

**Merafong 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	665	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	665	100.0%	0	0.08	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	665	100.0%	4	16.15	53
<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
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	64	100.0%	5.25	0.67	7.25
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	636	100.0%	20.64	1.44	24.96
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	60	100.0%	143.58	6.25	162.33
Turbidity	(NTU)	Operational	95.0%	≤1	632	99.8%	0.32	0.09	0.58
Turbidity	(NTU)	Aesthetic	95.0%	≤5	632	100.0%	0.32	0.09	0.58
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	636	100.0%	7.93	0.14	8.35
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	673	100.0%	0.28	0.14	0.70
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	62	100.0%	11.73	0.99	14.71
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	665	100.0%	0.09	0.08	0.32
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	663	100.0%	1.16	0.50	2.67
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	62	100.0%	0.19	0.00	0.21
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	666	100.0%	0.47	0.04	0.60
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	668	100.0%	0.05	0.05	0.20
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	648	100.0%	0.09	0.06	0.26
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	665	95.3%	1.25	0.52	2.82
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	71	100.0%	9.19	0.65	11.14
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	62	100.0%	14.92	0.89	17.60
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	62	100.0%	14.92	0.89	17.60
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	71	100.0%	0.07	0.23	0.76
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	71	100.0%	30.58	8.31	55.51
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	248	100.0%	0.57	0.38	1.69
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	64	100.0%	2.06	2.48	9.50
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	71	100.0%	41.20	4.34	54.21
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	71	100.0%	17.78	8.23	42.49
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	64	100.0%	1.88	0.70	3.98
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	71	100.0%	10.49	5.01	25.53
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	71	100.0%	9.86	2.17	16.36
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	64	100.0%	15.55	6.91	36.27
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	71	100.0%	18.32	16.45	67.66
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	71	100.0%	18.32	16.45	67.66
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	64	100.0%	1.88	2.47	9.29
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	71	100.0%	7.16	3.80	18.57
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	71	100.0%	7.16	3.80	18.57
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	248	100.0%	0.78	0.12	1.15
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	71	100.0%	7.75	2.51	15.26
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	64	100.0%	2.71	2.59	10.48
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	247	100.0%	0.36	0.26	1.13
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	64	100.0%	4.00	0.53	5.59
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	64	100.0%	4.09	1.00	7.10
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	71	100.0%	41.44	12.28	78.27
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	71	100.0%	4.65	4.74	18.88
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	71	100.0%	5.62	3.95	17.48
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	71	100.0%	14.41	2.31	21.35
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	71	100.0%	0.48	0.12	0.83
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	195	100.0%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	71	100.0%	17.01	1.77	22.32024432
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	71	100.0%	65.42	6.42	84.70
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	71	100.0%	6.61	0.68	8.65
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	71	100.0%	3.40	0.45	4.75
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	243	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	243	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%	99.23%

- Notes:**
- (1) Specification date of effect : 1 July 2016
  - (2) Free chlorine : Results from chloraminated system
  - (3) Monochloramine : Results are from the chloraminated systems
  - (4) Residual disinfectant : Results from chloraminated system
  - (5) Measured at water treatment works exit points
  - (6) Customer request: Results not included in the risk indices compliance calculations
  - (7) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)
  - (8) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)