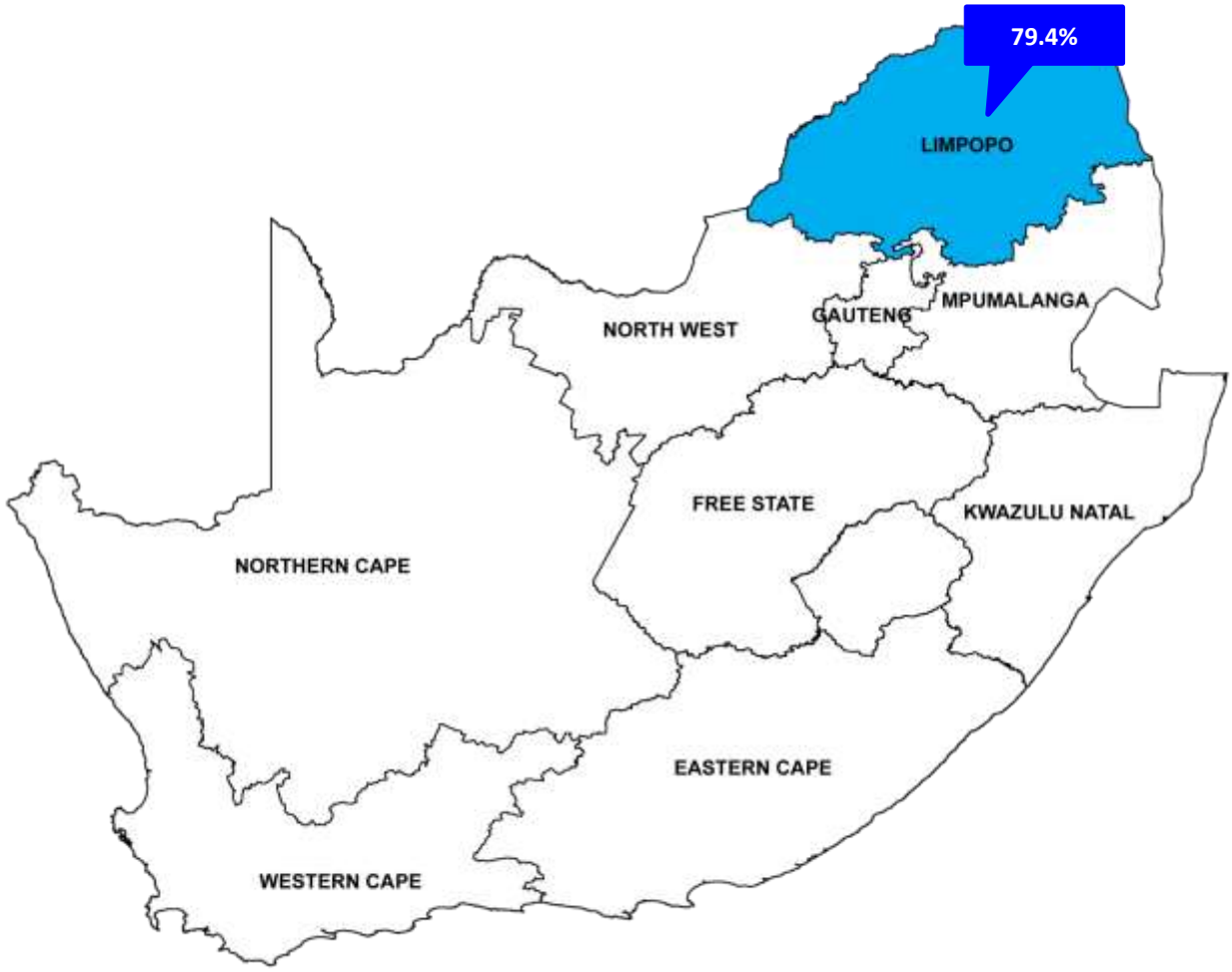


Provincial Best Performer

Lephalale Local Municipality is the best performing municipality in Limpopo Province with support from Exxaro and Eskom as their Service Providers. The Municipal Blue Drop Score of **92.84%** was achieved. Congratulations!

Blue Drop Provincial Performance Log – Limpopo

Water Services Authority	Provincial Blue Drop Log Position	Blue Drop Score 2012	Blue Drop Score 2011	Blue Drop Score 2010
Lephalale Local Municipality *(Exxaro/Khumba Resources and Eskom)*	1	92.84	82.63	34.40
Polokwane Local Municipality	2	86.52	92.61	81.00
Mopani District Municipality	3	79.21	63.87	74.50
Vhembe District Municipality	4	74.85	45.06	41.50
Capricorn District Municipality	5	71.99	86.85	55.90
Bela Bela Local Municipality	6	71.21	71.07	61.40
Modimolle Local Municipality	7	70.10	81.70	39.90
Mogalakwena Local Municipality	8	60.50	77.86	46.60
Greater Sekhukhune District Municipality	9	59.93	59.05	49.50
Thabazimbi Local Municipality	10	54.33	14.32	54.30
Mookgopong Local Municipality	11	31.73	24.79	44.90

Top 3

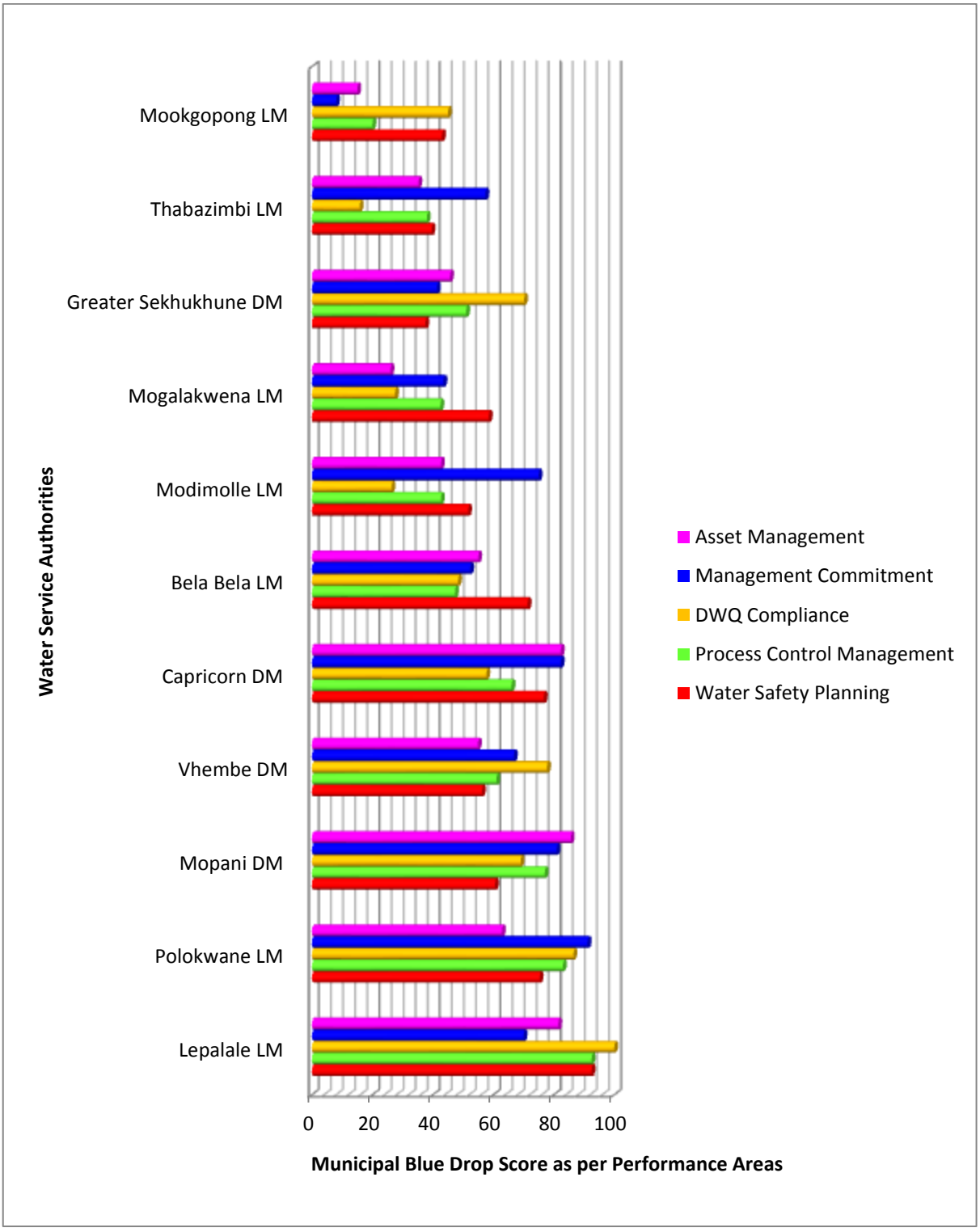
The Department wish to acknowledge and congratulate the Lephalale Local Municipality and its water services provider, Exxaro, for an exceptional performance in obtaining 1st in Limpopo Province. Other municipalities should note what is possible when planning, commitment and implementation come together. Polokwane Local Municipality remains as one of the top performers as it fills the second place in the Province. Mopani District Municipality again performed very well to fill the third place in the province.

