



# REPORTS FOR RUSTENBURG MUNICIPALITY

21 NOVEMBER 2015 TO 22 DECEMBER 2015

DATE GENERATED : 05 JANUARY 2016

## Rustenburg Municipality 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			
<b>SPECIFICATIONS</b>						
<b>Chemical and Physical properties</b>						
Colour	(mg / l as Pt)	< 20	≤ 50	22	95.5%	95.5%
Conductivity	(mS / m)	< 150	≤ 370	35	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	35	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	35	97.1%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	35	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	22	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	22	100.0%	100.0%
<b>Organic Determinants</b>						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	22	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	11	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	22	100.0%	100.0%
<b>Micro Elements</b>						
Antimony	(ug / l as Sb)	< 10	≤ 50	24	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	24	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	24	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	24	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	24	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	20	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	24	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	24	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	24	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	24	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	24	100.0%	100.0%
<b>Macro Elements &amp; Miscellaneous Determinants</b>						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	24	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	29	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	24	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	24	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	24	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	24	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	24	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	24	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	24	83.3%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	29	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	24	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	24	100.0%	100.0%
Sulphate	(mg / l as SO <sub>4</sub> )	< 400	≤ 600	24	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	24	100.0%	100.0%
<b>Microbiological</b>						
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	33	97.0%	97.0%
<b>Other Determinants as required by supply contract (3),(4)</b>						
Free chlorine and monochloramine	(mg / l)	Chloraminated system: ≥ 0.1 min 95% compliance; Chlorinated system: ≥ 0.2 min 95% compliance		33	100.0%	

**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
<b>Chemical and Physical properties</b>									
Colour	(mg / l as Pt)	< 20	22	5.00	5.00	7.77	19.27	42.25	11.49
Conductivity	(mS / m)	< 150	35	20.00	20.00	35.80	59.22	78.00	23.42
pH	(pH units)	≥ 5 to ≤ 9.5	35	7.62	7.87	8.08	8.30	8.74	0.22
Turbidity	(NTU)	< 1	35	0.13	0.13	0.35	0.58	1.05	0.24
Total Dissolved Solids	(mg / l)	< 1000	35	140.00	140.00	231.86	369.00	480.00	137.15
Hardness	(mg / l as CaCO <sub>3</sub> )	> 20 to < 200	24	64.00	64.00	115.96	173.77	245.00	57.81
Taste	(FTN)	< 5	22	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	22	1.00	1.00	1.00	1.00	1.00	0.00
<b>Organic Determinants</b>									
Total Trihalomethanes	(ug / l)	< 200	22	19.00	26.04	34.27	42.51	50.00	8.24
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(ug / l)	< 10	11	2.50	2.50	2.50	2.50	2.50	0.00
Dissolved Organic Carbon	(mg / l)	< 10	22	3.50	3.52	4.33	5.13	6.60	0.80
<b>Micro Elements</b>									
Antimony	(ug / l as Sb)	< 10	24	0.25	0.25	0.25	0.25	0.25	0.00
Arsenic	(ug / l as As)	< 10	24	0.05	0.30	0.67	1.03	1.30	0.36
Cadmium	(ug / l as Cd)	< 5	24	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	24	7.50	7.50	7.50	7.50	7.50	0.00
Cobalt	(ug / l as Co)	< 500	24	5.00	5.00	5.00	5.00	5.00	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	20	2.50	2.50	1.00	9.24	19.39	5.08
Lead	(ug / l as Pb)	< 20	24	0.10	0.10	0.10	0.10	0.10	0.00
Mercury	(ug / l as Hg)	< 1	24	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	24	5.00	5.00	5.00	5.00	5.00	0.00
Selenium	(ug / l as Se)	< 20	24	0.78	1.97	4.33	6.69	7.60	2.36
Vanadium	(ug / l as V)	< 200	24	5.00	5.00	5.00	5.00	5.00	0.00
<b>Macro Elements &amp; Miscellaneous Determinants</b>									
Aluminium	(mg / l as Al)	< 0.3	24	0.013	0.013	0.025	0.044	0.065	0.019
Ammonia	(mg / l as N)	< 1	29	0.050	0.098	0.182	0.266	0.347	0.084
Calcium	(mg / l as Ca)	< 150	24	16.000	16.000	24.083	33.697	52.925	9.614
Chloride	(mg / l as Cl)	< 200	24	5.500	5.500	30.688	62.484	96.000	31.797
Copper	(mg / l as Cu)	< 1	24	0.005	0.005	0.014	0.027	0.045	0.013
Fluoride	(mg / l as F)	< 1	24	0.075	0.084	0.219	0.354	0.530	0.135
Iron	(mg / l as Fe)	< 0.2	24	0.003	0.003	0.015	0.028	0.054	0.013
Magnesium	(mg / l as Mg)	< 70	24	6.500	6.500	16.013	26.682	30.000	10.670
Manganese	(mg / l as Mn)	< 0.1	24	0.005	0.005	0.048	0.126	0.283	0.078
Nitrate & Nitrite	(mg / l as N)	< 10	29	0.050	0.064	0.154	0.244	0.350	0.090
Potassium	(mg / l as K)	< 50	24	2.400	2.400	5.883	9.920	17.000	4.036
Sodium	(mg / l as Na)	< 200	24	8.700	8.700	32.838	62.079	74.000	29.242
Sulphate	(mg / l as SO <sub>4</sub> )	< 400	24	7.600	7.600	36.254	69.912	98.000	33.658
Zinc	(mg / l as Zn)	< 5	24	0.008	0.008	0.010	0.016	0.028	0.006
<b>Microbiological</b>									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	33	0.0	0.0	0.2	1.2	3.3	1.0
<b>Other Determinants as required by supply contract (3),(4)</b>									
Free chlorine and monochloramine	(mg / l)	Chloraminated system: ≥ 0.1 min 95% compliance; Chlorinated system: ≥ 0.2 min 95% compliance	33	0.12	0.78	1.14	1.50	1.71	0.36
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									