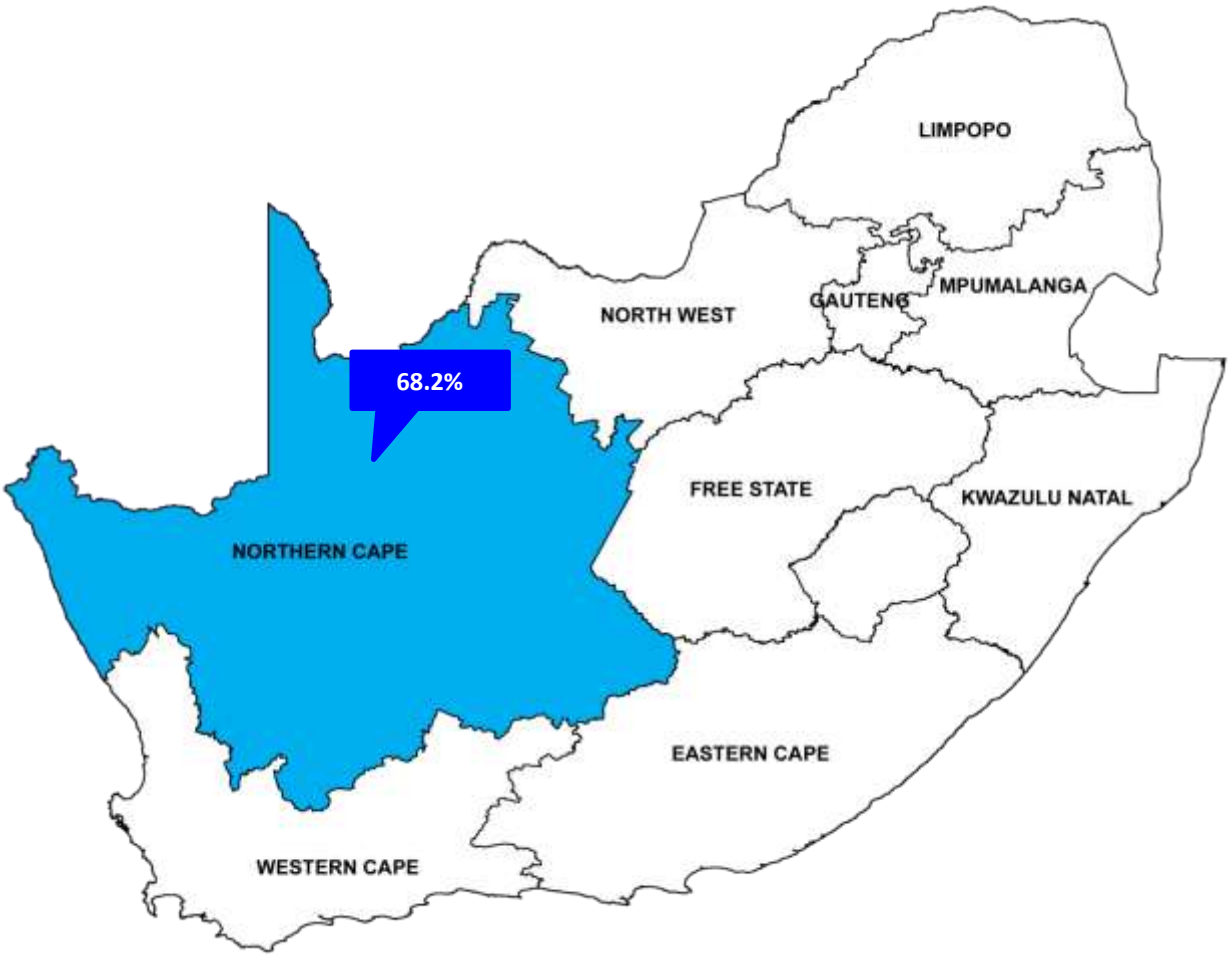


Provincial Best Performer

Hantam Local Municipality is the best performing municipality in Northern Cape Province with a Municipal Blue Drop Score of **81.64%.** Congratulations!

Blue Drop Provincial Performance Log – Northern Cape

Water Services Authority	Provincial Blue Drop Log Position	Blue Drop Score 2012	Blue Drop Score 2011	Blue Drop Score 2010
Hantam Local Municipally	1	81.64	75.07	68.50
Thembilihle Local Municipally	2	72.82	45.87	55.10
Magareng Local Municipally	3	72.66	65.56	54.00
Ubuntu Local Municipally	4	72.63	67.15	66.60
Ga-Segonyana Local Municipally	5	72.27	37.32	25.40
Sol Plaatje Local Municipally	6	72.10	84.23	64.30
//Khara Hais Local Municipally	7	71.70	43.57	37.80
!Kai !Garib Local Municipally	8	68.99	47.08	42.60
Tsatsabane Local Municipally	9	66.18	59.47	74.70
Kgatelopele Local Municipally	10	66.03	54.21	97.40
Nama Khoi Local Municipally	11	63.47	57.96	22.00
Emthanjeni Local Municipally	12	63.18	60.42	68.40
Siyathemba Local Municipally	13	62.40	40.94	52.80
Phokwane Local Municipally	14	60.16	49.44	33.20
Dikgatlong Local Municipally	15	55.32	67.48	83.80
Khai Ma Local Municipally	16	53.11	46.62	33.50
!Kheis Local Municipally	17	50.33	53.43	45.90
Gamagara Local Municipally	18	40.00	49.87	42.40
Karoo Hoogland Local Municipally	19	39.96	50.53	39.00
Kareeberg Local Municipally	20	39.35	35.06	62.40
Richtersveld Local Municipally	21	36.77	36.44	25.90
Kamiesberg Local Municipally	22	35.63	53.18	29.30
Joe Morolong Local Municipally	23	33.42	60.08	37.10
Mier Local Municipally	24	25.03	25.56	25.10
Siyancuma Local Municipally	25	19.66	29.49	54.60
Renosterberg Local Municipally	26	17.60	25.36	28.70
Umsobomvu Local Municipally	27	15.76	35.18	23.40

Top 3

The Department wishes to acknowledge and congratulate Hantam Local Municipality for the commitment of officials responsible for diligently doing their task. For this small Karoo municipality this is a massive achievement. Thembilihle Local Municipality is another small municipality of which the Blue Drop performance of this year justifies an impressive provincial second place. Magareng Local Municipality makes consistent progress each year which speaks volumes of the strategic approach towards improvement.

Most Improved

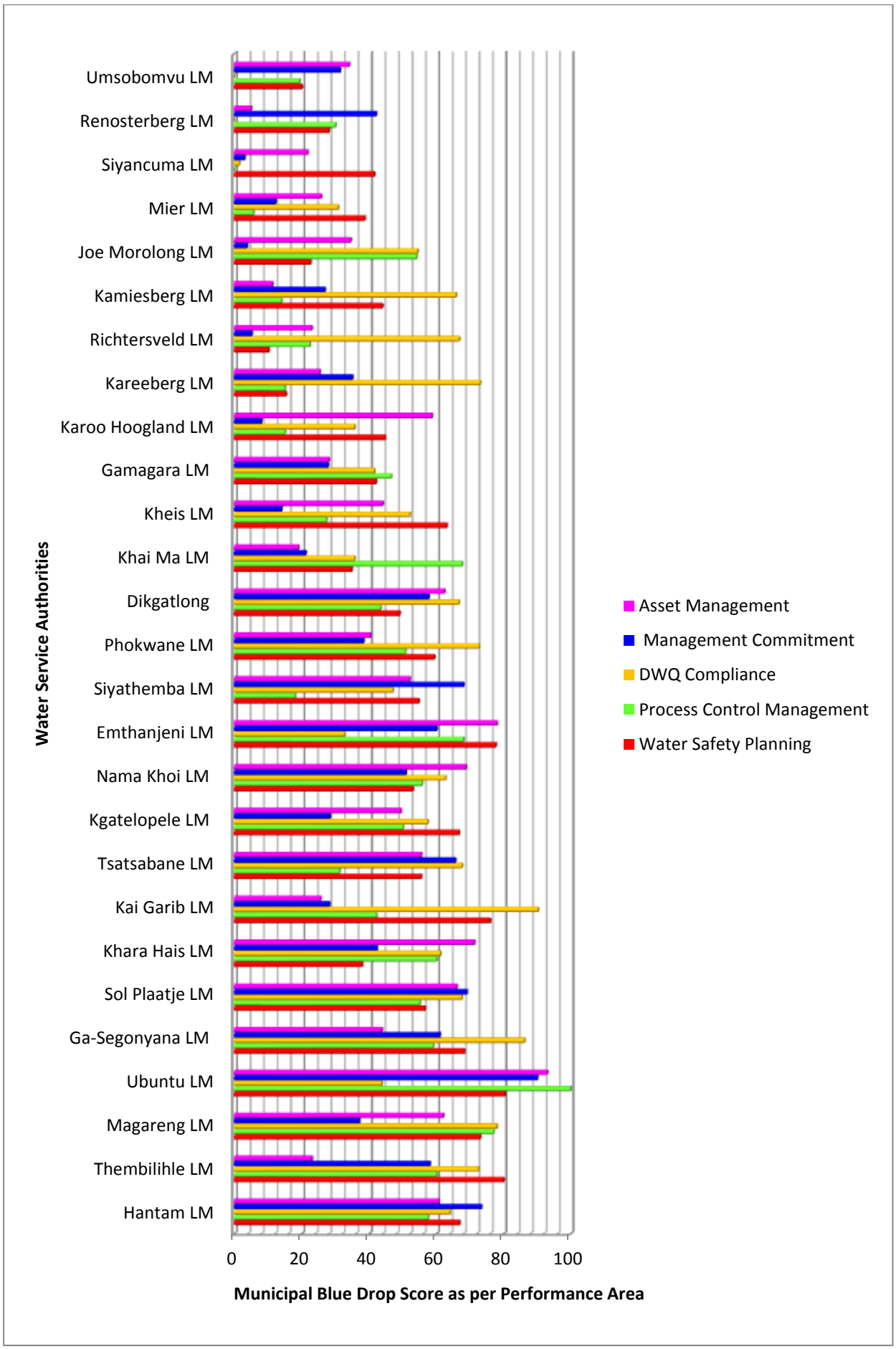
Ga-Segonyana Local Municipality improved most impressively from a meagre 25.40% (in 2o1o) to 37.32% (in 2011) and 72.27% (in 2012). All responsible for this remarkable effort is saluted by the Department.