Most Improved

This should be an acknowledgement shared between Lephalale Local Municipality and Vhembe District Municipality. Lephalale Local Municipality is acknowledged for consistent improvement in performance over the past 3 years. The municipal score for this water service authority increased from 34.4% in 2010, to 82.63% in 2011 and an impressive 92.84% in 2012. So too would be Vhembe District Municipality for scoring 41.50% in 2012, 45.06% in 2011 and then 74.85% in 2012.

Lowest Performer(s)

Mookgopong Local Municipality has been hovering at the bottom part of the log for some time now and seems to struggle to get to grips with implementing drinking water quality management procedures as per the Blue Drop requirements.


Mookgopong LM
Thabazimbi LM
Greater Sekhukhune DM
Mogalakwena LM
Modimolle LM
Bela Bela LM
Capricorn DM
Vhembe DM
Mopani DM
Polokwane LM
Lepalale LM
Water Service Authorities
0
20
40
60
80
100
Municipal Blue Drop Score as per Performance Areas
Asset Management
Management Commitment
DWQ Compliance
Process Control Management
Water Safety Planning

BLUE DROP ASSESSMENT ANALYSIS (LIMPOPO)					
Category	**2009**	**2010**	**2011**	**2012**	**Trend**
Number of Municipalities audited	6	11	11	11	(→)
Number of water systems audited	37	64	64	57	(↓)
Number of Blue Drop Awards	0	3	5	3	(↓)
Provincial Blue Drop score	54.33%	79.40%	77.33%	79.4%	(↑)

Blue Drop Certified Systems

Log position	Blue Drop Certified System	Blue Drop Score	Water Services Authority	Water Services Provider
1	**Greater Tzaneen**	**95.14%**	**Mopani District Municipality**	**Greater Tzaneen Local Municipality**
2	**Zeeland**	**95.02%**	**Lephalale Local Municipality**	**Exxaro**
3	**Letsitele**	**95.02%**	**Mopani District Municipality**	**Lepelle Northern Water**

Water Services Authority	Bela Bela Local Municipality
Water Services Provider(s)	Magalies Water
Municipal Blue Drop Score:	**71.21%**

Performance Area	Systems	Bela Bela/ Magalies [a]	Radium Borehole	Rapotokwane Boreholes
Water Safety Planning (35%)		**70**	**72**	**72**
Treatment Process Management (10%)		**90**	**26**	**26**
DWQ Compliance (30%)		**45**	**0**	**100**
Management, Accountability (10%)		**78**	**41**	**38**
Asset Management (15%)		**81**	**42**	**42**
Bonus Scores		7.93	4.50	2.90
Penalties		0	-4.00	-0.97
Blue Drop Score (2012)		**74.88% (↓)**	**38.59% (→)**	**69.72% (↑)**
2011 Blue Drop Score		78.67%	38.95%	48.45%
2010 Blue Drop Score		61.38%	Not assessed	Not assessed
System Design Capcity (Ml/d)		No information	No information	No information
Operational Capacity (% ito Design)		No information	No information	No information
Population Served		46 671	3 500	46 671
Average daily Consumption (l/p/d)		64.28	57.14	64.28
Microbiological Compliance (%)		**86.9%**	**75.0%**	**>99.9**
Chemical Compliance (%)		**97.6%**	**81.2%**	**76.1%**

Regulatory Impression

The performance of Bela Bela Local Municipality remained constant. It is, however, regrettable that the microbiological compliance of water in the Bela Bela / Magalies Water supply system, as well as the Radium boreholes, infers that drinking water in the two systems poses a risk to consumers. Nitrate / nitrite failures in the Radium system and excessive fluoride in the Rapotokwane boreholes also renders the water unsuitable for drinking due to the chemical contaminants. Municipal management are required to acknowledge the risks associated with the continued use of water not complying with the limits specified in the South African National Standard (SANS 241). Since the previous Blue Drop report also highlighted the same failures, the WSA must prioritise plans to ensure adequate treatment of these water supplies.

The Department was furnished with information to confirm that the municipality is in process of reviewing its water safety planning process. The WSA is advised to ensure the accuracy of the risk prioritisation method, and associate realistic control measures to the risks identified. While the WSA presented evidence of a full set of SANS 241 analyses on both the raw and final water, discussions indicated that the WSA questions the need for the analyses on the raw water. The WSA is reminded that treatment cannot be optimally managed if no information exists regarding the levels of pollutants that need to be removed through the various stages of treatment. Continued analyses on the raw water are furthermore required to ensure that all potential new threats to the water quality are identified and addressed through treatment.

Process control is required to improve within both borehole supply systems, and the WSA is reminded

that each of the systems should be classified according to Regulation 2834. Staff that currently takes responsibility for treatment should also be shown as competent and adequate. Operational monitoring was not conducted at the disinfection units, and failures in residual chlorine concentrations at the reservoirs were unfortunately not used to effect process control back to the point of disinfection. DWA therefore has to regard the recording of daily activities, as well as the availability of operational monitoring data, as not used to improve process control. The WSA is reminded that all monitoring data is required to be loaded onto the BDS. Signed letters related various aspects of the drinking water quality management business were acknowledged, but management are recommended to indicate commitment to improve the business by making funds available to address the risks.

Drinking water quality management by Magalies Water, supplying water into the Bela Bela system via the Klipdrift WTW, was evaluated as part of the Modimolle assessment. The evaluation identified areas that require improvement, including ensuring representation from each municipality receiving water from Magalies Water during their water safety planning process. Communication with stakeholders and improved implementation of the Incident Management Protocol also needs attention - Bela Bela should take note that the final water from the Klipdrift treatment plant does not currently comply with the SANS 241 microbiological requirements, and until such time that the plant is upgraded, the WSA and WSP should have systems in place to inform consumers of the risk. Emergency measures are also required to be undertaken to mitigate the risks to public health.

Site Inspection Scores:

Bela Bela: **56%**

The Bela Bela WTW was visited to verify the Bela Bela Local Municipality & Magalies Water Blue Drop findings. Overall, the site inspection impression was unsatisfactory, with many drinking water quality management areas requiring improvement.

Areas requiring improvement at the **Bela Bela** WTW include:

- The overall appearance of the WTW requires attention (broken windows, leaking taps, no fire extinguishers)
- The following critical documents were not present at the Bela Bela WTW:
  - Maintenance Logbook (only daily operations were logged in the daily occurrence book, not maintenance)
  - O&M Manual
  - Drinking water quality Incident Management Protocol and list of contact details
- Buffers for the calibration of the pH meter had expired at the time of inspection;
- Jar test equipment was not functional at the time of the Bela Bela inspection, and floc formation tests are not undertaken to determine the coagulant dosing rate;
- Screens are used to remove solids and debris from the raw water, but these required cleaning since scum had accumulated at the sides of the screens;
- The flocculant dosing pump was leaking at the time of the inspection;
- Occupational Health and Safety issues require attention as there was no emergency shower or eye wash;
- No standby was available for the lime dosing pump and inadequate lime stocks were available in storage;
- The flocculation process requires optimisation, as no flocs were observed at the end of the unit, and scum and sludge accumulated and bypassed into the clarifiers.

