



RAND WATER
Mogale Water Quality Report
1 Month

23 January 2021 to 19 February 2021

Date generated: 10 March 2021

							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
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	44	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	44	95.0%	100%	0	0.15	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	44	95.0%	100%	16	47.17	158
<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	64	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	7	95.0%	100%	6.14	0.90	8.84
Conductivity	(mS / m)	Aesthetic	≤ 170	44	95.0%	100%	22.68	2.71	30.81
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	7	95.0%	100%	162.86	6.36	181.94
Turbidity	(NTU)	Operational	≤ 1	44	95.0%	100%	0.37	0.11	0.72
Turbidity	(NTU)	Aesthetic	≤ 5	44	95.0%	100%	0.37	0.11	0.72
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	44	95.0%	100%	7.79	0.13	8.19
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	44	95.0%	100%	0.32	0.19	0.89
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	7	95.0%	100%	13.57	1.90	19.28
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	44	97.0%	100%	0.07	0.02	0.13
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	44	97.0%	100%	0.90	0.60	2.70
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	7	97.0%	100%	0.23	0.08	0.46
Nitrate	(mg / L as N)	Acute health	≤ 11	44	99.0%	100%	0.78	0.25	1.53
Nitrite	(mg / L as N)	Acute health	≤ 0.9	41	99.0%	100%	0.16	0.18	0.70
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	40	99.0%	100%	0.29	0.25	1.05
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	44	95.0%	90.91%	0.96	0.62	2.82
Sodium	(mg / L as Na)	Aesthetic	≤ 200	4	95.0%	100%	11.00	0.00	11.00
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	7	95.0%	100%	15.71	0.76	17.98
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	7	99.0%	100%	15.71	0.76	17.98
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	4	95.0%	100%	0.06	0.09	0.32
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	4	95.0%	100%	12.75	0.96	15.62
Antimony	(µg / L as Sb)	Chronic health	≤ 20	4	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	4	97.0%	100%	0.80	0.01	0.82
Barium	(µg / L as Ba)	Chronic health	≤ 700	4	97.0%	100%	46.00	1.41	50.24
Boron	(µg / L as B)	Chronic health	≤ 2400	4	97.0%	100%	12.25	2.22	18.90
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	4	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	4	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	4	97.0%	100%	5.50	3.83	16.99
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	4	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	4	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	4	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	4	97.0%	100%	3.20	0.45	4.56
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	4	95.0%	100%	3.20	0.45	4.56
Mercury	(µg / L as Hg)	Chronic health	≤ 6	4	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	4	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	4	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	4	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	7	97.0%	100%	4.19	0.54	5.81
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	7	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	7	97.0%	100%	93.14	10.85	125.71
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	7	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	7	97.0%	100%	17.29	1.25	21.05
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.61	0.05	0.77
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	.	no data	.
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	4	not applicable	100%	19.75	0.96	22.62
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	4	not applicable	100%	77.50	2.52	85.05
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	4	not applicable	100%	6.80	0.08	7.04
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	4	not applicable	100%	4.08	0.05	4.23
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	28	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	28	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%	98.61%

Notes
 (1) Specification SANS 241 date of effect : 1 July 2016
 (2) Measured at water treatment works exit points
 (3) (NO₂/0.9 + NO₃/11)
 (4) Residual disinfectant : Results from the chloraminated system = Sum of Free and Monochloramine
 (5) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)
 (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****