

Victor Khanye Municipality (Delmas System) Water Quality Report - 12 Month

23 May 2017 to 22 May 2018

Date generated: 01 June 2018

Determinand	Measurement units	Risk	Required compliance to SANS 241: 2015 standard (%)	SANS 241: 2015 standard limits (1)	No of results	Achieved Compliance to SANS 241: 2015 Spec(%)	Descriptive statistics		
							Mean	Standard Deviation	Mean + 3 standard deviations
Microbiological determinands									
<i>E. coli</i>	(mpn per 100 mL)	Acute health	99.0%	0	256	100.0%	0	0.00	0
Total Coliforms	(mpn per 100 mL)	Operational	95.0%	10	256	100.0%	0	0.26	0
Heterotrophic Plate Count	(cfu per 1 mL)	Operational	95.0%	≤1000	256	100.0%	4	22.01	61
<i>Cryptosporidium spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
<i>Giardia spp</i> (5)	(org / 10 Litre)	Acute health	99.0%	0	183	100.0%	0	0.00	0
Somatic Coliphages (5)	(count per 10 mL)	Operational	95.0%	0	809	100.0%	0	0.00	0
Physical and Aesthetic determinands									
Colour	(mg / L as Pt-Co)	Aesthetic	95.0%	≤15	28	100.0%	5.11	0.42	6.73
Conductivity	(mS / m)	Aesthetic	95.0%	≤170	256	100.0%	19.38	1.48	23.00
Total Dissolved Solids	(mg / L)	Aesthetic	95.0%	≤1200	28	100.0%	136.96	7.50	150.00
Turbidity	(NTU)	Operational	95.0%	≤1	255	100.0%	0.30	0.09	0.48
Turbidity	(NTU)	Aesthetic	95.0%	≤5	255	100.0%	0.30	0.09	0.48
pH	(pH units)	Operational	95.0%	≥ 5 to ≤ 9.7	256	100.0%	7.87	0.14	8.25
Chemical Properties									
Macro determinands									
Ammonia	(mg / L as N)	Aesthetic	95.0%	≤1.5	255	100.0%	0.27	0.16	0.50
Chloride	(mg / L as Cl)	Aesthetic	95.0%	≤300	28	100.0%	10.43	1.08	12.73
Free chlorine (2)	(mg / L as Cl ₂)	Chronic health	97.0%	≤5	256	100.0%	0.11	0.21	1.30
Monochloramine (3)	(mg / L as Cl ₂)	Chronic health	97.0%	≤4.1	256	100.0%	1.04	0.53	1.85
Fluoride	(mg / L as F)	Chronic health	97.0%	≤1.5	27	100.0%	0.19	0.01	0.19
Nitrate	(mg / L as N)	Acute health	99.0%	≤11	256	100.0%	0.46	0.06	0.66
Nitrite	(mg / L as N)	Acute health	99.0%	≤0.9	256	100.0%	0.10	0.09	0.33
Combined nitrate plus nitrite (7)	(mg / L as N)	Acute health	99.0%	≤1	255	100.0%	0.15	0.10	0.40
Residual disinfectant (4)	(mg / L)	Operational	95.0%	≥0.1 Sum of Free and Monochloramine	256	100.0%	1.15	0.53	2.00
Sodium	(mg / L as Na)	Aesthetic	95.0%	≤200	28	100.0%	8.65	0.88	10.00
Sulphate	(mg / L as SO ₄)	Aesthetic	95.0%	≤250	27	100.0%	13.52	1.01	15.74
Sulphate	(mg / L as SO ₄)	Acute health	99.0%	≤500	27	100.0%	13.52	1.01	15.74
Zinc	(mg / L as Zn)	Aesthetic	95.0%	≤5	28	100.0%	0.02	0.00	0.02
Micro determinands									
Aluminium	(µg / L as Al)	Operational	95.0%	≤300	28	100.0%	43.54	15.15	81.92
Antimony	(µg / L as Sb)	Chronic health	97.0%	≤20	28	100.0%	0.50	0.00	0.50
Arsenic	(µg / L as As)	Chronic health	97.0%	≤10	28	100.0%	0.89	0.72	2.47
Barium	(µg / L as Ba)	Chronic health	97.0%	≤700	27	100.0%	35.78	8.03	58.06
Boron	(µg / L as B)	Chronic health	97.0%	≤2400	28	100.0%	29.64	24.57	119.90
