

**Nkangala District Municipality**  
**EMAKHAZENI**

P.O. Box 437  
 Watletr Sisulu Street  
 1050

**CERTIFICATE OF CHEMICAL ANALYSIS**  
 Attention: VUSI MAHLANGU / SOLLY LINKS

Date received : 6 November 2017  
 Date reported : 15 November 2017  
 Quantity Analyzed : 15  
 Our Ref : NDM / 49 - 63 / A /11/17  
 Lab No:

A 49

Analysis Results mg/l	LPM METHOD	SANS Standards -241 - 1 : 2015 Ed 2 Domestic Water	Siyathuthuka Reservoir BF17/11/17
		Standard Limits	
Total Dissolved Solids	LPM 2	≤ 1 200	178
Suspended Solids	LPM 1		<0.4
Nitrate & Nitrite as N	LPM 32/76		0,30
Nitrate NO <sub>3</sub> as N	LPM 32/76	≤ 11	0,30
Nitrite NO <sub>2</sub> as N	LPM 32/76	≤ 0.9	<0.1
Chlorides as Cl	LPM 30/76	≤ 300	53,3
Total Alkalinity as CaCO <sub>3</sub>	LPM 11/81		53
Fluoride as F	LPM 27/76	≤ 1.5	0,21
Sulphate as SO <sub>4</sub>	LPM 28/76	Acute Health ≤ 500 - Aesthetic ≤ 250	26,5
Total Hardness as CaCO <sub>3</sub>	LPM 85		87
Calcium Hardness as CaCO <sub>3</sub>	LPM 85		40
Magnesium Hardness as CaCO <sub>3</sub>	LPM 85		47
Calcium as Ca	LPM 15		16,0
Magnesium as Mg	LPM 15		11,5
Sodium as Na	LPM 15	≤ 200	34,3
Potassium as K	LPM 15		5,98
Iron as Fe	LPM 15	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3	0,04
Manganese as Mn	LPM 15	Chronic Health ≤ 0.4 - Aesthetic ≤ 0.1	0,02
Conductivity at 25° C in mS/m	LPM 51/82	≤ 170	33,6
pH-Value at 25 ° C	LPM 51/82	≥ 5.0 to ≤ 9.7	8,03
pHs by 21° Celsius	LPM 85		8,42
Langelier Saturation Index	LPM 85		-0.39
Turbidity as N.T.U.	LPM 23/82	Operational ≤ 1.0 - Aesthetic ≤ 5.0	92,4
Free Residual Chlorine Cl <sub>2</sub> *	LPM 84		<0.1
Aluminium as Al	LPM 15	≤ 0.30	0,04

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

**QUALITY CONTROL CHECKS**

Cation Balance	3,40
Anion Balance	3,15
% Difference	3,8
Measured TDS	178
Calculated TDS	182
Limits > 1.0 - <1.2	1,0
Calcul TDS / E.C. (0.55 - 0.70)	0,5

All heavy metal analyses have been performed on filtered samples.  
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**P.L.G. UYS (M.D.)**  
**Technical Signatory**

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 Lab No:

A 50

Analysis Results mg/l	LPM METHOD	SANS Standards -241 - 1 : 2015 Ed 2 Domestic Water	Belfast Old Reservoir BF19/11/17
		Standard Limits	
Total Dissolved Solids	LPM 2	≤ 1 200	190
Suspended Solids	LPM 1		<0.4
Nitrate & Nitrite as N	LPM 32/76		0,11
Nitrate NO <sub>3</sub> as N	LPM 32/76	≤ 11	0,11
Nitrite NO <sub>2</sub> as N	LPM 32/76	≤ 0.9	<0.1
Chlorides as Cl	LPM 30/76	≤ 300	54,1
Total Alkalinity as CaCO <sub>3</sub>	LPM 11/81		54
Fluoride as F	LPM 27/76	≤ 1.5	<0.20
Sulphate as SO <sub>4</sub>	LPM 28/76	Acute Health ≤ 500 - Aesthetic ≤ 250	28,4
Total Hardness as CaCO <sub>3</sub>	LPM 85		85
Calcium Hardness as CaCO <sub>3</sub>	LPM 85		38
Magnesium Hardness as CaCO <sub>3</sub>	LPM 85		47
Calcium as Ca	LPM 15		15,4
Magnesium as Mg	LPM 15		11,4
Sodium as Na	LPM 15	≤ 200	33,8
Potassium as K	LPM 15		5,96
Iron as Fe	LPM 15	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3	<0.01
Manganese as Mn	LPM 15	Chronic Health ≤ 0.4 - Aesthetic ≤ 0.1	0,02
Conductivity at 25° C in mS/m	LPM 51/82	≤ 170	31,7
pH-Value at 25 ° C	LPM 51/82	≥ 5.0 to ≤ 9.7	7,94
pHs by 21° Celsius	LPM 85		8,43
Langelier Saturation Index	LPM 85		-0.49
Turbidity as N.T.U.	LPM 23/82	Operational ≤ 1.0 - Aesthetic ≤ 5.0	0,50
Free Residual Chlorine Cl <sub>2</sub> *	LPM 84		<0.1
Aluminium as Al	LPM 15	≤ 0.30	0,04

