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Date: 2010-02-04  
Report No: 2819/L4160  
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## WATER SAMPLE

### 1 DESCRIPTION OF SAMPLE

The following sample was submitted by W Raubenheimer to our Cape Town laboratory on 15 January 2010.

SABS CODE	SAMPLE DESCRIPTION
CT0024	Drinking water - SANS 241

### 2 ANALYTICAL DURATION

The analysis commenced on 15 January 2010 and was completed on 02 February 2010.

NOTE: Preservation techniques used, where required, were based on the recommendations supplied in ISO 5667/3 'Guidelines on the preservation and handling of samples' and Method 1060/C 'Sample preservation' from 'Standard Methods for the Examination of Water and Wastewater', APHA-AWWA-WPCF, 1995 19<sup>th</sup> Edition.

## /4 RESULTS OF ANALYSIS

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## 3 RESULTS OF ANALYSIS

DETERMINANDS	METHOD	LAB Ref.	SAMPLE
			CT0024
<b>Physical and organoleptic requirements</b>			
Colour in mg/L of platinum	SANS 7887	CPT	<5
Conductivity at 25 °C in mS/m	SANS 7888	CPT	99,2
Dissolved solids in mg/L	SANS 5213	CPT	527
Odour – as Threshold Odour No (TON)	SM 2150 (B)	CPT	1
pH value at 25 °C	SANS 5011	CPT	8,5
Taste – as Flavour Threshold No (FTN)	SM 2160 (A)	CPT	1
Turbidity in nephelometric units	SANS 5197	CPT	0,7
<b>Chemical requirements : Macro – determinands</b>			
Ammonia as N in mg/L	SANS 5217	CPT	<0,3
Calcium as Ca in mg/L	SANS 11885:2008	CPT	38,81
Chloride as Cl in mg/L	SANS 9297	CPT	178
Fluoride as F in mg/L	SANS 10359-1	CPT	<0,05
Magnesium as Mg in mg/L	SANS 11885:2008	CPT	30,0
Nitrate and nitrite as N in mg/L	SANS 5210	CPT	<0,3
Potassium as K in mg/L	SANS 11885:2008	CPT	3,49
Sodium as Na in mg/L	SANS 11885:2008	CPT	134,3
Sulfate as SO <sub>4</sub> in mg/L	SANS 6310	CPT	43
Total zinc as Zn in mg/L	SANS 11885:2008	CPT	<0,01
<b>Chemical requirements : Micro determinands</b>			
Total Aluminium as Al in µg/L	SANS 11885:2008	CPT	1 320
Total Antimony as Sb in µg/L	SANS 11885:2008	CPT	<10
Arsenic (recoverable) as As in µg/L	SANS 11885:2008	CPT	75,61
Total Cadmium as Cd in µg/L	SANS 11885:2008	CPT	<10
Total Chromium as Cr in µg/L	SANS 11885:2008	CPT	<10
Total Cobalt as Co in µg/L	SANS 11885:2008	CPT	<10
Total Copper as Cu in µg/L	SANS 11885:2008	CPT	<10
Cyanide (total) as CN in µg/L	CMP 26(AK)	T0007	<20
Total Iron as Fe in µg/L	SANS 11885:2008	CPT	25,97
Total Lead as Pb in µg/L	SANS 11885:2008	CPT	<10
Total Manganese as Mn in µg/L	SANS 11885:2008	CPT	10,66
Mercury (recoverable) as Hg in µg/L	SANS 11885:2008	CPT	<10
Total Nickel as Ni in µg/L	SANS 11885:2008	CPT	<10
Selenium (recoverable) as Se in µg/L	SANS 11885:2008	CPT	<10
Total Vanadium as V in µg/L	SANS 11885:2008	CPT	<10
<b>Chemical requirements : Organic determinands</b>			
Dissolved organic carbon as C in mg/L	CMP 29	T0007	4,9
Total trihalomethanes in µg/L	GC050	T0007	146
Phenolic compounds as phenol in µg/L	CMP 26K	T0007	<4
NOTE - The limits for iron are based on aesthetic aspects.			



