



RAND WATER

Metsimaholo Water Quality Report
1 Month

22 April 2021 to 21 May 2021

Date generated: 04 June 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	54	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	54	95.0%	100%	0	0.14	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	54	95.0%	100%	4	13.39	44
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
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	14	95.0%	85.71%	12.79	3.70	23.90
Conductivity	(mS / m)	Aesthetic	≤ 170	28	95.0%	100%	22.82	0.98	25.77
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	8	95.0%	100%	156.25	6.41	175.48
Turbidity	(NTU)	Operational	≤ 1	28	95.0%	100%	0.43	0.19	1.01
Turbidity	(NTU)	Aesthetic	≤ 5	28	95.0%	100%	0.43	0.19	1.01
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	28	95.0%	100%	8.11	0.20	8.70
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	28	95.0%	100%	0.12	0.08	0.35
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	3	95.0%	100%	18.67	3.06	27.83
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	54	97.0%	100%	1.41	0.67	3.41
Monochloramine	(mg / L as Cl ₂)	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	3	97.0%	100%	0.39	0.06	0.56
Nitrate	(mg / L as N)	Acute health	≤ 11	26	99.0%	100%	0.58	0.06	0.75
Nitrite	(mg / L as N)	Acute health	≤ 0.9	26	99.0%	100%	0.04	0.02	0.11
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	24	99.0%	100%	0.09	0.01	0.13
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	54	95.0%	90.74%	1.41	0.67	3.41
Sodium	(mg / L as Na)	Aesthetic	≤ 200	8	95.0%	100%	12.45	2.72	20.61
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	6	95.0%	100%	18.67	0.82	21.12
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	6	99.0%	100%	18.67	0.82	21.12
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	8	95.0%	100%	0.07	0.04	0.20
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	8	95.0%	100%	32.34	17.96	86.22
Antimony	(µg / L as Sb)	Chronic health	≤ 20	5	97.0%	100%	0.30	0.00	0.30
Arsenic	(µg / L as As)	Chronic health	≤ 10	5	97.0%	100%	2.32	3.18	11.86
Barium	(µg / L as Ba)	Chronic health	≤ 700	8	97.0%	100%	45.63	10.20	76.22
Boron	(µg / L as B)	Chronic health	≤ 2400	8	97.0%	100%	7.54	3.72	18.68
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	5	97.0%	100%	1.10	0.22	1.77
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	8	97.0%	100%	2.00	2.48	9.45
Copper	(µg / L as Cu)	Chronic health	≤ 2000	8	97.0%	100%	6.35	2.09	12.61
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	8	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	8	97.0%	100%	47.69	34.19	150.27
Iron	(µg / L as Fe)	Aesthetic	≤ 300	8	95.0%	100%	47.69	34.19	150.27
Lead	(µg / L as Pb)	Chronic health	≤ 10	5	97.0%	100%	3.20	2.68	11.25
Manganese	(µg / L as Mn)	Chronic health	≤ 400	8	97.0%	100%	2.13	1.61	6.95
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	8	95.0%	100%	2.13	1.61	6.95
Mercury	(µg / L as Hg)	Chronic health	≤ 6	5	97.0%	100%	0.94	0.31	1.88
Nickel	(µg / L as Ni)	Chronic health	≤ 70	8	97.0%	100%	2.65	2.03	8.73
Selenium	(µg / L as Se)	Chronic health	≤ 40	5	97.0%	100%	4.80	1.79	10.17
Uranium	(µg / L as U)	Chronic health	≤ 30	5	97.0%	100%	0.10	0.00	0.10
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	5	97.0%	100%	4.88	0.15	5.32
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	5	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	6	97.0%	100%	74.17	39.53	192.76
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	6	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	6	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	6	97.0%	100%	17.83	5.19	33.41
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	6	97.0%	100%	0.53	0.26	1.32
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	21	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	8	not applicable	100%	18.38	5.13	33.75
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	8	not applicable	100%	78.13	17.59	130.88
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	8	not applicable	100%	8.01	0.86	10.58
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	8	not applicable	100%	4.93	1.77	10.23
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	10	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	10	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%	98.68%
Operational	95.0%	98.29%

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