

Mogale 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	608	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	608	99.8%	0	8.16	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	608	100.0%	7	25.69	155
<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	93	100.0%	5.09	0.38	6.16
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	608	100.0%	19.05	1.70	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	93	100.0%	134.29	15.57	153.60
Turbidity	(NTU)	Operational	95.0%	≤1	599	98.5%	0.36	0.62	3.11
Turbidity	(NTU)	Aesthetic	95.0%	≤5	599	99.3%	0.36	0.62	3.11
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	608	100.0%	7.87	0.14	8.26
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	608	100.0%	0.33	0.12	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	100	100.0%	11.01	1.00	13.00
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	608	100.0%	0.11	0.20	1.14
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	608	100.0%	1.30	0.50	1.91
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	100	100.0%	0.20	0.04	0.37
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	608	100.0%	0.45	0.05	0.57
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	608	100.0%	0.04	0.05	0.25
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	608	100.0%	0.09	0.06	0.32
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	608	98.7%	1.40	0.49	2.04
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	93	100.0%	8.66	0.98	11.08
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	100	100.0%	13.84	1.28	17.00
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	100	100.0%	13.84	1.28	17.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	93	100.0%	0.02	0.01	0.05
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	93	100.0%	28.51	8.61	67.88
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	93	100.0%	0.51	0.07	0.56
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	93	100.0%	0.88	0.70	2.60
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	92	100.0%	34.85	7.82	54.09
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	93	100.0%	26.86	16.63	49.76
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	93	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	93	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	93	100.0%	10.18	1.36	11.96
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	93	100.0%	5.07	0.33	6.63
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	93	100.0%	27.56	34.43	166.80
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	93	100.0%	27.56	34.43	166.80
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	93	100.0%	0.32	0.61	3.26
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	93	100.0%	11.41	5.68	40.16
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	93	100.0%	11.41	5.68	40.16
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	93	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	93	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	93	100.0%	0.86	1.04	6.24
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	93	100.0%	0.20	0.03	0.27
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	94	100.0%	3.70	0.48	4.93
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	93	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	93	100.0%	47.38	7.29	60.04
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	93	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	93	100.0%	1.39	0.81	3.11
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	93	100.0%	14.29	1.71	18.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	93	100.0%	0.41	0.04	0.51
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	93	100.0%	17.01	2.51	23
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	93	100.0%	63.63	8.51	88.00
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	93	100.0%	6.09	0.86	8.81
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	93	100.0%	3.82	0.36	5.00
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	369	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	369	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%	99.85%
Operational	95.00%	99.54%

- 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)