

**Mogale Municipality Water Quality Report - 12 Month**

23 January 2018 to 22 January 2019 Date generated: 11 February 2019

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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	583	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	583	100.0%	0	0.41	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	583	99.5%	22	134.90	427
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	191	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	841	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	89	100.0%	5.42	1.02	8.48
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	583	100.0%	20.52	1.30	24.42
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	89	100.0%	143.65	6.60	163.46
Turbidity	(NTU)	Operational	95.0%	≤1	576	97.6%	0.39	0.65	2.33
Turbidity	(NTU)	Aesthetic	95.0%	≤5	576	99.3%	0.39	0.65	2.33
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	583	100.0%	7.96	0.14	8.37
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	583	100.0%	0.30	0.14	0.71
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	89	100.0%	11.54	0.68	13.56
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	583	100.0%	0.09	0.15	0.55
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	581	100.0%	1.23	0.54	2.85
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	89	100.0%	0.19	0.01	0.21
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	583	100.0%	0.46	0.05	0.60
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	583	100.0%	0.05	0.05	0.20
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	583	100.0%	0.09	0.06	0.27
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	583	98.3%	1.31	0.55	2.96
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	89	100.0%	9.27	0.80	11.67
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	89	100.0%	14.91	1.12	18.28
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	89	100.0%	14.91	1.12	18.28
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	89	100.0%	0.10	0.27	0.89
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	89	100.0%	28.85	9.16	56.33
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	274	100.0%	0.58	0.35	1.63
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	89	100.0%	1.77	2.03	7.86
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	89	100.0%	41.83	4.79	56.21
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	89	100.0%	17.80	8.67	43.80
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	89	100.0%	1.90	0.71	4.03
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	89	100.0%	10.73	4.97	25.65
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	89	100.0%	9.82	2.67	17.82
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	89	100.0%	14.61	7.24	36.32
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	89	100.0%	27.69	53.99	189.67
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	89	97.8%	27.69	53.99	189.67
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	89	100.0%	1.55	2.10	7.84
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	89	100.0%	8.67	6.98	29.63
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	89	100.0%	8.67	6.98	29.63
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	274	100.0%	0.79	0.07	1.00
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	89	100.0%	7.87	2.49	15.33
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	89	100.0%	2.64	2.25	9.40
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	274	100.0%	0.37	0.25	1.11
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	87	100.0%	3.84	0.52	5.40
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	89	100.0%	4.15	0.99	7.13
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	89	100.0%	40.31	7.11	61.65
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	89	100.0%	4.56	4.73	18.73
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	89	100.0%	5.45	3.99	17.41
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	89	100.0%	14.59	1.70	19.69
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	89	100.0%	0.48	0.10	0.77
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	195	100.0%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	89	100.0%	17.11	1.92	22.87655905
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	89	100.0%	65.85	7.23	87.56
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	89	100.0%	6.67	0.78	9.01
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	89	100.0%	3.43	0.48	4.88
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	349	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	349	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%	99.76%
Operational	95.00%	99.30%

- 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) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)
  - (8) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)