

Mogale Municipality Water Quality Report - 12 Month

23 October 2017 to 22 October 2018

Date generated: 05 November 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	578	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	578	99.8%	0	8.37	25
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	578	99.8%	12	89.08	279
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	189	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	817	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%	5.28	0.62	7.16
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	578	100.0%	20.04	1.81	25.48
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	88	100.0%	140.05	16.75	190.29
Turbidity	(NTU)	Operational	95.0%	≤1	571	98.4%	0.38	0.63	2.27
Turbidity	(NTU)	Aesthetic	95.0%	≤5	571	99.3%	0.38	0.63	2.27
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	578	100.0%	7.91	0.15	8.37
<b>Chemical Properties</b>									
<b>Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	578	100.0%	0.33	0.12	0.68
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	88	100.0%	11.47	0.71	13.60
Free chlorine (2)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤5	578	100.0%	0.09	0.13	0.48
Monochloramine (3)	(mg / L as Cl <sub>2</sub> )	Chronic health	97.0%	≤4.1	577	100.0%	1.30	0.50	2.79
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	88	100.0%	0.19	0.00	0.20
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	573	100.0%	0.44	0.04	0.56
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	578	100.0%	0.04	0.05	0.19
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	566	100.0%	0.09	0.05	0.25
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	578	99.0%	1.38	0.50	2.89
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	88	100.0%	9.08	1.02	12.13
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	95.0%	≤250	84	100.0%	14.56	1.43	18.84
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	99.0%	≤500	84	100.0%	14.56	1.43	18.84
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	88	100.0%	0.10	0.27	0.90
<b>Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	88	100.0%	29.22	9.18	56.75
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	83	100.0%	0.51	0.11	0.85
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	88	100.0%	1.62	2.04	7.75
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	88	100.0%	38.92	7.03	60.01
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	88	100.0%	22.40	6.23	41.08
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	88	100.0%	2.30	0.47	3.71
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	88	100.0%	13.41	3.68	24.44
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	88	100.0%	9.92	1.62	14.78
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	88	100.0%	10.70	7.26	32.46
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	88	100.0%	24.05	35.21	129.67
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	88	100.0%	24.05	35.21	129.67
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	88	100.0%	1.12	2.19	7.69
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	88	100.0%	10.35	6.42	29.62
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	88	100.0%	10.35	6.42	29.62
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	83	100.0%	0.78	0.12	1.15
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	88	100.0%	9.20	1.84	14.72
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	88	100.0%	1.81	2.26	8.58
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	83	100.0%	0.25	0.11	0.58
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	86	100.0%	3.70	0.52	5.27
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	95.0%	≤10	88	100.0%	4.68	0.74	6.89
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤300	88	100.0%	41.78	8.23	66.48
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	97.0%	≤100	88	100.0%	2.01	3.49	12.50
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	97.0%	≤100	88	100.0%	3.11	3.09	12.38
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	97.0%	≤60	88	100.0%	14.39	2.00	20.39
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	88	100.0%	0.43	0.08	0.66
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	193	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	88	100.0%	17.14	2.10	23.42562901
Hardness	(mg / L as CaCO <sub>3</sub> )	Operational	not applicable	≥ 20 to ≤ 200	88	100.0%	65.32	7.97	89.23
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	88	100.0%	6.49	0.96	9.36
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	88	100.0%	3.61	0.42	4.87
<b>Rand Water Risk Determinands (RWRD)</b>									
Odour	TON	RWRD	95.0%	≤2	345	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	345	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%	99.55%

**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)