



REGEN WATERS

LABORATORY • LABORATORIUM

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CK. 89/14418/23

HENDRINA POWER STATION

Private Bag X 1003
PULLENHOPE
1096

CHEMICAL ANALYSIS

Our Ref: HPS / 451 -455 /E /12/12
Attention: Mr. G. Coertze

Date received : 6 December 2012
Date reported : 14 December 2012
Quantity Analyzed: 5
Lab No :

Analysis Results mg/l	E451		E452		SANS Standards -241 (2011) Domestic Water
	Lap Tap	Optimum Tap	Lap Tap	Optimum Tap	Standard Limits
Total Dissolved Solids	148	150			≤ 1 200
Nitrate & Nitrite as N	0.16	0.15			≤ 11
Chlorides as Cl	11	11.0			≤ 300
Total Alkalinity as CaCO ₃	70	73			
Fluoride as F	<0.20	<0.20			≤ 1.5
Sulphate as SO ₄	30.7	32.3			Acute Health ≤ 500 - Aesthetic ≤ 250
Calcium as Ca	14.2	15.0			
Magnesium as Mg	10.10	9.98			
Sodium as Na	14.8	15.1			≤ 200
Potassium as K	1.74	1.58			
Iron as Fe	0.02	0.60			Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3
Manganese as Mn	<0.01	<0.01			Chronic Health ≤ 0.5 - Aesthetic ≤ 0.1
Conductivity at 25° C in mS/m	18.3	18.2			≤ 170
pH-Value at 25° C	8.22	8.45			≥ 5.0 to ≤ 9.7
pHs by 21° Celsius	8.50	8.46			
Langelier Saturation Index	-0.28	-0.01			
Turbidity as N.T.U	0.73	2.80			Operational ≤ 1.0 - Aesthetic ≤ 5.0
Free & Saline Ammonia NH ₃ as N	<0.20	<0.20			≤ 1.5
Cyanide as CN *	<0.07	<0.07			≤ 0.07
Total Organic Carbon (TOC)	3.18	3.05			
Total Chromium as Cr	<0.01	<0.01			≤ 0.05
Lead as Pb	<0.01	<0.01			≤ 0.01
Mercury as Hg	<0.001	<0.001			≤ 0.006
Colour as Pt-Co*	<5.0	<5.0			≤ 15
Aluminium as Al	0.11	0.12			≤ 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	2.24	2.31
Anion Balance	2.36	2.45
% Difference	-2.6	-3.0
Measured TDS	148	150
Calculated TDS	126	131
Limits > 1.0 - <1.2	1.2	1.1
Calcul TDS / E.C. (0.55 - 0.70)	0.7	0.7



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CHEMICAL ANALYSIS

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Attention: Mr. G. Coertze

Date received : 6 December 2012

Date reported : 14 December 2012

Quantity Analyzed: 5

Lab No :

E455

E453

Analysis Results mg/l	Raw Water Tap Waterplant	Waterplant Tap	SANS Standards -241 (2011) Domestic Water
			Standard Limits
Total Dissolved Solids	126	162	≤ 1 200
Nitrate & Nitrite as N	<0.1	0.18	≤ 11
Chlorides as Cl	7.0	15.0	≤ 300
Total Alkalinity as CaCO ₃	60	76	
Fluoride as F	<0.20	<0.20	≤ 1.5
Sulphate as SO ₄	25.2	36.4	Acute Health ≤ 500 - Aesthetic ≤ 250
Calcium as Ca	14.4	16.4	
Magnesium as Mg	7.64	9.29	
Sodium as Na	8.75	20.0	≤ 200
Potassium as K	1.37	2.50	
Iron as Fe	0.05	<0.01	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3
Manganese as Mn	0.09	0.09	Chronic Health ≤ 0.5 - Aesthetic ≤ 0.1
Conductivity at 25° C in mS/m	15.8	22.6	≤ 170
pH-Value at 25 ° C	7.93	9.17	≥ 5.0 to ≤ 9.7
pHs by 21°Celsius	8.55	8.41	
Langelier Saturation Index	-0.62	+0.76	
Turbidity as N.T.U	13.0	0.26	Operational ≤ 1.0 - Aesthetic ≤ 5.0
Free & Saline Ammonia NH ₃ as N	<0.20	<0.20	≤ 1.5
Cyanide as CN *	<0.07	<0.07	≤ 0.07
Total Organic Carbon (TOC)	4.27	4.10	
Total Chromium as Cr	<0.01	<0.01	≤ 0.05
Lead as Pb	<0.01	<0.01	≤ 0.01
Mercury as Hg	<0.001	<0.001	≤ 0.006
Colour as Pt-Co*	<5.0	<5.0	≤ 15
Aluminium as Al	0.17	0.17	≤ 0.30

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QUALITY CONTROL CHECKS

Cation Balance	1.79	2.54
Anion Balance	1.92	2.71
% Difference	-3.6	-3.3
Measured TDS	126	162
Calculated TDS	101	147
Limits > 1.0 - <1.2	1.2	1.1
Calcul TDS / E.C. (0.55 - 0.70)	0.6	0.6



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Date received : 6 December 2012
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 Quantity Analyzed: 5
 Lab No :

E454

Analysis Results mg/l	Pump Station Tap	SANS Standards -241 (2011) Domestic Water
		Standard Limits
Total Dissolved Solids	156	≤ 1 200
Nitrate & Nitrite as N	0.17	≤ 11
Chlorides as Cl	14	≤ 300
Total Alkalinity as CaCO ₃	76	
Fluoride as F	<0.20	≤ 1.5
Sulphate as SO ₄	33.9	Acute Health ≤ 500 - Aesthetic ≤ 250
Calcium as Ca	16.2	
Magnesium as Mg	10.77	
Sodium as Na	18.8	≤ 200
Potassium as K	2.24	
Iron as Fe	<0.01	Chronic Health ≤ 2.0 - Aesthetic ≤ 0.3
Manganese as Mn	0.01	Chronic Health ≤ 0.5 - Aesthetic ≤ 0.1
Conductivity at 25° C in mS/m	21.2	≤ 170
pH-Value at 25 ° C	8.15	≥ 5.0 to ≤ 9.7
pHs by 21°Celsius	8.41	
Langelier Saturation Index	-0.26	
Turbidity as N.T.U	0.27	Operational ≤ 1.0 - Aesthetic ≤ 5.0
Free & Saline Ammonia NH ₃ as N	<0.20	≤ 1.5
Cyanide as CN *	<0.07	≤ 0.07
Total Organic Carbon (TOC)	3.76	
Total Chromium as Cr	<0.01	≤ 0.05
Lead as Pb	<0.01	≤ 0.01
Mercury as Hg	<0.001	≤ 0.006
Colour as Pt-Co*	<5.0	≤ 15
Aluminium as Al	0.10	≤ 0.30

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QUALITY CONTROL CHECKS

Cation Balance	2.58
Anion Balance	2.63
% Difference	-1.0
Measured TDS	156
Calculated TDS	143
Limits > 1.0 - <1.2	1.1
Calcul TDS / E.C. (0.55 - 0.70)	0.7