



**RAND WATER**  
**Thembisile 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	12	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	12	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	12	95.0%	100%	0	0.62	2
<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	72	95.0%	100%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	1	95.0%	100%	6.00	no data	6.00
Conductivity	(mS / m)	Aesthetic	≤ 170	12	95.0%	100%	20.83	2.79	29.21
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	1	95.0%	100%	135.00	no data	135.00
Turbidity	(NTU)	Operational	≤ 1	12	95.0%	100%	0.26	0.04	0.38
Turbidity	(NTU)	Aesthetic	≤ 5	12	95.0%	100%	0.26	0.04	0.38
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	11	95.0%	100%	8.26	0.07	8.48
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	11	95.0%	100%	0.31	0.14	0.74
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	1	95.0%	100%	10.00	no data	10.00
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	12	97.0%	100%	0.08	0.03	0.16
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	12	97.0%	100%	1.32	0.42	2.58
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	1	97.0%	100%	0.31	no data	0.31
Nitrate	(mg / L as N)	Acute health	≤ 11	11	99.0%	100%	0.56	0.06	0.73
Nitrite	(mg / L as N)	Acute health	≤ 0.9	11	99.0%	100%	0.13	0.22	0.80
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	12	99.0%	100%	0.24	0.27	1.05
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ 0.1	12	95.0%	100%	1.39	0.42	2.64
Sodium	(mg / L as Na)	Aesthetic	≤ 200	2	95.0%	100%	6.90	0.28	7.75
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	1	95.0%	100%	14.00	no data	14.00
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	1	99.0%	100%	14.00	no data	14.00
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	2	95.0%	100%	0.01	0.00	0.03
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	2	95.0%	100%	36.00	2.83	44.49
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%	36.00	0.00	36.00
Boron	(µg / L as B)	Chronic health	≤ 2400	2	97.0%	100%	1.50	0.00	1.50
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%	5.05	0.92	7.81
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	1	99.0%	100%	5.00	no data	5.00
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%	3.35	0.49	4.83
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	2	95.0%	100%	3.35	0.49	4.83
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
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	1	97.0%	100%	2.70	no data	2.70
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	1	95.0%	100%	3.00	no data	3.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	1	97.0%	100%	37.00	no data	37.00
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	1	97.0%	100%	10.00	no data	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	1	97.0%	100%	10.00	no data	10.00
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	1	97.0%	100%	15.00	no data	15.00
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	1	97.0%	100%	0.41	no data	0.41
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	2	not applicable	100%	19.50	0.71	21.62
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	2	not applicable	100%	74.50	3.54	85.11
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	2	not applicable	100%	6.10	0.28	6.95
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	2	not applicable	100%	2.80	0.14	3.22
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	4	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	4	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) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)  
(4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine  
(5) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/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\*\*\*\*