



## water affairs

Department:  
Water Affairs  
REPUBLIC OF SOUTH AFRICA



EdST

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Reference: 6/2/1/1

### MINISTER OF WATER AND ENVIRONMENTAL AFFAIRS

#### NATIONAL ASSEMBLY: QUESTION 102 FOR WRITTEN REPLY

A draft reply to the above question asked by Mr J H Steenhuisen (DA) is attached for your consideration.

Attached is **Annexure A** for reference.

*M. Sinyu*

DIRECTOR-GENERAL

DATE: 23/02/2012

DRAFT REPLY APPROVED/AMENDED

*[Signature]*  
MRS B E E MOLEWA, MP  
MINISTER OF WATER AND ENVIRONMENTAL AFFAIRS

DATE: 20/02/12

*as [initials] Urgently ensure that a team is dispatched to help in this semi crisis*  
*① Amend & send through*  
*② Copy Maw, for him to draft a statement progressively stating our response in action*  
*Urgent*

**FOR WRITTEN REPLY**

**QUESTION NO 102**

**DATE OF PUBLICATION IN INTERNAL QUESTION PAPER: 09 February 2012**  
**(INTERNAL QUESTION PAPER NO. 01)**

**102. Mr J H Steenhuisen (DA) to ask the Minister of Water and Environmental Affairs:**

- (1) With reference to her replies to questions 2111 and 2119 on 30 August 2011, what progress has since been made with regard to implementing the Corrective Action Plan for the Mkhondo Local Municipality as outlined in the last editions of the Green Drop and Blue Drop report;
- (2) with regard to the quality of drinking water in the Dorpspruit and Assegaai River, what were the outcomes of the last ten samples taken against each of the prescribed minimum standards for drinking water contained in the SA National Standard for drinking water (SANS) 241;
- (3) whether the quality of water being provided in Dorpspruit poses a risk to human health; if not, how was this conclusion reached; if so, what will be done to rectify the situation?

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**REPLY:**

- (1) The Mkhondo Local Municipality is currently training 17 Process Controllers as follows:
  - 7 are undertaking in-house learnership;
  - 6 are undertaking skills development; and
  - 4 are undergoing recognition of prior learning programmes.

The Mkhondo Local Municipality laboratory is operational, covering the following:

- Testing for operational parameters
- Biological meter to test for *E Coli* has been procured and the service provider is still to conduct training on its use
- Jar test for optimum dosage

The Mkhondo Local Municipality has applied to the Department for the Accelerated Community Infrastructure Project funding for their waste water treatment works (WWTWs) and an amount of R3.6 million for 2012/13 financial year has been approved. The Department has also approved R3.6 million and R2.2 million for Amsterdam and Piet Retief WWTWs respectively.

The Department's Regional Office: Mpumalanga has also conducted the following activities with the Mkhondo Local Municipality:

- Symposium workshop on the 22 and 23 August 2011 which covered the Blue and Green drop hand books and Regulatory Performance Management System (RPMS).
- Information session on 31 August 2011 with regards to Blue and Green Drop results, drinking water failures, Blue and Green Drop handbooks, RPMS and tariff determination.
- Mpumalanga Region Blue Water Audits on 11 October 2011 to prepare the Municipality for the National Blue Water Audits.

- (2) No natural river as would be the case with the Dorpspruit and Assegai Rivers would meet the drinking water quality criteria in terms of South African National Standards (SANS) 241 standards. The water abstracted from the rivers and treated in the Driefontein water treatment works is however required to meet the SANS 241. The results of the samples taken against each of the prescribed minimum standards for drinking water contained in the SANS for drinking water 241 are attached as **Annexure A**).
- (3) The non-compliant samples indicated on last columns of the attached **Annexure A** gives an extent of the risk posed to public health. With each failure, the Regional Office: Mpumalanga issues a failure notice to the Mkhondo Local Municipality as part of rectification measures. The Mkhondo Local Municipality does not have a Water Safety Plan in place, which will also include the detailed incident management protocol. However, currently the Mkhondo Local Municipality has developed a Receipt book for noting complaints received regarding water quality, which makes provision for the complainant to sign, with turnaround times for responding to the incidents.