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**QUALITY CONTROL CHECKS**

Cation Balance	3,33
Anion Balance	3,21
% Difference	2,0
Measured TDS	190
Calculated TDS	183
Limits > 1.0 - <1.2	1,0
Calcul TDS / E.C. (0.55 - 0.70)	0,6

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 Lab No:

A 51

Analysis Results mg/l	LPM METHOD	SANS Standards -241 - 1 : 2015 Ed 2 Domestic Water	Belfast New Reservoir BF 21/11/17
		Standard Limits	
Total Dissolved Solids	LPM 2	≤ 1 200	186
Suspended Solids	LPM 1		<0.4
Nitrate & Nitrite as N	LPM 32/76		0,10
Nitrate NO <sub>3</sub> as N	LPM 32/76	≤ 11	0,10
Nitrite NO <sub>2</sub> as N	LPM 32/76	≤ 0.9	<0.1
Chlorides as Cl	LPM 30/76	≤ 300	53,9
Total Alkalinity as CaCO <sub>3</sub>	LPM 11/81		55
Fluoride as F	LPM 27/76	≤ 1.5	<0.20
Sulphate as SO <sub>4</sub>	LPM 28/76	Acute Health ≤ 500 - Aesthetic ≤ 250	28,1
Total Hardness as CaCO <sub>3</sub>	LPM 85		84
Calcium Hardness as CaCO <sub>3</sub>	LPM 85		38
Magnesium Hardness as CaCO <sub>3</sub>	LPM 85		46
Calcium as Ca	LPM 15		15,2
Magnesium as Mg	LPM 15		11,2
Sodium as Na	LPM 15	≤ 200	33,5
Potassium as K	LPM 15		5,86
Iron as Fe	LPM 15	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3	<0.01
Manganese as Mn	LPM 15	Chronic Health ≤ 0.4 - Aesthetic ≤ 0.1	0,02
Conductivity at 25° C in mS/m	LPM 51/82	≤ 170	33,1
pH-Value at 25 ° C	LPM 51/82	≥ 5.0 to ≤ 9.7	8,02
pHs by 21° Celsius	LPM 85		8,43
Langelier Saturation Index	LPM 85		-0.41
Turbidity as N.T.U.	LPM 23/82	Operational ≤ 1.0 - Aesthetic ≤ 5.0	0,48
Free Residual Chlorine Cl <sub>2</sub> *	LPM 84		<0.1
Aluminium as Al	LPM 15	≤ 0.30	0,04

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**QUALITY CONTROL CHECKS:**

Cation Balance	3,29
Anion Balance	3,21
% Difference	1,2
Measured TDS	186
Calculated TDS	182
Limits > 1.0 - <1.2	1,0
Calcul TDS / E.C. (0.55 - 0.70)	0,5

