

Mogale Municipality Water Quality Report - 12 Month

21 July 2017 to 20 July 2018 Date generated: 03 August 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	593	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	593	99.8%	0	8.26	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	593	100.0%	7	25.68	158
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	185	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	800	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	90	100.0%	5.23	0.60	8.00
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	593	100.0%	19.52	1.74	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	90	100.0%	136.71	16.12	163.85
Turbidity	(NTU)	Operational	95.0%	≤1	584	98.5%	0.38	0.62	3.17
Turbidity	(NTU)	Aesthetic	95.0%	≤5	584	99.3%	0.38	0.62	3.17
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	593	100.0%	7.88	0.14	8.18
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	593	100.0%	0.32	0.11	0.49
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	90	100.0%	11.18	0.92	13.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	593	100.0%	0.10	0.19	1.16
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	592	100.0%	1.27	0.49	1.90
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	90	100.0%	0.19	0.00	0.20
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	593	100.0%	0.44	0.03	0.50
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	593	100.0%	0.04	0.05	0.25
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	592	100.0%	0.09	0.06	0.32
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	593	98.7%	1.36	0.49	1.99
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	90	100.0%	8.82	0.99	11.11
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	90	100.0%	14.02	1.23	17.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	90	100.0%	14.02	1.23	17.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	90	100.0%	0.02	0.01	0.05
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	90	100.0%	27.96	6.98	57.21
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	90	100.0%	0.51	0.07	0.66
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	90	100.0%	1.02	0.79	3.40
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	90	100.0%	36.27	6.95	53.22
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	90	100.0%	25.00	0.00	25.00
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	90	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	90	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	90	100.0%	10.19	1.38	12.32
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	90	100.0%	7.24	5.28	20.00
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	90	100.0%	24.29	33.84	169.35
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	90	100.0%	24.29	33.84	169.35
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	90	100.0%	0.35	0.63	3.32
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	90	100.0%	11.27	5.59	40.22
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	90	100.0%	11.27	5.59	40.22
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	90	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	90	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	90	100.0%	0.95	1.06	6.26
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	90	100.0%	0.22	0.07	0.53
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	90	100.0%	3.72	0.52	4.94
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	90	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	90	100.0%	44.19	8.25	58.11
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	90	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	90	100.0%	1.60	0.82	3.11
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	90	100.0%	14.10	2.00	18.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	90	100.0%	0.40	0.05	0.52
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	189	100.0%	0.31	0.00	0.31
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	90	100.0%	17.00	2.45	23
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	90	100.0%	64.37	8.58	88.00
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	90	100.0%	6.31	0.95	8.81
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	90	100.0%	3.77	0.36	5.00
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	357	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	357	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%	99.84%
Operational	95.00%	99.53%

- 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)