Water Services Authority	Capricorn Local Municipality
Water Services Provider(s)	Capricorn Local Municipality; Magalies Water [a]
Municipal Blue Drop Score:	**71.99%**

Performance Area	Systems	Botlokwa Regional	Mashashane	Olifantspoort [a]
Water Safety Planning (35%)		**69**	**79**	**82**
Treatment Process Management (10%)		**0**	**100**	**98**
DWQ Compliance (30%)		**28**	**100**	**45**
Management, Accountability (10%)		**77**	**85**	**85**
Asset Management (15%)		**77**	**93**	**77**
Bonus Scores		2.90	1.48	4.23
Penalties		0	0	0
Blue Drop Score (2012)		**54.55% (→)**	**91.60% (↑)**	**76.05% (↓)**
2011 Blue Drop Score		Not assessed	72.55%	87.13%
2010 Blue Drop Score		Not assessed	55.88%	Not Assessed
System Design Capacity (Ml/d)		No information	1.44	60
Operational Capacity (% ito Design)		No information	41.67	66.67
Population Served		28 000	8 999	108 518
Average daily Consumption (l/p/d)		357.14	66.67	368.60
Microbiological Compliance (%)		**95.9%**	**97.8%**	**94.6%**
Chemical Compliance (%)		**92.7%**	**>99.9%**	**97.7%**

Regulatory Impression

The performance of Capricorn District Municipality stayed on par with the requirements of the Blue Drop certification programme. Recognition goes for the information that was available to assess performance in the Botlokwa Regional-borehole supply system for the first time, the municipality also showed that continued improvements are being made to the manner in which drinking water quality is being managed in the Mashashane supply system. Circumstances that affected the ability of Lepelle Water to ensure drinking water of excellence quality at the point of use in the Olifantspoort supply system, accounted mainly for the decline in performance measured in the latter system.

Site Inspection Scores:

Oliphantspoort: **80%**

The Oliphantspoort WTW was visited to verify the Capricorn District Municipality Blue Drop findings. Overall, the site inspection impression was acceptable, and the water treatment process was well managed.

Areas requiring improvement at the Oliphantspoort WTW include:

- The Maintenance Logbook was not available at the Oliphantspoort WTW at the time of the inspection;
- Standards for calibration of the turbidity meter had expired;
- Regular jar testing is recommend to be implemented, and not only during the rainy season when

turbidity changes occur;

- The required 30 days of flocculant and chlorine storage capacity was not available at the time of the inspection;
- Occupational Health and Safety issues require further attention: Neither the emergency shower nor the eye wash was operational;
- The general housekeeping around the filters was not acceptable;
- The sludge dams were poorly maintained.

Water Services Authority	Greater Sekhukhune District Municipality
Water Services Provider(s)	Greater Sekhukhune DM; Lepelle Northern Water [a]; Dr JS Moroka LM [b]
Municipal Blue Drop Score:	**59.93%**

Performance Area	Systems	Groblersdal	Roosenekal	Flag Boshielo [a]	Marble Hall [a]
Water Safety Planning (35%)		**26**	**23**	**74**	**74**
Treatment Process Management (10%)		**44**	**E**	**80**	**70**
DWQ Compliance (30%)		**45**	**38**	**34**	**100**
Management, Accountability (10%)		**31**	**31**	**65**	**65**
Asset Management (15%)		**40**	**61**	**43**	**80**
Bonus Scores		4.50	4.50	7.13	3.11
Penalties		0	0	0	0
Blue Drop Score (2012)		**40.34% (↓)**	**39.00% (↓)**	**63.93% (↓)**	**84.26% (↑)**
2011 Blue Drop Score		66.35%	52.40%	66.45%	72.61%
2010 Blue Drop Score		44.38%	44.13%	Not assessed	11.63%
System Design Capacity (Ml/d)		18.7	0.5	8	5.5
Operational Capacity (% ito Design)		62.03	128.00	50.00	61.82
Population Served		78 552	2 603	100 000	45 000
Average daily Consumption (l/p/d)		147.67	245.87	40.00	75.56
Microbiological Compliance (%)		**81.0%**	**87.5%**	**95.3%**	**>99.9%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**	**96.1%**	**>99.9%**

Performance Area	Systems	Burgersfort [a]	Hlogotlou	Magukubjane	Masemola
Water Safety Planning (35%)		**72**	**24**	**28**	**14**
Treatment Process Management (10%)		**90**	**32**	**15**	**52**
DWQ Compliance (30%)		**100**	**73**	**100**	**75**
Management, Accountability (10%)		**65**	**38**	**31**	**31**
Asset Management (15%)		**40**	**40**	**47**	**33**
Bonus Scores		3.84	4.50	4.39	4.50
Penalties		0	0	0	0
Blue Drop Score		**80.54% (↓)**	**47.40% (↑)**	**55.61% (↑)**	**45.03% (↑)**
2011 Score		87.62%	45.39%	41.99%	44.04%
2010 Score		74.75%	39.75%	36.75%	41.25%
System Design Capacity (Ml/d)		5	2.3	0.75	1.5
Operational Capacity (% ito Design)		68.00	100.00	106.27	126.67
Population Served		230 000	17 072	3 927	35 000
Average daily Consumption (l/p/d)		14.78	134.72	202.95	54.29
Microbiological Compliance (%)		**>99.9%**	**95.9%**	**>99.9%**	**>99.9%**
Chemical Compliance (%)		**>99.9%**	**98.7%**	**>99.9%**	**>99.9%**

Performance Area	Systems	Nkosini	Vergelegen	Penge	Marishane
Water Safety Planning (35%)		**16**	**32**	**24**	**14**
Treatment Process Management (10%)		**40**	**75**	**33**	**35**
DWQ Compliance (30%)		**86**	**86**	**75**	**55**
Management, Accountability (10%)		**23**	**31**	**23**	**38**
Asset Management (15%)		**41**	**40**	**23**	**31**
Bonus Scores		4.50	4.20	4.50	4.50
Penalties		-5.00	0	-1.50	0
Blue Drop Score		**57.57% (→)**	**43.43% (↓)**	**42.90% (↑)**	**37.78% (→)**
2011 Score		Not assessed	52.94%	29.86%	Not assessed
2010 Score		Not assessed	40.00%	Not assessed	Not assessed
System Design Capacity (Ml/d)		0.9	5.1	0.2	5.8
Operational Capacity (% ito Design)		55.56	80.20	100.00	100.00
Population Served		2 100	77 133	1 954	18 752
Average daily Consumption (l/p/d)		238.10	53.03	102.35	309.30
Microbiological Compliance (%)		**96.2%**	**96.2%**	**>99.9%**	**99.9%**
Chemical Compliance (%)		**>99.9%**	**98.1%**	**>99.9%**	**94.4%**

Performance Area	Systems	Moutse [b]
Water Safety Planning (35%)		**67**
Treatment Process Management (10%)		**68**
DWQ Compliance (30%)		**45**
Management, Accountability (10%)		**65**
Asset Management (15%)		**75**
Bonus Scores		3.47
Penalties		0
Blue Drop Score		**64.89% (→)**
2011 Score		Not assessed
2010 Score		Not assessed
System Design Capacity (Ml/d)		65
Operational Capacity (% ito Design)		87.69
Population Served		242 000
Average daily Consumption (l/p/d)		235.54
Microbiological Compliance (%)		**93.3%**
Chemical Compliance (%)		**98.8%**

Regulatory Impression

The overall municipal performance of Greater Sekhukhune District Municipality remained more or less the same, most supply systems, however, showed some improvement. Water safety planning that is yet to commence in all the supply systems solely managed by the Water Services Authority, resulted in a lower score compared to systems where Lepelle Northern Water provides bulk water and already commenced the water safety planning process.

While the municipality presented more systems for evaluation this assessment cycle, a large number of systems registered on the Blue Drop System, showing data on the quality of water supplied to residents, were again not presented for evaluation. Greater Sekhukhune District Municipality needs to confirm correctness of their BDS profile, in future the Department expects that the municipality will present all the systems for evaluation. DWA similarly expressed a concern last year that a number of systems registered were not presented for evaluation. The number of registered systems, a large number also containing no information, appeared to have increased form the previous assessment cycle.

