



REPORTS FOR VICTOR KHANYE MUNICIPALITY (DELMAS SUPPLY)

21 NOVEMBER 2015 TO 22 DECEMBER 2015

DATE GENERATED : 05 JANUARY 2016

Victor Khanye Municipality (Delmas Supply) Water Quality Report

21 November 2015 to 22 December 2015

Date generated : 05 January 2016

Parameter	Units of measure	Specifications (based on SANS241: 2005)		No of results	Achieved compliance levels	
		Required compliance			Class I	Class II
		95% min to Class I	99% min to Class II			
SPECIFICATIONS						
Chemical and Physical properties						
Colour	(mg / l as Pt)	< 20	≤ 50	17	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	19	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	19	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	19	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	19	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	17	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	17	100.0%	100.0%
Organic Determinants						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	17	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	8	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	17	100.0%	100.0%
Micro Elements						
Antimony	(ug / l as Sb)	< 10	≤ 50	17	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	17	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	17	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	17	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	17	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	17	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	17	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	17	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	17	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	17	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	17	100.0%	100.0%
Macro Elements & Miscellaneous Determinants						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	17	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	19	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	17	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	17	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	17	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	17	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	17	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	17	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	17	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	19	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	17	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	17	100.0%	100.0%
Sulphate	(mg / l as SO ₄)	< 400	≤ 600	17	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	17	100.0%	100.0%
Microbiological						
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	minimum of 99% of the original and repeat/consecutive results shall be non-detected	19	100.0%	100.0%
Other Determinants as required by supply contract (3),(4)						
Free chlorine and monochloramine	(mg / l)	Chloraminated system: ≥ 0.1 min 95% compliance; Chlorinated system: ≥ 0.2 min 95% compliance		19	94.7%	

Notes :

- (1) Specification date of effect : July 2006
- (2) Guideline derived from SANS 241: 2005 operations alert and industry practices
- (3) Compliance for Free and monochloramine is against 0.2 mg/l for areas in the chlorinated system
- (4) Compliance for Free and monochloramine is against 0.1 mg/l for areas in the chloraminated system after 30 June 2014
- (5) Compliance for Standard Plate Count is against 100 cfu per 1ml before 30 June 2014 and 500 cfu per 1ml after 30 June 2014 mg/l for areas in the chloraminated system

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Parameter	Units of measure	Specification	No of samples	Mean - 3 SD	Mean - 1 SD	Mean	Mean + 1 SD	Mean + 3 SD	Standard Deviation
Chemical and Physical properties									
Colour	(mg / l as Pt)	< 20	17	5.00	5.00	5.00	5.00	5.00	0.00
Conductivity	(mS / m)	< 150	19	19.00	20.22	21.26	22.31	23.00	1.05
pH	(pH units)	≥ 5 to ≤ 9.5	19	7.69	7.90	8.03	8.16	8.29	0.13
Turbidity	(NTU)	< 1	19	0.13	0.20	0.29	0.38	0.40	0.09
Total Dissolved Solids	(mg / l)	< 1000	19	135.00	140.79	146.58	152.37	160.00	5.79
Hardness	(mg / l as CaCO ₃)	> 20 to < 200	17	65.00	66.56	71.65	76.73	82.00	5.09
Taste	(FTN)	< 5	17	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	17	1.00	1.00	1.00	1.00	1.00	0.00
Organic Determinants									
Total Trihalomethanes	(ug / l)	< 200	17	37.00	43.99	48.59	53.19	55.00	4.60
Phenols as C ₆ H ₅ OH	(ug / l)	< 10	8	2.50	2.50	2.50	2.50	2.50	0.00
Dissolved Organic Carbon	(mg / l)	< 10	17	3.60	3.61	3.94	4.27	4.90	0.33
Micro Elements									
Antimony	(ug / l as Sb)	< 10	17	0.25	0.25	0.25	0.25	0.25	0.00
Arsenic	(ug / l as As)	< 10	17	0.05	0.08	0.45	0.82	1.20	0.37
Cadmium	(ug / l as Cd)	< 5	17	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	17	7.50	7.50	7.50	7.50	7.50	0.00
Cobalt	(ug / l as Co)	< 500	17	5.00	5.00	5.00	5.00	5.00	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	17	2.50	2.50	1.00	2.50	2.50	0.00
Lead	(ug / l as Pb)	< 20	17	0.10	0.10	0.10	0.10	0.10	0.00
Mercury	(ug / l as Hg)	< 1	17	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	17	5.00	5.00	5.00	5.00	5.00	0.00
Selenium	(ug / l as Se)	< 20	17	1.20	1.35	3.35	5.34	7.70	2.00
Vanadium	(ug / l as V)	< 200	17	5.00	5.00	5.00	5.00	5.00	0.00
Macro Elements & Miscellaneous Determinants									
Aluminium	(mg / l as Al)	< 0.3	17	0.013	0.013	0.017	0.026	0.036	0.009
Ammonia	(mg / l as N)	< 1	19	0.091	0.176	0.254	0.333	0.400	0.078
Calcium	(mg / l as Ca)	< 150	17	16.000	16.589	18.529	20.470	22.000	1.940
Chloride	(mg / l as Cl)	< 200	17	9.700	9.700	10.606	11.572	13.000	0.967
Copper	(mg / l as Cu)	< 1	17	0.005	0.005	0.005	0.005	0.005	0.000
Fluoride	(mg / l as F)	< 1	17	0.075	0.097	0.147	0.198	0.200	0.050
Iron	(mg / l as Fe)	< 0.2	17	0.003	0.004	0.013	0.022	0.029	0.009
Magnesium	(mg / l as Mg)	< 70	17	6.700	7.008	7.329	7.651	7.700	0.322
Manganese	(mg / l as Mn)	< 0.1	17	0.005	0.005	0.005	0.007	0.009	0.001
Nitrate & Nitrite	(mg / l as N)	< 10	19	0.050	0.053	0.115	0.178	0.230	0.063
Potassium	(mg / l as K)	< 50	17	2.500	2.650	2.806	2.962	3.000	0.156
Sodium	(mg / l as Na)	< 200	17	9.000	9.682	10.359	11.000	11.000	0.676
Sulphate	(mg / l as SO ₄)	< 400	17	12.000	12.000	13.294	14.653	17.370	1.359
Zinc	(mg / l as Zn)	< 5	17	0.008	0.008	0.015	0.047	0.112	0.032
Microbiological									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	19	0.0	0.0	0.0	0.0	0.0	0.0
Other Determinants as required by supply contract (3),(4)									
Free chlorine and monochloramine	(mg / l)	Chloraminated system: ≥ 0.1 min 95% compliance; Chlorinated system: ≥ 0.2 min 95% compliance	19	0.03	0.99	1.52	2.06	2.14	0.53
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									