



RAND WATER
Midvaal Water Quality Report
1 Month

20 February 2021 to 22 March 2021

Date generated: 08 April 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	215	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	215	95.0%	100%	0	0.76	2
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	215	95.0%	100%	10	33.98	112
<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	64	95.0%	100%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	≤ 15	16	95.0%	100%	6.69	1.08	9.92
Conductivity	(mS / m)	Aesthetic	≤ 170	147	95.0%	100%	23.66	2.26	30.44
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	16	95.0%	100%	161.56	21.35	225.61
Turbidity	(NTU)	Operational	≤ 1	147	95.0%	100%	0.37	0.11	0.70
Turbidity	(NTU)	Aesthetic	≤ 5	147	95.0%	100%	0.37	0.11	0.70
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	147	95.0%	100%	8.04	0.16	8.51
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	146	95.0%	100%	0.10	0.03	0.20
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	16	95.0%	100%	15.38	1.02	18.45
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	215	97.0%	100%	0.75	0.61	2.58
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	16	97.0%	100%	0.37	0.05	0.51
Nitrate	(mg / L as N)	Acute health	≤ 11	147	99.0%	100%	0.82	0.18	1.35
Nitrite	(mg / L as N)	Acute health	≤ 0.9	147	99.0%	100%	0.03	0.03	0.11
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	138	99.0%	100%	0.14	0.13	0.52
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.2	215	95.0%	70.70%	0.75	0.61	2.58
Sodium	(mg / L as Na)	Aesthetic	≤ 200	16	95.0%	100%	10.69	2.38	17.84
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	16	95.0%	100%	18.81	0.91	21.54
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	16	99.0%	100%	18.81	0.91	21.54
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	15	95.0%	100%	0.01	0.01	0.04
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	16	95.0%	100%	9.44	7.73	32.62
Antimony	(µg / L as Sb)	Chronic health	≤ 20	16	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	16	97.0%	100%	0.86	0.06	1.04
Barium	(µg / L as Ba)	Chronic health	≤ 700	16	97.0%	100%	42.56	4.97	57.46
Boron	(µg / L as B)	Chronic health	≤ 2400	16	97.0%	100%	3.03	1.46	7.42
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	16	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	16	97.0%	100%	0.68	0.73	2.86
Copper	(µg / L as Cu)	Chronic health	≤ 2000	16	97.0%	100%	6.98	5.86	24.54
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	16	99.0%	100%	5.00	0.00	5.00
Iron	(µg / L as Fe)	Chronic health	≤ 2000	16	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	16	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	16	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	16	97.0%	100%	2.70	0.84	5.21
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	16	95.0%	100%	2.70	0.84	5.21
Mercury	(µg / L as Hg)	Chronic health	≤ 6	16	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	16	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	16	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	16	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	16	97.0%	100%	5.01	0.39	6.18
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	16	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	26	97.0%	100%	99.04	40.64	220.97
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	26	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	26	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	26	97.0%	100%	16.77	4.47	30.19
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	26	97.0%	100%	0.62	0.20	1.22
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.31	0.00	0.31
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	16	not applicable	100%	19.06	4.52	32.63
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	16	not applicable	100%	75.31	16.16	123.78
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	16	not applicable	100%	6.75	1.30	10.64
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	16	not applicable	100%	4.05	0.85	6.59
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%	93.82%

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****