Data submitted unfortunately again indicated that the water supplied to residents within the Groblersdal and Roosenekal supply systems posed a risk of infection. The municipality has to prioritise addressing the ineffective disinfection procedures in the two systems. DWA noted that the number of systems that presented last year with serious microbiological water quality issues declined significantly, the municipality is encouraged to continue its efforts to address the risks. It is advised that monitoring in all the supply systems increase, some *E. coli* failures detected in the Flag Bosheilo, Hlogotlou and Vergelegen supply systems needs to be closely monitored. A full SANS 241 analyses must be done as part of the risk assessment process, the municipality is yet to provide all the required information to confirm that all risks are included in their chemical health compliance monitoring programme.

Water Services Authority	**Lephalale Local Municipality**
Water Services Provider(s)	**Exxaro/ Khumba Resources [a]; Eskom [b]**
Municipal Blue Drop Score:	**92.84%**

Performance Area	Systems	Zeeland [a]	Matimba [b]
Water Safety Planning (35%)		**96**	**89**
Treatment Process Management (10%)		**100**	**85**
DWQ Compliance (30%)		**100**	**100**
Management, Accountability (10%)		**70**	**70**
Asset Management (15%)		**94**	**69**
Bonus Scores		0.32	1.59
Penalties		0	0
Blue Drop Score (2012)		**95.02% (↑)**	**88.34% (↑)**
2011 Blue Drop Score		88.63%	77.41%
2010 Blue Drop Score		Not assessed	Not assessed
System Design Capacity (Ml/d)		20	23
Operational Capacity (% ito Design)		91.00	38.26
Population Served		20 373	15 000
Average daily Consumption (l/p/d)		893.34	586.67
Microbiological Compliance (%)		**99.3%**	**>99.9%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**

Regulatory Impression

The Department commends the performance of Lephalale Local Municipality during this Blue Drop assessment period. Together with their service providers (Exxaro / Khumba Resources and Eskom), DWA was impressed with the attitude of the municipal officials. Evidence was presented in contrast to the comment in the 2011 Blue Drop report: "*the municipality is not taking responsibility for their functions as a Water Services Authority*". Good drinking water quality management systems were observed up to the point of delivery to the consumer. It is with pleasure that the Department awards Blue Drop status to Lephalale and Exxaro / Khumba Resources for the Zeeland supply system. Improvements in the water safety planning process for the Matimba supply system, and ensuring that the WSA becomes more involved in the process implemented by Eskom, and vice versa, could mean that the Matimba supply system may also be well on its way of attaining Blue Drop status in the near future.

The Department encourages Lephalale to commence communication on drinking water quality within its area of supply, failure to promote their excellence performance should not be the reason for the municipality not being evaluated favourably. While the municipality and the service providers are encouraged to continue with their good work, the Department requests the WSA and WSPs to maintain adequate compliance monitoring. Analyses for all the determinands specified in SANS 241 are required to form part of their planning this year to prove that all risks are being adequately managed. Effectiveness of disinfection, as measured against the residual chlorine results, should also improve - the DWA has some concern that residual chlorine is not available at the point-of-use to safeguard the users against any unforeseen contamination.

While the Department also acknowledges that the municipality is maintaining more acceptable monitoring of the various borehole supplies, consideration should be given to combining the 35 supply systems into a single system and providing information to allow future assessments of the borehole systems. While the WSA considers how to best manage the borehole systems, disinfection should improve urgently in all the systems where data showed potential risks of infection. Furthermore, occasional fluoride and nitrate / nitrite failures warrant Lephalale to consider more conventional treatment options to minimise future risks.

Site Inspection Scores:

Matimba Power Station WTW: 99%

The Matimba Power Station WTW was visited to verify the Lephalale Local Municipality & EXXARO Blue Drop findings. Overall, the site inspection impression was excellent, indicating a well-managed facility including a well-equipped laboratory. Health, safety and access control /security are a priority at the Matimba Power Station WTW.

There were no significant areas identified as requiring improvement at the **Matimba Power Station** WTW.

Water Services Authority	**Modimolle Local Municipality**
Water Services Provider(s)	**Modimolle Local Municipality; Magalies Water** [a]
Municipal Blue Drop Score:	**70.10%**

Performance Area	Systems	Modimolle (Magalies) [a]	Mabaleng	Mabatlane
Water Safety Planning (35%)		**79**	**45**	**31**
Treatment Process Management (10%)		**68**	**30**	**30**
DWQ Compliance (30%)		**45**	**34**	**0**
Management, Accountability (10%)		**100**	**64**	**61**
Asset Management (15%)		**68**	**30**	**30**
Bonus Scores		7.72	7.50	7.50
Penalties		-1.61	-4.00	0
Blue Drop Score (2012)		**73.96% (↓)**	**43.28% (↑)**	**31.78% (↓)**
2011 Blue Drop Score		95.01%	34.00%	34.00%
2010 Blue Drop Score		39.88%	Not assessed	Not assessed
System Design Capacity (Ml/d)		21.5	No information	1.5
Operational Capacity (% ito Design)		116.28	No information	93.33
Population Served		100 000	5 000	7 000
Average daily Consumption (l/p/d)		250.00	320.00	200.00
Microbiological Compliance (%)		**90.3%**	**60.0%**	**No information**
Chemical Compliance (%)		**98.1%**	**99.9%**	**No information**

Regulatory Impression

It is with great regret that the Department has to withdraw Blue Drop certification from the Modimolle (Magalies) water supply system. However, it was noted that both the municipal and Water Board team continued to show commitment in the manner in which they approached the Blue Drop assessment. Failure to comply with the microbiological requirements of the South African National Standard for drinking water (SANS 241) at the Klipdrift WTW resulted in the microbiological quality of the water at the point-of-use not being classified as excellent. The lack of evidence to confirm adequate implementation of the incident management protocol including communication with consumers regarding the risks, along with the lack of a coordinated and integrated approach to the water safety planning process between the municipality and Water Board, further compromised the Blue Drop score obtained. While DWA encourages the WSA and WSP to address the shortcomings during the review of their risk assessment process, special attention should be given to the cadmium and mercury failures evident in the water from the Klipdrift treatment plant.

Magalies Water indicated that the Klipdrift treatment plant is in process of being upgraded since it operates above design capacity. The contact time for disinfection appears to be compromised in an attempt to meet the demand, plans to improve treatment needs to be prioritised since the quality of water supplied from the plant presently does not comply with SANS 241.

Drinking water quality management performance in the Mabaleng and Mabatlane water supply systems has to improve to the satisfaction of the DWA. Although DWA is grateful that the municipality has commenced with monitoring in the Mabaleng supply system, the data infers that the water is of

unsuitable microbiological quality. The situation demands the attention of the municipal administration and governance, and it is essential that improvement is shown in all areas highlighted by a poor score.

Site Inspection Scores:

Klipdrift (Magalies Water): 89%

The Klipdrift WTW and the Mabaleng Boreholes in the area were visited to verify the Modimolle Local Municipality Blue Drop findings. Overall, the site inspection impression was good at the Klipdrift WTW and satisfactory at the Mabaleng borehole.

Areas requiring improvement at the **Klipdrift** WTW include:

- Buffers for the calibration of the pH meter had expired at the time of inspection;
- The standby pump for lime dosing was in the workshop for repairs;
- Housekeeping in the lime storage was unsatisfactory (lime spillage all over the floor and empty bags also stored in the room);
- No flocs were visible at the end of the flocculation unit – some process optimisation may be necessary;
- The sludge dams are not well maintained (full of reeds).

Weekly jar testing at the Klipdrift WTW

Poor housekeeping in the lime storage area

Areas requiring improvement at the **Mabaleng Borehole and Reservoir** include:

- The fence at the borehole was broken, posing a risk for unauthorized entry;
- The flow meter at the borehole was not functional at the time of the inspection;
- There was also excess leakage at the gland packaging observed at the Mabaleng Borehole;
- Records of flow measurements only commenced in October 2011 at the reservoir;
- Long grass was observed at the reservoir and general housekeeping requires improvement in the reservoir area.

