

# Water Analysis Report

Heavy Metals in Water, Standard Drinking Water Analysis, Total Coliforms and Faecal E. Coli



Customer:	CIPAD Kenya	Water Use:	Drinking (W.H.O.)	Date Received:	29-May-18
Address:	andreabollinie@protonmail.ch			Analysis Date:	29-May-18
Farm Name:	Sololo Moyale	Comments:		Report Date:	6-Jun-18
Contact Person:	Giuseppe Bollin	Condition:	Filled	Sample ID:	CC204WA0001

Water Source: Nairobi 1

To maintain the correct history ensure that the next sample sent from this Water Source is labelled: Nairobi 1

History (Last 3 analysis)

Parameter	Unit	Result	Guide Low	Guide High	Low	Optimum	High	Symbol	Current		Method
pH		6.14	6.50	8.50				pH	6.14		Potentiometric
*Electrical Conductivity	mS cm <sup>-1</sup>	0.013		< 1.80				EC	0.013		Potentiometric
Silicon	ppm	0.25		< 50.0				Si	0.25		Spectroscopy
*Silica	ppm	0.53		< 115				SiO <sub>2</sub>	0.53		Spectroscopy
Ammonium	ppm	0.026		< 0.50				NH <sub>4</sub>	0.026		Colorimetric
Calcium	ppm	0.33		< 150				Ca	0.33		Spectroscopy
Magnesium	ppm	0.099		< 100				Mg	0.099		Spectroscopy
Potassium	ppm	2.90		< 100				K	2.90		Spectroscopy
Sodium	ppm	0.36		< 200				Na	0.36		Spectroscopy
Nitrate N	ppm	0.45		< 10.0				NO <sub>3</sub> N	0.45		Colorimetric
Phosphorus	ppm	0.044		< 0.20				P	0.044		Spectroscopy
Sulphur	ppm	1.01		< 133				S	1.01		Spectroscopy
Iron	ppm	0.033		< 0.30				Fe	0.033		Spectroscopy
Manganese	ppm	< 0.01		< 0.40				Mn	< 0.01		Spectroscopy
Chlorides	ppm	0.95		< 250				Cl	0.95		Colorimetric
*Bicarbonate	ppm	6.56		< 255				HCO <sub>3</sub>	6.56		Colorimetric
*Fluorides	ppm	0.036		< 1.50				Fl	0.036		Colorimetric
*Nitrates	ppm	1.99		< 50.0				NO <sub>3</sub>	1.99		Colorimetric
*Sulphate	ppm	3.03		< 250				SO <sub>4</sub>	3.03		Spectroscopy
*Phosphate	ppm	0.13		< 0.61				PO <sub>4</sub>	0.13		Spectroscopy
*Hardness	ppm	1.23		< 300				CaCO <sub>3</sub>	1.23		Calculated
*Turbidity	NTU	2.56		< 5.00				TUB	2.56		Turbidimetry
Molybdenum	ppm	< 0.01		< 0.07				Mo	< 0.01		Spectroscopy
Arsenic	ppm	< 0.007		< 0.01				As	< 0.007		Spectroscopy
Cadmium	ppm	< 0.002		< 0.003				Cd	< 0.002		Spectroscopy
Chromium	ppm	< 0.004		< 0.05				Cr	< 0.004		Spectroscopy
Cobalt	ppm	< 0.001		< 0.01				Co	< 0.001		Spectroscopy
Lead	ppm	< 0.009		< 0.01				Pb	< 0.009		Spectroscopy
*Mercury	ppm	< 0.001		< 0.001				Hg	< 0.001		Spectroscopy
Nickel	ppm	< 0.003		< 0.02				Ni	< 0.003		Spectroscopy
Selenium	ppm	< 0.01		< 0.02				Se	< 0.01		Spectroscopy
Zinc	ppm	0.79		< 1.50				Zn	0.79		Spectroscopy
Copper	ppm	< 0.01		< 0.05				Cu	< 0.01		Spectroscopy
Boron	ppm	< 0.01		< 2.40				B	< 0.01		Spectroscopy
~Faecal E. Coli	cfu/100 ml	6		ND				FCECL	6		ISO 9308-2
~Faecal Coliforms	mpn/100ml	40		ND				FC	40		ISO 9308-2

ND = Not Detectable

## COMMENTS #

E. Coli is an indicator of faecal pollution. They must not be detectable in any 100-ml sample and must not be present in 95% of samples taken throughout any 12-month period. > This water is unfit for human consumption as it indicates contamination by human and/or animal faecal waste. Carry out disinfection treatment.

## RECOMMENDATIONS #

> Faecal contamination requires disinfect water with chlorine.

Gakobo Jo Lab Manager		Cordingley Jeremy Managing Director		Approval Date: 06/06/2018
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Customer:	CIPAD Kenya	Water Use:	Drinking (W.H.O.)	Date Received:	29-May-18
Address:	andreabollini@protonmail.ch			Analysis Date:	29-May-18
Farm Name:	Sololo Moyale	Comments:		Report Date:	6-Jun-18
Contact Person:	Giuseppe Bollin	Condition:	Filled	Sample ID:	CC204WA0001

Water Source: Nairobi 1

To maintain the correct history ensure that the next sample sent from this Water Source is labelled: Nairobi 1

History (Last 3 analysis)

Parameter	Unit	Result	Guide Low	Guide High	Low	Optimum	High	Symbol	Current	Method
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Gakobo Jo  
Lab Manager

