



# REPORTS FOR LESEDI MUNICIPALITY

21 NOVEMBER 2015 TO 22 DECEMBER 2015

DATE GENERATED : 05 JANUARY 2016

## Lesedi 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	77	100.0%	100.0%
Conductivity	(mS / m)	< 150	≤ 370	83	100.0%	100.0%
pH	(pH units)	≥ 5 to ≤ 9.5	≥ 4 to ≤ 10	83	100.0%	100.0%
Turbidity	(NTU)	< 1	≤ 5	83	100.0%	100.0%
Total Dissolved Solids	(mg / l)	< 1000	≤ 2400	83	100.0%	100.0%
Taste	(FTN)	< 5	≤ 10	77	100.0%	100.0%
Odour	(TON)	< 5	≤ 10	77	100.0%	100.0%
<b>Organic Determinants</b>						
Total Trihalomethanes	(ug / l)	< 200	≤ 300	76	100.0%	100.0%
Phenols as C6H5OH	(ug / l)	< 10	≤ 70	38	100.0%	100.0%
Dissolved Organic Carbon	(mg / l)	< 10	≤ 20	77	100.0%	100.0%
<b>Micro Elements</b>						
Antimony	(ug / l as Sb)	< 10	≤ 50	77	100.0%	100.0%
Arsenic	(ug / l as As)	< 10	≤ 50	77	100.0%	100.0%
Cadmium	(ug / l as Cd)	< 5	≤ 10	77	100.0%	100.0%
Chromium (Total)	(ug / l as Cr)	< 100	≤ 500	77	100.0%	100.0%
Cobalt	(ug / l as Co)	< 500	≤ 1000	77	100.0%	100.0%
Cyanide (Recoverable)	(ug / l as CN)	< 50	≤ 70	76	100.0%	100.0%
Lead	(ug / l as Pb)	< 20	≤ 50	77	100.0%	100.0%
Mercury	(ug / l as Hg)	< 1	≤ 5	77	100.0%	100.0%
Nickel	(ug / l as Ni)	< 150	≤ 350	77	100.0%	100.0%
Selenium	(ug / l as Se)	< 20	≤ 50	77	100.0%	100.0%
Vanadium	(ug / l as V)	< 200	≤ 500	77	100.0%	100.0%
<b>Macro Elements &amp; Miscellaneous Determinants</b>						
Aluminium	(mg / l as Al)	< 0.3	≤ 0.5	77	100.0%	100.0%
Ammonia	(mg / l as N)	< 1	≤ 2	83	100.0%	100.0%
Calcium	(mg / l as Ca)	< 150	≤ 300	77	100.0%	100.0%
Chloride	(mg / l as Cl)	< 200	≤ 600	77	100.0%	100.0%
Copper	(mg / l as Cu)	< 1	≤ 2	77	100.0%	100.0%
Fluoride	(mg / l as F)	< 1	≤ 1.5	76	100.0%	100.0%
Iron	(mg / l as Fe)	< 0.2	≤ 2	77	100.0%	100.0%
Magnesium	(mg / l as Mg)	< 70	≤ 100	77	100.0%	100.0%
Manganese	(mg / l as Mn)	< 0.1	≤ 1	77	100.0%	100.0%
Nitrate & Nitrite	(mg / l as N)	< 10	≤ 20	83	100.0%	100.0%
Potassium	(mg / l as K)	< 50	≤ 100	77	100.0%	100.0%
Sodium	(mg / l as Na)	< 200	≤ 400	77	100.0%	100.0%
Sulphate	(mg / l as SO4)	< 400	≤ 600	77	100.0%	100.0%
Zinc	(mg / l as Zn)	< 5	≤ 10	77	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	83	100.0%	100.0%
<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		83	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	77	5.00	5.00	5.04	5.23	5.62	0.19
Conductivity	(mS / m)	< 150	83	19.00	20.35	21.39	22.42	24.49	1.03
pH	(pH units)	≥ 5 to ≤ 9.5	83	7.77	7.93	8.01	8.10	8.21	0.08
Turbidity	(NTU)	< 1	83	0.13	0.19	0.28	0.36	0.44	0.08
Total Dissolved Solids	(mg / l)	< 1000	83	135.00	141.05	147.41	153.77	166.49	6.36
Hardness	(mg / l as CaCO <sub>3</sub> )	> 20 to < 200	77	59.00	65.89	70.99	76.08	80.00	5.10
