aquatico
Scientific (Pty). Ltd.

LEADERS IN ENVIRONMENTAL MONITORING

ORGANISATION UNDOING TAX ABUSE (OUTA)

BATCH 75345 – SEPTEMBER WEEK 2

HAMAANSKRAAL

WATER QUALITY REPORT

10 October 2019

Compiled by Aquatico Scientific

aquatico Scientific (Pty). Ltd.

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10TH FLOOR
OKEEFFE AND SWARTZ BUILDING
318 OAK AVENUE

ATTENTION: ORGANISATION UNDOING TAX ABUSE

10 OCTOBER 2019

CONCISE WATER QUALITY EVALUATION
(TEST REPORT 75345)

WATER QUALITY RESULTS

A water sample was submitted to Aquatico Laboratories on **30 September 2019** for testing the quality for intended use as domestic water. The water quality test results are displayed on the attached Test Report. Water quality is compared to the SANS 241-1:2015 Drinking Water Standard (SABS, 2015).

Table 1. Sampling Register

PROJECT NAME:			Hammanskraal Potable w ater				
SAMPLER NAME:			Emanuel Mathebula				
Hammanskraal Potable w ater							
Locality	Description	Coordinates		Sample Time	Status	Remarks	Lab no
		Latitude	Longitude				
Monitoring Localities							
Hammanskraal Water	Tshw ane Water supply in Hammanskraal	S25.378320	E28.210471	2019-09-30 11:49	Yes	WARD 8 - SUURMAN CLINIC	48248

Locality	Hammanskraal Magalies Water
Locality Coordinates	S25.378320 E28.210471
Sample Date	2019-09-30 11:49
Sample By	Emanuel Mathebula

Tshw ane Water supply in Hammanskraal

Figure 1. Photographic Catalogue of sampling locality

Appendix A.

DATA TABLE			
CLIENT NAME	Organisation Undoing Tax Abuse	DATE COMPILED	2019-10-10
ASSESSMENT SET	SANS 241-1:2015 Drinking Water Standard (SABS, 2015)	COMPILED BY	Ian Belford

*Value exceeds the assessment set

VARIABLE	UNITS	ASSESSMENT SET	SAMPLE NAME : Hammanskraal Tshwane Water	POSSIBLE HEALTH EFFECTS
pH @ 25°C	pH	Range 5.0 - 9.7	7.55	No health effects
Electrical conductivity (EC) @ 25°C	mS/m	170	91.4	Insignificant effect on sensitive users
Total Dissolved solids @ 180°C	mg/l	1200	472	
Chloride (Cl)	mg/l	300	81.8	No health effects
Sulphate (SO_4)	mg/l	500	70.9	No effects
Nitrate (NO_3) as N	mg/l	11	7.98	Insignificant risk
Nitrite (NO_2) as N	mg/l	0.9	0.229	
Ammonium (NH_4) as N	mg/l	-	10.1	
Ammonia (NH_3) as N	mg/l	1.5	0.180	
Fluoride (F)	mg/l	1.5	<0.466	
Acid Soluble Sodium (Na)	mg/l	-	111	Insignificant effects
Acid Soluble Aluminium (Al)	mg/l	0.3	0.057	
Acid Soluble Iron (Fe)	mg/l	0.3	0.076	No effects
Acid Soluble Manganese (Mn)	mg/l	0.1	0.099	Negligible effects
Acid Soluble Chromium (Cr)	mg/l	0.05	<0.007	
Acid Soluble Copper (Cu)	mg/l	2	0.040	No health effects
Acid Soluble Nickel (Ni)	mg/l	0.07	<0.005	
Acid Soluble Zinc (Zn)	mg/l	5	<0.005	
Acid Soluble Cadmium (Cd)	mg/l	0.003	<0.005	
E.coli	CFU/100ml	0	0	
Total coliform	CFU/100ml	10	0	
TotalViableCount	CFU/ml	1000	100	
Turbidity	NTU	1	2.40	Possibility of secondary health effects
Free chlorine (Cl_2)	mg/l	5	<0.1	
Total organic carbon (TOC)	mg/l	10	11.3	
Temperature	°C	-	22.0	
Total oxidised nitrogen	mg/l	-	8.21	
Monochloramine	mg/l	3	0.99	

The water quality of the sample called '**Hammanskraal Magalies Water**' can be described as neutral (pH 6.0 - 8.5), non-saline (TDS < 450 mg/l) and hard (total hardness 200 - 300 $CaCO_3$) with no E.coli and no total coliforms detected.