Flowmeter not functional at boreholes

Chlorine tablets dosed at reservoir

Water Services Authority	Mogalakwena Local Municipality
Water Services Provider(s)	Mogalakwena Local Municipality; Lepelle Northern Water [a]
Municipal Blue Drop Score:	**60.50%**

Performance Area	Systems	Doorndraai [a]	Mahwelereng
Water Safety Planning (35%)		**76**	**41**
Treatment Process Management (10%)		**85**	**0**
DWQ Compliance (30%)		**55**	**0**
Management, Accountability (10%)		**72**	**15**
Asset Management (15%)		**52**	**0**
Bonus Scores		1.25	0
Penalties		0	0
Blue Drop Score (2012)		**67.94% (↓)**	**15.85% (→)**
2011 Blue Drop Score		77.86%	Not assessed
2010 Blue Drop Score		46.63%	Not assessed
System Design Capacity (Ml/d)		12	No information
Operational Capacity (% ito Design)		100.00	No information
Population Served		125 137	36 522
Average daily Consumption (l/p/d)		95.89	54.76
Microbiological Compliance (%)		**99.5%**	**81.6%**
Chemical Compliance (%)		**90.9%**	**No information**

Regulatory Impression

It is regrettable that the Department cannot again congratulate the Mogalakwena Local Municipality and Lepelle Water Board on a significant improvement in the management of drinking water quality in the Doorndraai water supply system. Measured against the 2011 Blue Drop requirements, performance declined. The chemical quality of the water did not comply with the excellence requirements of the South African National Standard for drinking water (SANS 241). Both Mogalakwena and Lepelle Water are, however, thanked for addressing past disinfection deficiencies which, in previous years, rendered the water unsafe for human consumption due to the acute infection risk posed by micro-organisms.

DWA acknowledged the receipt of data from Lepelle Water who, on behalf of the municipality, conducted a full set of SANS 241 analyses to determine the chemical quality of the drinking water supplied to residents within Doorndraai. While results of the analyses are required to be used to inform the risk assessment process and improve the design of monitoring programmes, the Department noted that monitoring frequencies for risk-defined determinands did not increase, for example cadmium and mercury. The WSA / WSP is advised to immediately increase monitoring for the risk-defined determinands to allow a better evaluation and understanding of the public health risk posed by these determinands which exceeded the limits specified in SANS 241.

As already implied, the 2011 supply of drinking water in Doorndraai supply system was deemed to be of excellent microbiological quality (data submitted by both the WSA and WSP was used to determine compliance). Microbiological water quality data submitted by the WSA for the Mahwelerebng system, unfortunately, showed a significant number of *E. coli* failures. The DWA noted that the municipality only

recently commenced disinfection of the borehole water. The municipality is encouraged to ensure that all aspects of good drinking water quality management are being adhered to including classification of the borehole system against Regulation 2834, and ensuring that the process controlling staff is competent to manage this system and improve on disinfection.

In conclusion, DWA noted the very good working relationship between the WSA and WSP. Information submitted to the Department shows that the Water Board has the required competency to manage drinking water quality against legislative requirements; the local municipality are thus recommended to seek assistance from the WSP to ensure improvements in the areas identified as requiring attention, including asset management, financial management related to the drinking water quality budget, publication of performance and incident management.

Site Inspection Scores:

Doorndraai: 90%

The Doorndraai WTW was visited to verify the Mogalakwena Local Municipality Blue Drop findings. Overall, the site inspection impression was very good. The motivation levels of the Process Controllers and the pride that they have in their work, was particularly commendable.

Areas requiring improvement at the **Doorndraai** WTW include:

- Jar testing equipment was not available at the Doorndraai WTW since jar testing is undertaken at Lepelle Water depending on the raw water turbidity;
- Effective flash mixing was not occurring at the chemical dosing point, and it was advised that the dosing channel be moved to a slightly higher point;
- Only 3 weeks of flocculant was available in storage (30 days is recommended) at the time of the inspection. There was also inadequate lime stocks available in storage;
- While the amount of chlorine gas remaining in the container was monitored, one switch over device for the chlorine gas was broken.

Two blowers are available – one operational, one standby

Good consideration of safety issues

Water Services Authority	**Mookgopong Local Municipality**
Water Services Provider(s)	**Mookgopong Local Municipality**
Municipal Blue Drop Score:	**31.73%**

Performance Area	Systems	Welgevonden
Water Safety Planning (35%)		**43**
Treatment Process Management (10%)		**20**
DWQ Compliance (30%)		**45**
Management, Accountability (10%)		**8**
Asset Management (15%)		**15**
Bonus Scores		0.75
Penalties		-2.50
Blue Drop Score (2012)		**31.73%** (↑)
2011 Blue Drop Score		24.79%
2010 Blue Drop Score		44.88%
System Design Capacity (Ml/d)		1.6
Operational Capacity (% ito Design)		100.00
Population Served		25 000
Average daily Consumption (l/p/d)		64.00
Microbiological Compliance (%)		**94.4%**
Chemical Compliance (%)		**99.7%**

Regulatory Impression

It is regrettable that the DWA again found the drinking water quality management practices of the Mookgopong Local Municipality to be below standard. The DWA was, however, pleasantly surprised that the municipality, assisted by their appointed consultant, provided the Department with information during the Confirmation session in March 2012 confirming that work had commenced to improve performance following the November 2011 technical site inspection. The municipality is encouraged to continue improving their water safety planning process, but without municipal management prioritising water services delivery, the quality of the services are not likely to improve. Similar sentiments were expressed in the 2011 Report. The water safety plan should clearly delineate the risk prioritisation method followed, roles and responsibilities, timeframes as well as the routes for communication.

In addition, procedures available to manage incidents require immediate attention, since compliance monitoring currently shows that the drinking water poses a risk to public health. Disinfection, as evident by the number of residual chlorine failures, needs to be optimised. While the water is deemed to be of excellent chemical quality, determined against a good set of data for a number of risk-defined determinands, the WSA is still encouraged to conduct a full set of SANS 241 analyses. Data submitted does not confirm that all the required analyses were done in November 2011.

The Department is of opinion that evidence supporting the evaluation of management commitment and asset management could be enhanced if a single person within the WSA takes responsibility for this function and ensures a more appropriate system to record and store information in future. Technical staff made reference to a number of documents and processes, but the fact that DWA was not furnished with all the required evidence following the assessment implies that no-one took responsibility for the

outstanding actions.

Compliance with Regulation 2834 (soon to be replaced by Regulation 17) and systems to ensure optimum treatment were found to be below expectations. While DWA took note that the WSA mailed the information to the National DWA Office requesting reclassification, Mookgopong is again reminded that the process is required to be initiated by the municipality on the Blue Drop System (BDS). Furthermore, a formal request for Process Controller skills assessments is required to be submitted to DWA, and the WSA should thereafter maintain communication with the Department until the competency assessments have been concluded.

Site Inspection Scores:

Welgevonden WTW: 27%

The Welgevonden WTW was visited to verify the Mookgopong Local Municipality Blue Drop findings. Overall, the site inspection impression was unacceptable and much work needs to be done to ensure an adequate facility to treat water and to provide a conducive working environment for Process Controllers.