Taste	(FTN)	< 5	77	1.00	1.00	1.00	1.00	1.00	0.00
Odour	(TON)	< 5	77	1.00	1.00	1.00	1.00	1.00	0.00
<b>Organic Determinants</b>									
Total Trihalomethanes	(ug / l)	< 200	76	19.97	38.63	47.96	57.29	75.96	9.33
Phenols as C <sub>6</sub> H <sub>5</sub> OH	(ug / l)	< 10	38	2.50	2.50	2.50	2.50	2.50	0.00
Dissolved Organic Carbon	(mg / l)	< 10	77	3.40	3.61	3.89	4.16	4.70	0.28
<b>Micro Elements</b>									
Antimony	(ug / l as Sb)	< 10	77	0.25	0.25	0.29	0.46	0.80	0.17
Arsenic	(ug / l as As)	< 10	77	0.05	0.17	0.50	0.83	1.49	0.33
Cadmium	(ug / l as Cd)	< 5	77	1.25	1.25	1.25	1.25	1.25	0.00
Chromium (Total)	(ug / l as Cr)	< 100	77	7.50	7.50	7.50	7.50	7.50	0.00
Cobalt	(ug / l as Co)	< 500	77	5.00	5.00	5.00	5.00	5.00	0.00
Cyanide (Recoverable)	(ug / l as CN)	< 50	76	2.50	2.50	1.00	3.00	3.85	0.43
Lead	(ug / l as Pb)	< 20	77	0.10	0.10	0.17	0.69	1.75	0.53
Mercury	(ug / l as Hg)	< 1	77	0.40	0.40	0.40	0.40	0.40	0.00
Nickel	(ug / l as Ni)	< 150	77	5.00	5.00	5.00	5.00	5.00	0.00
Selenium	(ug / l as Se)	< 20	77	0.64	1.43	3.52	5.61	7.90	2.09
Vanadium	(ug / l as V)	< 200	77	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	77	0.013	0.013	0.017	0.028	0.051	0.012
Ammonia	(mg / l as N)	< 1	83	0.050	0.159	0.243	0.327	0.440	0.084
Calcium	(mg / l as Ca)	< 150	77	14.000	16.467	18.312	20.156	22.000	1.844
Chloride	(mg / l as Cl)	< 200	77	8.900	9.562	10.639	11.716	13.000	1.077
Copper	(mg / l as Cu)	< 1	77	0.005	0.005	0.006	0.008	0.014	0.003
Fluoride	(mg / l as F)	< 1	76	0.075	0.132	0.172	0.213	0.230	0.041
Iron	(mg / l as Fe)	< 0.2	77	0.003	0.003	0.009	0.018	0.034	0.008
Magnesium	(mg / l as Mg)	< 70	77	6.600	6.992	7.277	7.561	7.900	0.284
Manganese	(mg / l as Mn)	< 0.1	77	0.005	0.005	0.005	0.006	0.007	0.001
Nitrate & Nitrite	(mg / l as N)	< 10	83	0.050	0.086	0.147	0.207	0.329	0.061
Potassium	(mg / l as K)	< 50	77	2.300	2.540	2.703	2.866	3.000	0.163
Sodium	(mg / l as Na)	< 200	77	8.700	9.444	10.186	10.927	12.000	0.742
Sulphate	(mg / l as SO <sub>4</sub> )	< 400	77	12.000	12.000	13.558	15.397	19.000	1.839
Zinc	(mg / l as Zn)	< 5	77	0.008	0.008	0.010	0.017	0.033	0.008
<b>Microbiological</b>									
E. Coli	(cfu per 100 ml)	minimum of 95% of the original results shall be non-detected	83	0.0	0.0	0.0	0.0	0.0	0.0
<b>Other Determinants as required by supply contract (3),(4)</b>									
Free chlorine and monochloramine	(mg / l)	Chloraminated system: ≥ 0.1 min 95% compliance	83	1.20	1.44	1.63	1.81	1.94	0.18
Notes :									
(1) Specification date of effect : July 2006									
(2) Guideline derived from SANS 241: 2005 operations alert and industry practices									