Lowest Performer(s)

There would be a number of municipalities that failed to operate and manage drinking water quality management according the set regulatory requirements. The ability of the following municipalities to supply safe water continuously is of great concern.

- Umsobomvu Local Municipality
- Renosterberg Local Municipality
- Siyancuma Local Municipality
- Mier Local Municipality

BLUE DROP ASSESSMENT ANALYSIS (NORTHERN CAPE)					
Category	**2009**	**2010**	**2011**	**2012**	**Trend**
Number of Municipalities audited	19 (of 27)	31 (of 31)	31 (of 31)	27	(↓)
Number of water systems audited	85	136	155	143	(↓)
Number of Blue Drop Awards	1	1	1	1	(↓)
Provincial Blue Drop score	28.3%	46.87	62.07%	68.29%	(↑)


Umsobomvu LM
Renosterberg LM
Siyancuma LM
Mier LM
Joe Morolong LM
Kamiesberg LM
Richtersveld LM
Kareeberg LM
Karoo Hoogland LM
Gamagara LM
Kheis LM
Khai Ma LM
Dikgatlong
Phokwane LM
Siyathemba LM
Emthanjeni LM
Nama Khoi LM
Kgatelopele LM
Tsatsabane LM
Kai Garib LM
Khara Hais LM
Sol Plaatje LM
Ga-Segonyana LM
Ubuntu LM
Magareng LM
Thembilihle LM
Hantam LM
Water Service Authorities
0
20
40
60
80
100
Municipal Blue Drop Score as per Performance Area
Asset Management
Management Commitment
DWQ Compliance
Process Control Management
Water Safety Planning

Blue Drop Certified Systems

Log position	Blue Drop Certified System	Blue Drop Score	Water Services Authority	Water Services Provider
1	Danielskuil	95.00%	Kgatelopele Local Municipality	

Water Services Authority	Dikgatlong Local Municipality
Water Services Provider(s)	Dikgatlong Local Municipality; Sedibeng Water [a]
Municipal Blue Drop Score:	**55.32%**

Performance Area	Systems	Delpoorthoop & Longlands [a]	Barkly West	Windsorton
Water Safety Planning (35%)		**89**	**29**	**29**
Treatment Process Management (10%)		**100**	**15**	**15**
DWQ Compliance (30%)		**95**	**40**	**65**
Management, Accountability (10%)		**92**	**37**	**44**
Asset Management (15%)		**77**	**50**	**60**
Bonus Scores		2.19	7.5	10.5
Penalties		0	0	0
Blue Drop Score (2012)		**92.44% (↑)**	**42.34% (↑)**	**55.09% (→)**
2011 Blue Drop Score		72.78%	23.87%	Not Assessed
2010 Blue Drop Score		87.13%	73.75%	Not Assessed
System Design Capacity (Ml/d)		36.4	8	1
Operational Capacity (% ito Design)		68.68	71.25	100.00
Population Served		10 000	36 179	7 888
Average daily Consumption (l/p/d)		364.00	22.11	12.68
Microbiological Compliance (%)		**97.0%**	**81.8%**	**95.7%**
Chemical Compliance (%)		**99.9%**	**99.9%**	**99.9%**

Regulatory Impression

By now the water supply system of Delportshoop should have obtained Blue Drop certification status already since it is the second time in 3 years that it comes painfully close. The inspiring commitment of Sedibeng Water alone will not be sufficient for this achievement to materialise. Dikgatlong Local Municipality as water services authority is encouraged to endeavour towards this coveted status to the benefit of the communities served.

The municipality must commence with a risk management approach as per water safety planning requirements and implement. This will guide towards the required excellence. Nevertheless, a very good performance and most encouraging to note improvement all round.

Microbiological quality compliance in the Barkly West system, is far from the desired standard and this most probably could be accounted to ineffective disinfection patterns or the unacceptable condition of storage infrastructure. It would be to the benefit of all concerned if trouble-shooting in this regard is prioritised for greater improvement.

Water Services Authority	**Emthanjeni Local Municipality**
Water Services Provider(s)	**Emthanjeni Local Municipality**
Municipal Blue Drop Score:	**63.18%**

Performance Area	System	De Aar	Britstown	Hanover
Water Safety Planning (35%)		**75**	**79**	**79**
Treatment Process Management (10%)		**68**	**68**	**68**
DWQ Compliance (30%)		**27**	**27**	**44**
Management, Accountability (10%)		**60**	**60**	**60**
Asset Management (15%)		**78**	**77**	**79**
Bonus Scores		3.71	3.59	3.13
Penalties		0	0	0
Blue Drop Score (2012)		**62.47%** (↑)	**63.68%** (↓)	**68.39%** (↓)
2011 Blue Drop Score		56.72%	78.11%	75.10%
2010 Blue Drop Score		68.72%	68.35%	68.35%
System Design Capacity (Ml/d)		5.5	0.818	1.54
Operational Capacity (% ito Design)		100.00	100.00	43.05
Population Served		26 019	4 024	2 300
Average daily Consumption (l/p/d)		211.38	203.28	288.6
Microbiological Compliance (%)		**77.2%**	**75.0%**	**94.4%**
Chemical Compliance (%)		**94.4%**	**94.4%**	**94.4%**

Regulatory Impression

The municipality performed reasonably well during this assessment period if the various challenges of this small municipality are taken into consideration. The inspectors noted the efforts made to comply with the Blue Drop requirements, but in comparison with the 2011 performance the major cause for decline are the lower microbiological compliance figures recorded. Whilst there are no reasons for these unacceptable compliance levels, the Lead Inspector conveyed the suggestion that the reservoirs require urgent scouring. The planned chlorination installation is a priority since this would be the key control measure to barrier the risk of microbiological contamination.

The groundwater abstraction in De Aar and the implemented control management of this aquifer withdrawal remains an impressive practice. It is noted that the aquifer is De Aar's most valuable effort, making this practice even more praise worthy.

There is further room for improvement and a joint effort is required between operational, financial and management staff. All should agree on and acknowledge the risk prioritization according to the water safety planning process and together plan for the implementation of relevant and effective control measures.

Whilst compliance in Hanover was slightly better it would be worthwhile to trouble shoot the poor compliance rate across the area of jurisdiction and implement effective preventative measures in all three towns.

Site Inspection Report

De Aar Water Supply System: 75%


Pump-stations and mechanical pumping equipment is in as very good condition (well maintained)

There i no conventional treatment facility within the jurisdiction of Emthanjeni Local Municipality other than the groundwater abstraction processes. The inspectors were impressed with the manner in which this is done (as indicated by the pictures above). However the ever increasing number of microbiological failures recorded necessitates the introduction of disinfection processes even though the quality of the groundwater is impeccable. The risk of post contamination within the reticulation is evidently unopposed and that would be the most reasonable finding to make with the available information at hand. Note the pictures below; as mentioned above, these storage facilities require cleaning.


