



RAND WATER
Midvaal Water Quality Report
1 Month

22 April 2021 to 21 May 2021

Date generated: 04 June 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	223	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	223	95.0%	100%	0	0.40	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	223	95.0%	100%	3	13.06	42
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	no data	99.0%	no data	no data	no data	no data
Somatic Coliphages (2)	(count per 10 mL)	Operational	Non-detect	62	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	20	95.0%	100%	11.30	3.05	20.44
Conductivity	(mS / m)	Aesthetic	≤ 170	155	95.0%	100%	22.75	1.68	27.80
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	20	95.0%	100%	152.00	5.71	169.14
Turbidity	(NTU)	Operational	≤ 1	155	95.0%	99.35%	0.31	0.14	0.73
Turbidity	(NTU)	Aesthetic	≤ 5	155	95.0%	100%	0.31	0.14	0.73
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	155	95.0%	100%	8.04	0.21	8.66
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	155	95.0%	100%	0.11	0.04	0.22
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	20	95.0%	100%	15.20	1.15	18.66
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	223	97.0%	100%	0.75	0.54	2.39
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	20	97.0%	100%	0.33	0.03	0.43
Nitrate	(mg / L as N)	Acute health	≤ 11	155	99.0%	100%	0.57	0.06	0.74
Nitrite	(mg / L as N)	Acute health	≤ 0.9	155	99.0%	100%	0.03	0.00	0.04
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	141	99.0%	100%	0.09	0.01	0.11
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	223	95.0%	78.03%	0.75	0.54	2.39
Sodium	(mg / L as Na)	Aesthetic	≤ 200	20	95.0%	100%	11.23	1.87	16.84
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	20	95.0%	100%	18.65	1.14	22.06
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	20	99.0%	100%	18.65	1.14	22.06
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	20	95.0%	100%	0.05	0.04	0.18
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	20	95.0%	100%	36.96	17.10	88.25
Antimony	(µg / L as Sb)	Chronic health	≤ 20	20	97.0%	100%	0.30	0.00	0.30
Arsenic	(µg / L as As)	Chronic health	≤ 10	20	97.0%	100%	5.16	3.58	15.88
Barium	(µg / L as Ba)	Chronic health	≤ 700	20	97.0%	100%	47.75	7.92	71.51
Boron	(µg / L as B)	Chronic health	≤ 2400	20	97.0%	100%	8.10	3.87	19.72
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	20	97.0%	100%	1.30	0.25	2.05
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	20	97.0%	100%	3.08	2.41	10.32
Copper	(µg / L as Cu)	Chronic health	≤ 2000	20	97.0%	100%	11.45	9.09	38.73
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	20	99.0%	100%	5.03	0.11	5.36
Iron	(µg / L as Fe)	Chronic health	≤ 2000	20	97.0%	100%	19.68	18.30	74.59
Iron	(µg / L as Fe)	Aesthetic	≤ 300	20	95.0%	100%	19.68	18.30	74.59
Lead	(µg / L as Pb)	Chronic health	≤ 10	20	97.0%	100%	5.60	3.02	14.65
Manganese	(µg / L as Mn)	Chronic health	≤ 400	20	97.0%	100%	2.38	1.06	5.55
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	20	95.0%	100%	2.38	1.06	5.55
Mercury	(µg / L as Hg)	Chronic health	≤ 6	20	97.0%	100%	1.22	0.35	2.28
Nickel	(µg / L as Ni)	Chronic health	≤ 70	20	97.0%	100%	3.67	1.70	8.77
Selenium	(µg / L as Se)	Chronic health	≤ 40	20	97.0%	100%	6.40	2.01	12.43
Uranium	(µg / L as U)	Chronic health	≤ 30	20	97.0%	100%	0.11	0.02	0.17
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	20	97.0%	100%	4.97	0.22	5.62
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	20	95.0%	100%	2.50	0.00	2.50
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	30	97.0%	100%	68.13	22.69	136.20
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	30	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	30	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	30	97.0%	100%	17.27	4.04	29.39
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	30	97.0%	100%	0.52	0.15	0.96
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	20	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	20	not applicable	100%	17.40	3.44	27.72
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	20	not applicable	100%	69.65	12.83	108.15
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	20	not applicable	100%	7.14	1.19	10.69
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	20	not applicable	100%	4.55	1.28	8.39
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%	95.29%

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****