

Kouga Municipality

Cacadu DM, Eastern Cape, South Africa

Drinking Water Quality Summary Report

August 2012

1. Background

This report provides an overview of water quality in your area of concern. The report is generated automatically on a monthly basis and is based on data loaded onto your electronic Water Quality Management System (eWQMS). The report includes tables and graphs which highlight issues related to key bacteriological, physical and chemical parameters monitored in your area of concern.

You are reminded that a full analysis of water quality in your area of concern can be accessed at <http://www.wqms.co.za>.

Website access includes the following components:

- Management Dashboard (shows specific sample sites in excess of required limits, and assists with status tracking)
- Overview (includes map-based interface, summary of bacteriological, physical and chemical water quality and quick links to regularly used tables/graphs)
- Tables and Graphs (includes Point Analysis Tables, Compliance/Failure Tables, Mean Value/Median Value Graphs, Failure Graphs)
- Reports (an archive of water quality management reports in PDF format - if applicable)
- Reference (reference material and information)

Other features of the eWQMS include an infrastructure component (ability to capture details of water system related infrastructure) and a risk toolbox (ability to perform water system related self-assessments).

If you have any queries or difficulties with regards to the above, please do not hesitate to contact us at info@emanti.co.za.

2. Purpose of Report

This report provides summary information on key water quality results as required for legislative compliance. This includes:

- Percentage characterisation of water quality against national standards/limits for the report period
- Points failing Maximum Allowable Limits for the report period
- Percentage failure and/or mean values for SANS 241 minimum required parameters for the report period
- Percentage failure for other key bacteriological water quality parameters for the report period
- Mean values and percentage failure for other key physico-chemical water quality parameters for the report period

The above aspects will be presented in the following section.

3. Drinking Water Quality Overview

3.1. Management Dashboard

Sample points are categorized as follows:

Green: All parameters monitored satisfy the following limits:

- SANS 241 Table 1 column 4 (microbiological safety requirements - 4% of samples max.) and/or
- SANS 241 Table 2 column 3 (Class I - recommended operational limit)
- SANS 241 Table C.3 Operational water quality alert values

Yellow: One or more parameters monitored satisfy the following limits:

- SANS 241 Table 1 column 5 (microbiological safety requirements - 1% of samples max.) and/or
- SANS 241 Table 2 column 4 (Class II - max. allowable for limited duration)

Yellow: One or more parameters monitored do not satisfy the following limits:

- SANS 241 Table C.3 Operational water quality alert values

Orange: One or more aesthetic or operational related parameters monitored do not satisfy the following limits:

- SANS 241 Table 2 column 4 (Class II - max. allowable for limited duration)

Red: One or more health related parameters monitored do not satisfy the following limits:

- SANS 241 Table 1 column 5 (microbiological safety requirements - 1% of samples max.) and/or
- SANS 241 Table 2 column 4 (Class II - max. allowable for limited duration)

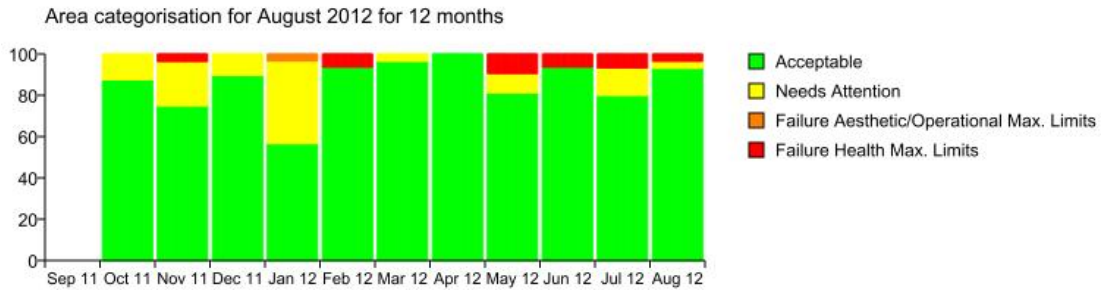
The following results are presented for August 2012:

Acceptable (Green):	27 sample points or 93% of monitored sample points
Needs Attention (Yellow):	1 sample points or 3% of monitored sample points
Failure Aesthetic/Operational Max. Limits (Orange):	0 sample points
Failure Health Max. Limits (Red):	1 sample points or 3% of monitored sample points

Detailed information related to the above table can be accessed via the Management Dashboard of your website. The following table presents details of those sample points which were classified as being Red (i.e. failing SANS Health Max. Limits).

Area categorisation for August 2012





Red: August 2012				
Area	Sample Point	Determinant	Date Occurred	Sample Value
Humansdorp	Kruisfontein Tap	E.coli (health)	2012-08-13 00:00:00	21

1 failures at 1 Sample Points

The following table presents details of those sample points which were classified as being Orange (i.e. failing SANS Aesthetic/Operational Max Limits).

Orange: August 2012			
Area	Sample Point	Determinant	Date Occurred
None			

At time of analysis, the water quality issues noted above were communicated to operational personnel. As you are aware, corrective action is required to address these issues. Therefore, the responsible Water Service Authority should login onto eWQMS and add details of the corrective actions/interventions implemented to address the identified water quality issues. Details of corrective actions/interventions implemented are added/viewed under the "comments" section of the "details" link in the Management Dashboard. The comment/s serve as a record of the management actions implemented by the Water Service Authority. If you have added any comments, this will be displayed in Appendix B.