The new (left) and old (right) reservoirs in De Aar.

Water Services Authority	**Ga-Segonyane Local Municipality**
Water Services Provider(s)	**Ga-Segonyane Local Municipality; Sedibeng Water** [a]
Municipal Blue Drop Score:	**72.27%**

Performance Area	Systems	Ga-Segonyana North [a]	Ga-Segonyana West [a]	Bankhara	Kuruman/ Wrenchville
Water Safety Planning (35%)		**81**	**85**	**56**	**51**
Treatment Process Management (10%)		**65**	**65**	**53**	**53**
DWQ Compliance (30%)		**73**	**86**	**93**	**93**
Management, Accountability (10%)		**92**	**88**	**32**	**32**
Asset Management (15%)		**51**	**50**	**32**	**42**
Bonus Scores		0	0	3.54	3.54
Penalties		0	0	0	0
Blue Drop Score (2012)		**73.40% (↑)**	**78.23% (↑)**	**64.16% (↑)**	**64.16% (↑)**
2011 Blue Drop Score		42.25%	44.30%	34.18%	08.55%
2010 Blue Drop Score		27.63%	27.63%	23.13%	23.13%
System Design Capacity (Ml/d)		3.507	2.063	No Information	No information
Operational Capacity (% ito Design)		100.00	100.00	No Information	No Information
Population Served		36 461	20 805	4 000	11 480
Average daily Consumption (l/p/d)		96.18	9.92	250.00	87.11
Microbiological Compliance (%)		**95.5%**	**96.2%**	**96.8%**	**96.8%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**

Regulatory Impression

The Department salutes the Ga-Segonyane Local Municipality together with Sedibeng Water for the astounding improvement recorded since the previous assessment was conducted. It would be performances like these that contribute to the success of the Blue Drop Certification programme. Improvements of this degree can only materialise when there is commitment and teamwork, a truly commendable effort.

There however remains room for improvement across all key performance areas required by the regulatory programme before the next step towards recognised excellence would materialise. The inspectors noted the water safety planning initiative for Bankara and Kuruman systems and gave partial scores in this regard since implementation evidently did not commence as yet. The municipality is encouraged to fully implement a risk management approach as described by the water safety planning process since this will guide drinking water quality management towards the desired excellence levels.

Site Inspection Report

Ga-Segonyana North Water Management Area: <20%

The inspectors were not impressed with the general appearance of the infrastructure and its surroundings. It would require some housekeeping enhancement in order to mirror the general improved Blue Drop scoring obtained.

The lack of any documentation or procedure charts is identified as risk, which needs to be improved in line with water safety planning risk management initiatives.

Which was most disconcerting was the fact that the chlorination unit was out of order on the day of the audit. The magnitude of this risk is further exacerbated by the lack of a standby unit to mitigate the effect of treatment unit not being operation. This is a risk which requires prioritisation and urgent attention.

The site inspection clearly indicated that in spite of all the good work done at management and operational level, there is a need for further improvement to materialise with regards to the manner infrastructure is maintained and managed.

Water Services Authority	**Gamagara Local Municipality**
Water Services Provider(s)	**Gamagara Local Municipality; Sedibeng Water** [a]
Municipal Blue Drop Score:	**40.0%**

Performance Area	System	Olifantshoek [a]	Kathu	Dingleton	Dibeng
Water Safety Planning (35%)		**44**	**41**	**38**	**45**
Treatment Process Management (10%)		**36**	**50**	**50**	**50**
DWQ Compliance (30%)		**78**	**11**	**66**	**11**
Management, Accountability (10%)		**54**	**19**	**19**	**19**
Asset Management (15%)		**46**	**22**	**22**	**22**
Bonus Scores		2.72	0	0	0
Penalties		-1.36	-1.50	-1.50	-4.00
Blue Drop Score (2012)		**55.96% (↓)**	**26.16% (↓)**	**41.61% (↓)**	**25.06% (↑)**
2011 Blue Drop Score		68.35%	67.01%	51.51%	12.40%
2010 Blue Drop Score		60.33%	45.81%	54.31%	25.81%
System Design Capacity (Ml/d)		5	3.4	No Information	0.17
Operational Capacity (% ito Design)		No Information	No Information	No Information	No Information
Population Served		9 603	25 000	3 000	4 000
Average daily Consumption (l/p/d)		0.00	180.00	0.00	325.00
Microbiological Compliance (%)		**99.6%**	**92.2%**	**99.9%**	**73.1%**
Chemical Compliance (%)		**99.9%**	**99.0%**	**99.0%**	**99.0%**

Regulatory Impression

The Department disappointed in the drinking water quality management performance of Gamagara Local Municipality and also extremely concerned about the finding that chemical risks are not prioritised in spite of the fact that large volumes of water is sourced from iron ore mining area. The 2012 performance is a major step backwards in relation to previously recorded Blue Drop performances.

The efforts of Sedibeng Water are noted (especially with the assistance to get risk assessments done) but unfortunately some of these late interventions could not be allowed since it would only benefit the municipality's perceived performance and not benefit the Olifantshoek community. The implementation thereof is fundamental to ensure that currently employed control measures are adequate to deal with all possible health risk factors. Currently the municipality has no credible information to proof that they are adequately equipped to monitor, manage or mitigate possible risks that may stem from the source or even within the reticulation system. It is noted that only Fluorides are monitored at an erratic frequency; this is not sufficient in the context of Chemical Monitoring as prescribed by the South African National Standard (SANS 241). The frustration regarding no operational (chlorine) monitoring since October 2011 due to the non-availability of reagents was communicated to the relevant municipal officials during the on-site audit (Kathu).

During the previous audit cycle the municipality benefitted (in score) because of the availability of a risk assessment in terms of the water safety planning requirements. Sadly it was found that the findings of this assessment were not implemented and the water safety planning was basically done as a paper exercise. This defeats the purpose of this World Health Organisation requirement for effective drinking water quality management.

It would be sincerely appreciated if the drinking water quality management will be improved by Gamagara Local Municipality to the benefit of long term health.

Site Inspection Report

Dingleton WTW: **22.7%**
Kathu WTW: **11.5%**

The inspectors visited the Dingleton and Kathu water treatment systems and found both facilities in a fairly dilapidated state. Both plants are in serious need of intensive capital investment to ensure maintenance and repairs are done to improve functionality. The process controller on duty during the inspection (Mr Neils van Tonder) impressed with his eagerness to keep the facility tidy and functional in spite of a major lack of resources.

The situation of these two plants is depicted by a few pictures taken during the inspection.

On the left are the filters at Dingleton, in not a satisfactory condition. Below is a ceiling in the office that caved in.

The two pictures below indicate the worrying state of the Kathu treatment works. Urgent dedicated attention is required.

Images from the Dingleton and Kathu WTWs

Water Services Authority	Hantam Local Municipality
Water Services Provider(s)	Hantam Local Municipality
Municipal Blue Drop Score:	**81.64%**

Performance Area	Systems	Brandvlei	Calvinia	Loeriesfontein	Middelpos
Water Safety Planning (35%)		**76**	**82**	**76**	**76**
Treatment Process Management (10%)		**65**	**65**	**70**	**75**
DWQ Compliance (30%)		**55**	**100**	**28**	**23**
Management, Accountability (10%)		**85**	**85**	**85**	**85**
Asset Management (15%)		**69**	**74**	**69**	**69**
Bonus Scores		7.60	3.69	9.46	9.70
Penalties		-1.58	0	0	0
Blue Drop Score (2012)		**74.36% (↑)**	**88.31% (↑)**	**70.06% (↑)**	**69.30% (↑)**
2011 Blue Drop Score		68.69%	78.12%	69.16%	57.16%
2010 Blue Drop Score		76.25%	69.81%	64.88%	48.60%
System Design Capacity (Ml/d)		1.15	4	1.5	0.24
Operational Capacity (% ito Design)		25.22	87.50	62.53	15.00
Population Served		2 309	8 459	2 404	152
Average daily Consumption (l/p/d)		125.60	413.76	390.18	236.84
Microbiological Compliance (%)		**>99.9%**	**>99.9%**	**95.8%**	**93.3%**
Chemical Compliance (%)		**78.0%**	**98.0%**	**80.0%**	**94.0%**

Performance Area	Systems	Nieuwoudtville	Swartkop
Water Safety Planning (35%)		**76**	**15**
Treatment Process Management (10%)		**70**	**0**
DWQ Compliance (30%)		**100**	**78**
Management, Accountability (10%)		**85**	**15**
Asset Management (15%)		**69**	**14**
Bonus Scores		4.24	5.25
Penalties		0	-1.50
Blue Drop Score		**86.59% (↑)**	**35.78% (↓)**
2011 Score		78.16%	52.25%
2010 Score		68.10%	38.13%
System Design Capacity (Ml/d)		0.72	No information
Operational Capacity (% ito Design)		43.06	No information
Population Served		1 437	200
Average daily Consumption (l/p/d)		215.73	1250.00
Microbiological Compliance (%)		**>99.9%**	**>99.9%**
Chemical Compliance (%)		**98.1%**	**94.1%**

Regulatory Impression

The Hantam Local Municipality impressed the Department with its drive to improve drinking water quality management. An improvement in overall municipal score from 75.07% to 81.6%, against more stringent requirements and an increase in the number of supply systems that had to be assessed, speaks volumes of the officials' commitment in this regard.