Areas requiring improvement at the **Welgevonden** WTW include:

- The Welgevonden WTW has not yet been classified and an application for classification has not been submitted by the Mookgopong Local Municipality;
- Attention needs to be focused on providing an acceptable working environment for Process Controllers:
  - There was no place for Process Controllers to eat or wash
  - Conditions in the flocculant and lime dosing room were hazardous to health
  - There was no emergency shower or eye wash
  - There was no chlorine safety equipment available (alarm, detector, or extractor fan)
- The following critical documents were not present at the Welgevonden WTW:
  - O&M Manual
  - Drinking water quality Incident Management Protocol (only a list of emergency contact details exists)
- No operational monitoring was undertaken by the Process Controllers. The only operational monitoring equipment available was a turbidity meter in poor condition. No jar testing occurred to determine coagulant dosage;
- There was inadequate standby capacity for the raw water pumps;
- There was no mechanism to remove solids and debris from the raw water;
- The condition of the flocculant dosing pump was poor and no standby pump existed;
- The lime dosing equipment was also in a poor condition, and housekeeping in the lime dosing room was unacceptable;
- There was no standby for the chlorination system, and inadequate monitoring of the gas remaining in the container (no scale or switch over device);
- Process optimisation and management is recommended:
  - The channel that leads from the floc channel to the sedimentation tanks was covered with a large amount of scum
  - Irregular desludging of the sedimentation tanks occurred

Water Services Authority	**Mopani District Municipality**
Water Services Provider(s)	**Mopani DM; Lepelle Northern Water [a]; Nkowankowa LM [b]; Tzaneen LM [c]; Ba-Phalaborwa LM [d]; Letaba LM [e]**
Municipal Blue Drop Score:	**79.21%**

Performance Area	Systems	Nkowankowa [a;b;a]	Phalaborwa / Lulekani / Namakgale [a;d]	Letaba Politisi / Modjadji [a;e]	Haenertsburg [a;c]
Water Safety Planning (35%)		**86**	**84**	**85**	**86**
Treatment Process Management (10%)		**70**	**70**	**70**	**70**
DWQ Compliance (30%)		**100**	**100**	**100**	**41**
Management, Accountability (10%)		**92**	**92**	**92**	**92**
Asset Management (15%)		**96**	**96**	**96**	**96**
Bonus Scores		2.56	2.73	2.63	7.32
Penalties		0	0	0	-0.34
Blue Drop Score (2012)		**93.07% (↑)**	**92.63% (↑)**	**92.88% (↑)**	**79.87% (→)**
2011 Blue Drop Score		69.62%	80.47%	61.97%	Not assessed
2010 Blue Drop Score		82.50%	86.00%	84.25%	Not assessed
System Design Capacity (Ml/d)		24	No information	17.5	No information
Operational Capacity (% ito Design)		91.67	No information	76.00	No information
Population Served		80 000	61 724	18 000	584
Average daily Consumption (l/p/d)		275.00	486.03	738.89	513.70
Microbiological Compliance (%)		**98.4%**	**99.7%**	**>99.9%**	**96.9%**
Chemical Compliance (%)		**98.6%**	**97.3%**	**97.0%**	**92.9%**

Performance Area	Systems	Greater Tzaneen Municipality [c]	Letsitele [c]	Nondweni	Nkambako
Water Safety Planning (35%)		**90**	**89**	**43**	**43**
Treatment Process Management (10%)		**100**	**100**	**75**	**75**
DWQ Compliance (30%)		**100**	**100**	**45**	**45**
Management, Accountability (10%)		**84**	**84**	**77**	**77**
Asset Management (15%)		**88**	**88**	**76**	**86**
Bonus Scores		2.09	2.13	13.49	13.04
Penalties		0	0	-2.25	-2.17
Blue Drop Score		**95.14% (→)**	**95.02% (→)**	**66.27% (↑)**	**67.39% (↑)**
2011 Score		95.08%	95.05%	30.43%	27.33%
2010 Score		95.63%	95.63%	51.13%	53.63%
System Design Capacity (Ml/d)		15	1.4	1	12
Operational Capacity (% ito Design)		46.67	57.14	90.00	66.67
Population Served		13 000	3 000	3 333	60 000
Average daily Consumption (l/p/d)		538.46	266.67	270.03	133.33
Microbiological Compliance (%)		**99.3%**	**>99.9%**	**91.7%**	**92.5%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**

Performance Area	Systems	Tours	Thabina	Thapane Semarela	Giyani
Water Safety Planning (35%)		**43**	**39**	**41**	**40**
Treatment Process Management (10%)		**75**	**75**	**75**	**75**
DWQ Compliance (30%)		**100**	**55**	**45**	**45**
Management, Accountability (10%)		**77**	**62**	**77**	**77**
Asset Management (15%)		**80**	**76**	**76**	**76**
Bonus Scores		8.36	10.81	13.73	13.81
Penalties		0	-1.35	-2.29	-2.30
Blue Drop Score		**80.49% (↑)**	**64.41% (↑)**	**65.68% (↑)**	**65.48% (↑)**
2011 Score		29.55%	7.75%	38.50%	41.85%
2010 Score		41.88%	49.38%	44.63%	54.38%
System Design Capacity (Ml/d)		4	10	4.5	29.4
Operational Capacity (% ito Design)		200.00	120.00	84.44	102.04
Population Served		60 000	50 000	30 500	182 000
Average daily Consumption (l/p/d)		133.33	240.00	124.59	164.84
Microbiological Compliance (%)		**>99.9%**	**>99.9%**	**93.3%**	**89.2%**
Chemical Compliance (%)		**>99.9%**	**No information**	**>99.9%**	**>99.9%**

Performance Area	Systems	Mapuve	Middle Letaba
Water Safety Planning (35%)		**40**	**41**
Treatment Process Management (10%)		**75**	**75**
DWQ Compliance (30%)		**45**	**45**
Management, Accountability (10%)		**77**	**77**
Asset Management (15%)		**90**	**80**
Bonus Scores		9.21	13.53
Penalties		-2.19	-2.25
Blue Drop Score		**63.17% (↑)**	**66.18% (↑)**
2011 Score		24.00%	48.38%
2010 Score		Not assessed	Not assessed
System Design Capacity (Ml/d)		4	36
Operational Capacity (% ito Design)		87.50	47.22
Population Served		17 000	52 000
Average daily Consumption (l/p/d)		205.88	326.92
Microbiological Compliance (%)		**81.0%**	**90.4%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**

Regulatory Impression

The DWA Inspectors identified lack of municipal management support as a reason of concern which could delay future improvements in the drinking water quality management performance of the Mopani District Municipality. While the municipality provided information that allowed a better assessment of performance in most of the supply systems managed solely by Mopani, a number of systems were still found not-assessed. Water to residents in the Nondweni, Nkambako, Thapane Semarela, Giyani,

Mapuve and Middle Letaba water supply areas were found of a microbiological quality not compliant with the requirements of SANS 241 (South African National Standard for Drinking Water). While the municipality improves on chemical compliance monitoring to confirm that monitoring only fluoride, nitrate / nitrite and sulphate is sufficient to safeguard against all the chemical health determinands which could be associated with drinking water, disinfection needs to improve. Failures of residual chlorine levels at points of use further confirm the need to improve treatment.

The performance of Mopani was measured at higher scores in systems where the WSA received assistance from Tzaneen Local Municipality and Northern Lepelle Water. While the performance in systems receiving water from Lepelle Water (Nkowankowa; Phalaborwa, Lulekani & Namakgale as well as Letaba Politisi & Modjadji) remain on the brink of Blue Drop status, the DWA evaluated performance of Mopani and Tzaneen LM of a quality in the Greater Tzaneen and Letsitele supply systems that deserves Blue Drop status for a second year.

Water Services Authority	**Polokwane Local Municipality**
Water Services Provider(s)	**Lepelle Water Board**
Municipal Blue Drop Score:	**86.52%**

Performance Area	Systems	Chuenemaja	Molepo	Houtrivier / Moletjie Area	Seshego [a]
Water Safety Planning (35%)		**69**	**69**	**62**	**75**
Treatment Process Management (10%)		**95**	**68**	**100**	**100**
DWQ Compliance (30%)		**100**	**89**	**55**	**100**
Management, Accountability (10%)		**89**	**96**	**77**	**89**
Asset Management (15%)		**72**	**65**	**60**	**63**
Bonus Scores		4.33	5.99	8.97	3.32
Penalties		-0.25	-0.75	0.00	-0.62
Blue Drop Score (2012)		**87.29% (↑)**	**82.02% (↑)**	**73.79% (↓)**	**87.12% (↓)**
2011 Blue Drop Score		81.44%	79.89%	76.57%	89.65%
2010 Blue Drop Score		55.10%	66.38%	53.63%	66.38%
System Design Capacity (Ml/d)		No information	No information	3.4	3.9
Operational Capacity (% ito Design)		No information	No information	88.24	100.00
Population Served		45 000	40 000	60 000	100 000
Average daily Consumption (l/p/d)		422.22	475.00	50.00	39.00
Microbiological Compliance (%)		**99.1%**	**99.8%**	**98.1%**	**99.0%**
Chemical Compliance (%)		**97.1%**	**96.4%**	**93.5%**	**98.9%**