Furthermore the Mkhondo Local Municipality is currently in the process of appointing a service provider and they are currently negotiating the contract with Aquous Solution, to develop a Water Safety Plan which will include the incident management protocol.

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 Comply

## ANNEXURE A

 Do not comply

## DRIEFONTEIN WATER TREATMENT WORKS

| Variable (units)                                | May 2011 | July 2011 | Sep 2011 | Oct 2011 | Dec 2011 | Comparison to SANS 241                 |
|---|----------|-----------|----------|----------|----------|--|
| pH  | 7.65     | 7.69      | 7.68     | 7.95     | 8.70     | 5.0 - 9.5<br>comply                    |
| Turbidity (NTU)                                 | 0.039    | 0.20      | 0.27     | 0.13     | 0.19     | <1.0<br>comply                         |
| Conductivity (mS/m)                             | 11.3     | 11.50     | 17.0     | 12.0     | 13.0     | <150<br>comply                         |
| Colour Platinum<br>(mg/l Pt)                    | <2.5     | <2.5      | <2.5     | <2.5     | <2.5     | <20<br>comply                          |
| Total Dissolved<br>Solids (mg/l)                | -        | -         | 111.0    | -        | -        | <1000<br>comply                        |
| E. Coli (CFU/100 ml)                            | 0        | 0         | 0        | 0        | 0        | 0<br>comply                            |
| Free Residual<br>Chlorine (mg/l)                | <0.1     | <0.1      | 1.0      | <0.1     | <0.1     | 0.3 - 0.6<br>All samples do not comply |
| Alkalinity as CaCO <sub>3</sub><br>(mg/l)       | 40       | 40        | 40       | 38       | 40       | 100 - 250<br>All samples do not comply |
| Total Hardness as<br>CaCO <sub>3</sub> (mg/l)   | 84       | 40        | 44       | 50       | 52       | 50 - 300<br>2 samples do not comply    |
| Calcium Hardness<br>as CaCO <sub>3</sub> (mg/l) | 22       | 16        | 108      | 20       | 20       | 50 - 300<br>4 samples do not comply    |
| Langelier Saturation<br>Index                   | -1.29    | -1.07     | -0.35    | -1.28    | -0.52    | <0 (corrosive)<br>comply               |
| Iron as Fe                                      | -        | 0.12      | 0.46     | 0.04     | 0.04     | <0.2<br>1 sample does not comply       |
| Aluminium as Al                                 | -        | 0.03      | 0.24     | 0.17     | 0.04     | <0.30<br>comply                        |

## DRIEFONTEIN STAND NO 62 B

| Variable (units)                             | July 2011 | Sep 2011 Sample taken at primary school | Oct 2011 | Dec 2011 | Comparison to SANS 241                 |
|--|-----------|---|----------|----------|--|
| pH   | 7.14      | 7.80                                    | 8.07     | 8.52     | 5.0 - 9.5 comply                       |
| Turbidity (NTU)                              | 11.6      | 0.51                                    | 0.22     | 0.10     | <1.0<br>1 sample does not comply       |
| Conductivity (mS/m)                          | 8.65      | 17.00                                   | 12.1     | 12.5     | <150<br>comply                         |
| Colour Platinum (mg/l Pt)                    | <2.5      | <2.5                                    | <2.5     | <2.5     | <20<br>comply                          |
| Total Dissolved Solids (mg/l)                | -         | 111                                     | -        | -        | <1000<br>comply                        |
| E. Coli (CFU/100 ml)                         | 0         | 0                                       | 0        | 0        | 0<br>comply                            |
| Free Residual Chlorine (mg/l)                | <0.1      | 1                                       | <0.1     | <0.1     | 0.3 - 0.6<br>All samples do not comply |
| Alkalinity as CaCO <sub>3</sub> (mg/l)       | 38        | 42                                      | 34       | 44       | 100 - 250<br>All samples do not comply |
| Total Hardness as CaCO <sub>3</sub> (mg/l)   | 28        | 40                                      | 52       | 50       | 50 - 300<br>2 samples do not comply    |
| Calcium Hardness as CaCO <sub>3</sub> (mg/l) | 14        | 50                                      | 20       | 24       | 50 - 300<br>3 samples do not comply    |
| Langelier Saturation Index                   | -1.77     | -0.55                                   | -1.21    | -0.57    | <0 (corrosive)<br>comply               |
| Iron as Fe                                   | 0.02      | 0.37                                    | 0.04     | 0.08     | <0.2<br>1 sample does not comply       |
| Aluminium as Al                              | 0.01      | 0.23                                    | 0.18     | 0.06     | <0.30<br>comply                        |