The Water Services Authority completed the water safety planning process for all the supply systems historically under its control. Hantam is encouraged to extend this process to include the Swartkop supply system which was recently added to its jurisdiction. The Department trusts that the WSA will manage drinking water quality in the Swartkop system at the same level as the other systems, noting that budgetary limitations experienced in the previous financial year prevented the WSA from undertaking all required processes immediately.

The DWA furthermore acknowledges the commendable action of the WSA to conduct a full set of SANS 241 analyses in all the supply systems as part of the risk assessment process. Compliance monitoring programmes registered on BDS should consequently be confirmed or updated, and the actual monitoring frequency must adhere to that specified by the registered programmes. DWA noted the increased sampling frequency for fluoride, confirming that the WSA has identified fluoride as a high risk determinand, with associated concerning levels of chemical compliance in the Brandvlei, Loeriesfontein and Swartkop systems caused by recurrent fluoride failures. The WSA is encouraged to maintain close monitoring of this situation, and future planning should include changes to treatment technologies to address this risk. The WSA is furthermore advised to increase monitoring for mercury, since once-off analyses in almost all the supply systems confirm that mercury is a high risk determinand that negatively affects the quality of the drinking water. It is also recommended that arsenic and cadmium are monitored at a quarterly frequency since elevated concentrations of these determinands were noted in previously submitted information. Improvement in monitoring to confirm the effectiveness of disinfection is another future monitoring requirement.

In conclusion, DWA is encouraged that the municipal management of Hantam Local Municipality is committed to improve service delivery. Continued improvements may result in Blue Drop status in the near future.

Site Inspection Scores:

Hantam:	**62%**
Nieuwoudtville Boreholes:	**64%**

The Hantam WTW and Nieuwoudtville Boreholes were visited to verify the Hantam Local Municipality Blue Drop findings. Overall, the site inspection impression indicated that further attention is required to be given to drinking water quality management in Hantam Local Municipality.

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

- Some of the essential guiding documents required to ensure adequate drinking water quality management were not available at the Hantam WTW at the time of inspection:
  - Maintenance Logbook
  - O&M Manual
  - Comprehensive drinking water quality Incident Management Protocol (only an emergency contact list exists)

- Operational monitoring logbook

- No jar testing equipment was available at the WTW to ensure that dosing was occurring according to coagulation dosing calculations;
- No standby flocculant dosing pumps or chlorine dosing systems were available at the Hantam WTW;
- Chlorine safety equipment (alarm, detector, extractor fan, masks) was absent from the Hantam WTW;
- The flocculation unit was by-passed and water was going straight to filters at the time of the inspection. Flocculant was also not being dosed.

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

- The registration certificate was not displayed at the Nieuwoudtville Boreholes facility;
- Similar to the Hantam WTW, a number of crucial documents were not available at the Nieuwoudtville Boreholes site inspection including the Maintenance Logbook, O&M Manual, Incident Management Protocol and Operational monitoring logbook.

Water Services Authority	Joe Morolong Local Municipality
Water Services Provider(s)	Joe Morolong Local Municipality; Sedibeng Water[a]
Municipal Blue Drop Score:	**33.42%**

Performance Area	Systems	Hotazel[a]	Van Zylsrus	Churchill	Bothetheletsa
Water Safety Planning (35%)		**74**	**22**	**14**	**17**
Treatment Process Management (10%)		**85**	**75**	**50**	**50**
DWQ Compliance (30%)		**91**	**61**	**34**	**77**
Management, Accountability (10%)		**53**	**0**	**4**	**0**
Asset Management (15%)		**84**	**20**	**41**	**41**
Bonus Scores		0.93	0	0	0
Penalties		0	0	0	0
Blue Drop Score (2012)		**80.28% (↓)**	**36.41% (↓)**	**26.64% (↓)**	**40.36% (↓)**
2011 Blue Drop Score		83.94%	68.19%	51.39%	74.33%
2010 Blue Drop Score		76.63%	57.25%	37.13%	37.13%
System Design Capacity (Ml/d)		No Information	0.420 M/d	No Information	0.959
Operational Capacity (% ito Design)		No Information	No Information	No Information	No Information
Population Served		1 500	1 500	7 446	2 646
Average daily Consumption (l/p/d)		No Information	No Information	212.33	No Information
Microbiological Compliance (%)		**>99.9%**	**95.7%**	**83.3%**	**99.9%**
Chemical Compliance (%)		**<99.9%**	**<99.9%**	**<99.9%**	**<99.9%**

Performance Area	Systems	Bothithong	Dithakong	Gasehunelo	Gasese
Water Safety Planning (35%)		**14**	**14**	**20**	**17**
Treatment Process Management (10%)		**50**	**50**	**50**	**50**
DWQ Compliance (30%)		**45**	**73**	**34**	**83**
Management, Accountability (10%)		**0**	**0**	**0**	**0**
Asset Management (15%)		**41**	**41**	**41**	**41**
Bonus Scores		0	0	0	0
Penalties		0	0	0	-1.5
Blue Drop Score (2012)		**29.64% (↓)**	**37.89% (↓)**	**28.36% (↓)**	**40.66% (↓)**
2011 Score		54.13%	59.08%	51.88%	74.33%
2010 Score		37.13%	37.13%	37.13%	37.13%
System Design Capacity (Ml/d)		1.97	2.346	1.42	No Info
Operational Capacity (% ito Design)		No information	No Information	No Information	No Information
Population Served		10, 920	8, 274	3 804	1 746
Average daily Consumption (l/p/d)		No Information	No Information	No Information	No information
Microbiological Compliance (%)		**73.9%**	**95.0%**	**70.0%**	**99.9%**
Chemical Compliance (%)		**<99.9%**	**<99.9%**	**<99.9%**	**<99.9%**

Performance Area	Systems	Heisso	Kikahela	Laxey	Maipeng
Water Safety Planning (35%)		**17**	**20**	**20**	**20**
Treatment Process Management (10%)		**50**	**50**	**50**	**50**
DWQ Compliance (30%)		**34**	**75**	**45**	**34**
Management, Accountability (10%)		**0**	**0**	**0**	**0**
Asset Management (15%)		**0**	**0**	**0**	**0**
Bonus Scores		0	0	0	0
Penalties		-1.5	-1.5	-1.5	-1.5
Blue Drop Score (2012)		**25.81% (↓)**	**39.24% (↓)**	**30.24% (↓)**	**26.86% (↓)**
2011 Score		50.63%	68.90%	54.13%	73.17%
2010 Score		37.13%	37.13%	37.13%	37.13%
System Design Capacity (Ml/d)		0.346	0.022	3.405	1.081
Operational Capacity (% ito Design)		No Information	No Information	No Information	No Information
Population Served		1 272	183	22 836	8 976
Average daily Consumption (l/p/d)		No Information	No Information	No Information	No Information
Microbiological Compliance (%)		**50.0%**	**>99.9%**	**79.2%**	**70.0%**
Chemical Compliance (%)		**<99.9%**	**<99.9%**	**<99.9%**	**<99.9%**

Key Performance Area	Systems	Manyeding A	Manyeding Lower	Metsetswaneng
Water Safety Planning (35%)		**20**	**30**	**20**
Treatment Process Management (10%)		**50**	**50**	**50**
DWQ Compliance (30%)		**64**	**34**	**34**
Management, Accountability (10%)		**0**	**0**	**0**
Asset Management (15%)		**41**	**41**	**41**
Bonus Scores		0	0	0
Penalties		-1.5	-1.5	-1.5
Blue Drop Score (2012)		**35.86% (↓)**	**30.36% (↓)**	**26.86% (↓)**
2011 Score		73.81%	52.63%	51.63%
2010 Score		37.13%	37.13%	37.13%
System Design Capacity (Ml/d)		1.555	2.958	2.836
Operational Capacity (% ito Design)		No Information	No Information	No Information
Population Served		2 808	5 460	6 411
Average daily Consumption (l/p/d)		No Information	No Information	No Information
Microbiological Compliance (%)		**>99.9%**	**71.4%**	**57.1%**
Chemical Compliance (%)		**<99.9%**	**<99.9%**	**<99.9%**

Regulatory Impression

The good performance of 2011 was regrettably not repeated mostly due to the lack of proper risk assessments to inform the drinking water quality management within the jurisdiction of Joe Morolong Local Municipality. Unfortunately the municipality also took responsibility of additional supply systems that previously resided under the authority of John Taolo Gaetsewe District Municipality, but could not provide adequate information to justify a proper assessment. The impression left with the Department is that this water services authority has a general lack of resources to effectively manage the quality of drinking water according to the accepted standards. Only seven out of the 15 systems assessed

managed to maintain tap water quality at the acceptable standard throughout the year - this certainly is reason for concern. It is assumed that disinfection processes at the various systems might be completely inadequate to mitigate the risk of microbiological contamination.

