



RAND WATER
Merafong Water Quality Report
1 Month

22 April 2020 to 22 May 2020

Date generated: 05 June 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
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	Non-detect	66	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	66	95.0%	100%	0	0.00	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	66	95.0%	100%	13	34.02	115
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	17	99.0%	100%	0	0.00	0
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	66	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	5	95.0%	100%	5.00	0.00	5.00
Conductivity	(mS / m)	Aesthetic	≤ 170	61	95.0%	100%	22.67	1.34	26.69
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	5	95.0%	100%	155.00	7.07	176.21
Turbidity	(NTU)	Operational	≤ 1	61	95.0%	100%	0.28	0.05	0.42
Turbidity	(NTU)	Aesthetic	≤ 5	61	95.0%	100%	0.28	0.05	0.42
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	61	95.0%	100%	7.84	0.09	8.13
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	65	95.0%	100%	0.08	0.08	0.33
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	5	95.0%	100%	14.60	1.14	18.02
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	66	97.0%	100%	0.08	0.03	0.18
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	66	97.0%	100%	0.42	0.37	1.53
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	5	97.0%	100%	0.36	0.03	0.45
Nitrate	(mg / L as N)	Acute health	≤ 11	64	99.0%	100%	0.76	0.16	1.23
Nitrite	(mg / L as N)	Acute health	≤ 0.9	64	99.0%	100%	0.07	0.07	0.27
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	63	99.0%	100%	0.14	0.08	0.37
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	66	95.0%	83.33%	0.48	0.40	1.67
Sodium	(mg / L as Na)	Aesthetic	≤ 200	6	95.0%	100%	10.05	0.96	12.94
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	5	95.0%	100%	21.60	0.55	23.24
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	5	99.0%	100%	21.60	0.55	23.24
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	6	95.0%	100%	0.02	0.01	0.04
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	6	95.0%	100%	28.67	8.04	52.79
Antimony	(µg / L as Sb)	Chronic health	≤ 20	no data	97.0%	no data	-	no data	-
Arsenic	(µg / L as As)	Chronic health	≤ 10	5	97.0%	100%	8.00	0.00	8.00
Barium	(µg / L as Ba)	Chronic health	≤ 700	6	97.0%	100%	34.83	3.54	45.47
Boron	(µg / L as B)	Chronic health	≤ 2400	6	97.0%	100%	7.23	1.40	11.43
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	5	97.0%	100%	1.50	0.00	1.50
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	6	97.0%	100%	5.00	0.00	5.00
Copper	(µg / L as Cu)	Chronic health	≤ 2000	6	97.0%	100%	8.00	0.00	8.00
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	5	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	6	97.0%	100%	24.00	10.66	55.98
Iron	(µg / L as Fe)	Aesthetic	≤ 300	6	95.0%	100%	24.00	10.66	55.98
Lead	(µg / L as Pb)	Chronic health	≤ 10	5	97.0%	100%	8.00	0.00	8.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	6	97.0%	100%	3.00	0.00	3.00
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	6	95.0%	100%	3.00	0.00	3.00
Mercury	(µg / L as Hg)	Chronic health	≤ 6	5	97.0%	100%	1.50	0.00	1.50
Nickel	(µg / L as Ni)	Chronic health	≤ 70	6	97.0%	100%	5.00	0.00	5.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	5	97.0%	100%	8.00	0.00	8.00
Uranium	(µg / L as U)	Chronic health	≤ 30	no data	97.0%	no data	-	no data	-
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	10	97.0%	100%	3.83	0.11	4.15
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	6	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	7	97.0%	100%	39.14	9.01	66.17
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%	18.00	1.00	21.00
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	7	97.0%	100%	0.46	0.04	0.59
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	25	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	6	not applicable	100%	15.83	1.17	19.34
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	6	not applicable	100%	64.67	4.41	77.90
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	6	not applicable	100%	7.20	0.40	8.41
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	6	not applicable	100%	3.22	0.25	3.96
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	25	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	25	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%	97.19%

- 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****