Cadmium	(µg / L as Cd)	Chronic health	97.0%	≤3	28	100.0%	2.50	0.00	2.50
Chromium (Total)	(µg / L as Cr)	Chronic health	97.0%	≤50	28	100.0%	15.00	0.00	15.00
Copper	(µg / L as Cu)	Chronic health	97.0%	≤2000	28	100.0%	10.04	0.19	10.73
Cyanide (Recoverable)	(µg / L as CN)	Acute health	99.0%	≤200	28	100.0%	5.00	0.02	5.07
Iron	(µg / L as Fe)	Chronic health	97.0%	≤2000	28	100.0%	18.99	9.71	42.68
Iron	(µg / L as Fe)	Aesthetic	95.0%	≤300	28	100.0%	18.99	9.71	42.68
Lead	(µg / L as Pb)	Chronic health	97.0%	≤10	28	100.0%	0.45	0.50	1.90
Manganese	(µg / L as Mn)	Chronic health	97.0%	≤400	28	100.0%	10.75	3.97	25.33
Manganese	(µg / L as Mn)	Aesthetic	95.0%	≤100	28	100.0%	10.75	3.97	25.33
Mercury	(µg / L as Hg)	Chronic health	97.0%	≤6	28	100.0%	0.80	0.00	0.80
Nickel	(µg / L as Ni)	Chronic health	97.0%	≤70	28	100.0%	10.00	0.00	10.00
Selenium	(µg / L as Se)	Chronic health	97.0%	≤40	28	100.0%	0.84	1.19	5.29
Uranium	(µg / L as U)	Chronic health	97.0%	≤30	28	100.0%	0.22	0.10	0.60
Organic determinands									
Total Organic Carbon	(mg / L)	Chronic health	97.0%	≤10	28	100.0%	3.73	0.30	4.17
Phenols as C ₆ H ₅ OH	(µg / L)	Aesthetic	95.0%	≤10	36	100.0%	5.00	0.00	5.00
Chloroform - CHCl ₃	(µg / L)	Chronic health	97.0%	≤300	28	100.0%	43.96	6.14	55.00
Bromoform - CHBr ₃	(µg / L)	Chronic health	97.0%	≤100	28	100.0%	0.50	0.00	0.50
Dibromochloromethane - CHBr ₂ Cl	(µg / L)	Chronic health	97.0%	≤100	28	100.0%	1.39	1.00	3.30
Bromodichloromethane - CHBrCl ₂	(µg / L)	Chronic health	97.0%	≤60	28	100.0%	13.86	1.63	16.73
Combined trihalomethanes (8)	(µg / L)	Chronic health	97.0%	≤1	28	100.0%	0.40	0.04	0.46
Total Microcystin (5)	(µg / L)	Chronic health	97.0%	≤1	186	100.0%	0.32	0.02	0.36
For monitoring/reporting purposes only (6)									
Calcium	(mg / L as Ca)	Aesthetic	not applicable	≤150	28	100.0%	17.89	3.88	28.57
Hardness	(mg / L as CaCO ₃)	Operational	not applicable	≥ 20 to ≤ 200	28	100.0%	66.75	13.39	108.66
Magnesium	(mg / L as Mg)	Aesthetic	not applicable	≤70	28	100.0%	6.41	1.27	10.73
Potassium	(mg / L as K)	Aesthetic	not applicable	≤50	28	100.0%	3.80	0.36	4.47
Rand Water Risk Determinands (RWRD)									
Odour	TON	RWRD	95.0%	≤2	97	100.0%	1.00	0.00	1.00
Taste	FTN	RWRD	95.0%	≤2	97	100.0%	1.00	0.00	1.00

Risk	Required compliance to SANS 241: 2015 standard	Overall Compliance-SANS 241
Acute health microbiological	99.00%	100.00%
Acute health chemical	99.00%	100.00%
Chronic health	97.00%	100.00%
Aesthetic	95.00%	100.00%
Operational	95.00%	100.00%

Notes:

- (1) Specification date of effect : 1 July 2016
- (2) Free chlorine : Results from chloraminated system
- (3) Monochloramine : Results are from the chloraminated systems
- (4) Residual disinfectant : Results from chloraminated system
- (5) Measured at water treatment works exit points
- (6) Customer request: Results not included in the risk indices compliance calculations
- (7) (NO₂/0.9 + NO₃/11)
- (8) (CHCl₃/300 + CHBr₃/100 + CHBr₂Cl/100 + CHBrCl₂/60)