## AMSTERDAM WATER TREATMENT WORKS

| Variable (units)                             | May 2011 | Aug 2011 | July 2011 | Sep 2011 | Oct 2011 | Nov 2011 | Dec 2011 | Comparison to SANS 241                     |
|--|----------|----------|-----------|----------|----------|----------|----------|--|
| pH   | 7.86     | 7.60     | 7.77      | 8.28     | 8.51     | 8.96     | 8.06     | 5.0 - 9.5<br>comply                        |
| Turbidity (NTU)                              | 4.06     | 0.32     | 0.97      | 0.17     | 14.2     | 0.83     | 0.18     | <1.0<br>2 samples do not comply            |
| Conductivity (mS/m)                          | 7.15     | 9.06     | 7.5       | 11.6     | 8.14     | 9.36     | 9.23     | <150<br>comply                             |
| Colour Platinum (mg/l Pt)                    | <2.5     | <2.5     | <2.5      | <2.5     | 2.5      | <2.5     | <2.5     | <20<br>comply                              |
| Total Dissolved Solids (mg/l)                | -        | -        | -         | 79       | -        | -        | -        | <1000<br>comply                            |
| E. Coli (CFU/100 ml)                         | 14       | 0        | 2         | 2        | 0        | 21       | 11       | 0<br>5 samples do not comply               |
| Free Residual Chlorine (mg/l)                | <0.1     | <0.1     | <0.1      | <0.1     | <0.1     | <0.1     | <0.1     | 0.3 - 0.6<br>All samples do not comply     |
| Alkalinity as CaCO <sub>3</sub> (mg/l)       | 20       | 34       | 30        | 30       | 20       | 30       | 32       | 100 - 250<br>All samples do not comply     |
| Total Hardness as CaCO <sub>3</sub> (mg/l)   | 44       | 24       | 24        | 54       | 20       | 28       | 30       | 50 - 300<br>6 samples do not comply        |
| Calcium Hardness as CaCO <sub>3</sub> (mg/l) | 20       | 12       | 10        | 100      | 18       | 12       | 14       | 50 - 300<br>6 samples do not comply        |
| Langlier Saturation Index                    | -1.40    | -1.43    | -1.39     | 0.10     | -1.03    | -0.59    | -1.39    | <0 (corrosive)<br>1 sample does not comply |
| Iron as Fe                                   | -        | 0.04     | 0.15      | 0.27     | 0.06     | 0.08     | 0.06     | <0.2<br>comply                             |
| Aluminium as Al                              | -        | 0.01     | 0.06      | 0.23     | 0.22     | 0.16     | 0.09     | <0.30<br>comply                            |

