



RAND WATER

Rand Water Supply to Mogale City municipality
1 Month Water Quality Report

23 December 2021 to 21 January 2022

Date generated: 02 February 2022

							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	26	95.0%	100%	29	44.95	163
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	15	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	15	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	60	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	7	95.0%	100%	9.00	1.00	12.00
Conductivity	(mS / m)	Aesthetic	≤ 170	44	95.0%	100%	24.48	0.79	26.85
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	7	95.0%	100%	168.57	2.44	175.89
Turbidity	(NTU)	Operational	≤ 1	44	95.0%	100%	0.26	0.03	0.36
Turbidity	(NTU)	Aesthetic	≤ 5	44	95.0%	100%	0.26	0.03	0.36
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	44	95.0%	100%	7.81	0.13	8.21
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	44	95.0%	100%	0.35	0.20	0.94
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	7	95.0%	100%	19.14	1.07	22.35
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	44	97.0%	100%	0.08	0.02	0.15
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	44	97.0%	100%	1.05	0.64	2.97
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	7	97.0%	100%	0.45	0.06	0.63
Nitrate	(mg / L as N)	Acute health	≤ 11	44	99.0%	100%	0.63	0.13	1.03
Nitrite	(mg / L as N)	Acute health	≤ 0.9	44	99.0%	100%	0.08	0.08	0.31
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	44	99.0%	100%	0.15	0.09	0.42
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	44	95.0%	97.73%	1.11	0.66	3.08
Sodium	(mg / L as Na)	Aesthetic	≤ 200	7	95.0%	100%	16.29	1.25	20.05
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	7	95.0%	100%	23.14	1.07	26.35
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	7	99.0%	100%	23.14	1.07	26.35
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	7	95.0%	100%	0.02	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	7	95.0%	100%	54.86	12.85	93.41
Antimony	(µg / L as Sb)	Chronic health	≤ 20	7	97.0%	100%	0.30	0.00	0.30
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%	53.71	4.79	68.07
Boron	(µg / L as B)	Chronic health	≤ 2400	7	97.0%	100%	18.14	3.76	29.43
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%	10.50	5.98	28.44
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%	18.54	15.51	65.06
Iron	(µg / L as Fe)	Aesthetic	≤ 300	7	95.0%	100%	18.54	15.51	65.06
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%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	7	95.0%	100%	3.00	0.00	3.00
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%	0.13	0.01	0.17
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	7	97.0%	100%	5.24	0.28	6.07
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	7	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	7	97.0%	100%	71.00	6.27	89.81
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%	22.86	1.21	26.50
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.65	0.04	0.76
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	15	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	7	not applicable	100%	20.57	1.40	24.76
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	7	not applicable	100%	84.14	6.34	103.15
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	7	not applicable	100%	9.44	0.79	11.81
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	7	not applicable	100%	5.00	0.36	6.08
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	21	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	21	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%	99.63%

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****