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A 52

Analysis Results mg/l	LPM METHOD	SANS Standards -241 - 1 : 2015 Ed 2 Domestic Water	Belfast Waterworks Final Treated BF4/11/17
		Standard Limits	
Total Dissolved Solids	LPM 2	≤ 1 200	188
Suspended Solids	LPM 1		<0.4
Nitrate & Nitrite as N	LPM 32/76		<0.1
Nitrate NO <sub>3</sub> as N	LPM 32/76	≤ 11	<0.1
Nitrite NO <sub>2</sub> as N	LPM 32/76	≤ 0.9	<0.1
Chlorides as Cl	LPM 30/76	≤ 300	57,9
Total Alkalinity as CaCO <sub>3</sub>	LPM 11/81		47
Fluoride as F	LPM 27/76	≤ 1.5	<0.20
Sulphate as SO <sub>4</sub>	LPM 28/76	Acute Health ≤ 500 - Aesthetic ≤ 250	26,6
Total Hardness as CaCO <sub>3</sub>	LPM 85		85
Calcium Hardness as CaCO <sub>3</sub>	LPM 85		38
Magnesium Hardness as CaCO <sub>3</sub>	LPM 85		47
Calcium as Ca	LPM 15		15,4
Magnesium as Mg	LPM 15		11,4
Sodium as Na	LPM 15	≤ 200	33,0
Potassium as K	LPM 15		5,84
Iron as Fe	LPM 15	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3	<0.01
Manganese as Mn	LPM 15	Chronic Health ≤ 0.4 - Aesthetic ≤ 0.1	<0.01
Conductivity at 25° C in mS/m	LPM 51/82	≤ 170	33,7
pH-Value at 25 ° C	LPM 51/82	≥ 5.0 to ≤ 9.7	7,92
pHs by 21° Celsius	LPM 85		8,49
Langelier Saturation Index	LPM 85		-0.57
Turbidity as N.T.U.	LPM 23/82	Operational ≤ 1.0 - Aesthetic ≤ 5.0	1,00
Free Residual Chlorine Cl <sub>2</sub> *	LPM 84		4,0
Aluminium as Al	LPM 15	≤ 0.30	0,01

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**QUALITY CONTROL CHECKS**

Cation Balance	3,29
Anion Balance	3,13
% Difference	2,6
Measured TDS	188
Calculated TDS	179
Limits > 1.0 - <1.2	1,1
Calcul TDS / E.C. (0.55 - 0.70)	0,5

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 Lab No:

A 54

Analysis Results mg/l	LPM METHOD	SANS Standards -241 - 1 : 2015 Ed 2 Domestic Water	Sakhelwe Reservoir DS17/11/17
		Standard Limits	
Total Dissolved Solids	LPM 2	≤ 1 200	50
Suspended Solids	LPM 1		<0.4
Nitrate & Nitrite as N	LPM 32/76		0,10
Nitrate NO <sub>3</sub> as N	LPM 32/76	≤ 11	0,10
Nitrite NO <sub>2</sub> as N	LPM 32/76	≤ 0.9	<0.1
Chlorides as Cl	LPM 30/76	≤ 300	12,2
Total Alkalinity as CaCO <sub>3</sub>	LPM 11/81		16
Fluoride as F	LPM 27/76	≤ 1.5	<0.20
Sulphate as SO <sub>4</sub>	LPM 28/76	Acute Health ≤ 500 - Aesthetic ≤ 250	5,35
Total Hardness as CaCO <sub>3</sub>	LPM 85		21
Calcium Hardness as CaCO <sub>3</sub>	LPM 85		11
Magnesium Hardness as CaCO <sub>3</sub>	LPM 85		11
Calcium as Ca	LPM 15		4,37
Magnesium as Mg	LPM 15		2,57
Sodium as Na	LPM 15	≤ 200	8,13
Potassium as K	LPM 15		1,98
Iron as Fe	LPM 15	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3	0,02
Manganese as Mn	LPM 15	Chronic Health ≤ 0.4 - Aesthetic ≤ 0.1	<0.01
Conductivity at 25° C in mS/m	LPM 51/82	≤ 170	6,49
pH-Value at 25 ° C	LPM 51/82	≥ 5.0 to ≤ 9.7	7,19
pHs by 21° Celsius	LPM 85		9,41
Langelier Saturation Index	LPM 85		-2.22
Turbidity as N.T.U.	LPM 23/82	Operational ≤ 1.0 - Aesthetic ≤ 5.0	0,91
Free Residual Chlorine Cl <sub>2</sub> *	LPM 84		<0.1
Aluminium as Al	LPM 15	≤ 0.30	0,05

