



RAND WATER

Victor Khanye (Delmas System) 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	26	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	26	95.0%	100%	0	0.27	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	26	95.0%	100%	2	4.91	17
<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	4	95.0%	100%	8.00	0.00	8.00
Conductivity	(mS / m)	Aesthetic	≤ 170	26	95.0%	100%	23.88	4.15	36.34
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	4	95.0%	100%	151.25	19.31	209.18
Turbidity	(NTU)	Operational	≤ 1	26	95.0%	100%	0.36	0.10	0.66
Turbidity	(NTU)	Aesthetic	≤ 5	26	95.0%	100%	0.36	0.10	0.66
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	26	95.0%	100%	7.93	0.12	8.29
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	26	95.0%	100%	0.37	0.15	0.83
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	4	95.0%	100%	12.50	0.58	14.23
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	26	97.0%	100%	0.09	0.05	0.25
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	26	97.0%	100%	1.03	0.42	2.30
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	4	97.0%	100%	0.31	0.02	0.37
Nitrate	(mg / L as N)	Acute health	≤ 11	26	99.0%	100%	0.50	0.01	0.53
Nitrite	(mg / L as N)	Acute health	≤ 0.9	26	99.0%	100%	0.08	0.06	0.27
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	22	99.0%	100%	0.14	0.07	0.36
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	26	95.0%	100%	1.10	0.45	2.46
Sodium	(mg / L as Na)	Aesthetic	≤ 200	4	95.0%	100%	8.70	0.26	9.47
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	4	95.0%	100%	15.25	0.50	16.75
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	4	99.0%	100%	15.25	0.50	16.75
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	4	95.0%	100%	0.01	0.00	0.02
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	4	95.0%	100%	21.75	3.77	33.07
Antimony	(µg / L as Sb)	Chronic health	≤ 20	4	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	4	97.0%	100%	0.80	0.00	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	4	97.0%	100%	42.25	2.36	49.34
Boron	(µg / L as B)	Chronic health	≤ 2400	4	97.0%	100%	6.48	0.17	6.99
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	4	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	4	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	4	97.0%	100%	7.23	3.89	18.89
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	4	99.0%	100%	6.60	2.94	15.42
Iron	(µg / L as Fe)	Chronic health	≤ 2000	4	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	4	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	4	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	4	97.0%	100%	2.45	0.34	3.47
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	4	95.0%	100%	2.45	0.34	3.47
Mercury	(µg / L as Hg)	Chronic health	≤ 6	4	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	4	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	4	97.0%	100%	4.00	0.00	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	4	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	4	97.0%	100%	3.73	0.10	4.01
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	≤ 10	4	95.0%	100%	3.00	0.00	3.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	≤ 300	4	97.0%	100%	62.25	1.71	67.37
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	4	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	4	97.0%	100%	15.25	1.26	19.02
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	4	97.0%	100%	0.48	0.03	0.56
Total Microcystin (2)	(µg / L)	Chronic health	≤ 1	.	97.0%	no data	.	no data	.
For monitoring/reporting purposes only									
Calcium (6)	(mg / L as Ca)	Aesthetic	≤ 150	4	not applicable	100%	15.75	0.96	18.62
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	4	not applicable	100%	63.00	3.16	72.49
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	4	not applicable	100%	5.83	0.13	6.20
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	4	not applicable	100%	2.85	0.13	3.24
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	6	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	6	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%	100%

- 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****