## AMSTERDAM SHELL GARAGE

| Variable (units)                             | May 2011 | Aug 2011 | July 2011 | Sep 2011 | Oct 2011 | Nov 2011 | Dec 2011 | Comparison to SANS 241                     |
|--|----------|----------|-----------|----------|----------|----------|----------|--|
| pH   | 7.69     | 7.60     | 7.73      | 8.04     | 8.07     | 10.30    | 9.12     | 5.0 - 9.5<br>1 sample does not comply      |
| Turbidity (NTU)                              | 4.76     | 0.22     | 2.27      | 0.51     | 0.14     | 0.26     | 0.14     | <1.0<br>2 samples do not comply            |
| Conductivity (mS/m)                          | 7.55     | 8.22     | 7.3       | 17.0     | 26.5     | 27.6     | 26.7     | <150<br>comply                             |
| Colour Platinum (mg/l Pt)                    | <2.5     | <2.5     | <2.5      | <2.5     | <2.5     | <2.5     | <2.5     | <20<br>comply                              |
| Total Dissolved Solids (mg/l)                | -        | -        | -         | 76       | -        | -        | -        | <1000<br>comply                            |
| E. Coli (CFU/100 ml)                         | 16       | 3        | 4         | 0        | 205      | 0        | 0        | 0<br>4 samples do not comply               |
| Free Residual Chlorine (mg/l)                | <0.1     | <0.1     | <0.1      | <0.1     | <0.1     | <0.1     | <0.1     | 0.3 - 0.6<br>All samples do not comply     |
| Alkalinity as CaCO <sub>3</sub> (mg/l)       | 34       | 32       | 30        | 32       | 78       | 62       | 60       | 100 - 250<br>All samples do not comply     |
| Total Hardness as CaCO <sub>3</sub> (mg/l)   | 50       | 24       | 24        | 62       | 24       | 4        | 24       | 50 - 300<br>All samples do not comply      |
| Calcium Hardness as CaCO <sub>3</sub> (mg/l) | 16       | 10       | 10        | 52       | 6        | 2        | 10       | 50 - 300<br>All samples do not comply      |
| Langaller Saturation Index                   | -1.44    | -1.53    | -1.43     | -0.39    | -1.42    | 0.84     | -0.27    | <0 (corrosive)<br>1 sample does not comply |
| Iron as Fe                                   | -        | 0.03     | 0.07      | 0.46     | 0.03     | 0.09     | 0.06     | <0.2<br>1 sample does not comply           |
| Aluminium as Al                              | -        | 0.01     | 0.02      | 0.22     | 0.20     | 0.19     | 0.12     | <0.30<br>comply                            |

## PIET RETIEF WATER TREATMENT WORKS

| Variable (units)                             | May 2011 | Aug 2011 | July 2011 | Sep 2011 | Oct 2011 | Nov 2011 | Dec 2011 | Comparison to SANS 241                 |
|--|----------|----------|-----------|----------|----------|----------|----------|--|
| pH   | 8.05     | 6.92     | 7.69      | 7.65     | 7.58     | 9.01     | 8.01     | 5.0 - 9.5 comply                       |
| Turbidity (NTU)                              | 0.143    | 0.87     | 5.11      | 1.70     | 0.87     | 1.70     | 1.72     | <1.0<br>4 samples do not comply        |
| Conductivity (mS/m)                          | 15.5     | 8.47     | 13.80     | 23.3     | 18.1     | 20.6     | 15.4     | <150 comply                            |
| Colour                                       | <2.5     | <2.5     | <2.5      | <2.5     | <2.5     | <2.5     | <2.5     | <20 comply                             |
| Platinum (mg/l Pt)                           |          |          |           |          |          |          |          |  |
| Total Dissolved Solids (mg/l)                | -        | -        | -         | 152      | -        | -        | -        | <1000 comply                           |
| E. Coli (CFU/100 ml)                         | 0        | 3        | 0         | 0        | 0        | 0        | 0        | 0<br>1 sample does not comply          |
| Free Residual Chlorine (mg/l)                | <0.1     | <0.1     | <0.1      | <0.1     | <0.1     | <0.1     | <0.1     | 0.3 - 0.6<br>All samples do not comply |
| Alkalinity as CaCO <sub>3</sub> (mg/l)       | 46       | 44       | 40        | 52       | 56       | 26       | 24       | 100 - 250<br>All samples do not comply |
| Total Hardness as CaCO <sub>3</sub> (mg/l)   | 52       | 62       | 54        | 52       | 90       | 58       | 38       | 50 - 300<br>1 sample does not comply   |
| Calcium Hardness as CaCO <sub>3</sub> (mg/l) | 30       | 24       | 24        | 30       | 32       | 22       | 22       | 50 - 300<br>All samples do not comply  |
| Langelier Saturation Index                   | -0.71    | -1.73    | -1.00     | -0.86    | -1.3     | -0.3     | -1.39    | <0 (corrosive) comply                  |
| Iron as Fe                                   | -        | 0.06     | 0.11      | 0.64     | 0.28     | 0.04     | 0.06     | <0.2<br>1 sample does not comply       |
| Aluminium as Al                              | -        | 0.01     | 0.05      | 0.28     | 0.19     | 0.18     | 0.11     | <0.30 comply                           |