



RAND WATER
Midvaal Water Quality Report
1 Month

23 December 2020 to 22 January 2021

Date generated: 08 February 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	231	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	231	95.0%	97.84%	0	2.40	8
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	231	95.0%	100%	7	49.09	155
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	25	99.0%	100%	0	0.00	0
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	25	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	22	95.0%	100%	7.55	0.96	10.43
Conductivity	(mS / m)	Aesthetic	≤ 170	163	95.0%	100%	23.13	3.53	33.72
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	22	95.0%	100%	155.23	22.33	222.23
Turbidity	(NTU)	Operational	≤ 1	163	95.0%	99.39%	0.35	0.15	0.80
Turbidity	(NTU)	Aesthetic	≤ 5	163	95.0%	100%	0.35	0.15	0.80
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	163	95.0%	100%	8.01	0.22	8.66
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	163	95.0%	100%	0.11	0.06	0.27
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	22	95.0%	100%	11.29	0.99	14.27
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	231	97.0%	100%	0.94	0.50	2.42
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	n/a	97.0%	n/a	n/a	n/a	n/a
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	22	97.0%	100%	0.30	0.05	0.46
Nitrate	(mg / L as N)	Acute health	≤ 11	162	99.0%	100%	0.50	0.03	0.59
Nitrite	(mg / L as N)	Acute health	≤ 0.9	159	99.0%	100%	0.03	0.02	0.08
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	163	99.0%	100%	0.09	0.09	0.35
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	231	95.0%	90.04%	0.94	0.50	2.42
Sodium	(mg / L as Na)	Aesthetic	≤ 200	22	95.0%	100%	9.21	0.79	11.59
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	22	95.0%	100%	15.64	0.73	17.82
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	22	99.0%	100%	15.64	0.73	17.82
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	22	95.0%	100%	0.00	0.01	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	22	95.0%	100%	24.95	9.60	53.73
Antimony	(µg / L as Sb)	Chronic health	≤ 20	22	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	22	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	22	97.0%	100%	36.95	6.28	55.78
Boron	(µg / L as B)	Chronic health	≤ 2400	22	97.0%	100%	4.36	6.51	23.88
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	22	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	22	97.0%	100%	0.78	0.45	2.14
Copper	(µg / L as Cu)	Chronic health	≤ 2000	22	97.0%	100%	6.51	6.60	26.33
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	15	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	22	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	22	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	22	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	22	97.0%	100%	2.25	0.65	4.21
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	22	95.0%	100%	2.25	0.65	4.21
Mercury	(µg / L as Hg)	Chronic health	≤ 6	22	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	22	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	22	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	22	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	22	97.0%	100%	3.01	0.50	4.52
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	22	95.0%	100%	3.07	0.21	3.69
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	33	97.0%	100%	40.88	15.05	86.02
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	33	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	33	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	33	97.0%	100%	12.58	2.63	20.48
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	33	97.0%	100%	0.37	0.12	0.72
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	no data	97.0%	no data	no data	no data	no data
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	22	not applicable	100%	16.77	1.90	22.47
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	22	not applicable	100%	66.14	6.63	86.02
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	22	not applicable	100%	5.95	0.58	7.69
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	22	not applicable	100%	3.00	0.36	4.08
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	22	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	22	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%	97.38%

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 chlorinated system = Free available chlorine
 (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****