

Amajuba WSA								
Utrecht	√	x (Op)	√	Turbidity >1 NTU and E.coli	16	4	Turbidity failures at the reticulation point.	It was agreed and implemented that there will be increase of disinfectant dosage and increase the residual chlorine number
Waterval Prison Reservoir / Alcockspruit / Header Tanks	√	x	√	Turbidity >1 NTU	12	1	All the failures were turbidity failures at various points.	Chlorine dosage at the storage reservoir should be increased.
Dannhauser	√	x (Op)	√	Turbidity >1 NTU	20	14	The samples failed on operational limit turbidity of 1 NTU but complied with the aesthetic turbidity of 5 NTU.	
Durnacol	√	x (Op)	√	Turbidity >1	12	6	The samples failed on operational turbidity of 1 NTU.	Communication with the reticulation points should be made to curb the failures.
Hattingspruit Reservoir / Reticulation	√	x	√	Turbidity >1NTU	8	3	1 turbidity failure which complied with the aesthetic compliance of 5.	Investigate if there is a water storage before water gets to the tap.

Table C with the water quality results per Water Purification Plant. Water quality, non-conformance results are highlighted and actions and interventions indicated.

NUMBER OF PORTABLE WATER SAMPLES ANALYSED

- A total of 68 samples were submitted to the lab for analysis, all of the samples were for compliance purpose.
- Operational tests are done and recorded on the plant log books, which are kept at the treatment works and consolidated monthly for minimums, averages and maximums.

SANS 241:2011 PERFORMANCE INDICATORS (AMAJUBA WSA)

	Risk defined health (Acute or Chronic)			Risk defined Operational (Final to Distribution)			Acute Health - 1 Microbiological (<i>E. coli</i>)			Acute Health Chemical			Chronic Health Chemical			Aesthetic		
	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable
Hattingspruit	100%					63%	100%			100%			100%			100%		
Dannhauser	100%					25%	100%			100%			100%			100%		
Durnacol	100%					33%	100%			100%			100%			100%		
Waterval	100%					92%	100%			100%			100%			100%		
Utrecht	100%					75%	100%			100%			100%			100%		

SUMMARY

- There hasn't been any microbiological failure for this month.

WATER QUALITY PERFORMANCE REPORT FOR NOVEMBER 2014
WASTE WATER QUALITY

Amajuba WWTP Non Compliant variables to DWAF General Effluent Standards						
<u>Sample</u> <u>Sample</u> <u>Point</u>	COD	Suspended Solids	Ammonia	Nitrate	Phosphate	E. Coli
Utrecht	3/4 Compliant	1/4 Compliant	1/4 Compliant	4/4 Compliant	1/4 Compliant	3/4 Compliant
Tweediedale	4/4 Compliant	4/4 Compliant	0/4 Compliant	4/4 Compliant	0/4 Compliant	4/4 Compliant
Durnacol	4/4 Compliant	4/4 Compliant	4/4 Compliant	2/4 Compliant	4/4 Compliant	3/4 Compliant

Table A: displays wastewater quality compliance and non compliance as per treatment works and determinants.

NO. OF WASTEWATER SAMPLES ANALYSED

- A total number of 30 samples were submitted to the lab for analysis on various determinants with some on the table above.
- 24 samples were for compliance purpose and 6 were for operational monitoring and compliance.

Waste Water Treatment Works	Compliance Criteria			Magnitude of non-compliance			Reason for failure & Action Taken
	Chemical	Physical	Microbiological	Constituent	No of samples tested	No. of determinants failed	
Amajuba WSA							
Utrechth Ponds	x	x	√	Ammonia; Suspended solids, phosphates	08	5	Determinants that have failed to comply were ammonia, COD, phosphates and suspended solids, which the pond seems to be failing to treat altogether, cause to be investigated.
Dannhauser / Tweediedale	x	x	√	Ammonia, phosphates	10	2	The ponds have accumulated a large volume of sludge and vegetation control has to be implemented. Two determinants have failed namely phosphate, ammonia.
Durnacol	√	√	√	Nitrates and e.coli	12	2	

Table B: Waste water compliance of the Amajuba Waste Water treatment plants, i.e. Durnacol, Tweediedale and the Utrecht ponds. This table indicates the number of samples tested and parameters failed. Actions and interventions taken are indicated in the table.

POTABLE WATER QUALITY

Water Purification Works		Compliance with SANS 241:2011			Variables not meeting the Standard			Reason for failure	Action Taken
WTP Plants & supply areas	Chemical	Physical (Operational / Aesthetic)	Microbiological	Constituent	No of samples tested	No. of Samples failed			
Amajuba WSA									
Utrecht	✓	x (Op)	✓	Turbidity >1 NTU	16	2	Turbidity failure at the reticulation point should be looked into.	It was agreed and implemented that there will be increase of disinfectant dosage and increase the residual chlorine limit.	
Waterval Prison Reservoir / Alcockspruit / Header Tanks	✓	X	✓	Turbidity >1 NTU	12	3	All the failures were turbidity failures at various points.	Increase the dosage of the disinfectant and start disinfecting the reservoirs without relying on the residual chlorine form the treatment works	
Dannhauser	✓	x (Op)	✓	Turbidity >1 NTU	20	5	The samples failed on operational limit turbidity of 1 NTU but complied with the aesthetic turbidity of 5 NTU.	During the cleaning of sludge on various components of the plant, the sludge blanket was left too thin failing to assist in clearing the aesthetic quality of the water.	
Durnacol	✓	x (Op)	✓	Turbidity >1	12	2	The samples failed on operational turbidity of 1 NTU at reticulation points.	The failed points have storage containers which are deemed to cause these failures.	
Hattingspruit Reservoir / Reticulation	✓	✓	✓	Turbidity >1NTU	08	0	No failures.		

