



RAND WATER

Metsimaholo Water Quality Report  
1 Month

23 January 2021 to 19 February 2021

Date generated: 10 March 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	48	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	48	95.0%	97.92%	0	1.73	5
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	48	95.0%	100%	1	1.11	4
<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	68	95.0%	100%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	5	95.0%	100%	6.80	1.10	10.09
Conductivity	(mS / m)	Aesthetic	≤ 170	24	95.0%	100%	22.29	2.27	29.11
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	5	95.0%	100%	150.00	18.71	206.13
Turbidity	(NTU)	Operational	≤ 1	24	95.0%	91.67%	0.39	0.27	1.20
Turbidity	(NTU)	Aesthetic	≤ 5	24	95.0%	100%	0.39	0.27	1.20
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	24	95.0%	100%	8.03	0.21	8.67
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	24	95.0%	100%	0.10	0.00	0.10
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	2	95.0%	100%	15.50	3.54	26.11
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	48	97.0%	100%	1.18	0.58	2.91
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	n/a	97.0%	n/a	n/a	n/a	n/a
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	5	97.0%	100%	0.25	0.08	0.49
Nitrate	(mg / L as N)	Acute health	≤ 11	23	99.0%	100%	0.58	0.09	0.85
Nitrite	(mg / L as N)	Acute health	≤ 0.9	23	99.0%	100%	0.03	0.01	0.05
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	22	99.0%	100%	0.20	0.24	0.93
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ 0.2	48	95.0%	93.75%	1.18	0.58	2.91
Sodium	(mg / L as Na)	Aesthetic	≤ 200	5	95.0%	100%	11.92	2.63	19.82
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	5	95.0%	100%	15.40	2.30	22.31
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	5	99.0%	100%	15.40	2.30	22.31
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	5	95.0%	100%	0.02	0.05	0.16
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	4	95.0%	100%	17.45	15.39	63.63
Antimony	(µg / L as Sb)	Chronic health	≤ 20	2	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	2	97.0%	100%	0.84	0.05	0.98
Barium	(µg / L as Ba)	Chronic health	≤ 700	5	97.0%	100%	50.60	13.41	90.83
Boron	(µg / L as B)	Chronic health	≤ 2400	4	97.0%	100%	5.60	3.58	16.34
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	5	97.0%	100%	0.60	0.22	1.27
Copper	(µg / L as Cu)	Chronic health	≤ 2000	5	97.0%	100%	3.22	1.49	7.70
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	5	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	5	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	5	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	5	97.0%	100%	3.74	2.49	11.21
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	5	95.0%	100%	3.74	2.49	11.21
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	5	97.0%	100%	3.18	0.40	4.39
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	2	97.0%	100%	0.50	0.00	0.50
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	2	97.0%	100%	4.70	1.27	8.52
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	2	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	3	97.0%	100%	57.00	41.04	180.11
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	3	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	3	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	3	97.0%	100%	13.33	4.16	25.82
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	3	97.0%	100%	0.39	0.27	1.19
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	no data	no data	no data
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	5	not applicable	100%	21.20	5.89	38.87
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	5	not applicable	100%	84.60	19.73	143.79
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	5	not applicable	100%	7.60	1.47	12.02
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	5	not applicable	100%	4.48	1.25	8.24
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	8	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	8	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%	97.73%

- 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 chlorinated system = Free available chlorine
  - (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\*\*\*\*