

**AMENDED CERTIFICATE OF ANALYSES**

**GENERAL WATER QUALITY PARAMETERS**

Date received: 2019-06-10

Date completed: 2019-06-26

Project number: 1000

Report number: 83813-A

Order number:

Client name: Kusini Water

Contact person: Mr. M. Mafuno

Address: 35 Manhattan Street, Paulshof,

e-mail: murendi@kusiniwater.co.za

Telephone: 082 082 0624

Facsimile:

Mobile: 082 082 0624

Analyses in mg/l (Unless specified otherwise)	Method Identification	Risk	SANS 241 : 2015 Limits	Sample Identification		
				Swartkop School After	Swartkop School Before	
Sample Number				065546	065547	
Date/Time Sampled				N/A	N/A	
pH - Value @ 25 °C	A	WLAB065	Operational	≥5 to ≤ 9.7	7.4	6.4
Electrical Conductivity in mS/m @ 25°C	A	WLAB002	Aesthetic	≤170	18.0	19.8
Total Dissolved Solids @ 180°C	A	WLAB027	Aesthetic	≤1200	128	108
Colour in PtCo Units	N	WLAB006	Aesthetic	≤15	7	6
Turbidity in N.T.U	A	WLAB005	Operational/Aesthetic	≤1 / ≤5	<0.1	6.5↓
Total Alkalinity as CaCO <sub>3</sub>	A	WLAB007	---	---	80	16
Langelier Index at 25°C	A	WLAB053	---	---	-1.1	-2.9
Chloride as Cl	A	WLAB046	Aesthetic	≤300	6	37
Sulphate as SO <sub>4</sub>	A	WLAB046	Acute health/Aesthetic	≤500 / ≤250	6	5
Fluoride as F	A	WLAB014	Chronic health	≤1.5	0.2	<0.2
Nitrate as N	A	WLAB046	Acute health	≤11	1.7	3.0
Nitrite as N	A	WLAB046	Acute health	≤0.9	<0.05	0.06
Combined Nitrate & Nitrite	A	WLAB046	Acute health	≤1	0.2	0.3
Silica as SiO <sub>2</sub>	N	WLAB046	---	---	54	13.1
Total Organic Carbon as C	N	WLAB060	Chronic health	≤10	<1.0	<1.0
Total Coliform Bacteria / (100 ml)	A	WLAB021	Operational	≤10	0	>100000↓
E. coli / (100 ml)	A	WLAB021	Acute health	Not detected	0	580↓
Free and Saline Ammonia as N	A	WLAB046	Aesthetic	≤1.5	0.1	<0.1
Sodium as Na	A	WLAB015	Aesthetic	≤200	17	17
Potassium as K	A	WLAB015	---	---	1.3	1.2
Calcium as Ca	A	WLAB015	---	---	13	10
Magnesium as Mg	A	WLAB015	---	---	4	4
Aluminium as Al (µg/l)	A	WLAB015	Operational	≤300	<100	167
Antimony as Sb (µg/l)	A	WLAB050	Chronic health	≤20	1	<1
Arsenic as As (µg/l)	A	WLAB050	Chronic health	≤10	<1	<1
Barium as Ba (µg/l)	A	WLAB015	Chronic health	≤700	<25	62
Boron as B (µg/l)	A	WLAB015	Chronic health	≤2400	<25	25
Cadmium as Cd (µg/l)	A	WLAB015	Chronic health	≤3	<3	<3
Total Chromium as Cr (µg/l)	A	WLAB015	Chronic health	≤50	<25	<25
Copper as Cu (µg/l)	A	WLAB015	Chronic health	≤2000	<10	<10
Iron as Fe (µg/l)	A	WLAB015	Chronic health/Aesthetic	≤ 2000 / ≤300	<25	142



J. Ngobeza - Chemical Technical Signatory



N. Ntuli - Microbiological Technical Signatory

This Certificate, 83813-A, replaces the previous Certificate of Analysis 83813

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Sample condition acceptable unless specified on the report.

The information contained in this report is relevant only to the sample/samples supplied to **WATERLAB (Pty) Ltd**. Details of sampling conducted by Waterlab (PTY) Ltd, according to WLAB/Sampling Plan and Procedures/SOP, are available on request.

**Bacteriological parameters analysed on: 2019-06-10**

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				Swartkop School After	Swartkop School Before	
Sample Number				065546	065547	
Date/Time Sampled				N/A	N/A	
Lead as Pb (µg/l)	A	WLAB015	Chronic health	≤10	<10	<10
Manganese as Mn (µg/l)	A	WLAB015	Chronic health/Aesthetic	≤ 400 / ≤100	<25	26
Mercury as Hg (µg/l)	N	WLAB047	Chronic health	≤6	<1	<1
Nickel as Ni (µg/l)	A	WLAB015	Chronic health	≤70	<25	<25
Selenium as Se (µg/l)	A	WLAB050	Chronic health	≤40	<1	<1
Uranium as U (µg/l)	A	WLAB050	Chronic health	≤ 30	<1	<1
Zinc as Zn	A	WLAB015	Aesthetic	≤5	<0.025	<0.025
% Balancing	N	---	---	---	93.0	97.4



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Information regarding accredited analyses

Analysis	Method Identification	Reporting limit	Average Uncertainty
pH Value	WLAB001	0.6	21%
Electrical Conductivity	WLAB002	0.1 mS/m	7%
Total Alkalinity	WLAB007	5 mg/L	10%
Chemical Oxygen Demand	WLAB018	10 mg/L	16%
Sulphate	WLAB046	2 mg/L	14%
Free & Saline Ammonia	WLAB046	0.1 mg/L	14%
Nitrate	WLAB046	0.1 mg/L	6.2%
Nitrite	WLAB046	0.05 mg/L	10%
Ortho Phosphate	WLAB046	0.1 mg/L	26%
Chloride	WLAB046	2 mg/L	10%
Fluoride	WLAB014	0.2 mg/L	7%
Turbidity	WLAB005	0.1 NTU	8%
Sodium	WLAB015	2 mg/L	13%
Potassium	WLAB015	1.0 mg/L	7.3%
Calcium	WLAB015	2 mg/L	7.8%
Magnesium	WLAB015	2 mg/L	8.0%
Aluminium	WLAB015	0.100 mg/L	7.2%
Cadmium	WLAB015	0.003 mg/L	9.1%
Cobalt	WLAB015	0.025 mg/L	4.6%
Chromium	WLAB015	0.025 mg/L	6.8%
Copper	WLAB015	0.025 mg/L	36%
Iron	WLAB015	0.025 mg/L	3.8%
Manganese	WLAB015	0.025 mg/L	4.4%
Nickel	WLAB015	0.025 mg/L	14%
Lead	WLAB015	0.010 mg/L	7.7%
Zinc	WLAB015	0.025 mg/L	23%
Total Coliform Bacteria	WLAB021	0 CFU/100 mL	6.1%
E. coli	WLAB021	0 CFU/100 mL	23%



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