



RAND WATER
Thembisile 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	13	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	13	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	13	95.0%	100%	1	1.71	6
<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	73	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	1	95.0%	100%	8.00	no data	8.00
Conductivity	(mS / m)	Aesthetic	≤ 170	13	95.0%	100%	22.92	2.90	31.62
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	1	95.0%	100%	145.00	no data	145.00
Turbidity	(NTU)	Operational	≤ 1	13	95.0%	100%	0.34	0.07	0.56
Turbidity	(NTU)	Aesthetic	≤ 5	13	95.0%	100%	0.34	0.07	0.56
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	13	95.0%	100%	7.87	0.08	8.11
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	13	95.0%	100%	0.29	0.07	0.49
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	1	95.0%	100%	11.00	no data	11.00
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	13	97.0%	100%	0.08	0.02	0.13
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	13	97.0%	100%	0.86	0.16	1.35
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	1	97.0%	100%	0.25	no data	0.25
Nitrate	(mg / L as N)	Acute health	≤ 11	13	99.0%	100%	0.51	0.02	0.58
Nitrite	(mg / L as N)	Acute health	≤ 0.9	13	99.0%	100%	0.10	0.03	0.18
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	13	99.0%	100%	0.15	0.03	0.25
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	13	95.0%	100%	0.93	0.17	1.44
Sodium	(mg / L as Na)	Aesthetic	≤ 200	2	95.0%	100%	8.90	0.57	10.60
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	1	95.0%	100%	15.00	no data	15.00
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	1	99.0%	100%	15.00	no data	15.00
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	2	95.0%	100%	0.01	0.00	0.01
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	2	95.0%	100%	24.00	1.41	28.24
Antimony	(µg / L as Sb)	Chronic health	≤ 20	1	97.0%	100%	0.60	no data	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	2	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	2	97.0%	100%	39.50	0.71	41.62
Boron	(µg / L as B)	Chronic health	≤ 2400	2	97.0%	100%	6.90	0.99	9.87
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	2	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	2	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	2	97.0%	100%	2.80	1.13	6.19
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	1	99.0%	100%	7.10	no data	7.10
Iron	(µg / L as Fe)	Chronic health	≤ 2000	2	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	2	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	2	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	2	97.0%	100%	2.30	0.42	3.57
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	2	95.0%	100%	2.30	0.42	3.57
Mercury	(µg / L as Hg)	Chronic health	≤ 6	2	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	2	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	2	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	1	97.0%	100%	0.50	no data	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	1	97.0%	100%	3.70	no data	3.70
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	1	95.0%	100%	3.00	no data	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	1	97.0%	100%	61.00	no data	61.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	1	97.0%	100%	10.00	no data	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	1	97.0%	100%	10.00	no data	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	1	97.0%	100%	16.00	no data	16.00
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	1	97.0%	100%	0.49	no data	0.49
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	2	not applicable	100%	15.50	0.71	17.62
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	2	not applicable	100%	63.00	4.24	75.73
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	2	not applicable	100%	5.90	0.28	6.75
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	2	not applicable	100%	2.85	0.21	3.49
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	3	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	3	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****