Performance Area	Systems	City Polokwane [a]	Mankweng Area [a]
Water Safety Planning (35%)		**89**	**88**
Treatment Process Management (10%)		**85**	**50**
DWQ Compliance (30%)		**100**	**75**
Management, Accountability (10%)		**96**	**100**
Asset Management (15%)		**69**	**48**
Bonus Scores		2.68	6.37
Penalties		-0.26	-0.80
Blue Drop Score		**92.03% (→)**	**80.89% (↓)**
2011 Score		95.05%	95.15%
2010 Score		95.70%	Not assessed
System Design Capacity (Ml/d)		77	56
Operational Capacity (% ito Design)		94.16	92.86
Population Served		150 000	100 000
Average daily Consumption (l/p/d)		483.33	520.00
Microbiological Compliance (%)		**99.6%**	**98.3%**
Chemical Compliance (%)		**99.4%**	**96.3%**

Regulatory Impression

Polokwane Local Municipality was represented at the Blue Drop assessments by a dedicated team comprising representatives from both the Water Services Authority and Water Services Provider (Lepelle Northern Water). The team's overall understanding of drinking water quality management and subsequent control of the various supply systems is good. The Department was however not convinced that the risk management systems comply with the various regulatory requirements of excellence. Polokwane Local Municipality and Lepelle Northern Water are encouraged to further implement risk management strategies in line with the requirements of the World Health Organisation and also to study and implement the monitoring criteria as stated in the latest South African National Standard for Drinking Water (SANS 241: 2011).

The shortcomings in the risk-assessment process, changes that still needs to be made to monitoring, as well as the fact that process optimisation audits still needs to be completed for all the treatment plants managed by Polokwane Local Municipality, prevented the Department from again awarding Blue Drop status to both the Polokwane City and Mankweng supply systems. The Water Services Authority is reminded that evidence must be available on the Blue Drop System to confirm that a full SANS 241 analyses had been done at least annually in each of the supply systems. Intensive monitoring for only nitrate / nitrite, sulphate and to a lesser extend fluoride, should be shown adequate and representative of all potential risks to the water supplies. Information is furthermore required to confirm asset management against the requirements of the Regulator (the municipality should improve on their asset register, information related to financial expenditure should be more readily available, while flow records should be available at each of the treatment plants.)

Lepelle Northern Water Board needs to immediately improve treatment at both the Olifantspoort and Ebenezer water treatment works. Failure to do so might compromise the ability of any of the municipalities receiving water from the Water Board to attain Blue Drop Status in future. The microbiological quality of final water from the Olifantspoort plant was below the requirements of SANS 241, the water poses a risk to human health. Similarly, too many cadmium and mercury failures were reported in the final water from the Ebenezer treatment plant.

Site Inspection Scores:

Seshego WTW: **53%**

The Seshego WTW and Olifantspoort WTW in the area were visited to verify the Polokwane Local Municipality and Lepelle Water Blue Drop findings. Overall, the site inspection impression at the Seshego WTW was not satisfactory, and further consideration needs to be given to chemical dosing systems, process optimisation and Occupational Health & Safety issues to ensure an adequate facility to treat water to achieve drinking water standards.

Areas requiring improvement at the **Seshego** WTW include:

- The following critical documents were not present onsite at the Seshego WTW:
  - Maintenance Logbook (Defect book is kept by the Supervisor, but not onsite)
  - O&M Manual
  - Drinking water quality Incident Management Protocol or emergency contacts list
- The coagulant dosing rate is not adequately verified by the monthly jar testing;
- Chemical dosing systems require improvement:

- The condition of one flocculant dosing pump was poor and one pump was not operational. There was also no standby for the flocculant dosing system;
- The standby for the chlorine dosing system was stored offsite. There was no monitoring of the amount of gas remaining in the container and no switch over device was available.

- Inadequate attention was focused on Occupational Health and Safety issues:
  - There was no emergency shower or eye wash
  - There was inadequate chlorine safety equipment available (no masks or alarms)
- Optimisation and management of the Phase Separation process is recommended:
  - Sedimentation: There was a large concentration of floc carry over to the filters and no desludging records were maintained
  - Sand filtration: Poor hydraulic control in terms of flow splitting to filters, uneven bubble distribution during backwash, backwashing frequency exceeded 48 hours at times and cracks and mudballs were observed on the filer media surface
- Sludge dams were not well maintained.

Seshego WTW is a neat & well-maintained facility

Reeds observed in the sludge dams

Water Services Authority	Thabazimbi Local Municipality
Water Services Provider(s)	Thabazimbi Local Municipality; Magalies Water [a]
Municipal Blue Drop Score:	**54.33%**

Performance Area	Systems	Magalies Water / Thabazimbi [a]	Northam	Leeupoort	Rooiberg
Water Safety Planning (35%)		**57**	**55**	**29**	**29**
Treatment Process Management (10%)		**50**	**100**	**15**	**15**
DWQ Compliance (30%)		**45**	**34**	**0**	**0**
Management, Accountability (10%)		**76**	**76**	**45**	**45**
Asset Management (15%)		**65**	**69**	**14**	**14**
Bonus Scores		4.98	5.79	4.50	4.50
Penalties		-2.21	0	-2.50	-2.50
Blue Drop Score (2012)		**58.48% (↑)**	**62.90% (↑)**	**20.18% (↓)**	**20.18% (↑)**
2011 Blue Drop Score		13.69%	12.78%	21.28%	13.68%
2010 Blue Drop Score		54.25%	Not assessed	Not assessed	Not assessed
System Design Capacity (Ml/d)		No information	No information	No information	No information
Operational Capacity (% ito Design)		No information	No information	No information	No information
Population Served		28 000	17 000	3 500	11 000
Average daily Consumption (l/p/d)		250.00	294.12	57.14	68.18
Microbiological Compliance (%)		**93.0%**	**72.4%**	**92.9%**	**62.5%**
Chemical Compliance (%)		**97.1%**	**>99.9%**	**62.5%**	**71.9%**

Performance Area	Systems	Schilpadnest
Water Safety Planning (35%)		**28**
Treatment Process Management (10%)		**10**
DWQ Compliance (30%)		**0**
Management, Accountability (10%)		**45**
Asset Management (15%)		**14**
Bonus Scores		0.00
Penalties		-2.50
Blue Drop Score		**14.83% (↑)**
2011 Score		13.13%
2010 Score		Not assessed
System Design Capacity (Ml/d)		No information
Operational Capacity (% ito Design)		No information
Population Served		19 000
Average daily Consumption (l/p/d)		52.63
Microbiological Compliance (%)		**68.6%**
Chemical Compliance (%)		**91.4%**

Regulatory Impression

Drinking water quality management performance in Thabazimbi Local Municipality remained constant. Apart from the improved performance in the Greater Thabazimbi and Northam supply systems, which are actually attributed to a more detailed evaluation of the more acceptable performance of Magalies Water this year, the municipality provided little information to indicate that previous requests by the Department are receiving the required attention. Drinking water quality continues to pose an unacceptable risk to human health in the Leeupoort, Rooiberg and Schilpadnest supply systems.

To make matters worse, the excellent microbiological quality of the water delivered by Magalies Water in the Greater Thabazimbi and Northam supply systems, deteriorated to the point that the water in these two distribution systems also showed significant *E. coli* failures. From a microbiological perspective, all water supplied by the Thabazimbi Local Municipality exposes consumers to a significant risk of contracting diarrhoeal disease.

Fluoride failures in almost all the supply systems (Leeupoort, Rooiberg and Schilpadnest) were again found to be another significant risk which remained unresolved. Although compliant with the overall annual requirements for chemical compliance in SANS 241: 2006, water from the Magalies owned Vaalkop treatment works which feeds Greater Thabazimbi, unfortunately also indicated a number of arsenic, cadmium, fluoride and mercury failures. While the authority continued to monitor fluoride and nitrate / nitrite at the point-of-use, no monitoring of arsenic, cadmium, fluoride and mercury was undertaken at the point-of-use. This is further evidence that the municipality does not take responsibility for the implementation of the water safety planning process themselves. Since chemical compliance was therefore not calculated against all the required risk-defined determinand data, the DWA has to conclude that it has little confidence in the acceptable overall chemical compliance recorded for the Greater Thabazimbi supply system.