Cordingley Jeremy  
Managing Director

Approval Date: 06/06/2018

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# Water Analysis Report

Heavy Metals in Water, Standard Drinking Water Analysis, Total Coliforms and Faecal E. Coli



Customer:	CIPAD Kenya	Water Use:	Drinking (W.H.O.)	Date Received:	29-May-18
Address:	andreabollinie@protonmail.ch			Analysis Date:	29-May-18
Farm Name:	Sololo Moyale	Comments:		Report Date:	6-Jun-18
Contact Person:	Giuseppe Bollin	Condition:	Filled	Sample ID:	CC204WA0002

Water Source: Nairobi 2

To maintain the correct history ensure that the next sample sent from this Water Source is labelled: Nairobi 2

History (Last 3 analysis)

Parameter	Unit	Result	Guide Low	Guide High	Low	Optimum	High	Symbol	Current			Method
pH		7.64	6.50	8.50				pH	7.64			Potentiometric
*Electrical Conductivity	mS cm <sup>-1</sup>	0.092		< 1.80				EC	0.092			Potentiometric
Silicon	ppm	8.97		< 50.0				Si	8.97			Spectroscopy
*Silica	ppm	19.2		< 115				SiO <sub>2</sub>	19.2			Spectroscopy
Ammonium	ppm	0.29		< 0.50				NH <sub>4</sub>	0.29			Colorimetric
Calcium	ppm	11.7		< 150				Ca	11.7			Spectroscopy
Magnesium	ppm	2.27		< 100				Mg	2.27			Spectroscopy
Potassium	ppm	2.28		< 100				K	2.28			Spectroscopy
Sodium	ppm	3.70		< 200				Na	3.70			Spectroscopy
Nitrate N	ppm	0.44		< 10.0				NO <sub>3</sub> N	0.44			Colorimetric
Phosphorus	ppm	0.33		< 0.20				P	0.33			Spectroscopy
Sulphur	ppm	0.22		< 133				S	0.22			Spectroscopy
Iron	ppm	0.23		< 0.30				Fe	0.23			Spectroscopy
Manganese	ppm	0.12		< 0.40				Mn	0.12			Spectroscopy
Chlorides	ppm	3.05		< 250				Cl	3.05			Colorimetric
*Bicarbonate	ppm	58.6		< 255				HCO <sub>3</sub>	58.6			Colorimetric
*Fluorides	ppm	0.35		< 1.50				Fl	0.35			Colorimetric
*Nitrates	ppm	1.95		< 50.0				NO <sub>3</sub>	1.95			Colorimetric
*Sulphate	ppm	0.66		< 250				SO <sub>4</sub>	0.66			Spectroscopy
*Phosphate	ppm	1.01		< 0.61				PO <sub>4</sub>	1.01			Spectroscopy
*Hardness	ppm	38.6		< 300				CaCO <sub>3</sub>	38.6			Calculated
*Turbidity	NTU	19.6		< 5.00				TUB	19.6			Turbidimetry
Molybdenum	ppm	< 0.01		< 0.07				Mo	< 0.01			Spectroscopy
Arsenic	ppm	< 0.007		< 0.01				As	< 0.007			Spectroscopy
Cadmium	ppm	< 0.002		< 0.003				Cd	< 0.002			Spectroscopy
Chromium	ppm	< 0.004		< 0.05				Cr	< 0.004			Spectroscopy
Cobalt	ppm	< 0.001		< 0.01				Co	< 0.001			Spectroscopy
Lead	ppm	< 0.009		< 0.01				Pb	< 0.009			Spectroscopy
*Mercury	ppm	< 0.001		< 0.001				Hg	< 0.001			Spectroscopy
Nickel	ppm	< 0.003		< 0.02				Ni	< 0.003			Spectroscopy
Selenium	ppm	< 0.01		< 0.02				Se	< 0.01			Spectroscopy
Zinc	ppm	< 0.01		< 1.50				Zn	< 0.01			Spectroscopy
Copper	ppm	< 0.01		< 0.05				Cu	< 0.01			Spectroscopy
Boron	ppm	0.013		< 2.40				B	0.013			Spectroscopy
~Faecal E. Coli	cfu/100 ml	1		ND				FCECL	1			ISO 9308-2
~Faecal Coliforms	mpn/100ml	> 180		ND				FC	> 180			ISO 9308-2

ND = Not Detectable

## COMMENTS #

E. Coli is an indicator of faecal pollution. They must not be detectable in any 100-ml sample and must not be present in 95% of samples taken throughout any 12-month period. > This water is unfit for human consumption as it indicates contamination by human and/or animal faecal waste. Carry out disinfection treatment. > High phosphates can increase the likelihood of algae growth in reservoirs.

## RECOMMENDATIONS #

> Heavy faecal contamination - disinfect water with chlorine.

Gakobo Jo Lab Manager		Cordingley Jeremy Managing Director		Approval Date: 06/06/2018
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Address:	andreabollini@protonmail.ch			Analysis Date:	29-May-18
Farm Name:	Sololo Moyale	Comments:		Report Date:	6-Jun-18
Contact Person:	Giuseppe Bollin	Condition:	Filled	Sample ID:	CC204WA0002

Water Source: Nairobi 2

To maintain the correct history ensure that the next sample sent from this Water Source is labelled: Nairobi 2

History (Last 3 analysis)

Parameter	Unit	Result	Guide Low	Guide High	Low	Optimum	High	Symbol	Current	Method
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Lab Manager

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