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**QUALITY CONTROL CHECKS**

Cation Balance	0,84
Anion Balance	0,78
% Difference	3,6
Measured TDS	50
Calculated TDS	45
Limits > 1.0 - <1.2	1,1
Calcul TDS / E.C. (0.55 - 0.70)	0,7

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A 55

Analysis Results mg/l	LPM METHOD	SANS Standards -241 - 1 : 2015 Ed 2 Domestic Water	Dullstroom Reservoir DS19/11/17
		Standard Limits	
Total Dissolved Solids	LPM 2	≤ 1 200	56
Suspended Solids	LPM 1		1,20
Nitrate & Nitrite as N	LPM 32/76		0,16
Nitrate NO <sub>3</sub> as N	LPM 32/76	≤ 11	0,16
Nitrite NO <sub>2</sub> as N	LPM 32/76	≤ 0.9	<0.1
Chlorides as Cl	LPM 30/76	≤ 300	10,5
Total Alkalinity as CaCO <sub>3</sub>	LPM 11/81		25
Fluoride as F	LPM 27/76	≤ 1.5	<0.20
Sulphate as SO <sub>4</sub>	LPM 28/76	Acute Health ≤ 500 - Aesthetic ≤ 250	5,55
Total Hardness as CaCO <sub>3</sub>	LPM 85		27
Calcium Hardness as CaCO <sub>3</sub>	LPM 85		17
Magnesium Hardness as CaCO <sub>3</sub>	LPM 85		10
Calcium as Ca	LPM 15		7,00
Magnesium as Mg	LPM 15		2,43
Sodium as Na	LPM 15	≤ 200	7,88
Potassium as K	LPM 15		1,54
Iron as Fe	LPM 15	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3	0,08
Manganese as Mn	LPM 15	Chronic Health ≤ 0.4 - Aesthetic ≤ 0.1	0,01
Conductivity at 25° C in mS/m	LPM 51/82	≤ 170	7,18
pH-Value at 25 ° C	LPM 51/82	≥ 5.0 to ≤ 9.7	7,22
pHs by 21° Celsius	LPM 85		9,02
Langelier Saturation Index	LPM 85		-1.80
Turbidity as N.T.U.	LPM 23/82	Operational ≤ 1.0 - Aesthetic ≤ 5.0	1,76
Free Residual Chlorine Cl <sub>2</sub> *	LPM 84		0,10
Aluminium as Al	LPM 15	≤ 0.30	0,10

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**QUALITY CONTROL CHECKS**

Cation Balance	0,95
Anion Balance	0,92
% Difference	1,3
Measured TDS	56
Calculated TDS	51
Limits > 1.0 - <1.2	1,1
Calcul TDS / E.C. (0.55 - 0.70)	0,7

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A 56

Analysis Results mg/l	LPM METHOD	SANS Standards -241 - 1 : 2015 Ed 2 Domestic Water	Dullstroom Waterworks Final Treated DS4/11/17
		Standard Limits	
Total Dissolved Solids	LPM 2	≤ 1 200	42
Suspended Solids	LPM 1		<0.4
Nitrate & Nitrite as N	LPM 32/76		<0.1
Nitrate NO <sub>3</sub> as N	LPM 32/76	≤ 11	<0.1
Nitrite NO <sub>2</sub> as N	LPM 32/76	≤ 0.9	<0.1
Chlorides as Cl	LPM 30/76	≤ 300	10,4
Total Alkalinity as CaCO <sub>3</sub>	LPM 11/81		16
Fluoride as F	LPM 27/76	≤ 1.5	<0.20
Sulphate as SO <sub>4</sub>	LPM 28/76	Acute Health ≤ 500 - Aesthetic ≤ 250	3,53
Total Hardness as CaCO <sub>3</sub>	LPM 85		21
Calcium Hardness as CaCO <sub>3</sub>	LPM 85		10
Magnesium Hardness as CaCO <sub>3</sub>	LPM 85		11
Calcium as Ca	LPM 15		4,07
Magnesium as Mg	LPM 15		2,67
Sodium as Na	LPM 15	≤ 200	6,14
Potassium as K	LPM 15		2,00
Iron as Fe	LPM 15	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3	0,06
Manganese as Mn	LPM 15	Chronic Health ≤ 0.4 - Aesthetic ≤ 0.1	<0.01
Conductivity at 25° C in mS/m	LPM 51/82	≤ 170	6,41
pH-Value at 25 ° C	LPM 51/82	≥ 5.0 to ≤ 9.7	6,81
pHs by 21° Celsius	LPM 85		9,44
Langelier Saturation Index	LPM 85		2.63
Turbidity as N.T.U.	LPM 23/82	Operational ≤ 1.0 - Aesthetic ≤ 5.0	1,08
Free Residual Chlorine Cl <sub>2</sub> *	LPM 84		0,30
Aluminium as Al	LPM 15	≤ 0.30	0,10

