



RAND WATER

Victor Khanye (Delmas System) 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	24	99.0%	100%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	≤ 10	24	95.0%	100%	0	0.41	1
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	≤ 1000	24	95.0%	100%	4	6.75	24
<i>Cryptosporidium spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	.	99.0%	no data	.	no data	.
<i>Giardia spp</i> (2)	(org / 10 Litre)	Acute health	Non-detect	.	99.0%	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	2	95.0%	100%	7.00	0.00	7.00
Conductivity	(mS / m)	Aesthetic	≤ 170	24	95.0%	100%	23.13	1.73	28.31
Total Dissolved Solids	(mg / L)	Aesthetic	≤ 1200	2	95.0%	100%	162.50	10.61	194.32
Turbidity	(NTU)	Operational	≤ 1	24	95.0%	100%	0.40	0.07	0.62
Turbidity	(NTU)	Aesthetic	≤ 5	24	95.0%	100%	0.40	0.07	0.62
pH	(pH units)	Operational	≥ 5 to ≤ 9.7	24	95.0%	100%	7.85	0.11	8.18
Chemical Properties: Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	≤ 1.5	24	95.0%	100%	0.21	0.15	0.67
Chloride	(mg / L as Cl)	Aesthetic	≤ 300	2	95.0%	100%	19.00	2.83	27.49
Free chlorine	(mg / L as Cl ₂)	Chronic health	≤ 5	24	97.0%	100%	0.07	0.02	0.12
Monochloramine	(mg / L as Cl ₂)	Chronic health	≤ 4.1	24	97.0%	100%	0.65	0.58	2.40
Fluoride	(mg / L as F)	Chronic health	≤ 1.5	2	97.0%	100%	0.37	0.04	0.47
Nitrate	(mg / L as N)	Acute health	≤ 11	24	99.0%	100%	1.05	0.17	1.57
Nitrite	(mg / L as N)	Acute health	≤ 0.9	24	99.0%	100%	0.18	0.09	0.46
Combined nitrate plus nitrite (3)	(mg / L as N)	Acute health	≤ 1	20	99.0%	100%	0.32	0.09	0.59
Residual disinfectant (4)	(mg / L as Cl ₂)	Operational	≥ 0.1	24	95.0%	87.50%	0.71	0.59	2.49
Sodium	(mg / L as Na)	Aesthetic	≤ 200	2	95.0%	100%	7.25	0.35	8.31
Sulphate	(mg / L as SO ₄)	Aesthetic	≤ 250	2	95.0%	100%	20.00	0.00	20.00
Sulphate	(mg / L as SO ₄)	Acute health	≤ 500	2	99.0%	100%	20.00	0.00	20.00
Zinc	(mg / L as Zn)	Aesthetic	≤ 5	2	95.0%	100%	0.01	0.00	0.01
Chemical Properties: Micro determinands									
Aluminium	(µg / L as Al)	Operational	≤ 300	2	95.0%	100%	10.35	3.75	21.59
Antimony	(µg / L as Sb)	Chronic health	≤ 20	2	97.0%	100%	0.60	0.00	0.60
Arsenic	(µg / L as As)	Chronic health	≤ 10	1	97.0%	100%	0.80	no data	0.80
Barium	(µg / L as Ba)	Chronic health	≤ 700	2	97.0%	100%	44.00	5.66	60.97
Boron	(µg / L as B)	Chronic health	≤ 2400	2	97.0%	100%	4.15	0.49	5.63
Cadmium	(µg / L as Cd)	Chronic health	≤ 3	2	97.0%	100%	1.00	0.00	1.00
Chromium (Total)	(µg / L as Cr)	Chronic health	≤ 50	2	97.0%	100%	0.50	0.00	0.50
Copper	(µg / L as Cu)	Chronic health	≤ 2000	2	97.0%	100%	2.85	1.06	6.03
Cyanide (Recoverable)	(µg / L as CN)	Acute health	≤ 200	2	99.0%	100%	5.35	0.49	6.83
Iron	(µg / L as Fe)	Chronic health	≤ 2000	2	97.0%	100%	100.00	0.00	100.00
Iron	(µg / L as Fe)	Aesthetic	≤ 300	2	95.0%	100%	100.00	0.00	100.00
Lead	(µg / L as Pb)	Chronic health	≤ 10	2	97.0%	100%	2.00	0.00	2.00
Manganese	(µg / L as Mn)	Chronic health	≤ 400	2	97.0%	100%	3.85	1.77	9.15
Manganese	(µg / L as Mn)	Aesthetic	≤ 100	2	95.0%	100%	3.85	1.77	9.15
Mercury	(µg / L as Hg)	Chronic health	≤ 6	2	97.0%	100%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	≤ 70	2	97.0%	100%	3.00	0.00	3.00
Selenium	(µg / L as Se)	Chronic health	≤ 40	1	97.0%	100%	4.00	no data	4.00
Uranium	(µg / L as U)	Chronic health	≤ 30	2	97.0%	100%	0.50	0.00	0.50
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	≤ 10	2	97.0%	100%	5.60	0.14	6.02
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	2	97.0%	100%	117.50	3.54	128.11
Bromoform - CHBr ₃	(µg / L)	Chronic health	≤ 100	2	97.0%	100%	10.00	0.00	10.00
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	≤ 100	2	97.0%	100%	10.00	0.00	10.00
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	≤ 60	2	97.0%	100%	19.00	0.00	19.00
Combined trihalomethanes (5)	(µg / L)	Chronic health	≤ 1	2	97.0%	100%	0.72	0.01	0.74
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	2	not applicable	100%	12.50	0.71	14.62
Hardness (7)	(mg / L as CaCO ₃)	Operational	≥ 20 to ≤ 200	2	not applicable	100%	51.50	0.71	53.62
Magnesium (6)	(mg / L as Mg)	Aesthetic	≤ 70	2	not applicable	100%	4.80	0.14	5.22
Potassium (6)	(mg / L as K)	Aesthetic	≤ 50	2	not applicable	100%	2.65	0.07	2.86
Rand Water Risk Determinands (RWRD) (6)									
Odour	TON	RWRD	≤ 2	8	not applicable	100%	1.00	0.00	1.00
Taste	FTN	RWRD	≤ 2	8	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%	98.39%

- 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****