Compliance with the 'SANS 241-1:2015 Drinking Water Standard (SABS, 2015)' guidelines is as follows:

Chronic health Risk:	TOC 11.3 mg/l (> 10.0 mg/l)
Acute health Risk:	All compliant
Operational (non-health):	Turbidity 2.40 NTU (> 1.00 NTU)
Aesthetic (non-health):	NH_4-N 10.1 mg/l (> 1.50 mg/l)

In terms of the classification system of the 'Quality of Domestic water supplies' (WRC,1998) the quality is classified as follows :

Drinking:	Class 2 - Marginal	due to Turbidity
Bathing:	Class 1 - Good	
Washing:	Class 1 - Good	
Food Preparation:	Class 2 - Marginal	due to Turbidity
Aesthetic:	Class 2 - Marginal	due to Turbidity

Based on the assessment of variables analysed in comparison to 'SANS 241-1:2015 Drinking Water Standard (SABS, 2015)' and 'Quality of Domestic water supplies' (WRC, 1998), the tested water sample is **Not Fit** for use as potable water and domestic use.

Treatment for intended use: ~~Optional~~ , ~~Recommended~~ , **Essential**
Variables requiring treatment: Turbidity, TOC

It is recommended to perform a full SANS 241:2015 analysis in the future as exceeding TOC value can only be confirmed and discussed when trihalomethanes are also included in the analysis package.

aquatico Laboratories (Pty). Ltd.

ilac-MRA sanas Testing Laboratory T0685

Test Report

Client: Organisation Undoing Tax Abuse
Address: 10th Floor, Okeeffe and Swartz Building, 318 Oak Avenue, Ferndale, Randburg
Report no: 75345
Project: Hammanskraal Potable water

Date of certificate: 08 October 2019
Date accepted: 30 September 2019
Date completed: 08 October 2019
Date received: 30 September 2019

Lab no:				48248
Date sampled:				30-Sep-19
Aquatico sampled:				Yes
Sample type:				Water
Locality description:				Hammanskraal Magalies Water
Analyses		**Unit**	**Method**	
A	pH @ 25°C	pH	ALM 20	7.55
A	Electrical conductivity (EC) @ 25°C	mS/m	ALM 20	91.4
A	Total Dissolved solids @ 180°C	mg/l	ALM 24	472
A	Chloride (Cl)	mg/l	ALM 02	81.8
A	Sulphate (SO_4)	mg/l	ALM 03	70.9
A	Nitrate (NO_3) as N	mg/l	ALM 06	7.98
A	Nitrite (NO_2) as N	mg/l	ALM 07	0.229
A	Ammonium (NH_4) as N	mg/l	ALM 05	10.1
N	Ammonia (NH_3) as N	mg/l	ALM 26	0.180
A	Fluoride (F)	mg/l	ALM 08	0.295
A	Acid Soluble Sodium (Na)	mg/l	ALM 30	111
A	Acid Soluble Aluminium (Al)	mg/l	ALM 31	0.057
A	Acid Soluble Iron (Fe)	mg/l	ALM 31	0.076
A	Acid Soluble Manganese (Mn)	mg/l	ALM 31	0.099
A	Acid Soluble Chromium (Cr)	mg/l	ALM 31	<0.003
A	Acid Soluble Copper (Cu)	mg/l	ALM 31	0.040
A	Acid Soluble Nickel (Ni)	mg/l	ALM 31	<0.002
A	Acid Soluble Zinc (Zn)	mg/l	ALM 31	<0.002
A	Acid Soluble Cadmium (Cd)	mg/l	ALM 31	<0.002
A	E.coli	CFU/100ml	ALM 40	<1
A	Total coliform	CFU/100ml	ALM 40	<1
A	TotalViableCount	CFU/ml	ALM 43	100
A	Turbidity	NTU	ALM 21	2.40
N	Free chlorine (Cl_2)	mg/l	ALM 23	<0.10
A	Total organic carbon (TOC)	mg/l	ALM 63	11.3
N	Temperature	°C	ALM 20	22.0
N	Total oxidised nitrogen	mg/l	ALM 26	8.21
N	Monochloramine	mg/l	ALM 67	0.99

A = Accredited N = Non accredited Out = Outsourced Sub = Sub-contracted NR = Not requested RTF = Results to follow NATD = Not able to determine ATR = Alternative test report ; The results relates only to the test item tested; Results reported against the limit of detection; Results marked 'Non SANAS Accredited' in this report are not included in the SANAS Schedule of Accreditation for this laboratory; Uncertainty of measurement available on request for all methods included in the SANAS Schedule of Accreditation; The report shall not be reproduced except in full without approval of the laboratory

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Lab no:				48248
Date sampled:				30-Sep-19
Aquatico sampled:				Yes
Sample type:				Water
Locality description:				Hammanskraal Magalies Water
Analyses				
		Unit	**Method**	
N	Combined Nitrate plus Nitrite	ratio	ALM 26	1.0

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