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**QUALITY CONTROL CHECKS:**

Cation Balance	0,76
Anion Balance	0,69
% Difference	4,8
Measured TDS	42
Calculated TDS	39
Limits > 1.0 - <1.2	1,1
Calcul TDS / E.C. (0.55 - 0.70)	0,6

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A 58

Analysis Results mg/l	LPM METHOD	SANS Standards -241 - 1 : 2015 Ed 2 Domestic Water	Cement Reservoir MH21/11/17
		Standard Limits	
Total Dissolved Solids	LPM 2	≤ 1 200	128
Suspended Solids	LPM 1		<0.4
Nitrate & Nitrite as N	LPM 32/76		0,38
Nitrate NO <sub>3</sub> as N	LPM 32/76	≤ 11	0,38
Nitrite NO <sub>2</sub> as N	LPM 32/76	≤ 0.9	<0.1
Chlorides as Cl	LPM 30/76	≤ 300	19,9
Total Alkalinity as CaCO <sub>3</sub>	LPM 11/81		76
Fluoride as F	LPM 27/76	≤ 1.5	<0.20
Sulphate as SO <sub>4</sub>	LPM 28/76	Acute Health ≤ 500 - Aesthetic ≤ 250	9,56
Total Hardness as CaCO <sub>3</sub>	LPM 85		92
Calcium Hardness as CaCO <sub>3</sub>	LPM 85		45
Magnesium Hardness as CaCO <sub>3</sub>	LPM 85		46
Calcium as Ca	LPM 15		18,2
Magnesium as Mg	LPM 15		11,2
Sodium as Na	LPM 15	≤ 200	11,0
Potassium as K	LPM 15		1,66
Iron as Fe	LPM 15	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3	<0.01
Manganese as Mn	LPM 15	Chronic Health ≤ 0.4 - Aesthetic ≤ 0.1	<0.01
Conductivity at 25° C in mS/m	LPM 51/82	≤ 170	19,3
pH-Value at 25 ° C	LPM 51/82	≥ 5.0 to ≤ 9.7	8,11
pHs by 21° Celsius	LPM 85		8,17
Langelier Saturation Index	LPM 85		-0.06
Turbidity as N.T.U.	LPM 23/82	Operational ≤ 1.0 - Aesthetic ≤ 5.0	1,35
Free Residual Chlorine Cl <sub>2</sub> *	LPM 84		2,00
Aluminium as Al	LPM 15	≤ 0.30	0,11

These results must be read in conjunction  
 with the Uncertainty of Measurement  
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**QUALITY CONTROL CHECKS**

Cation Balance	2,36
Anion Balance	2,31
% Difference	1,2
Measured TDS	128
Calculated TDS	120
Limits > 1.0 - <1.2	1,1
Calcul TDS / E.C. (0.55 - 0.70)	0,6

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**Nkangala District Municipality**  
**EMAKHAZENI**

P.O. Box 437  
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**CERTIFICATE OF CHEMICAL ANALYSIS**


**Attention: VUSI MAHLANGU / SOLLY LINKS**

**Date received : 6 November 2017**

**Date reported : 15 November 2017**

**Quantity Analyzed : 15**

**Our Ref : NDM / 49 - 63 / A /11/17**

  
**P.L.G. UYS (M.D.)**  
**Technical Signatory**



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Date received : 6 November 2017  
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 Lab No:

