

Metsimaholo Municipality Water Quality Report - 12 Month

23 March 2017 to 22 March 2018

Date generated: 03 April 2018

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	623	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	623	100.0%	0	0.33	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	622	100.0%	1	1.18	6
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	786	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	68	100.0%	5.09	0.33	6.33
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	306	100.0%	18.93	1.62	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	68	100.0%	133.24	6.45	145.00
Turbidity	(NTU)	Operational	95.0%	≤1	305	99.7%	0.31	0.18	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	305	100.0%	0.31	0.18	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	306	100.0%	7.93	0.16	8.37
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	307	100.0%	0.05	0.04	0.33
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	35	100.0%	10.78	1.46	14.66
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	620	100.0%	1.41	0.46	2.20
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	33	100.0%	0.19	0.06	0.41
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	310	100.0%	0.46	0.04	0.62
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	310	100.0%	0.03	0.02	0.09
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	310	100.0%	0.08	0.02	0.14
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine	620	99.2%	1.41	0.46	2.20
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	72	100.0%	8.57	1.19	13.58
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	69	100.0%	13.62	0.99	16.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	69	100.0%	13.62	0.99	16.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	72	100.0%	0.02	0.01	0.04
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	72	100.0%	27.88	6.62	52.03
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	32	100.0%	0.55	0.23	1.47
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	32	100.0%	0.94	1.26	5.57
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	72	100.0%	29.65	7.98	55.29
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	72	100.0%	25.01	0.12	25.29
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	32	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	72	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	72	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	68	100.0%	5.07	0.41	7.33
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	72	100.0%	24.01	21.07	98.76
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	72	100.0%	24.01	21.07	98.76
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	32	100.0%	0.24	0.13	0.76
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	72	100.0%	10.08	0.52	12.58
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	72	100.0%	10.08	0.52	12.58
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	32	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	72	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	32	100.0%	1.01	1.16	5.11
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	32	100.0%	0.22	0.07	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	32	100.0%	3.66	0.54	4.98
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	32	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	44	100.0%	36.21	23.63	84.99
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	43	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	43	100.0%	0.95	0.62	2.60
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	43	100.0%	10.73	4.71	19.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	43	100.0%	0.31	0.16	0.61
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	184	100.0%	0.32	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	72	100.0%	17.33	3.12	24.29
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	72	100.0%	62.57	9.35	89.29
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	72	100.0%	5.54	0.90	9.23
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	72	100.0%	3.65	0.35	4.40
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%	99.82%

- 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)