3.2. SANS 241 Minimum Required Parameters

The following section highlights performance versus the minimum parameters specified in SANS 241. The following section will therefore present results for the following parameters:

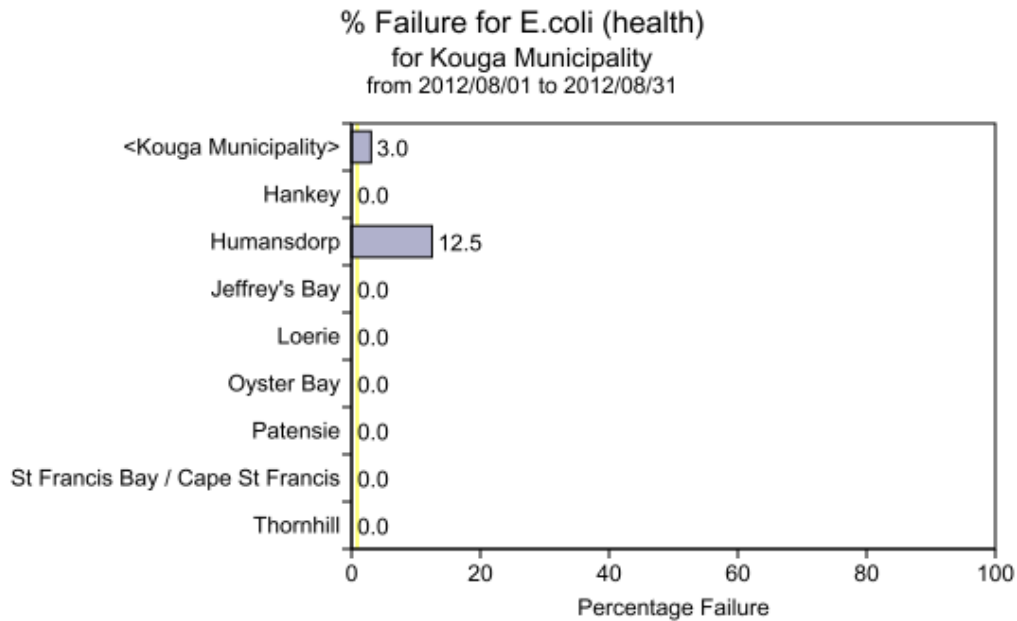
- E.coli and/or Faecal coliforms
- pH
- Electrical Conductivity
- Turbidity
- Free chlorine residual

Although it is acknowledged that SANS 241 states that the minimum required parameters is based on the water characteristics (e.g nitrates/nitrites and/or fluoride for groundwaters; aluminium or iron if alum or ferric chloride are used for water treatment purposes), and that WSAs may need to monitor these particular water characteristics, the results thereof will not be included in this section. Please refer to later sections of this report for these results.

3.2.1. E.coli

NOTE: SANS 241 specifies that either E.coli or faecal coliforms should be monitored as an indicator of microbiological safety of drinking water. Therefore, if faecal coliforms are used as the indicator of microbiological safety, no results for E.coli will be displayed.

If neither E.coli nor faecal coliforms results are displayed, it implies that microbiological safety indicators were not monitored for the report period or had not been entered by the time of automatic summary report generation.



Notes

E.coli: health 1. Standards: SANS 241 Column 4, Allowable compliance contribution: 4%, Upper Limit: Not detected (count/100mL). 2. Description: Escherichia coli (E.coli) is used as an indicator of faecal pollution by warm blooded animals (often interpreted as human faecal pollution). The presence of faecal pollution by warm blooded animals may indicate the presence of pathogens responsible for infectious disease such as gastroenteritis, cholera, dysentery and typhoid fever after ingestion of contaminated water. Any bacteriological failure with regards to E.coli can therefore be considered as a direct indication of risk to health. If the percentage failure exceeds the required limits shown above, intervention is required to rectify the situation (e.g. optimise disinfection).

3.2.2. Faecal coliforms

NOTE: SANS 241 specifies that either E.coli or faecal coliforms should be monitored as an indicator of microbiological safety of drinking water. Therefore, if E.coli are used as the indicator of microbiological safety, no results for faecal coliforms will be displayed.

If neither E.coli nor faecal coliforms results are displayed, it implies that microbiological safety indicators were not monitored for the report period or had not been entered by the time of automatic summary report generation.

3.2.3. pH

NOTE: SANS 241 specifies that pH should be regularly monitored. If no results for pH are displayed, it implies that pH was not monitored for the report period or had not been entered by the time of automatic summary report generation.

3.2.4. Electrical conductivity

NOTE: SANS 241 specifies that electrical conductivity should be regularly monitored. If no results for electrical conductivity are displayed, it implies that electrical conductivity was not monitored for the report period or had not been entered by the time of automatic summary report generation.