Table C with the water quality results per Water Purification Plant. Water quality, non-conformance results are highlighted and actions and interventions indicated.

SANS 241:2011 PERFORMANCE INDICATORS (AMAJUBA WSA)

	Risk defined health (Acute or Chronic)			Risk defined Operational (Final to Distribution)			Acute Health - 1 Microbiological (<i>E. coli</i>)			Acute Health Chemical			Chronic Health Chemical			Aesthetic		
	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable
Hattingspruit	100%			100%			100%			100%			100%			100%		
Dannhauser	100%					75%	100%			100%			100%			100%		
Durnacol	100%					83%	100%			100%			100%			100%		
Waterval	100%					75%	100%			100%			100%			100%		
Utrecht	100%					88%	100%			100%			100%			100%		

- **SUMMARY**
- There hasn't been any microbiological failure for this month.
- Plant performance has improved on all our water works.

WATER QUALITY PERFORMANCE REPORT FOR DECEMBER 2014
WASTE WATER QUALITY

Amajuba WWTP Non Compliant variables to DWAF General Effluent Standards

Sample Point	COD	Suspended Solids	Ammonia	Nitrate	Phosphate	E. Coli
Utrecht	4/4 Compliant	3/4 Compliant	0/4 Compliant	4/4 Compliant	2/4 Compliant	3/3 Compliant
Tweediedale	4/4 Compliant	4/4 Compliant	1/4 Compliant	4/4 Compliant	3/4 Compliant	3/3 Compliant
Durnacol	4/4 Compliant	4/4 Compliant	4/4 Compliant	3/4 Compliant	4/4 Compliant	2/3 Compliant

Table A: displays wastewater quality compliance and non compliance as per treatment works and determinants.

Waste Water Treatment Works	Compliance Criteria			Magnitude of non-compliance			Reason for failure & Action Taken
	Chemical	Physical	Microbiological	Constituent	No of samples tested	No. of determinants failed	
Amajuba WSA							
Utrecht Ponds	x	x	√	Ammonia; Suspended solids and phosphates	10	4	Determinants that have failed to comply were ammonia, phosphates and suspended solids, which the pond seems to be failing to treat altogether; it is highly recommended that the ponds are desludged increase treatment capacity.
Dannhauser / Tweediedale	x	√	√	ammonia	10	1	The ponds have accumulated a large volume of sludge and vegetation control has to be implemented. Ammonia is the only determinant that the ponds are failing to treat.
Durnacol	√	√	x	e.coli	16	1	Disinfection should be increased as the plant performance has improved overall.

Table B: Waste water compliance of the Amajuba Waste Water treatment plants, i.e. Durnacol, Tweediedale and the Utrecht ponds. This table indicates the number of samples tested and parameters failed. Actions and interventions taken are indicated in the table.

POTABLE WATER QUALITY

Water Purification Works	Compliance with SANS 241:2011			Variables not meeting the Standard			Reason for failure	Action Taken
WTP Plants & supply areas	Chemical	Physical (Operational / Aesthetic)	Microbiological	Constituent	No of samples tested	No. of Samples failed		

Amajuba WSA							
Utrecht	√	x (Op)	√	Turbidity >1 NTU	16	3	Turbidity failure at Khayaletu reservoir, at the reticulation reservoir and at the reticulation point. It was agreed and implemented that there will be increase of disinfectant dosage and increase the residual chlorine limit.
Waterval Prison Reservoir / Alcockspruit / Header Tanks	√	√	√		12	0	There were no failures.
Dannhauser	√	x (Op)	√	Turbidity >1 NTU	20	10	The samples failed on operational limit turbidity of 1 NTU but complied with the aesthetic turbidity of 5 NTU. The plant has improved its performance after it was failing at all points and now it's the reticulation points that are not complying with the turbidity limit of 1.
Durnacol	√	x (Op)	√	Turbidity >1	12	3	The samples failed on operational turbidity of 1 NTU.
Hattingspruit Reservoir / Reticulation	√	x	√	Turbidity >1NTU	8	1	1 turbidity failure which complied with the aesthetic compliance of 5.

Table C with the water quality results per Water Purification Plant. Water quality, non-conformance results are highlighted and actions and interventions indicated.

SANS 241:2011 PERFORMANCE INDICATORS (AMAJUBA WSA)

	Risk defined health (Acute or Chronic)			Risk defined Operational (Final to Distribution)			Acute Health - 1 Microbiological (<i>E. coli</i>)			Acute Health Chemical			Chronic Health Chemical			Aesthetic		
	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable	Excellent	Good	Unacceptable
Hattingspruit	100%					83 %	100%			100%			100%			100%		
Dannhauser	100%					60%	100%			100%			100%			100%		
Durnacol	100%					73%	100%			100%			100%			100%		
Waterval	100%			100%			100%			100%			100%			100%		
Utrecht	100%					81.3%	100%			100%			100%			100%		

SUMMARY

- There hasn't been any microbiological failure for this month.