The Hotazel system, with assistance of Sedibeng Water, is the only system that maintained the previous year's level of performance. This implies that there are possibilities for restoring the management of the drinking water quality to acceptable performance levels.

It is required to prioritise (as reported in the 2011 Blue Drop Report) improving monitoring, recording and record keeping since the lack of information is seriously impeding the authority's ability of be as effective as expected and required.

Site Inspection Report

Dithakong Water Supply System

No score was given since here would be no conventional water treatment facility to be assessed. Yet the Inspectors found the borehole area not to be in a satisfactory state due to excessive leaking. The surrounding areas were very muddy in spite of no rain reported during the time of the audit.

Due to the arid nature of the environment in this region, as well as the fact that this is an offence as per Section 82 (1)(a) of the Water Services Act (Act 108 of 1997), a responsible response is expected from the Municipality. Urgent rectification is required.

The pump station with evidence of water leakages.

Water Services Authority	**Kamiesberg Local Municipality**
Water Services Provider(s)	**Lekwa Local Municipality**
Municipal Blue Drop Score:	**35.63%**

Performance Area	Systems	Garies	Hondeklipbaai [a]	Kamasies	Kamieskroon
Water Safety Planning (35%)		**47**	**0**	**47**	**47**
Treatment Process Management (10%)		**15**	**0**	**15**	**15**
DWQ Compliance (30%)		**11**	**0**	**55**	**66**
Management, Accountability (10%)		**43**	**0**	**28**	**28**
Asset Management (15%)		**23**	**0**	**7**	**7**
Bonus Scores		0	0	0	0
Penalties		-0.75	0	-0.75	-0.75
Blue Drop Score (2012)		**28.06% (↓)**	**0% (↓)**	**37.33% (↓)**	**40.70% (↓)**
2011 Blue Drop Score		43.44%	59.31%	52.56%	51.31%
2010 Blue Drop Score		24.48%	24.48%	26.48%	26.48%
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		2 000	800	446	1 000
Average daily Consumption (l/p/d)		400.00	875.00	560.54	500.00
Microbiological Compliance (%)		**38.1%**	**>99.9%**	**>99.9%**	**>99.9%**
Chemical Compliance (%)		**94.7%**	**>99.9%**	**89.5%**	**94.7%**

Performance Area	Systems	Kharkams / Tweerivier	Khies	Klipfontein	Koiingnaas [a]
Water Safety Planning (35%)		**47**	**47**	**47**	**47**
Treatment Process Management (10%)		**15**	**15**	**15**	**15**
DWQ Compliance (30%)		**100**	**100**	**100**	**45**
Management, Accountability (10%)		**28**	**28**	**28**	**28**
Asset Management (15%)		**15**	**13**	**13**	**7**
Bonus Scores		0	0	0	0
Penalties		-0.71	-0.71	-0.71	-0.75
Blue Drop Score		**51.99% (↑)**	**51.76% (↓)**	**51.76% (↓)**	**34.33 (↓)**
2011 Score		43.19%	62.86%	62.86%	58.06%
2010 Score		26.48%	32.75%	32.25%	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		1 000	1 080	434	34
Average daily Consumption (l/p/d)		480.00	416.67	576.04	588.24
Microbiological Compliance (%)		**>99.9%**	**>99.9%**	**>99.9%**	**90.9%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**

Performance Area / Systems	Leliefontein	Lepelfontein	Nourivier	Paulshoek
Water Safety Planning (35%)	**47**	**47**	**47**	**47**
Treatment Process Management (10%)	**15**	**15**	**15**	**15**
DWQ Compliance (30%)	**55**	**100**	**55**	**55**
Management, Accountability (10%)	**28**	**28**	**28**	**28**
Asset Management (15%)	**7**	**12**	**7**	**7**
Bonus Scores	0	0	0	0
Penalties	-0.75	-0.72	-0.75	-0.75
Blue Drop Score	**37.33% (↓)**	**51.53% (↓)**	**37.33% (↓)**	**37.33% (↓)**
2011 Score	42.06%	53.31%	52.56%	42.06%
2010 Score	30.00%	32.25%	31.88%	31.88%
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	1 500	285	333	1 223
Average daily Consumption (l/p/d)	333.33	526.32	600.60	408.83
Microbiological Compliance (%)	**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**
Chemical Compliance (%)	**89.5%**	**>99.9%**	**89.5%**	**89.5%**

Performance Area / Systems	Rooifontein	Soebatsfontein	Spoegrivier
Water Safety Planning (35%)	**47**	**47**	**47**
Treatment Process Management (10%)	**15**	**15**	**15**
DWQ Compliance (30%)	**100**	**100**	**45**
Management, Accountability (10%)	**23**	**28**	**28**
Asset Management (15%)	**7**	**12**	**12**
Bonus Scores	0	0	0
Penalties	-0.73	-0.72	-0.75
Blue Drop Score	**50.39% (↓)**	**51.53% (↓)**	**35.00% (↓)**
2011 Score	52.56%	53.06%	68.48%
2010 Score	29.63%	29.63%	31.88%
System Design Capacity (Ml/d)	No information	No information	No information
Operational Capacity (% ito Design)	No information	No information	No information
Population Served	242	279	410
Average daily Consumption (l/p/d)	619.83	537.63	487.80
Microbiological Compliance (%)	**>99.9%**	**>99.9%**	**91.7%**
Chemical Compliance (%)	**>99.9%**	**>99.9%**	**>99.9%**

Regulatory Impression

Kamiesberg provided information related to the water safety planning process. The process was evaluated in need of further refinement. Various treatment options applies within the municipality, risks specific to each of the options of treatment are yet to be further defined. Control measures for the identified risks also need to be stated as to allow planning and implementation of the control measures.

The Department however praise Kamiesberg for maintaining compliance monitoring in each of the supply systems, data is available to confirm that a full SANS 241 analyses had at minimum been done once in the majority of the systems. The monitoring of determinands that poses a definite risk, i.e. microbial contaminants and fluoride, however needs to increase to allow for a 12-month submission of data. An increased frequency in monitoring is in particular required in the systems that showed failures.

The WSA provided no evidence to confirm that process control and management at all the treatment plants are effectively being managed. Measured against Regulation 2834 (to be replaced by Regulation 17), too few process controllers were appointed to manage each of the treatment systems, the lack of logbooks further imply that no evidence is available to proof that the staff is competent to manage the systems.

Commitment from municipal management is required to ensure that funds are sourced to address treatment and process control inadequacies. Microbial water quality in the Koiingnaas and Spoegrivier systems poses an infection risk to consumers, while fluoride failures in the Kamassies, Kamieskroon, Leliefontein, Nourivier and Paulshoek systems rendered the chemical quality of the water also not compliant with the standard for drinking water (SANS 241). *E. coli* failures in the Garies supply systems were extremely frequent, Kamiesberg has to immediately confirm that treatment has improved. It appears that an evaluation had not been completed on the Tweerivier supply system, compliance data however shows that drinking water in the latter system poses an infection risk from both microbiological and chemical contaminants. The Department furthermore trusts that the municipality will prioritise adequate treatment to address the disinfection problems while also removing fluoride to curb further exposure.

Site Inspection Scores:

Garies:	**14%**
Kheis:	**41%**

The Garies and Kheis WTWs were visited to verify the Kamiesberg Local Municipality Blue Drop findings. Overall, the site inspection impression was poor, with seriously inadequate drinking water quality management undertaken, indicating a risk to public health.