A 59

Analysis Results mg/l	LPM METHOD	SANS Standards -241 - 1 : 2015 Ed 2 Domestic Water	Waterworks Final MH4/11/17
		Standard Limits	
Total Dissolved Solids	LPM 2	≤ 1 200	122
Suspended Solids	LPM 1		<0.4
Nitrate & Nitrite as N	LPM 32/76		0,34
Nitrate NO <sub>3</sub> as N	LPM 32/76	≤ 11	0,34
Nitrite NO <sub>2</sub> as N	LPM 32/76	≤ 0.9	<0.1
Chlorides as Cl	LPM 30/76	≤ 300	18,3
Total Alkalinity as CaCO <sub>3</sub>	LPM 11/81		77
Fluoride as F	LPM 27/76	≤ 1.5	<0.20
Sulphate as SO <sub>4</sub>	LPM 28/76	Acute Health ≤ 500 - Aesthetic ≤ 250	8,63
Total Hardness as CaCO <sub>3</sub>	LPM 85		95
Calcium Hardness as CaCO <sub>3</sub>	LPM 85		47
Magnesium Hardness as CaCO <sub>3</sub>	LPM 85		47
Calcium as Ca	LPM 15		19,0
Magnesium as Mg	LPM 15		11,5
Sodium as Na	LPM 15	≤ 200	10,4
Potassium as K	LPM 15		1,64
Iron as Fe	LPM 15	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3	<0.01
Manganese as Mn	LPM 15	Chronic Health ≤ 0.4 - Aesthetic ≤ 0.1	0,02
Conductivity at 25° C in mS/m	LPM 51/82	≤ 170	19,5
pH-Value at 25 ° C	LPM 51/82	≥ 5.0 to ≤ 9.7	8,14
pHs by 21° Celsius	LPM 85		8,15
Langelier Saturation Index	LPM 85		-0.01
Turbidity as N.T.U.	LPM 23/82	Operational ≤ 1.0 - Aesthetic ≤ 5.0	1,71
Free Residual Chlorine Cl <sub>2</sub> *	LPM 84		2,50
Aluminium as Al	LPM 15	≤ 0.30	0,11

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**QUALITY CONTROL CHECKS**

Cation Balance	2,40
Anion Balance	2,26
% Difference	3,0
Measured TDS	122
Calculated TDS	118
Limits > 1.0 - <1.2	1,0
Calcul TDS / E.C. (0.55 - 0.70)	0,6

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Date received : 6 November 2017  
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A 61

Analysis Results mg/l	LPM METHOD	SANS Standards -241 - 1 : 2015 Ed 2 Domestic Water	Boven Reservoir WB17/11/17
		Standard Limits	
Total Dissolved Solids	LPM 2	≤ 1 200	124
Suspended Solids	LPM 1		0,40
Nitrate & Nitrite as N	LPM 32/76		0,43
Nitrate NO <sub>3</sub> as N	LPM 32/76	≤ 11	<0.1
Nitrite NO <sub>2</sub> as N	LPM 32/76	≤ 0.9	<0.1
Chlorides as Cl	LPM 30/76	≤ 300	20,8
Total Alkalinity as CaCO <sub>3</sub>	LPM 11/81		73
Fluoride as F	LPM 27/76	≤ 1.5	<0.20
Sulphate as SO <sub>4</sub>	LPM 28/76	Acute Health ≤ 500 - Aesthetic ≤ 250	12,4
Total Hardness as CaCO <sub>3</sub>	LPM 85		84
Calcium Hardness as CaCO <sub>3</sub>	LPM 85		36
Magnesium Hardness as CaCO <sub>3</sub>	LPM 85		48
Calcium as Ca	LPM 15		14,5
Magnesium as Mg	LPM 15		11,7
Sodium as Na	LPM 15	≤ 200	13,7
Potassium as K	LPM 15		1,42
Iron as Fe	LPM 15	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3	<0.01
Manganese as Mn	LPM 15	Chronic Health ≤ 0.4 - Aesthetic ≤ 0.1	<0.01
Conductivity at 25° C in mS/m	LPM 51/82	≤ 170	19,0
pH-Value at 25 ° C	LPM 51/82	≥ 5.0 to ≤ 9.7	7,77
pHs by 21° Celsius	LPM 85		8,29
Langelier Saturation Index	LPM 85		-0.52
Turbidity as N.T.U.	LPM 23/82	Operational ≤ 1.0 - Aesthetic ≤ 5.0	1,05
Free Residual Chlorine Cl <sub>2</sub> *	LPM 84		1,00
Aluminium as Al	LPM 15	≤ 0.30	0,05