In conclusion, it is regrettable that the findings from the 2010 Blue Drop Report still apply: "*From a regulatory point of view, poor DWQ presents a high risk situation to public health. The Department of Water Affairs expresses a zero confidence level in the municipality's ability to render a safe and sustainable DWQ service*."

The communities and visitors to the towns of Northam, Rooiberg and Schilpadnest are hereby warned not to consume tap water without home disinfection treatment (boiling or bleach addition). This warning will remain in place until an official announcement is made by the municipality in proving the contrary.

Site Inspection

The Leeuport Boreholes were visited to verify the Thabazimbi Local Municipality Blue Drop findings. Overall, the site inspection impression was not satisfactory due to lack of disinfection of the water supplied to the community.

Areas requiring improvement at the **Leeupoort Boreholes** include:

- No disinfection of the reservoir was occurring because the chlorination system was not functional at the time of inspection;
- The flow meter from the borehole was not functional;
- The water was not being reticulated to the community: the filters used to remove the elevated

fluoride concentrations in the water are too small to supply additional volume and so the water is only used for drinking. There is a single Jojo tank where community comes to collect water for drinking.

Non-functional flowmeter

A filtration system is used to remove fluoride from the water

Water Services Authority	**Vhembe District Municipality**
Water Services Provider(s)	**Vhembe DM; Musina LM [a]; Thulamela LM [b]; Mutale LM [c]; Makhado LM [d]; Naledi LM [e]**
Municipal Blue Drop Score	**74.85%**

Performance Area	Systems	Musina [a]	Thohoyandou [b]	Malamulele [b]	Mutale [c]
Water Safety Planning (35%)		**61**	**62**	**64**	**63**
Treatment Process Management (10%)		**75**	**50**	**90**	**65**
DWQ Compliance (30%)		**86**	**78**	**90**	**93**
Management, Accountability (10%)		**70**	**66**	**66**	**66**
Asset Management (15%)		**61**	**65**	**65**	**55**
Bonus Scores		6.13	5.08	3.81	6.07
Penalties		0	0	0	0
Blue Drop Score (2012)		**76.95% (↑)**	**71.21% (↑)**	**78.39% (↑)**	**77.17% (↑)**
2011 Blue Drop Score		32.00%	51.65%	36.93%	50.10%
2010 Blue Drop Score		44.00%	58.13%	44.13%	41.25%
System Design Capacity (Ml/d)		26	7	16	13.04
Operational Capacity (% ito Design)		53.85	57.14	91.25	46.40
Population Served		50 000	102 000	200 000	80 000
Average daily Consumption (l/p/d)		280.00	6.86	8.00	16.30
Microbiological Compliance (%)		**96.6%**	**96.8%**	**99.3%**	**>99.9**
Chemical Compliance (%)		**>99.9**	**>99.9**	**>99.9**	**>99.9**

Performance Area	Systems	Nzhelele [d]	Elim [d]	Kutama [d]	Makhado [d]
Water Safety Planning (35%)		**29**	**52**	**28**	**57**
Treatment Process Management (10%)		**25**	**30**	**18**	**75**
DWQ Compliance (30%)		**34**	**50**	**50**	**89**
Management, Accountability (10%)		**66**	**50**	**50**	**35**
Asset Management (15%)		**28**	**34**	**49**	**53**
Bonus Scores		10.50	7.50	7.50	5.19
Penalties		0.00	0.00	0.00	0.00
Blue Drop Score (2012)		**44.08% (↑)**	**53.79% (↑)**	**46.40% (↑)**	**70.59% (↑)**
2011 Score		12.18%	29.73%	21.03%	44.66%
2010 Score		41.50%	32.50%	Not assessed	54.13%
System Design Capacity (Ml/d)		5	No information	No information	10.36
Operational Capacity (% ito Design)		100.00	No information	No information	101.35
Population Served		500 000	70 000	120 000	50 000
Average daily Consumption (l/p/d)		10.00	114.29	125.00	210.00
Microbiological Compliance (%)		**88.4%**	**94.0%**	**96.1%**	**>99.9%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**

Performance Area / Systems	Musekwa	Mutshedzi[d]	Tshifhire[d]	Tshedza[d]
Water Safety Planning (35%)	**30**	**54**	**57**	**52**
Treatment Process Management (10%)	**60**	**78**	**70**	**75**
DWQ Compliance (30%)	**89**	**89**	**89**	**75**
Management, Accountability (10%)	**39**	**54**	**54**	**54**
Asset Management (15%)	**39**	**59**	**52**	**58**
Bonus Scores	7.10	4.90	4.98	5.65
Penalties	-1.42	0.00	0.00	0.00
Blue Drop Score (2012)	**58.37% (↑)**	**72.26% (↑)**	**71.77% (↑)**	**67.97% (↑)**
2011 Score	10.18%	46.00%	43.65%	39.20%
2010 Score	40.25%	Not assessed	Not assessed	44.00%
System Design Capacity (Ml/d)	1	8.64	0.864	1
Operational Capacity (% ito Design)	100.00	158.56	100.00	100.00
Population Served	7 000	97 000	12 900	20 000
Average daily Consumption (l/p/d)	142.86	141.24	66.98	50.00
Microbiological Compliance (%)	**>99.9%**	**99.0%**	**>99.9%**	**96.7%**
Chemical Compliance (%)	**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**

Regulatory Impression

The 2012 Blue Drop scores for Vhembe District Municipality indicates the significant achievement of improvement in performance for every water supply system within the water services authority's area of jurisdiction. This momentous accomplishment warrants celebration of the dedication of those responsible for drinking water quality operations and management within this municipality.

There remain shortcomings that require attention over next assessment cycle to ensure the tap water quality management in this most northern municipality continues on the track of improvement.

The Incident Management Protocol must be amended to include subject matter more relevant to drinking water quality and not only emergencies in general. To date the protocol is forming a solid basis for incident management since it indicates alert levels, response time, roles and responsibilities.

The number of data sets (water quality results) per supply system, and detail of the water safety plans, does not allow for an easy determination of what influenced the number of samples per water supply systems. The municipality is encouraged to develop and implement risk based monitoring programmes according to SANS 241 requirements. The Department could not allocate full scores under the drinking water quality compliance criteria since the municipality could not present evidence of a full SANS 241 analyses that would indicate key risk determinands. The Chemical monitoring programmes mostly catered for Fluoride, Iron and Manganese; this would be regarded as inadequate in areas where mining activity is prevalent.

The initiation of water safety planning processes in all water supply systems is highly commendable and it is trusted that the management of drinking water quality will continue along the principles of water safety planning. It is to be ensured that all staff responsible for the tasks of drinking water quality management comprehends water safety planning and buy into this process as part of their daily duties.

On a positive note, the Lead Inspector noted: "*The tone of the confirmation session was very positive, with the Vhembe team demonstrating willingness to participate and share relevant information. The*

presence of one of the senior managers: Mr. Manaka is proof of commitment; also it was shared that there's monthly DWQ & services update sessions with the Municipal Manager and Senior Managers. BDS and has kept the Lead Inspector informed of their activities, seeking advice along the way. The VDM has gone an extra mile in populating the BDS, a good base for future audits & reviews of the supply systems."

Site Inspection Scores:

Vhondo: **63%**

The Vhondo WTW was visited to verify the Vhembe District Municipality Blue Drop findings. Overall, the site inspection impression was satisfactory, but a number of improvements are required.

Areas requiring improvement at the **Vhondo** WTW include:

- The WTW registration certificate was not displayed at the Vhondo facility;
- The following critical documents were not present at the Vhondo WTW:
  - O&M Manual
  - Drinking water quality Incident Management Protocol (only a list of emergency contact details exists)
- Operational monitoring equipment was not calibrated and no jar test equipment was available at the time of inspection to accurately determine the coagulant dosing rate;
- There was no safety equipment in the chemical dosing area (emergency shower, eye wash);
- There was no standby lime or chlorine dosing equipment;
- The filtration process required optimisation at the time of inspection:
  - Uneven flow splitting to the filters due to a blower valve which was not functioning properly
  - Uneven bubble distribution during backwashing
  - The filter outlet became dirty during backwashing due to outlets not closing properly
  - The filter media surface was not in good condition (cracks and mudballs)
  - Algal growth on the walls of the filters