

**Metsimaholo Municipality Water Quality Report - 1 Month**

22 November 2016 to 22 December 2016 Date generated :04 January 2017

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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	52	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	52	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	52	100.0%	1	5.93	23
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	16	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	16	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	80	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	4	100.0%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	25	100.0%	15.28	0.98	17.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	4	100.0%	111.07	4.76	116.72
Turbidity	(NTU)	Operational	95.0%	≤1	24	100.0%	0.28	0.08	0.42
Turbidity	(NTU)	Aesthetic	95.0%	≤5	24	100.0%	0.28	0.08	0.42
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	25	100.0%	8.09	0.20	8.47
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	25	100.0%	0.05	0.00	0.07
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	1	100.0%	7.10	not applicable	7.10
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	52	100.0%	1.56	0.37	2.19
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	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	1	100.0%	0.17	not applicable	0.17
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	23	100.0%	0.39	0.06	0.52
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	25	100.0%	0.03	0.01	0.06
Combined nitrate plus nitrite	(NO <sub>2</sub> /0.9 + NO <sub>3</sub> /11)	Acute health	99.0%	≤1	23	100.0%	0.07	0.01	0.11
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.2 Free Chlorine	52	100.0%	1.56	0.37	2.19
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	4	100.0%	5.93	0.38	6.39
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	1	100.0%	8.30	not applicable	8.30
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	1	100.0%	8.30	not applicable	8.30
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	4	100.0%	0.02	0.00	0.02
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	4	100.0%	25.00	0.00	25.00
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	1	100.0%	0.50	not applicable	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	1	100.0%	0.93	not applicable	0.93
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	4	100.0%	22.50	6.66	31.70
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	4	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	1	100.0%	2.50	not applicable	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	4	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	4	100.0%	10.00	0.00	10.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	4	100.0%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	4	100.0%	8.43	6.39	17.63
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	4	100.0%	8.43	6.39	17.63
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	1	100.0%	0.20	not applicable	0.20
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	4	100.0%	10.00	0.00	10.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	4	100.0%	10.00	0.00	10.00
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	1	100.0%	0.80	not applicable	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	4	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	1	100.0%	0.50	not applicable	0.50
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	1	100.0%	0.20	not applicable	0.20
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	1	100.0%	2.70	not applicable	2.70
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	1	100.0%	5.00	not applicable	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	2	100.0%	10.20	6.79	14.90
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	2	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	2	100.0%	1.00	0.28	1.20
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	2	100.0%	4.65	1.63	5.78
Combined trihalomethanes	(CHCl <sub>3</sub> /300 + CHBr <sub>3</sub> /100 + CHBr <sub>2</sub> Cl/100 + CHBrCl <sub>2</sub> /60)	Chronic health	97.0%	≤1	2	100.0%	0.13	0.05	0.16
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	16	100.0%	0.36	0.00	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	4	100.0%	16.75	2.22	18.97
Hardness	(mg / L as CaCO <sub>3</sub> )	2	not applicable	≥ 20 to ≤ 200	4	100.0%	55.18	5.63	62.76
Magnesium	(mg / L as Mg)	2	not applicable	≤70	4	100.0%	3.85	1.24	5.18
Potassium	(mg / L as K)	Operational	not applicable	≤50	4	100.0%	1.70	0.14	1.89

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%	100.00%

- Notes:**
- (1) Specification date of effect : 1 July 2016
  - (4) Residual disinfectant : Results from chlorinated system
  - (3) Monochloramine : Results are from the chloraminated systems
  - (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