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**QUALITY CONTROL CHECKS:**

Cation Balance	2,32
Anion Balance	2,30
% Difference	0,4
Measured TDS	124
Calculated TDS	119
Limits > 1.0 - <1.2	1,0
Calcul TDS / E.C. (0.55 - 0.70)	0,6

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 Lab No:

A 62

Analysis Results mg/l	LPM METHOD	SANS Standards -241 - 1 : 2015 Ed 2 Domestic Water	Waterworks Final WB4/11/17
		Standard Limits	
<b>Total Dissolved Solids</b>	LPM 2	≤ 1 200	<b>116</b>
<b>Suspended Solids</b>	LPM 1		<b>&lt;0.4</b>
<b>Nitrate &amp; Nitrite as N</b>	LPM 32/76		<b>0,34</b>
<b>Nitrate NO<sub>3</sub> as N</b>	LPM 32/76	≤ 11	<b>0,34</b>
<b>Nitrite NO<sub>2</sub> as N</b>	LPM 32/76	≤ 0.9	<b>&lt;0.1</b>
<b>Chlorides as Cl</b>	LPM 30/76	≤ 300	<b>17,1</b>
<b>Total Alkalinity as CaCO<sub>3</sub></b>	LPM 11/81		<b>73</b>
<b>Fluoride as F</b>	LPM 27/76	≤ 1.5	<b>&lt;0.20</b>
<b>Sulphate as SO<sub>4</sub></b>	LPM 28/76	Acute Health ≤ 500 - Aesthetic ≤ 250	<b>10,7</b>
<b>Total Hardness as CaCO<sub>3</sub></b>	LPM 85		<b>82</b>
<b>Calcium Hardness as CaCO<sub>3</sub></b>	LPM 85		<b>35</b>
<b>Magnesium Hardness as CaCO<sub>3</sub></b>	LPM 85		<b>47</b>
<b>Calcium as Ca</b>	LPM 15		<b>14,0</b>
<b>Magnesium as Mg</b>	LPM 15		<b>11,5</b>
<b>Sodium as Na</b>	LPM 15	≤ 200	<b>12,0</b>
<b>Potassium as K</b>	LPM 15		<b>1,41</b>
<b>Iron as Fe</b>	LPM 15	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3	<b>&lt;0.01</b>
<b>Manganese as Mn</b>	LPM 15	Chronic Health ≤ 0.4 - Aesthetic ≤ 0.1	<b>0,01</b>
<b>Conductivity at 25° C in mS/m</b>	LPM 51/82	≤ 170	<b>19,0</b>
<b>pH-Value at 25° C</b>	LPM 51/82	≥ 5.0 to ≤ 9.7	<b>7,88</b>
<b>pHs by 21° Celsius</b>	LPM 85		<b>8,30</b>
<b>Langelier Saturation Index</b>	LPM 85		<b>-0.42</b>
<b>Turbidity as N.T.U.</b>	LPM 23/82	Operational ≤ 1.0 - Aesthetic ≤ 5.0	<b>1,24</b>
<b>Free Residual Chlorine Cl<sub>2</sub> *</b>	LPM 84		<b>0,10</b>
<b>Aluminium as Al</b>	LPM 15	≤ 0.30	<b>0,08</b>

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**QUALITY CONTROL CHECKS**

Cation Balance	2,21
Anion Balance	2,19
% Difference	0,5
Measured TDS	116
Calculated TDS	113
Limits > 1.0 - <1.2	1,0
Calcul TDS / E.C. (0.55 - 0.70)	0,6

All heavy metal analyses have been performed on filtered samples.  
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