3.2.5. Turbidity

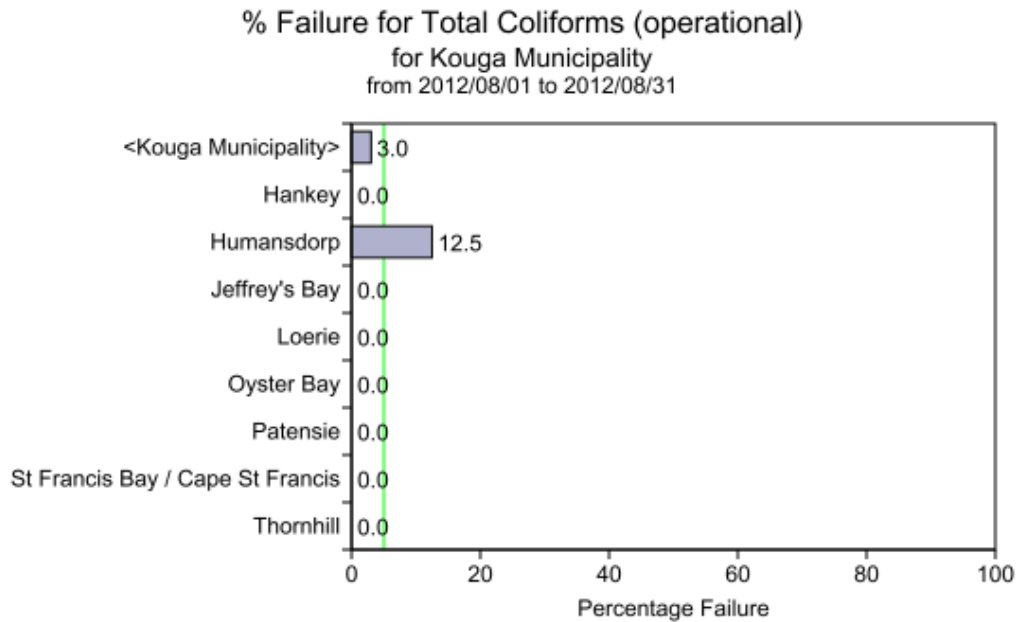
NOTE: SANS 241 specifies that turbidity should be regularly monitored. If no results for turbidity are displayed, it implies that turbidity was not monitored for the report period or had not been entered by the time of automatic summary report generation.

3.2.6. Free chlorine residual

NOTE: If chlorine is added to drinking-water for disinfection purposes, free chlorine residual should be regularly monitored. If no results for free chlorine residual are displayed, it implies that free chlorine residual was not monitored for the report period or had not been entered by the time of automatic summary report generation. In some areas, total (available) chlorine may be regularly monitored, no disinfection may be occurring or disinfection could be achieved using another disinfectant (e.g. ozone). The above must be considered in areas where no free chlorine results are displayed below.

3.3. Other Bacteriological Quality

NOTE:Water quality graphs for other key bacteriological parameters are shown in the section below. If data for the report period had not been entered by the time of automatic summary report generation, the applicable bacteriological water quality graphs will not be available. Water quality graphs for other key bacteriological parameters are shown in the section below. If data for the report period had not been entered by the time of automatic summary report generation, the applicable bacteriological water quality graphs will not be available.



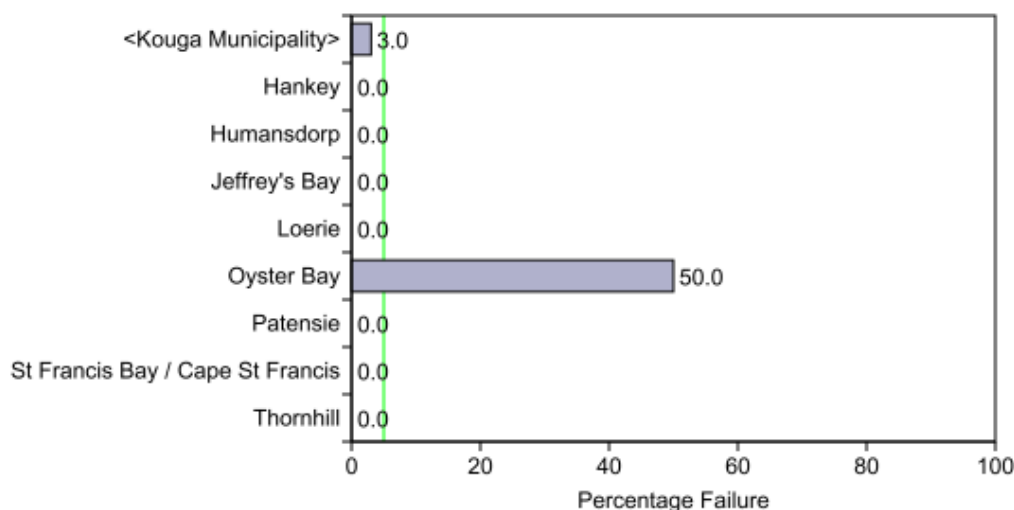
Notes

- The graph shows limits for SANS: Operational Limits: Acceptable Level
- Green Drop requires at least 90% compliance (ie maximum 10% failure).

Total Coliforms: Operational 1. Drinking-Water Standards: SANS 241 Table C.3 (Operational water quality alert values): 10 count/100 mL. 2. Description: The total coliform group includes bacteria of faecal origin and indicates the possible presence of bacterial pathogens such as Salmonella spp., Shigella spp., Vibrio cholerae, pathogenic E. coli, etc. These organisms can cause diseases such as gastroenteritis, salmonellosis, dysentery, cholera and typhoid fever. Total coliform counts are primarily used in the evaluation of the operational efficiency of water treatment processes. They also indicate microbial growth in the distribution system or post-treatment contamination of drinking water. If the percentage failure exceeds the required limits shown above, intervention is required to rectify the situation (e.g. optimise disinfection).