Areas requiring improvement common to both the Garies and Kheis WTW include:

- The WTW registration certificate was not displayed at either facility;
- The following critical documents were not present at either the Garies and Kheis WTW:
  - Maintenance Logbook
  - Operational Monitoring logbook
- It is of significant concern that no operational monitoring was undertaken at either WTW – this monitoring is essential to maintain process control within the WTW, to ensure optimal coagulant dosage and final water compliance with standards;
- The Garies and Kheis WTWs had no toilets, office or place for the Process Controllers to eat at the

time of inspection. This represents seriously inadequate consideration of the health and hygiene needs of the workers.

Specific areas requiring improvement at the Garies WTW include:

- No O&M manual, drinking water quality Incident Management Protocol or list of emergency contact numbers was available at the Garies WTW;
- No standby raw water pumps or inflow measuring devices were available;
- Chlorine contact was not known by the Process Controller and no free chlorine measurements were undertaken to ensure that the water was effectively disinfected before it left the Garies WTW.

Specific areas requiring improvement at the Kheis WTW include:

- While a list of emergency contact numbers was available at the Kheis WTW, no formal, comprehensive drinking water quality Incident Management Protocol existed;
- No standby raw water pumps were available and while a inflow measuring device was available, no flow recording was taking place a the time of inspection;
- Only one antiscalant dosing pump was available, no standby dosing facility existed;
- No standby supernatant pump existed to pump sludge to the brine evaporation dam.

Water Services Authority	**Kareeberg Local Municipality**
Water Services Provider(s)	**Kareeberg Local Municipality**
Municipal Blue Drop Score:	**39.35%**

Performance Area	Systems	Carnarvon	Van Wyksvlei	Vosburg
Water Safety Planning (35%)		**0**	**23**	**23**
Treatment Process Management (10%)		**15**	**15**	**15**
DWQ Compliance (30%)		**73**	**73**	**73**
Management, Accountability (10%)		**35**	**35**	**35**
Asset Management (15%)		**32**	**22**	**22**
Bonus Scores		0	0	0
Penalties		0	0	0
Blue Drop Score (2012)		**39.66% (↑)**	**38.16% (↑)**	**38.16% (↑)**
2011 Blue Drop Score		34.59%	35.99%	34.60%
2010 Blue Drop Score		64.40%	61.40%	61.40%
System Design Capacity (Ml/d)		1	0.07	0.15
Operational Capacity (% ito Design)		80.00	95.71	98.00
Population Served		6 100	3 200	2 100
Average daily Consumption (l/p/d)		131.15	20.94	70.00
Microbiological Compliance (%)		**99.9%**	**99.9%**	**99.9%**
Chemical Compliance (%)		**No Information**	**No Information**	**No Information**

Regulatory Impression

The inspectors noted a slight improvement in drinking water quality management of Kareeberg Local Municipality but not yet to satisfactory standards.

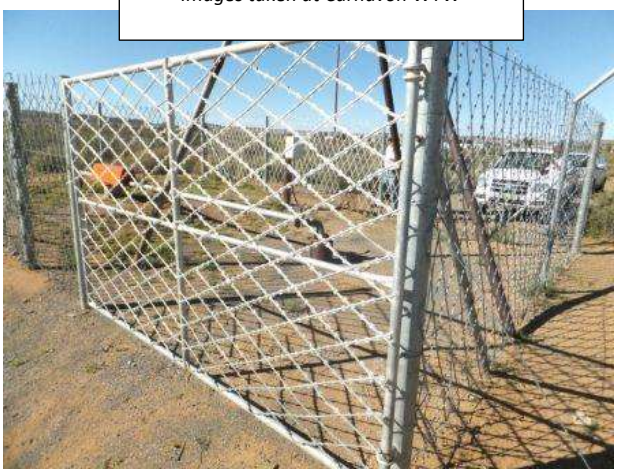
The Lead Inspector eloquently stated: "*Kareeberg is a small WSA that is confronted with specific geographical and source water challenges. The microbial water quality is fully compliant but the management system to support that is not in place and mostly in the heads of the present staff. Although the officials are aware of the water source risk (quantity), the WSA has up to now not documented and rated the risks for each of the systems, which is a risk in itself.*

Officials responsible for technical matters are financially inclined and may therefore not understand the dynamics of water related matters. There are serious challenges in this regard and urgent intervention is required to capacitate the WSA with a minimum of two suitably qualified and knowledgeable individuals to lead this very important aspect in the water business. With this said, it is evident that the aforementioned problem is having an effect on the credibility of their compliance data, daily operations of their three systems and knowledge of legislative requirements by a WSA (SANS 241: 2011 and Regulation 17). A programme addressing the skills shortage in Kareeberg LM (for each system) needs to be developed so as to ensure that they overcome the challenge of people not applying for work in a 'remote' area, get people from these areas to work there. This could be addressed in their WSDP if they have a Youth Development Policy."

As with the Green Drop 2011 assessment, the Department is encouraged by the endeavour of officials to tend to housekeeping of infrastructure. This is impressive, but it requires to be merged with the management of all risks relevant to the water supply systems the municipality is responsible for.

Site Inspection Report

Carnavon Water Supply System



Images taken at Carnavon WTW

As previously mention water supply infrastructures are well secured and shows evidence of relatively good maintenance. But it also indicates blatant risks which were revealed during the inspection. E.g. the reservoir inlet was locked and prevented the inspectors to verify disinfection dosing efficiency; this due to only one official having the key and not being available.

This might be a simplistic risk identified but could have immense impact on water safety should the consequences be carefully evaluated.

Another interesting point would be that the inspectors saw a tap installed at all reservoirs where dosing occurs, apparently installed for operational monitoring purposes. It was however revealed that no operational monitoring is done. Should this be implemented as a priority, the municipality would be assured of the efficacy of the disinfection barrier which is so important to safe-guard the water supply of Carnavon.

NB! Municipal Management, please note the greatest of risk identified by the inspectors would be the lack of staffing contingency noting the fact that current officials responsible for drinking water management are closing in on retirement.

Water Services Authority	**Karoo Hoogland Local Municipality**
Water Services Provider(s)	**Karoo Hoogland Local Municipality**
Municipal Blue Drop Score:	**39.96%**

Performance Area	Systems	Fraserburg	Sutherland	Williston
Water Safety Planning (35%)		**46**	**44**	**44**
Treatment Process Management (10%)		**15**	**15**	**15**
DWQ Compliance (30%)		**34**	**23**	**50**
Management, Accountability (10%)		**8**	**8**	**8**
Asset Management (15%)		**47**	**82**	**47**
Bonus Scores		9.00	4.50	4.50
Penalties		-4.00	-4.00	-1.50
Blue Drop Score (2012)		**40.49% (↓)**	**37.08% (↓)**	**42.58% (↓)**
2011 Blue Drop Score		47.00%	53.39%	51.50%
2010 Blue Drop Score		39.00%	39.00%	39.00%
System Design Capacity (Ml/d)		No information	0.5	No information
Operational Capacity (% ito Design)		#VALUE!	100.00	#VALUE!
Population Served		4 000	3 800	4 000
Average daily Consumption (l/p/d)		2500.00	131.58	250.00
Microbiological Compliance (%)		**85.7%**	**83.3%**	**>99.9%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**	**>99.9%**

Regulatory Impression

It is unfortunate to note a significant decline in the Blue Drop performance of the Karoo Hoogland Local Municipality, indicating that drinking water quality management does not comply with the requirements of the Blue Drop Certification Programme. While the Department acknowledged the vulnerability assessment which was done as part of the water safety planning process using the WRC tool, a number of additional aspects need to be addressed before the DWA can deem the process acceptable. Control measures are required to be identified and implemented, and information from a full set of SANS 241 analyses in one of the supply systems still has to be used to improve monitoring and treatment.

Maintenance of the disinfection process appears to have not been undertaken with the same degree of diligence noted in the previous assessment cycle, and the Fraserburg and Sutherland systems reported unacceptable microbiological quality, below the requirements specified in the drinking water standard, SANS 241. DWA also needs to place on record that although the microbiological quality of water in the Williston supply system and the chemical quality of the water in all the supply systems, were evaluated as excellent, compliance was calculated against minimal data. The Department cannot therefore state, with confidence, that drinking water supplied to residents of Karoo Hoogland poses no risk to public health.

