

NKANGALA DISTRICT
EMAKHAZENI MUNICIPALITY

P.O. Box 17
BELFAST, 1100

CHEMICAL ANALYSIS : WATER SAMPLES	Our Ref: EMA / 707 - 709 / D /05/15
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Date received: 24 May 2019

MACHADO DORP

Att : M. Joubert

Date reported: 3 June 2019

Quantity Analyzed: 3

Lab No:

D 707

Analysis Results mg/l	LPM METHOD	NMH 2/5/19 Water Works Inlet	<i>SANS Standards -241 (2011) Domestic Water</i>
			<i>Standard Limits</i>
Total Dissolved Solids	LPM 2	88	≤ 1 200
Suspended Solids	LPM 1	1,6	
Nitrate & Nitrite as N	LPM 76	0,18	
Nitrate NO ₃ as N	LPM 76	0,18	≤ 11
Nitrite NO ₂ as N	LPM 76	<0.1	≤ 0.9
Chlorides as Cl	LPM 76	7,09	≤ 300
Total Alkalinity as CaCO ₃	LPM 11/81	69	
Fluoride as F	LPM 76	<0.20	≤ 1.5
Sulphate as SO ₄	LPM 76	7,77	Acute Health ≤ 500 - Aesthetic ≤ 250
Total Hardness as CaCO ₃	LPM 85	58	
Calcium Hardness as CaCO ₃	LPM 85	25	
Magnesium Hardness as CaCO ₃	LPM 85	33	
Calcium as Ca	LPM 15	10,0	
Magnesium as Mg	LPM 15	8,01	
Sodium as Na	LPM 15	13,9	≤ 200
Potassium as K	LPM 15	1,53	
Iron as Fe	LPM 15/67	0,09	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3
Manganese as Mn	LPM 15/67	<0.01	Chronic Health ≤ 0.5 - Aesthetic ≤ 0.1
Conductivity at 25° C (mS/m)	LPM 51/82	15,1	≤ 170
pH-Value at 25 ° C (pH Units)	LPM 51/82	7,66	≥ 5.0 to ≤ 9.7
pHs by 21° Celsius	LPM 85	8,46	
Langelier Saturation Index	LPM 85	-0.80	
Turbidity as N.T.U.	LPM 23/82	3,96	Operational ≤ 1.0 - Aesthetic ≤ 5.0
Free Residual Chlorine Cl ₂ *	LPM 84	-	
Aluminium as Al	LPM 15/67	0,02	≤ 0.30

All heavy metal analyses have been performed on filtered samples.

Tests marked with an asterisk * are not SANAS accredited

These results are related only to the items tested

These results must be read in conjunction with the Uncertainty of Measurement 'list as provided by Regen Waters Laboratory

QUALITY CONTROL CHECKS

Cation Balance	1,81
Anion Balance	1,75
% Difference	1,5
Measured TDS	88
Calculated TDS	91
Limits > 1.0 - <1.2	1,0
Calcul TDS / E.C. (0.55 - 0.70)	0,6

P.L.G. UYS / A.KOHRIS
Technical Signatory

**NKANGALA DISTRICT
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CHEMICAL ANALYSIS : WATER SAMPLES Our Ref: EMA / 707 - 709 / D /05/15

Date received: 24 May 2019

MACHADO DORP

Att : M. Joubert

Date reported: 3 June 2019

Quantity Analyzed: 3

Lab No:

D 708

Analysis Results mg/l	LPM METHOD	NBF 4/5/19 Water Works Outlet	<i>SANS Standards -241 (2011) Domestic Water</i>
			<i>Standard Limits</i>
Total Dissolved Solids	LPM 2	92	<i>≤ 1 200</i>
Suspended Solids	LPM 1	1,2	
Nitrate & Nitrite as N	LPM 76	0,14	
Nitrate NO ₃ as N	LPM 76	0,14	<i>≤ 11</i>
Nitrite NO ₂ as N	LPM 76	<0.1	<i>≤ 0.9</i>
Chlorides as Cl	LPM 76	11,2	<i>≤ 300</i>
Total Alkalinity as CaCO ₃	LPM 11/81	68	
Fluoride as F	LPM 76	<0.20	<i>≤ 1.5</i>
Sulphate as SO ₄	LPM 76	7,24	<i>Acute Health ≤ 500 - Aesthetic ≤ 250</i>
Total Hardness as CaCO ₃	LPM 85	70	
Calcium Hardness as CaCO ₃	LPM 85	31	
Magnesium Hardness as CaCO ₃	LPM 85	39	
Calcium as Ca	LPM 15	12,5	
Magnesium as Mg	LPM 15	9,39	
Sodium as Na	LPM 15	7,53	<i>≤ 200</i>
Potassium as K	LPM 15	1,19	
Iron as Fe	LPM 15/67	0,02	<i>Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3</i>
Manganese as Mn	LPM 15/67	<0.01	<i>Chronic Health ≤ 0.5 - Aesthetic ≤ 0.1</i>
Conductivity at 25° C (mS/m)	LPM 51/82	16,4	<i>≤ 170</i>
pH-Value at 25 ° C (pH Units)	LPM 51/82	7,50	<i>≥ 5.0 to ≤ 9.7</i>
pHs by 21° Celsius	LPM 85	8,37	
Langelier Saturation Index	LPM 85	-0.87	
Turbidity as N.T.U.	LPM 23/82	2,35	<i>Operational ≤ 1.0 - Aesthetic ≤ 5.0</i>
Free Residual Chlorine Cl ₂ *	LPM 84	0,39	
Aluminium as Al	LPM 15/67	0,05	<i>≤ 0.30</i>

All heavy metal analyses have been performed on filtered samples.

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Measurement 'list as provided by Regen Waters Laboratory

QUALITY CONTROL CHECKS

Cation Balance	1,76
Anion Balance	1,84
% Difference	-2,1
Measured TDS	92
Calculated TDS	91
Limits > 1.0 - <1.2	1,0
Calcul TDS / E.C. (0.55 - 0.70)	0,6

P.L.G. UYS / A.KOHR
Technical Signatory