



RAND WATER

Govan Mbeki Water Quality Report
1 Month

23 October 2020 to 20 November 2020

Date generated: 04 December 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	75	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	75	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	82	95.0%	100%	3	9.15	30
<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	11	95.0%	100%	7.00	1.10	10.29
Conductivity	(mS / m)	Aesthetic	≤ 170	82	95.0%	100%	22.55	4.25	35.30
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	10	95.0%	100%	164.00	30.44	255.32
Turbidity	(NTU)	Operational	≤ 1	82	95.0%	100%	0.29	0.10	0.58
Turbidity	(NTU)	Aesthetic	≤ 5	82	95.0%	100%	0.29	0.10	0.58
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	82	95.0%	100%	8.16	0.17	8.67
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	82	95.0%	100%	0.34	0.18	0.88
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	11	95.0%	100%	14.56	7.81	38.00
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	82	97.0%	100%	0.26	0.52	1.81
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	82	97.0%	100%	1.16	0.58	2.90
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	11	97.0%	100%	0.26	0.08	0.50
Nitrate	(mg / L as N)	Acute health	≤ 11	82	99.0%	100%	0.54	0.06	0.72
Nitrite	(mg / L as N)	Acute health	≤ 0.9	82	99.0%	100%	0.20	0.25	0.95
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	82	99.0%	100%	0.27	0.28	1.10
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	82	95.0%	100%	1.41	0.44	2.74
Sodium	(mg / L as Na)	Aesthetic	≤ 200	10	95.0%	100%	8.95	1.81	14.38
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	11	95.0%	100%	14.73	1.35	18.77
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	11	99.0%	100%	14.73	1.35	18.77
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	10	95.0%	100%	0.01	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	10	95.0%	100%	66.70	28.93	153.48
Antimony	(µg / L as Sb)	Chronic health	≤ 20	11	97.0%	100%	0.63	0.06	0.80
Arsenic	(µg / L as As)	Chronic health	≤ 10	8	97.0%	100%	6.20	3.33	16.20
Barium	(µg / L as Ba)	Chronic health	≤ 700	10	97.0%	100%	35.20	1.62	40.06
Boron	(µg / L as B)	Chronic health	≤ 2400	10	97.0%	100%	7.79	7.30	29.68
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	8	97.0%	100%	1.38	0.23	2.07
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	10	97.0%	100%	4.10	1.90	9.79
Copper	(µg / L as Cu)	Chronic health	≤ 2000	10	97.0%	100%	7.02	2.13	13.41
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	11	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	9	97.0%	100%	30.67	28.04	114.77
Iron	(µg / L as Fe)	Aesthetic	≤ 300	9	95.0%	100%	30.67	28.04	114.77
Lead	(µg / L as Pb)	Chronic health	≤ 10	8	97.0%	100%	6.50	2.78	14.83
Manganese	(µg / L as Mn)	Chronic health	≤ 400	10	97.0%	100%	3.30	1.13	6.69
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	10	95.0%	100%	3.30	1.13	6.69
Mercury	(µg / L as Hg)	Chronic health	≤ 6	8	97.0%	100%	1.33	0.32	2.30
Nickel	(µg / L as Ni)	Chronic health	≤ 70	10	97.0%	100%	4.60	0.84	7.13
Selenium	(µg / L as Se)	Chronic health	≤ 40	8	97.0%	100%	7.00	1.85	12.55
Uranium	(µg / L as U)	Chronic health	≤ 30	11	97.0%	100%	1.09	1.42	5.34
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	11	97.0%	100%	3.14	0.47	4.55
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	9	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	11	97.0%	100%	34.55	6.38	53.68
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	11	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	11	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	11	97.0%	100%	14.64	1.86	20.21
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	11	97.0%	100%	0.39	0.06	0.57
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	7	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%	18.30	1.34	22.31
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	8	not applicable	100%	67.25	3.54	77.86
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	10	not applicable	100%	5.96	0.34	6.97
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	10	not applicable	100%	2.77	0.19	3.35
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	44	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	44	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%	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****