Site Inspection Scores:

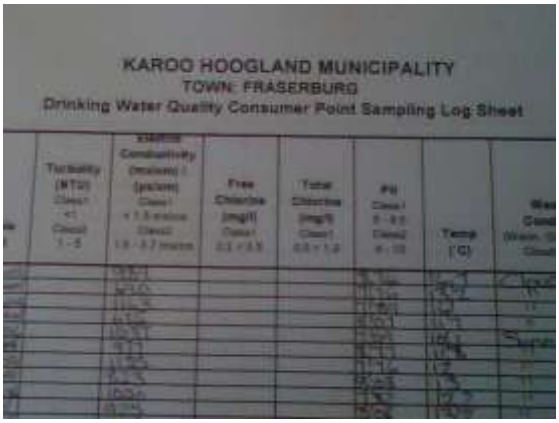
Fraserburg Borehole and Reservoirs: 55%
Williston Borehole and Reservoir: 52%

The Fraserburg Borehole Rante and Reservoirs and Williston Borehole 9 and Reservoir system were

visited to verify the Karoo Hoogland Local Municipality Blue Drop findings. Overall, the site inspection impression was unsatisfactory, with limited operational monitoring undertaken to ensure that the water supplied by these borehole systems was fit for consumption.

Areas requiring improvement at the **Fraserburg and Williston Borehole Systems** include:

- The WTW registration certificate were not displayed at either facility;
- The following critical documents were not present onsite at the time of the inspection:
  - Maintenance Logbook
  - O&M Manual (available at the office, but not onsite)
  - Drinking water quality Incident Management Protocol and list of contact details
- No operational monitoring of chlorine was undertaken to assess the effectiveness of disinfection using Kleenklor floaters. The Kleenklor floaters were only checked at a weekly frequency and replaced if empty;
- Turbidity levels were also not monitored at these borehole facilities.
- No operational monitoring logbook was available at the Williston Borehole System;
- Flowmeters were not in evidence at the time of the inspection at the Fraserburg Borehole System.


KAROO HOOGLAND MUNICIPALITY
TOWN: FRASERBURG
Drinking Water Quality Consumer Point Sampling Log Sheet

Limited operational monitoring is undertaken

Floaters are used for disinfection

Water Services Authority	**Kgatelopele Local Municipality**
Water Services Provider(s)	**Kgatelopele Local Municipality; Idwala Lime [a]; PPC Lime [b]**
Municipal Blue Drop Score:	**66.03%**

Performance Area	Systems	Danielskuil	Idwala Lime [a]	PPC Lime [b]
Water Safety Planning (35%)		**94**	**36**	**70**
Treatment Process Management (10%)		**85**	**15**	**50**
DWQ Compliance (30%)		**100**	**27**	**45**
Management, Accountability (10%)		**85**	**0**	**0**
Asset Management (15%)		**80**	**9**	**59**
Bonus Scores		1.98	0	4.34
Penalties		0	0	-1.45
Blue Drop Score (2012)		**95.00% (→)**	**23.64% (↑)**	**54.70% (↑)**
2011 Blue Drop Score		95.00%	16.90%	01.20%
2010 Blue Drop Score		97.43%	Not Assessed	Not Assessed
System Design Capacity (Ml/d)		No Information	1.04	No Information
Operational Capacity (% ito Design)		No Information	100.00	No Information
Population Served		12 717	250	2 400
Average daily Consumption (l/p/d)		No Information	4160.00	No Information
Microbiological Compliance (%)		**97.4%**	**68.0%**	**90.0%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**	**>99.9%**

Regulatory Impression

The Kgatelopele Local Municipality retains its Blue Drop Certification status for the Danielskuil water supply system but much work is to be done to ensure that this status is sustained. However the Department congratulates the municipality with this feat and encourages those responsible to note the need to review all possible risks and implement measures to ensure effective drinking water quality risk management.

Chlorine dosing (disinfection) and operational monitoring were two elements found to require improvement. But the general lack of volume measuring leaves the Department with the impression that the municipality is not effective in its responsibility to manage water demand and supply within the context of water use efficiency principles. Noting the arid nature of this region, it is a non-negotiable requirement that this element of the business should be addressed. The abstraction rates from the aquifer need to be recorded and measured against the safe yield of the boreholes as a bare minimum of effective groundwater management (also within the context of sound asset management).

The cooperation of all mines in the area is still a shortcoming which requires some deliberation between all parties concerned. During the last assessment Lime Acres (De Beers) together with Sedibeng Water came close to Blue Drop certification but this year did not respond positively to the call for Blue Drop assessments.

The performance of Idwala and PPC Lime Mining showed improvement which is encouraging. However the low compliance levels recorded at Idwala requires urgent intervention to ensure continued supply of safe water.

Site Inspection Report

PPC Cement Water Treatment Works: 71.0%

The inspectors were very pleased with the general condition of the terrain infrastructure and equipment. The water is evidently of a good quality which requires disinfection alone (based upon chemical and physical results). This water stems from underground resources into the quarry from where it is distributed to the community, which is located about six km away.

A shortcoming is the lack of abstraction volume measurement. However the pumping patterns are found to be within the expectations of effective asset management since two pumps are on standby while one is used for pumping.

The reservoirs used for storage were also found to be well kept and maintained.

The disinfection room was found in an acceptable condition but there is concern over the lack of an automatic change-over system when a gas tank is empty. This is further exacerbated by the finding that there is no acceptable gas content measurement taking place. This is a risk that requires adequate control measures to be implemented.

Water Services Authority	Khai Ma Local Municipality
Water Services Provider(s)	Khai Ma Local Municipality; Phella Water Board [a]
Municipal Blue Drop Score:	**53.11%**

Performance Area	Systems	Pofadder / Phella [a]	Onseepkans / Melkbosrand / Viljoensdraai	RK Onseepkans	Witbank
Water Safety Planning (35%)		**51**	**18**	**18**	**6**
Treatment Process Management (10%)		**100**	**58**	**40**	**40**
DWQ Compliance (30%)		**64**	**41**	**0**	**0**
Management, Accountability (10%)		**39**	**4**	**4**	**4**
Asset Management (15%)		**45**	**0**	**0**	**0**
Bonus Scores		0	0	0	0
Penalties		-1.27	-1.50	0	0
Blue Drop Score (2012)		**56.25% (↑)**	**23.24% (↓)**	**10.61% (↓)**	**6.50% (↓)**
2011 Blue Drop Score		49.01%	27.24%	27.06%	26.62%
2010 Blue Drop Score		30.00	Not assessed	36.50%	36.50%
System Design Capacity (Ml/d)		12.5	0.6	0.4	0.3
Operational Capacity (% ito Design)		16.00	83.33	100.00	100.00
Population Served		8 200	1 825	1 005	450
Average daily Consumption (l/p/d)		243.90	273.97	398.01	666.67
Microbiological Compliance (%)		**96.9%**	**>99.9%**	**72.7%**	**No information**
Chemical Compliance (%)		**>99.9%**	**No information**	**No information**	**No information**

Performance Area	Systems	Aggeneys [a]
Water Safety Planning (35%)		**81**
Treatment Process Management (10%)		**100**
DWQ Compliance (30%)		**73**
Management, Accountability (10%)		**55**
Asset Management (15%)		**50**
Bonus Scores		0
Penalties		0
Blue Drop Score		**72.93% (↑)**
2011 Score		49.01%
2010 Score		30.00%
System Design Capacity (Ml/d)		12.5
Operational Capacity (% ito Design)		16.00
Population Served		2 880
Average daily Consumption (l/p/d)		694.44
Microbiological Compliance (%)		**95.1%**
Chemical Compliance (%)		**>99.9%**

Regulatory Impression

It is regrettable to note that the performance of the Khai-Ma Local Municipality remains below expectations and is not aligned to the standard set for the country. The Phella Water Board, however, impressed the Blue Drop Inspectors with a noteworthy improvement, particularly in the Aggeneys supply system where the score primarily reflects the performance of the WSP who is largely responsible for service delivery within the system. Work done by Phella Water Board further improved the performance measured at the Pofadder/Phella system. However, further improvement is still required by the municipality who is responsible for the service within the distribution network since their approach towards drinking water quality management is yet to be improved.

Even though the Department highlighted the fact that the municipality was required to improve compliance monitoring, information received indicates that the WSA did little to address this 2011 finding. Microbiological water quality monitoring was not maintained for 12 months in each of the supply systems, and a chemical compliance monitoring programme has not yet been implemented. The WSA presented no evidence to confirm that a risk assessment process was completed in each of the supply systems. Noting the draft water safety plan, still dated 2010, DWA is of opinion that very little has been done to further this process and comply with regulatory requirements.

A significant effort is also required by the management of the Khai Ma Local Municipality to ensure that the responsible staff attains the required asset management and process control improvements. Municipal management should also address their responsibility to report on their drinking water quality performance to consumers within the entire area of supply. The 2011 data indicates that water within the RK Onseepkans supply system poses an unacceptable risk due to microbiological determinands exceeding the limits specified in SANS 241. While DWA expects the municipality to improve disinfection, consumers are also required to be informed immediately of the risk to public health.