**DRINKING WATER SPECIFICATION – SANS 241:2006**  
**Table 1 - Physical, organoleptic and chemical requirements**

1 Determinants	2 Units	3 Upper limit and ranges		4 Class II water, consumption period, <sup>a</sup> max.
		Upper limit and ranges		
		Class I (acceptable)	Class II (max. allowable)	
<b>Physical and organoleptic requirements</b>				
Colour (aesthetic)	mg/l Pt	<20	20 - 50	No limit <sup>d</sup>
Conductivity at 25 °C (aesthetic)	mS/m	<150	150 - 370	7 years
Dissolved solids (aesthetic)	mg/l	<1 000	1 000 - 2 400	7 years
Odour (aesthetic)	TON	< 5	5 - 10	No limit <sup>d</sup>
pH value at 25 °C (aesthetic/operational)	pH units	5,0 - 9,5	4,0 - 10,0	No limit <sup>d</sup>
Taste (aesthetic)	FTN	< 5	5 - 10	No limit
Turbidity (aesthetic/operational/indirect health)	NTU	<1	1 - 5	No limit <sup>d</sup>
<b>Chemical requirements - macro-determinants</b>				
Ammonia as N (operational)	mg/L	<1,0	1,0 - 2,0	No limit <sup>d</sup>
Calcium as Ca (aesthetic/operational)	mg/L	<150	150 - 300	7 years
Chloride as Cl (aesthetic)	mg/L	<200	200 - 600	7 years
Fluoride as F (health)	mg/L	<1,0	1,0 - 1,5	1 year
Magnesium as Mg (aesthetic/health)	mg/L	<70	70 - 500	7 years
(Nitrate + nitrite) as N (health)	mg/L	<10	10 - 20	7 years
Potassium as K (operational/health)	mg/L	<50	50 - 100	7 years
Sodium as Na (aesthetic/health)	mg/L	<200	200 - 400	7 years
Sulphate as SO <sub>4</sub> (health)	mg/L	<400	400 - 600	7 years
Zinc as Zn (aesthetic/health)	mg/L	<5,0	5,0 - 10,0	1 year
<b>Chemical requirements - micro-determinants</b>				
Aluminium as Al (health)	µg/L	<300	300 - 500	1 year
Antimony as Sb (health)	µg/L	<10	10 - 50	1 year
Arsenic as As (health)	µg/L	<10	10 - 50	1 year
Cadmium as Cd (health)	µg/L	<5	5 - 10	6 months
Total chromium as Cr (health)	µg/L	<100	100 - 600	3 months
Cobalt as Co (health)	µg/L	<500	500 - 1 000	1 year
Copper as Cu (health)	µg/L	<1 000	1 000 - 2 000	1 year
Cyanide (recoverable) as CN (health)	µg/L	<50	50 - 70	1 week
Iron as Fe (aesthetic/operational)	µg/L	<300	200 - 2 000	7 years <sup>e</sup>
Lead as Pb (health)	µg/L	<20	20 - 50	3 months
Manganese as Mn (aesthetic)	µg/L	<100	100 - 1 000	7 years
Mercury as Hg (health)	µg/L	<1	1 - 5	3 months
Nickel as Ni (health)	µg/L	<150	150 - 350	1 year
Selenium as Se (health)	µg/L	<20	20 - 50	1 year
Vanadium as V (health)	µg/L	<200	200 - 500	1 year
<b>Chemical requirements - organic determinants</b>				
Dissolved organic carbon as C (aesthetic/health)	mg/L	<10	10 - 20	3 months <sup>f</sup>
Total Trihalomethanes (health)	µg/L	<200	200 - 300	10 years <sup>g</sup>
Phenols (aesthetic/health)	µg/L	<10	10 - 70	No limit <sup>d</sup>

a The limits for the consumption of class II water are based on the consumption of 2 l of water per day by a person of mass 70 kg over a period of 70 years.  
b The limits given are based on aesthetic aspects.  
c No primary health effect - low pH values can result in structural problems in the distribution system.  
d These values can indicate process efficiency and risks associated with pathogens.  
e When dissolved organic carbon is deemed of natural origin, the consumption period can be extended.  
f This is suggested value because trihalomethanes have not been proven to have any effect on human health.

DEPARTMENT OF AGRICULTURE

EXPORT STATE VETERINARIAN  
DR. H.M.E. BOWKER 72/1017

09 FEB 2010

DIRECTORATE  
VETERINARY PUBLIC HEALTH

REPUBLIC OF SOUTH AFRICA

## NOTES :

- 1 Class I – Recommended operational limit according to SANS 241: 2006 'Drinking Water'  
Class II- For limited duration apply together according to SANS 241: 2006 'Drinking Water'  
(see note 'a').
- 2 The uncertainty of measurement on above results can be issued on request.

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