

Metsimaholo Municipality Water Quality Report - 12 Month

23 January 2018 to 22 January 2019

Date generated: 11 February 2019

Determinand	Measurement units	Risk	Required compliance to SANS 241: 2015 standard (%)	SANS 241: 2015 standard limits (1)	No of results	Achieved Compliance to SANS 241: 2015 Spec(%)	Descriptive statistics		
							Mean	Standard Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	252	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	252	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	252	100.0%	1	3.15	10
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	841	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	20	100.0%	5.20	0.70	7.29
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	252	100.0%	20.55	1.76	25.83
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	20	100.0%	148.25	11.95	184.10
Turbidity	(NTU)	Operational	95.0%	≤1	251	100.0%	0.31	0.08	0.54
Turbidity	(NTU)	Aesthetic	95.0%	≤5	251	100.0%	0.31	0.08	0.54
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	252	100.0%	8.01	0.16	8.48
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	249	100.0%	0.04	0.03	0.13
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	20	100.0%	12.44	1.30	16.33
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	252	100.0%	1.17	0.41	2.40
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	not applicable	not applicable	not applicable	not applicable	not applicable
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	20	100.0%	0.21	0.04	0.32
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	252	100.0%	0.46	0.03	0.56
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	252	100.0%	0.03	0.02	0.10
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	252	100.0%	0.07	0.02	0.14
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine	252	98.8%	1.17	0.41	2.40
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	20	100.0%	10.84	1.39	15.01
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	20	100.0%	15.20	1.54	19.83
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	20	100.0%	15.20	1.54	19.83
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	20	100.0%	0.07	0.22	0.73
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	20	100.0%	27.95	6.16	46.43
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	203	100.0%	0.59	0.40	1.79
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	20	100.0%	2.31	2.96	11.20
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	20	100.0%	43.15	6.00	61.16
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	20	100.0%	17.37	9.33	45.37
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	20	100.0%	1.93	0.67	3.95
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	20	100.0%	10.50	5.10	25.81
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	20	100.0%	9.25	1.33	13.25
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	20	100.0%	15.50	7.05	36.66
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	20	100.0%	20.08	12.52	57.64
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	20	100.0%	20.08	12.52	57.64
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	20	100.0%	2.34	2.99	11.31
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	20	100.0%	6.85	3.57	17.57
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	20	100.0%	6.85	3.57	17.57
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	203	100.0%	0.80	0.01	0.82
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	20	100.0%	7.75	2.55	15.41
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	20	100.0%	3.23	2.94	12.05
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	203	100.0%	0.39	0.28	1.24
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	20	100.0%	3.82	0.31	4.75
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	20	100.0%	4.10	1.02	7.16
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	31	100.0%	40.23	18.10	94.51
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	31	100.0%	4.79	4.81	19.21
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	31	100.0%	5.51	4.19	18.09
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	31	100.0%	13.77	3.76	25.06
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	31	100.0%	0.47	0.15	0.92
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	195	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	20	100.0%	18.00	3.03	27.07860411
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	20	100.0%	69.85	11.26	103.63
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	20	100.0%	7.18	1.13	10.56
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	20	100.0%	3.48	0.34	4.49
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	48	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	48	100.0%	1.00	0.00	1.00

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	100.00%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	99.86%

- Notes:**
- (1) Specification date of effect : 1 July 2016
 - (2) Free chlorine : Results from chlorinated system
 - (3) Monochloramine : Chlorinated system has no monochloramine
 - (4) Residual disinfectant : Results from chlorinated system
 - (5) Measured at water treatment works exit points
 - (6) Customer request: Results not included in the risk indices compliance calculations
 - (7) (NO₂/0.9 + NO₃/11)
 - (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)