

Merafong Municipality Water Quality Report - 12 Month

23 October 2017 to 22 October 2018

Date generated: 05 November 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	622	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	622	100.0%	0	0.09	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	622	100.0%	6	25.21	81
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	817	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	61	100.0%	5.26	0.68	7.30
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	606	100.0%	20.16	1.77	25.47
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	57	100.0%	140.18	10.22	170.83
Turbidity	(NTU)	Operational	95.0%	≤1	602	100.0%	0.31	0.08	0.55
Turbidity	(NTU)	Aesthetic	95.0%	≤5	602	100.0%	0.31	0.08	0.55
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	606	100.0%	7.87	0.16	8.36
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	645	100.0%	0.29	0.13	0.69
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	60	100.0%	11.77	1.01	14.81
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	622	100.0%	0.10	0.14	0.52
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	619	100.0%	1.13	0.54	2.77
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	60	100.0%	0.19	0.00	0.20
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	628	100.0%	0.45	0.04	0.58
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	638	100.0%	0.06	0.08	0.28
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	619	100.0%	0.10	0.09	0.36
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	622	94.7%	1.23	0.56	2.91
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	68	100.0%	9.14	0.71	11.26
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	60	100.0%	14.67	1.20	18.27
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	60	100.0%	14.67	1.20	18.27
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	68	100.0%	0.07	0.23	0.77
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	68	100.0%	33.09	11.30	67.00
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	59	100.0%	0.45	0.16	0.92
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	61	100.0%	1.79	2.56	9.48
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	68	100.0%	38.75	6.20	57.36
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	68	100.0%	22.29	6.02	40.34
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	61	100.0%	2.30	0.45	3.65
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	68	100.0%	13.24	3.84	24.76
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	68	100.0%	10.58	2.37	17.68
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	61	100.0%	11.95	7.63	34.83
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	68	100.0%	18.45	15.96	66.32
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	68	100.0%	18.45	15.96	66.32
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	61	100.0%	1.66	2.76	9.95
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	68	100.0%	8.81	2.63	16.71
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	68	100.0%	8.81	2.63	16.71
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	59	100.0%	0.72	0.24	1.45
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	68	100.0%	9.12	1.92	14.88
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	61	100.0%	1.96	2.63	9.83
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	59	100.0%	0.21	0.10	0.52
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	61	100.0%	3.87	0.59	5.63
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	61	100.0%	4.64	0.78	6.97
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	68	100.0%	42.41	13.09	81.69
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	68	100.0%	2.04	3.52	12.61
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	68	100.0%	3.19	3.16	12.67
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	68	100.0%	14.16	2.46	21.55
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	68	100.0%	0.43	0.10	0.73
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	193	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	68	100.0%	17.31	1.87	22.92148559
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	68	100.0%	65.66	6.36	84.73
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	68	100.0%	6.47	0.78	8.83
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	68	100.0%	3.64	0.40	4.85
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	223	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	223	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%	99.17%

- 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) (NO₂/0.9 + NO₃/11)
 - (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)