% Failure for Heterotrophic Plate Count (operational)

for Kouga Municipality
from 2012/08/01 to 2012/08/31



Notes

- The graph shows limits for SANS: Operational Limits: Acceptable Level
- Green Drop requires at least 90% compliance (ie maximum 10% failure).

Heterotrophic Plate Count (Operational) The Heterotrophic Plate Count is used to assess the general bacterial quality of water. High Heterotrophic Plate Counts (100 - 1000 counts per 1 mL) in treated drinking-water indicate inadequate treatment of the water, post-treatment contamination or bacterial after growth in the distribution system. Therefore, pathogenic microorganisms could possibly be present in the water and pose a health risk when the water is used for domestic consumption. If the percentage failure exceeds the required limits shown above, intervention is required to rectify the situation (e.g. optimise disinfection).

Point Analysis Tables

E.coli (health) (count per 100 mL)				
Area	Sample Point	Sample Date	Sample Value	Standard
Hankey	Tamar Street	2012/08/13	0	= 1.0
Humansdorp	Moeras River	2012/08/13	0	= 1.0
Humansdorp	Kwa - Nomzamo	2012/08/13	0	= 1.0
Humansdorp	Town Tap	2012/08/13	0	= 1.0
Humansdorp	St Patrick's	2012/08/13	0	= 1.0
Humansdorp	Arcadia Tap	2012/08/13	0	= 1.0
Humansdorp	Kruisfontein Tap	2012/08/13	21	= 1.0
Humansdorp	Vaaldam Tap	2012/08/13	0	= 1.0
Humansdorp	Kruisfontein Tap	2012/08/20	0	= 1.0
Jeffrey's Bay	Mandela Bay	2012/08/13	0	= 1.0
Jeffrey's Bay	Hektaar Tap/ Ocean View	2012/08/13	0	= 1.0

E.coli (health) (count per 100 mL)				
Area	Sample Point	Sample Date	Sample Value	Standard
Jeffrey's Bay	Jeffrey's Bay Water Treatment Works Tap	2012/08/13	0	= 1.0
Jeffrey's Bay	Wavecrest Tap	2012/08/13	0	= 1.0
Jeffrey's Bay	JBAY Central	2012/08/13	0	= 1.0
Jeffrey's Bay	Churchill Reservoir	2012/08/13	0	= 1.0
Jeffrey's Bay	KabeljousTap Water	2012/08/13	0	= 1.0
Jeffrey's Bay	Pellsrus Tap	2012/08/13	0	= 1.0
Loerie	Judy Str Loerie	2012/08/20	0	= 1.0
Loerie	Erf 31 Railway Loerie	2012/08/20	0	= 1.0
Oyster Bay	Oyster Bay Tap	2012/08/13	0	
Oyster Bay	Umzamowethu Tap	2012/08/13	0	= 1.0
Patensie	Patensie Primary School	2012/08/13	0	= 1.0
Patensie	Patensie Municipal Offices	2012/08/13	0	= 1.0
Patensie	Patensie Waterworks	2012/08/13	0	= 1.0
St Francis Bay / Cape St Francis	St Francis	2012/08/13	0	= 1.0
St Francis Bay / Cape St Francis	Paradys Strand Tap	2012/08/13	0	= 1.0
St Francis Bay / Cape St Francis	Cape St Francis	2012/08/13	0	
St Francis Bay / Cape St Francis	Aston Baai Tap	2012/08/13	0	= 1.0
Thornhill	Thornhill Phase 2	2012/08/20	0	= 1.0
Thornhill	Thornhill Phase 1	2012/08/20	0	= 1.0

Total Coliforms (operational) (count per 100 mL)				
Area	Sample Point	Sample Date	Sample Value	Standard
Hankey	Tamar Street	2012/08/13	0	< 10.0
Humansdorp	St Patrick's	2012/08/13	0	< 10.0
Humansdorp	Arcadia Tap	2012/08/13	0	< 10.0
Humansdorp	Kruisfontein Tap	2012/08/13	74	< 10.0
Humansdorp	Vaaldam Tap	2012/08/13	0	< 10.0
Humansdorp	Moeras River	2012/08/13	0	< 10.0
Humansdorp	Kwa - Nomzamo	2012/08/13	0	< 10.0
Humansdorp	Town Tap	2012/08/13	0	< 10.0
Humansdorp	Kruisfontein Tap	2012/08/20	0	< 10.0
Jeffrey's Bay	Hektaar Tap/ Ocean View	2012/08/13	0	< 10.0

