31	5.62	33.16
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	93	97.0%	100%	0.22	0.41	1.47
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	93	97.0%	100%	0.58	0.38	1.72
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	13	97.0%	100%	0.30	0.07	0.52
Nitrate	(mg / L as N)	Acute health	≤ 11	93	99.0%	100%	0.68	0.13	1.06
Nitrite	(mg / L as N)	Acute health	≤ 0.9	93	99.0%	100%	0.06	0.05	0.21
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	93	99.0%	100%	0.12	0.06	0.30
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	93	95.0%	98.92%	0.79	0.43	2.09
Sodium	(mg / L as Na)	Aesthetic	≤ 200	17	95.0%	100%	12.05	4.62	25.92
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	13	95.0%	100%	21.38	1.19	24.96
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	13	99.0%	100%	21.38	1.19	24.96
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	17	95.0%	100%	0.02	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	17	95.0%	100%	27.53	5.23	43.23
Antimony	(µg / L as Sb)	Chronic health	≤ 20	no data	97.0%	no data	.	no data	.
Arsenic	(µg / L as As)	Chronic health	≤ 10	14	97.0%	100%	4.40	3.74	15.61
Barium	(µg / L as Ba)	Chronic health	≤ 700	17	97.0%	100%	46.24	9.54	74.84
Boron	(µg / L as B)	Chronic health	≤ 2400	17	97.0%	100%	8.04	2.19	14.60
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	14	97.0%	100%	1.25	0.26	2.03
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	17	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	17	97.0%	100%	10.12	4.08	22.34
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	13	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	17	97.0%	100%	15.71	7.29	37.57
Iron	(µg / L as Fe)	Aesthetic	≤ 300	17	95.0%	100%	15.71	7.29	37.57
Lead	(µg / L as Pb)	Chronic health	≤ 10	14	97.0%	100%	5.00	3.11	14.34
Manganese	(µg / L as Mn)	Chronic health	≤ 400	17	97.0%	100%	3.47	1.94	9.29
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	17	95.0%	100%	3.47	1.94	9.29
Mercury	(µg / L as Hg)	Chronic health	≤ 6	19	97.0%	100%	1.24	0.35	2.28
Nickel	(µg / L as Ni)	Chronic health	≤ 70	17	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	14	97.0%	100%	6.00	2.08	12.23
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	13	97.0%	100%	3.79	0.18	4.33
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	10	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	13	97.0%	100%	49.69	14.28	92.53
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	13	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	13	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	13	97.0%	100%	20.08	2.87	28.69
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	13	97.0%	100%	0.54	0.10	0.84
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	25	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	17	not applicable	100%	16.41	2.69	24.49
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	17	not applicable	100%	64.76	12.39	101.93
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	17	not applicable	100%	6.86	2.01	12.91
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	17	not applicable	100%	3.42	0.64	5.33
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	49	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	49	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%	99.82%

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****