

Merafong Municipality Water Quality Report - 12 Month

23 May 2017 to 22 May 2018 Date generated: 01 June 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	590	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	590	100.0%	0	0.09	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	590	100.0%	5	24.46	137
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	809	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	60	100.0%	5.08	0.42	6.82
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	590	100.0%	19.07	1.40	22.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	56	100.0%	135.27	11.14	162.25
Turbidity	(NTU)	Operational	95.0%	≤1	585	100.0%	0.30	0.10	0.49
Turbidity	(NTU)	Aesthetic	95.0%	≤5	585	100.0%	0.30	0.10	0.49
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	590	100.0%	7.83	0.15	8.22
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	629	100.0%	0.29	0.13	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	61	100.0%	11.34	1.26	14.40
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	590	100.0%	0.11	0.16	0.82
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	590	100.0%	1.11	0.54	1.88
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	61	100.0%	0.19	0.01	0.23
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	621	100.0%	0.46	0.06	0.63
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	623	100.0%	0.06	0.08	0.40
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	621	100.0%	0.11	0.09	0.49
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	590	93.4%	1.22	0.55	1.96
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	63	100.0%	8.76	0.74	10.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	61	100.0%	13.72	1.27	16.40
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	61	100.0%	13.72	1.27	16.40
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	63	100.0%	0.02	0.01	0.05
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	63	100.0%	32.03	10.35	71.94
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	60	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	60	100.0%	0.80	0.88	4.15
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	63	100.0%	35.03	7.92	53.38
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	63	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	60	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	63	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	63	100.0%	11.08	2.30	19.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	60	100.0%	5.39	2.51	15.39
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	63	100.0%	25.75	22.69	110.86
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	63	100.0%	25.75	22.69	110.86
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	60	100.0%	0.53	1.20	6.37
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	63	100.0%	10.05	0.28	11.38
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	63	100.0%	10.05	0.28	11.38
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	60	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	63	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	60	100.0%	0.84	0.92	4.84
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	60	100.0%	0.21	0.09	0.53
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	60	100.0%	3.92	0.73	6.02
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	60	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	68	100.0%	45.88	7.17	64.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	68	100.0%	0.50	0.02	0.59
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	68	100.0%	1.49	1.02	3.93
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	68	100.0%	14.31	1.72	18.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	68	100.0%	0.41	0.05	0.53
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	186	100.0%	0.32	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	63	100.0%	17.18	2.20	21
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	63	100.0%	63.68	6.75	73.00
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	63	100.0%	5.99	0.73	7.30
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	63	100.0%	3.81	0.30	4.48
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	209	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	209	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%	98.98%

- Notes:**
- Specification date of effect : 1 July 2016
 - Free chlorine : Results from chloraminated system
 - Monochloramine : Results are from the chloraminated systems
 - Residual disinfectant : Results from chloraminated system
 - Measured at water treatment works exit points
 - Customer request: Results not included in the risk indices compliance calculations
 - (NO₂/0.9 + NO₃/11)
 - (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)