Total Coliforms (operational) (count per 100 mL)				
Area	Sample Point	Sample Date	Sample Value	Standard
Jeffrey's Bay	Jeffrey's Bay Water Treatment Works Tap	2012/08/13	0	< 10.0
Jeffrey's Bay	Wavecrest Tap	2012/08/13	0	< 10.0
Jeffrey's Bay	JBAY Central	2012/08/13	0	< 10.0
Jeffrey's Bay	Churchill Reservoir	2012/08/13	0	< 10.0
Jeffrey's Bay	KabeljousTap Water	2012/08/13	0	< 10.0
Jeffrey's Bay	Pellsrus Tap	2012/08/13	0	< 10.0
Jeffrey's Bay	Mandela Bay	2012/08/13	0	< 10.0
Loerie	Judy Str Loerie	2012/08/20	0	< 10.0
Loerie	Erf 31 Railway Loerie	2012/08/20	0	< 10.0
Oyster Bay	Umzamowethu Tap	2012/08/13	0	< 10.0
Oyster Bay	Oyster Bay Tap	2012/08/13	0	< 10.0
Patensie	Patensie Waterworks	2012/08/13	0	< 10.0
Patensie	Patensie Primary School	2012/08/13	0	< 10.0
Patensie	Patensie Municipal Offices	2012/08/13	0	< 10.0
St Francis Bay / Cape St Francis	Paradys Strand Tap	2012/08/13	0	< 10.0
St Francis Bay / Cape St Francis	Cape St Francis	2012/08/13	0	< 10.0
St Francis Bay / Cape St Francis	Aston Baai Tap	2012/08/13	0	< 10.0
St Francis Bay / Cape St Francis	St Francis	2012/08/13	0	< 10.0
Thornhill	Thornhill Phase 2	2012/08/20	0	< 10.0
Thornhill	Thornhill Phase 1	2012/08/20	0	< 10.0

Heterotrophic Plate Count (operational) (count per 1 mL)				
Area	Sample Point	Sample Date	Sample Value	Standard
Hankey	Tamar Street	2012/08/13	0	< 5000.0
Humansdorp	Town Tap	2012/08/13	0	< 5000.0
Humansdorp	St Patrick's	2012/08/13	70	< 5000.0
Humansdorp	Arcadia Tap	2012/08/13	0	< 5000.0
Humansdorp	Kruisfontein Tap	2012/08/13	310	< 5000.0
Humansdorp	Vaaldam Tap	2012/08/13	0	< 5000.0
Humansdorp	Moeras River	2012/08/13	0	< 5000.0
Humansdorp	Kwa - Nomzamo	2012/08/13	0	< 5000.0
Humansdorp	Kruisfontein Tap	2012/08/20	0	< 5000.0
Jeffrey's Bay	Mandela Bay	2012/08/13	0	< 5000.0

Heterotrophic Plate Count (operational) (count per 1 mL)				
Area	Sample Point	Sample Date	Sample Value	Standard
Jeffrey's Bay	Hektaar Tap/ Ocean View	2012/08/13	0	< 5000.0
Jeffrey's Bay	Jeffrey's Bay Water Treatment Works Tap	2012/08/13	0	< 5000.0
Jeffrey's Bay	Wavecrest Tap	2012/08/13	0	< 5000.0
Jeffrey's Bay	JBAY Central	2012/08/13	0	< 5000.0
Jeffrey's Bay	Churchill Reservoir	2012/08/13	0	< 5000.0
Jeffrey's Bay	Kabeljous Tap Water	2012/08/13	0	< 5000.0
Jeffrey's Bay	Pellsrus Tap	2012/08/13	0	< 5000.0
Loerie	Judy Str Loerie	2012/08/20	0	< 5000.0
Loerie	Erf 31 Railway Loerie	2012/08/20	0	< 5000.0
Oyster Bay	Oyster Bay Tap	2012/08/13	560	
Oyster Bay	Umzamowethu Tap	2012/08/13	6060	< 5000.0
Patensie	Patensie Municipal Offices	2012/08/13	0	< 5000.0
Patensie	Patensie Waterworks	2012/08/13	0	< 5000.0
Patensie	Patensie Primary School	2012/08/13	0	< 5000.0
St Francis Bay / Cape St Francis	St Francis	2012/08/13	0	< 5000.0
St Francis Bay / Cape St Francis	Paradys Strand Tap	2012/08/13	0	< 5000.0
St Francis Bay / Cape St Francis	Cape St Francis	2012/08/13	0	
St Francis Bay / Cape St Francis	Aston Baai Tap	2012/08/13	0	< 5000.0
Thornhill	Thornhill Phase 2	2012/08/20	0	< 5000.0
Thornhill	Thornhill Phase 1	2012/08/20	0	< 5000.0

3.4. Other Physical Quality

NOTE: Water quality graphs for other key physical parameters are shown in the section below. If data for the report period had not been entered by the time of automatic summary report generation, the applicable physical water quality graphs will not be available. If no results for other physical quality parameters are displayed, it implies that other physical quality parameters monitored for the report period or had not been entered by the time of automatic summary report generation.

Point Analysis Tables

3.5. Other Chemical Quality

NOTE: Water quality graphs for other key chemical parameters are shown in the section below. If data for the report period had not been entered by the time of automatic summary report generation, the applicable chemical water quality graphs will not be available. If no results for other chemical quality parameters are displayed, it implies that other chemical quality parameters monitored for the report period or had not been entered by the time of automatic summary report generation.

Point Analysis Tables

Appendix A: Data Received and Sampled Areas

Number of Samples Collected in Each Area for the Report Period

The following section highlights the following:

- The areas that were sampled for the report period (i.e. 1 month)
- The number of samples collected in each area for the report period (i.e. 1 month)

The number of samples collected in each area is shown in the table below.

Area	Samples Collected
Hankey	1
Humansdorp	8
Jeffrey's Bay	8
Loerie	2
Oyster Bay	2
Patensie	3
St Francis Bay / Cape St Francis	4
Thornhill	2
TOTAL	30

Appendix B: Comments on Red Failures

The following section highlights health related failures of maximum allowable limits (i.e. Reds) for the report period (i.e. 1 month). In addition, where a health related failure of maximum allowable limits has occurred, any previous failures within the last 12 months are also highlighted. This helps to determine if the failure has been once-off or is re-occurring.

