



**RAND WATER**  
Mogale Water Quality Report  
1 Month

22 September 2020 to 22 October 2020

Date generated: 06 November 2020

							Descriptive Statistics		
Determinands	Measurement Units	Risks	SANS 241:2015 standard limits (1)	No of results	Required compliances to SANS 241:2015 spec(%)	Achieved compliances to SANS 241:2015 spec(%)	Mean	Standard Deviation	Mean + 3 Std deviations
<b>Microbiological determinands</b>									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	51	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	51	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	51	95.0%	100%	3	5.79	20
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	16	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	80	95.0%	100%	0	0.00	0
<b>Physical and Aesthetic determinands</b>									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	7	95.0%	100%	7.71	1.60	12.53
Conductivity	(mS / m)	Aesthetic	≤ 170	51	95.0%	100%	20.24	2.49	27.72
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	7	95.0%	100%	136.43	2.44	143.75
Turbidity	(NTU)	Operational	≤ 1	51	95.0%	100%	0.25	0.01	0.29
Turbidity	(NTU)	Aesthetic	≤ 5	51	95.0%	100%	0.25	0.01	0.29
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	51	95.0%	100%	8.07	0.17	8.57
<b>Chemical Properties: Macro determinands</b>									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	51	95.0%	100%	0.35	0.11	0.67
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	7	95.0%	100%	10.67	0.98	13.60
Free chlorine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 5	51	97.0%	100%	0.09	0.04	0.20
Monochloramine	(mg / L as Cl <sub>2</sub> )	Chronic health	≤ 4.1	51	97.0%	100%	1.61	0.17	2.12
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	7	97.0%	100%	0.29	0.03	0.40
Nitrate	(mg / L as N)	Acute health	≤ 11	51	99.0%	100%	0.60	0.06	0.77
Nitrite	(mg / L as N)	Acute health	≤ 0.9	51	99.0%	100%	0.03	0.01	0.05
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	51	99.0%	100%	0.08	0.01	0.11
Residual disinfectant (4)	(mg / L as Cl <sub>2</sub> )	Operational	≥ 0.1	51	95.0%	100%	1.69	0.17	2.20
Sodium	(mg / L as Na)	Aesthetic	≤ 200	7	95.0%	100%	9.53	0.29	10.41
Sulphate	(mg / L as SO <sub>4</sub> )	Aesthetic	≤ 250	7	95.0%	100%	14.43	0.53	16.03
Sulphate	(mg / L as SO <sub>4</sub> )	Acute health	≤ 500	7	99.0%	100%	14.43	0.53	16.03
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	7	95.0%	100%	0.02	0.00	0.02
<b>Chemical Properties: Micro determinands</b>									
Aluminium	(µg / L as Al)	Operational	≤ 300	7	95.0%	100%	52.00	4.86	66.59
Antimony	(µg / L as Sb)	Chronic health	≤ 20	7	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	7	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	7	97.0%	100%	39.14	4.26	51.92
Boron	(µg / L as B)	Chronic health	≤ 2400	7	97.0%	100%	3.93	1.77	9.23
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	7	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	7	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	7	97.0%	100%	8.00	0.00	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	7	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	7	97.0%	100%	23.29	18.42	78.54
Iron	(µg / L as Fe)	Aesthetic	≤ 300	7	95.0%	100%	23.29	18.42	78.54
Lead	(µg / L as Pb)	Chronic health	≤ 10	7	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	7	97.0%	100%	5.86	7.56	28.54
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	7	95.0%	100%	5.86	7.56	28.54
Mercury	(µg / L as Hg)	Chronic health	≤ 6	7	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	7	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	7	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	7	97.0%	100%	0.50	0.00	0.50
<b>Organic determinands</b>									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	7	97.0%	100%	3.59	0.29	4.44
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(µg / L)	Aesthetic	≤ 10	7	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl <sub>3</sub>	(µg / L)	Chronic health	≤ 300	7	97.0%	100%	30.14	3.08	39.38
Bromoform - CHBr <sub>3</sub>	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr <sub>2</sub> Cl	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl <sub>2</sub>	(µg / L)	Chronic health	≤ 60	7	97.0%	100%	13.86	1.07	17.06
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.36	0.03	0.44
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	16	97.0%	100%	0.31	0.00	0.31
<b>For monitoring/reporting purposes only</b>									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	7	not applicable	100%	18.00	2.08	24.25
Hardness (7)	(mg / L as CaCO <sub>3</sub> )	Operational	≥ 20 to ≤ 200	6	not applicable	100%	66.50	5.99	84.48
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	7	not applicable	100%	6.36	0.22	7.02
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	7	not applicable	100%	3.00	0.08	3.24
<b>Rand Water Risk Determinands (RWRD) (6)</b>									
Odour	TON	RWRD	≤ 2	24	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	24	not applicable	100%	1.00	0.00	1.00

Risks	Required compliances to SANS 241: 2015 standard	Overall Compliances - SANS 241: 2015 standard
Acute health microbiological	99.0%	100%
Acute health chemical	99.0%	100%
Chronic health	97.0%	100%
Aesthetic	95.0%	100%
Operational	95.0%	100%

Notes  
 (1) Specification SANS 241 date of effect : 1 July 2016  
 (2) Measured at water treatment works exit points  
 (3) (NO<sub>2</sub>/0.9 + NO<sub>3</sub>/11)  
 (4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine  
 (5) (CHCl<sub>3</sub>/300 + CHBr<sub>3</sub>/100 + CHBr<sub>2</sub>Cl/100 + CHBrCl<sub>2</sub>/60)  
 (6) Customer request: Results not included in the risk indices compliance calculations and limits based on SANS 241:2006  
 (7) Customer request: Results not included in the risk indices compliance calculations and limits based on RW Internal Spec  
 \*\*\*\* Determinands with no data are due to instrument breakdown\*\*\*\*