

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

23 March 2017 to 22 March 2018 Date generated: 03 April 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
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	597	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	597	99.8%	0	8.23	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	590	100.0%	6	22.36	108
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	182	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	786	100.0%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	88	100.0%	5.11	0.41	6.26
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	597	100.0%	18.79	1.53	22.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	88	100.0%	132.72	15.24	151.50
Turbidity	(NTU)	Operational	95.0%	≤1	588	98.6%	0.36	0.65	3.15
Turbidity	(NTU)	Aesthetic	95.0%	≤5	588	99.3%	0.36	0.65	3.15
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	597	100.0%	7.86	0.13	8.18
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	597	100.0%	0.34	0.11	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	95	100.0%	10.83	0.88	13.00
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	597	100.0%	0.11	0.22	1.33
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	597	100.0%	1.32	0.48	1.91
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	95	100.0%	0.20	0.05	0.37
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	597	100.0%	0.47	0.09	0.81
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	597	100.0%	0.04	0.05	0.25
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	596	100.0%	0.09	0.06	0.32
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	597	98.5%	1.43	0.47	2.05
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	88	100.0%	8.41	0.86	11.00
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	95	100.0%	13.41	1.09	17.00
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	95	100.0%	13.41	1.09	17.00
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	88	100.0%	0.02	0.00	0.03
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	88	100.0%	28.49	7.97	58.86
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	88	100.0%	0.51	0.07	0.59
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	88	100.0%	0.98	0.68	2.60
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	87	100.0%	33.46	7.62	54.14
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	88	100.0%	26.97	17.10	57.11
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	88	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	88	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	88	100.0%	10.13	0.79	12.65
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	88	100.0%	5.07	0.34	6.65
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	88	100.0%	27.54	32.41	153.65
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	88	100.0%	27.54	32.41	153.65
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	88	100.0%	0.33	0.57	2.32
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	88	100.0%	11.39	5.74	40.26
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	88	100.0%	11.39	5.74	40.26
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	88	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	88	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	88	100.0%	0.87	1.07	6.27
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	88	100.0%	0.20	0.03	0.26
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	89	100.0%	3.73	0.52	4.95
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	88	100.0%	5.00	0.00	5.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	88	100.0%	50.43	6.68	65.91
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	88	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	88	100.0%	1.21	0.61	2.57
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	88	100.0%	14.22	1.73	18.00
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	88	100.0%	0.42	0.05	0.52
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	184	100.0%	0.32	0.02	0.36
<b>For monitoring/reporting purposes only (6)</b>									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	88	100.0%	17.11	2.64	23
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	88	100.0%	63.13	8.61	88.00
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	88	100.0%	5.87	0.80	8.81
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	88	100.0%	3.82	0.37	5.00
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	361	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	361	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%	99.53%

- 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) (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)