In particular, the tables show the following:

- Sampled area
- Sample point name
- Sample dates on which failures of maximum allowable limits occurred (for the last 12 months)
- The parameter/s that failed
- The actual analysis value of the failing parameter
- The comment added stating if an issue has been rectified, resolved, etc. **NOTE:** If a comment regarding corrective actions to resolve issues has not been captured on the eWQMS, this section will state "No Comment on Failure"

Note: The number before the area description is the unique sample point ID as per the eWQMS Database

11683 Humansdorp, Kruisfontein Tap

2012-08-13 00:00:00	E.coli (health)	21 count per 100 mL	No Comment on Failure
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Appendix C

This section highlights the following:

1. Percentage compliance versus SANS 241 for the report period (i.e. 1 month) for the following parameters:

- Microbiological
- Physical
- Chemical

2. Overview of percentage compliance versus SANS 241 for the last 12 months for the following parameters:

- Microbiological
- Physical
- Chemical

1. Percentage Compliance vs. SANS 241 for the Report Period

Parameters:	Unit Of Measure	Number of Samples	SANS 241:2006			
			SANS: Microbiological Safety: Column 3	SANS: Microbiological Safety: Column 4	SANS: Operational Limits: Acceptable Level	SANS: Microbiological Safety: Column 5
Microbiological						
Total Coliforms (operational)	count per 100 mL	33	-	-	97.0	-
Faecal Coliforms (health)	count per 100 mL	0	-	-	-	-
E.coli (health)	count per 100 mL	33	97.0	97.0	-	97.0

Parameters:	Unit Of Measure	Number of Samples	SANS 241:2006	
			SANS: Physical, Organoleptic, Chemical: Class I	SANS: Physical, Organoleptic, Chemical: Class II
Physical				
Colour (aesthetic)	mg/L Pt	0	-	-
Electrical Conductivity (aesthetic)	mS/m	0	-	-
Odour (aesthetic)	TON	0	-	-
pH (aesthetic/operational)	pH units	0	-	-
Taste (aesthetic)	FTN	0	-	-
Total Dissolved Solids (aesthetic)	mg/L	0	-	-

Parameters:	Unit Of Measure	Number of Samples	SANS 241:2006	
			SANS: Physical, Organoleptic, Chemical: Class I	SANS: Physical, Organoleptic, Chemical: Class II
Physical				
Turbidity (aesthetic/operational/indirect health)	NTU	0	-	-
Turbidity (Operational)	NTU	0	-	-

Parameters:	Unit Of Measure	Number of Samples	SANS 241:2006	
			SANS: Physical, Organoleptic, Chemical: Class I	SANS: Physical, Organoleptic, Chemical: Class II
Chemical				
Aluminium (health)	ug/L	0	-	-
Ammonia (operational)	mg/L as N	0	-	-
Antimony (health)	ug/L as Sb	0	-	-
Arsenic (health)	ug/L	0	-	-
Cadmium (health)	ug/L	0	-	-
Calcium (aesthetic/operational)	mg/L as Ca	0	-	-
Chloride (aesthetic)	mg/L as Cl-	0	-	-
Chromium (health)	ug/L	0	-	-
Cobalt (health)	ug/L as Co	0	-	-
Copper (health)	ug/L	0	-	-
Cyanide (recoverable) (health)	ug/L as CN-	0	-	-
Dissolved Organic Carbon (aesthetic/health)	mg/L as C	0	-	-
Fluoride (health)	mg/L as F-	0	-	-
Iron (aesthetic/operational)	ug/L	0	-	-
Lead (health)	ug/L	0	-	-
Magnesium (aesthetic/health)	mg/L as Mg	0	-	-
Manganese (aesthetic)	ug/L	0	-	-
Mercury (health)	ug/L	0	-	-
Nickel (health)	ug/L as Ni	0	-	-
Nitrate (health)	mg/L as N	0	-	-
Nitrates and Nitrites (health)	mg/L as N	0	-	-

Parameters:	Unit Of Measure	Number of Samples	SANS 241:2006	
			SANS: Physical, Organoleptic, Chemical: Class I	SANS: Physical, Organoleptic, Chemical: Class II
Chemical				
Phenols (aesthetic/health)	ug/L	0	-	-
Potassium (operational/health)	mg/L as K	0	-	-
Selenium (health)	ug/L	0	-	-
Sodium (aesthetic/health)	mg/L as Na	0	-	-
Sulphate (health)	mg/L as SO4=	0	-	-
Total Trihalomethanes (health)	ug/L	0	-	-
Vanadium (health)	ug/L as V	0	-	-
Zinc (aesthetic/health)	mg/L as Zn	0	-	-

2. Overview of Percentage Compliance vs. SANS 241 for the Last 12 Months

Microbiological Safety

Area	E.coli (health)		Faecal Coliforms (health)	
	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	18817	98	974	99
Eastern Cape	2927	96	85	98
Cacadu DM	1351	91	85	98
Kouga Municipality	358	97	0	0
Hankey	24	92	0	0
Humansdorp	85	98	0	0
Jeffrey's Bay	103	100	0	0
Loerie	22	100	0	0
Oyster Bay	19	74	0	0
Patensie	41	95	0	0
St Francis Bay / Cape St Francis	42	100	0	0
Thornhill	22	100	0	0

Notes:

- The percentage compliance displayed is the percentage of all samples collected in the area falling within SANS: Microbiological Safety: Column 5.
- Based on samples taken during the last 12 months.

