

Madibeng Municipality Water Quality Report - 1 Month

23 October 2018 to 21 November 2018 Date generated: 11 December 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	28	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	28	100.0%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	28	100.0%	0	0.52	2
<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
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	1	100.0%	5.00	not applicable	5.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	28	100.0%	20.39	0.83	22.89
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	1	100.0%	140.00	not applicable	140.00
Turbidity	(NTU)	Operational	95.0%	≤1	28	100.0%	0.30	0.06	0.47
Turbidity	(NTU)	Aesthetic	95.0%	≤5	28	100.0%	0.30	0.06	0.47
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	28	100.0%	8.02	0.12	8.38
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	28	100.0%	0.31	0.12	0.67
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	2	100.0%	11.00	0.00	11.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	28	100.0%	0.10	0.07	0.31
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	28	100.0%	1.19	0.18	1.74
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	2	100.0%	0.20	0.00	0.20
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	28	100.0%	0.50	0.00	0.50
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	28	100.0%	0.03	0.02	0.08
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	28	100.0%	0.08	0.02	0.14
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	28	100.0%	1.29	0.16	1.77
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	1	100.0%	9.30	not applicable	9.30
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	2	100.0%	14.50	0.71	16.62
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	2	100.0%	14.50	0.71	16.62
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	1	100.0%	0.01	not applicable	0.01
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	1	100.0%	25.00	not applicable	25.00
Antimony (9)	(µg / L as Sb)	Chronic health	97.0%	≤20	16	100.0%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	1	100.0%	8.00	not applicable	8.00
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	1	100.0%	44.00	not applicable	44.00
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	1	100.0%	3.00	not applicable	3.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	1	100.0%	1.50	not applicable	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	1	100.0%	5.00	not applicable	5.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	1	100.0%	8.00	not applicable	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	1	100.0%	20.00	not applicable	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	1	100.0%	17.00	not applicable	17.00
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	1	100.0%	17.00	not applicable	17.00
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	1	100.0%	8.00	not applicable	8.00
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	1	100.0%	3.00	not applicable	3.00
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	1	100.0%	3.00	not applicable	3.00
Mercury (9)	(µg / L as Hg)	Chronic health	97.0%	≤6	16	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	1	100.0%	5.00	not applicable	5.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	1	100.0%	8.00	not applicable	8.00
Uranium (9)	(µg / L as U)	Chronic health	97.0%	≤30	16	100.0%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	1	100.0%	5.10	not applicable	5.10
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	1	100.0%	3.00	not applicable	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	1	100.0%	28.00	not applicable	28.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	1	100.0%	10.00	not applicable	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	1	100.0%	10.00	not applicable	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	1	100.0%	10.00	not applicable	10.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	1	100.0%	0.46	not applicable	0.46
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	16	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	1	100.0%	16.00	not applicable	16
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	1	100.0%	61.00	not applicable	61.00
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	1	100.0%	6.10	not applicable	6.10
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	1	100.0%	3.20	not applicable	3.20
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	13	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	13	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%	100.00%

- 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)
 - (9) November 2018: measured at the water treatment works exit