SANS 241 Table C.2: Compliance frequency targets in respect of microbiological and chemical requirements that have health implications

Quality of Water System	Microbiological requirement	Chemical requirement	
	Column 5 of Table 1	Class I	Class II
Excellent	>= 99%%	>= 95%%	>= 97%%
Good	>= 98%%	>= 90%%	>= 95%%
Fair	>= 97%%	>= 85%%	>= 90%%
Poor	<97%%	<85%%	<90%%

Microbiological Operational

Area	Total Coliforms (operational)	
	SampleCount	Compliance %
South Africa	14626	92
Eastern Cape	2934	85
Cacadu DM	1360	78
Kouga Municipality	358	91
Hankey	24	79
Humansdorp	85	89
Jeffrey's Bay	103	96
Loerie	22	91
Oyster Bay	19	79
Patensie	41	80
St Francis Bay / Cape St Francis	42	100
Thornhill	22	100

Notes:

- The percentage compliance displayed is the percentage of all samples collected in the area falling within SANS: Operational Limits: Acceptable Level.
- Based on samples taken during the last 12 months.

Physical

Area	Turbidity (aesthetic/operational/indirect health)		pH (aesthetic/operational)		Electrical Conductivity (aesthetic)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	15736	70	16206	99	14023	99
Eastern Cape	1702	57	1714	95	1688	100
Cacadu DM	150	75	145	53	114	96
Kouga Municipality	30	67	30	100	30	100
Hankey	2	0	2	100	2	100
Humansdorp	8	75	8	100	8	100
Jeffrey's Bay	9	100	9	100	9	100
Loerie	2	50	2	100	2	100
Patensie	3	0	3	100	3	100
St Francis Bay / Cape St Francis	4	75	4	100	4	100
Thornhill	2	50	2	100	2	100

Area	Turbidity (Operational)		Total Dissolved Solids (aesthetic)		Colour (aesthetic)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	260	100	3105	98	925	96
Eastern Cape	25	100	116	96	133	89
Cacadu DM	2	100	116	96	133	89
Kouga Municipality	0	0	30	100	30	67
Hankey	0	0	2	100	2	0
Humansdorp	0	0	8	100	8	88
Jeffrey's Bay	0	0	9	100	9	89
Loerie	0	0	2	100	2	50
Patensie	0	0	3	100	3	33
St Francis Bay / Cape St Francis	0	0	4	100	4	75
Thornhill	0	0	2	100	2	0

Area	Odour (aesthetic)		Taste (aesthetic)	
	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	461	100	265	100
Eastern Cape	3	100	0	0
Cacadu DM	3	100	0	0

Area	Odour (aesthetic)		Taste (aesthetic)	
	SampleCount	Compliance %	SampleCount	Compliance %
Kouga Municipality	0	0	0	0
Hankey	0	0	0	0
Humansdorp	0	0	0	0
Jeffrey's Bay	0	0	0	0
Loerie	0	0	0	0
Patensie	0	0	0	0
St Francis Bay / Cape St Francis	0	0	0	0
Thornhill	0	0	0	0

Notes:

- The percentage compliance displayed is the percentage of all samples collected in the area falling within SANS: Physical, Organoleptic, Chemical: Class I.
- Based on samples taken during the last 12 months.

Chemical

Area	Aluminium (health)		Iron (aesthetic/operational)		Fluoride (health)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	1423	97	2016	97	1783	99
Eastern Cape	0	0	146	96	118	100
Cacadu DM	0	0	119	96	105	100
Kouga Municipality	0	0	30	100	30	100
Hankey	0	0	2	100	2	100
Humansdorp	0	0	8	100	8	100
Jeffrey's Bay	0	0	9	100	9	100
Loerie	0	0	2	100	2	100
Patensie	0	0	3	100	3	100
St Francis Bay / Cape St Francis	0	0	4	100	4	100
Thornhill	0	0	2	100	2	100

Area	Manganese (aesthetic)		Calcium (aesthetic/operational)		Chloride (aesthetic)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	826	97	3423	100	779	89
Eastern Cape	143	98	143	97	141	95
Cacadu DM	114	99	114	96	115	95
Kouga Municipality	30	100	30	100	30	100
Hankey	2	100	2	100	2	100
Humansdorp	8	100	8	100	8	100
Jeffrey's Bay	9	100	9	100	9	100
Loerie	2	100	2	100	2	100
Patensie	3	100	3	100	3	100
St Francis Bay / Cape St Francis	4	100	4	100	4	100
Thornhill	2	100	2	100	2	100

Area	Magnesium (aesthetic/health)		Potassium (operational/health)		Sodium (aesthetic/health)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	3213	99	524	100	645	94
Eastern Cape	142	96	142	100	143	97
Cacadu DM	114	95	114	100	114	96
Kouga Municipality	30	100	30	100	30	100

Area	Magnesium (aesthetic/health)		Potassium (operational/health)		Sodium (aesthetic/health)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
Hankey	2	100	2	100	2	100
Humansdorp	8	100	8	100	8	100
Jeffrey's Bay	9	100	9	100	9	100
Loerie	2	100	2	100	2	100
Patensie	3	100	3	100	3	100
St Francis Bay / Cape St Francis	4	100	4	100	4	100
Thornhill	2	100	2	100	2	100

Area	Sulphate (health)		Nitrates and Nitrites (health)		Copper (health)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	776	100	460	100	112	100
Eastern Cape	133	100	126	100	27	100
Cacadu DM	106	100	103	100	0	0
Kouga Municipality	30	100	30	100	0	0
Hankey	2	100	2	100	0	0
Humansdorp	8	100	8	100	0	0
Jeffrey's Bay	9	100	9	100	0	0
Loerie	2	100	2	100	0	0
Patensie	3	100	3	100	0	0
St Francis Bay / Cape St Francis	4	100	4	100	0	0
Thornhill	2	100	2	100	0	0

Area	Ammonia (operational)		Arsenic (health)		Cadmium (health)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	417	99	72	100	86	100
Eastern Cape	26	92	26	100	26	100
Cacadu DM	1	0	0	0	0	0
Kouga Municipality	0	0	0	0	0	0
Hankey	0	0	0	0	0	0
Humansdorp	0	0	0	0	0	0
Jeffrey's Bay	0	0	0	0	0	0
Loerie	0	0	0	0	0	0
Patensie	0	0	0	0	0	0

Area	Ammonia (operational)		Arsenic (health)		Cadmium (health)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
St Francis Bay / Cape St Francis	0	0	0	0	0	0
Thornhill	0	0	0	0	0	0

Area	Chromium (health)		Cobalt (health)		Selenium (health)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	83	100	79	100	60	93
Eastern Cape	23	100	27	100	27	85
Cacadu DM	0	0	0	0	0	0
Kouga Municipality	0	0	0	0	0	0
Hankey	0	0	0	0	0	0
Humansdorp	0	0	0	0	0	0
Jeffrey's Bay	0	0	0	0	0	0
Loerie	0	0	0	0	0	0
Patensie	0	0	0	0	0	0
St Francis Bay / Cape St Francis	0	0	0	0	0	0
Thornhill	0	0	0	0	0	0

Area	Lead (health)		Nickel (health)		Zinc (aesthetic/health)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	69	100	86	100	364	100
Eastern Cape	25	100	25	100	0	0
Cacadu DM	0	0	0	0	0	0
Kouga Municipality	0	0	0	0	0	0
Hankey	0	0	0	0	0	0
Humansdorp	0	0	0	0	0	0
Jeffrey's Bay	0	0	0	0	0	0
Loerie	0	0	0	0	0	0
Patensie	0	0	0	0	0	0
St Francis Bay / Cape St Francis	0	0	0	0	0	0
Thornhill	0	0	0	0	0	0

Area	Antimony (health)		Mercury (health)		Vanadium (health)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	35	91	55	100	52	100
Eastern Cape	0	0	0	0	0	0
Cacadu DM	0	0	0	0	0	0
Kouga Municipality	0	0	0	0	0	0
Hankey	0	0	0	0	0	0
Humansdorp	0	0	0	0	0	0
Jeffrey's Bay	0	0	0	0	0	0
Loerie	0	0	0	0	0	0
Patensie	0	0	0	0	0	0
St Francis Bay / Cape St Francis	0	0	0	0	0	0
Thornhill	0	0	0	0	0	0

Area	Dissolved Organic Carbon (aesthetic/health)		Cyanide (recoverable) (health)		Nitrate (health)	
	SampleCount	Compliance %	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	128	95	44	95	1335	94
Eastern Cape	0	0	0	0	1	100
Cacadu DM	0	0	0	0	1	100
Kouga Municipality	0	0	0	0	0	0
Hankey	0	0	0	0	0	0
Humansdorp	0	0	0	0	0	0
Jeffrey's Bay	0	0	0	0	0	0
Loerie	0	0	0	0	0	0
Patensie	0	0	0	0	0	0
St Francis Bay / Cape St Francis	0	0	0	0	0	0
Thornhill	0	0	0	0	0	0

Area	Total Trihalomethanes (health)		Phenols (aesthetic/health)	
	SampleCount	Compliance %	SampleCount	Compliance %
South Africa	65	100	50	4
Eastern Cape	0	0	0	0
Cacadu DM	0	0	0	0
Kouga Municipality	0	0	0	0
Hankey	0	0	0	0

Area	Total Trihalomethanes (health)		Phenols (aesthetic/health)	
	SampleCount	Compliance %	SampleCount	Compliance %
Humansdorp	0	0	0	0
Jeffrey's Bay	0	0	0	0
Loerie	0	0	0	0
Patensie	0	0	0	0
St Francis Bay / Cape St Francis	0	0	0	0
Thornhill	0	0	0	0

Notes:

- The percentage compliance displayed is the percentage of all samples collected in the area falling within SANS: Physical, Organoleptic, Chemical: Class I.
- Based on samples taken during the last 12 months.

SANS 241 Table C.2: Compliance frequency targets in respect of microbiological and chemical requirements that have health implications

Quality of Water System	Microbiological requirement	Chemical requirement	
	Column 5 of Table 1	Class I	Class II
Excellent	>= 99%%	>= 95%%	>= 97%%
Good	>= 98%%	>= 90%%	>= 95%%
Fair	>= 97%%	>= 85%%	>= 90%%
Poor	<97%%	<85%%	<90%%