The Phella Water Board is also required to improve disinfection processes at the Phelladrift water treatment works. The unavailability of supporting information on the Blue Drop System prevented DWA from giving more credit for many of the drinking water quality management systems and practices reported as undertaken by the WSP. In this regard, information to verify asset management and process control is required.

Site Inspection Scores:

Melkbosrand: **42%**
Phella Drift: **98%**

The Melkbosrand and Phella Drift WTWs were visited to verify the Khai Ma Local Municipality Blue Drop findings. Overall, the site inspection impression for Phella Drift was excellent, and indicated a well managed facility, but there were significant opportunities for improvement at the Melkbosrand WTW.

Areas requiring improvement at the Melkbosrand WTW include:

- The WTW registration certificate was not displayed at the facility;
- The following critical documents were not present at the Melkbosrand WTW:
  - O&M Manual
  - Drinking water quality Incident Management Protocol
- Operational monitoring undertaken at the Melkbosrand was inadequate to maintain process control:

- A swimming pool test kit was used to measure chlorine
- No water quality measurements were recorded in the logbook (only flows)
- No jar testing was undertaken

- The Melkbosrand WTW had no showers or place for the Process Controllers to eat;
- The flowmeter was broken at the time of the inspection;
- No mechanisms were in place to remove solids and debris from the raw water;
- There was no standby flocculant dosing pump or chlorine dosing system at the time of the inspection;
- Chlorine storage capacity was less than the required 30 days at the time of the inspection;
- Health and Safety issues require attention: No emergency showers or eye washes and inadequate chlorine safety equipment (only masks) were available in the chemical dosing area.

There were no significant areas requiring improvement at the Phella Drift WTW.

Water Services Authority	**//Khara Hais Local Municipality**
Water Services Provider(s)	**//Khara Hais Local Municipality**
Municipal Blue Drop Score:	**71.70%**

Performance Area	Systems	AH September (Upington)	Karos	Lambrechsdrift	Leerkrans
Water Safety Planning (35%)		**42**	**41**	**40**	**36**
Treatment Process Management (10%)		**75**	**65**	**65**	**65**
DWQ Compliance (30%)		**100**	**89**	**23**	**89**
Management, Accountability (10%)		**51**	**43**	**43**	**35**
Asset Management (15%)		**80**	**73**	**73**	**72**
Bonus Scores		3.70	4.46	6.00	4.81
Penalties		-0.54	-1.12	-1.50	-0.60
Blue Drop Score (2012)		**72.32% (↑)**	**66.15% (↑)**	**46.90% (↑)**	**64.14% (↑)**
2011 Blue Drop Score		43.96%	37.51%	26.97%	33.72%
2010 Blue Drop Score		37.88%	42.25%	30.25%	28.50%
System Design Capacity (Ml/d)		84	0.288	0.288	0.288
Operational Capacity (% ito Design)		71.43	44.44	100.00	100.00
Population Served		68 283	1 362	854	1 313
Average daily Consumption (l/p/d)		878.70	93.98	337.24	219.35
Microbiological Compliance (%)		**98.7%**	**>99.9%**	**92.3%**	**>99.9%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**

Performance Area	Systems	Leseding	Louisvalle	Ntsikelelo	Raaswater
Water Safety Planning (35%)		**36**	**35**	**38**	**35**
Treatment Process Management (10%)		**65**	**65**	**40**	**40**
DWQ Compliance (30%)		**55**	**55**	**0**	**78**
Management, Accountability (10%)		**43**	**37**	**43**	**43**
Asset Management (15%)		**67**	**76**	**67**	**62**
Bonus Scores		6.00	5.99	6.00	5.66
Penalties		0	-0.75	0	-0.71
Blue Drop Score (2012)		**55.78% (↑)**	**55.35% (↑)**	**37.61% (↑)**	**57.82% (↑)**
2011 Score		33.28%	27.63%	32.94%	22.44%
2010 Score		Nor assessed	34.63%	Not assessed	46.63%
System Design Capacity (Ml/d)		0.288	0.288	0.288	0.576
Operational Capacity (% ito Design)		100.00	100.00	100.00	100.00
Population Served		1 309	1 175	929	2 334
Average daily Consumption (l/p/d)		220.02	245.11	310.01	246.79
Microbiological Compliance (%)		**>99.9%**	**>99.9%**	**91.3%**	**>99.9%**
Chemical Compliance (%)		**>99.9%**	**No Information**	**>99.9%**	**>99.9%**

Regulatory Impression

It is appreciated that //Khara Hais Local Municipality manages water supply systems that comparatively would have a lesser revenue base yet has responsibilities of equal importance with reference to drinking water quality management. The Blue scores obtained for the majority of water supply systems are rather impressive and serve as indication of commitment to improve.

The inspectors were encouraged by the enthusiasm with which municipal officials responded to the audit and trust that this would be entrenched in the efforts to maintain on the course of continuous improvement towards the target of excellence.

The Ntsikelelo system's performance is well below the standard this municipality has set for itself during this audit cycle. Strategic attention is required to ensure that this system's adherence to the set standards will get on par with others.

The innovation in approach to the water safety planning process of involving process controllers should not be stifled but use as base information of risks posed to the treatment processes and be incorporated in and amended process which will follow the requirements of SANS 241:2011 and that of the World Health Organisation.

Site Inspection Scores:

AH September: **83%**
Ntsikelelo: **67%**

The AH September and Ntsikelelo WTWs were visited to verify the //Khara Hais Local Municipality Blue Drop findings. Overall, the site inspection impression was good, indicating a well-managed facility and good operational monitoring undertaken at the AH September WTW. The site inspection impression was moderate (with room for improvement) at the Ntsikelelo WTW.

Areas requiring improvement at the AH September WTW include:

- The Maintenance Logbook was not available at the AH September WTW at the time of the inspection. This is a critical document which is essential to ensure that drinking water management assets are maintained in good condition and are fit for purpose;
- The O&M Manual was outdated and did not reflect upgrades to the WTW;
- The Incident Management Protocol was limited in scope (only covered chlorine failures and fire) and is recommended to be further developed to ensure that it guides Process Controller actions for the management of drinking water quality failures;
- Occupational Health & Safety issues require attention – no eye wash existed in the chemical dosing area at the time of inspection;
- Some process optimisation and management is recommended:
    - Flocs visible at the end of the flocculation unit were fluffy in appearance and there were signs of floc carry over at the sedimentation tanks
    - The weirs in the sedimentation tanks were dirty, resulting in uneven flow
    - Only 15 of the 17 filters were functional at the time of the inspection
    - Chlorine contact time was less than 30 minutes;
- No sludge treatment was undertaken, and the sludge was diverted to river.

Jar testing is undertaken to ensure optimal flocculant dosing

Good condition of chlorinators

Areas requiring improvement at the Ntsikelelo WTW include:

- The following critical documents were not present at either the Ntsikelelo WTW:
  - Maintenance Logbook
  - O&M Manual
  - Drinking water quality Incident Management Protocol
- While good condition operational monitoring equipment was available at the Ntsikelelo WTW and results were recorded in the logbook, this equipment was not calibrated;
- No jar testing equipment was available onsite, but bimonthly jar testing is being undertaken at the AL Abbot Laboratory to optimize the flocculant dosage;
- While the raw water pump was in good condition, no standby pump existed;
- There was no standby flocculant dosing pump available. Similarly there was only a single pump available for dosing HTH granules;
- HTH granular chlorine was dosed, but the chlorine contact time was less than 30 minutes;
- No sludge treatment was undertaken, and the sludge gravitated to a field.

Water Services Authority	!Kai !Garib Local Municipality
Water Services Provider(s)	!Kai !Garib Local Municipality
Municipal Blue Drop Score:	**68.99%**

Performance Area	Systems	Alheit	Aughrabies	Bloemsmond	Cillie
Water Safety Planning (35%)		**77**	**77**	**77**	**77**
Treatment Process Management (10%)		**40**	**40**	**40**	**40**
DWQ Compliance (30%)		**100**	**100**	**100**	**100**
Management, Accountability (10%)		**35**	**28**	**35**	**23**
Asset Management (15%)		**28**	**40**	**28**	**18**
Bonus Scores		0.94	0.91	0.94	1.02
Penalties		0	-0.23	0	-1.02
Blue Drop Score (2012)		**69.52% (↑)**	**70.31% (↑)**	**69.52% (↑)**	**65.88% (↑)**
2011 Blue Drop Score		47.30%	53.35%	52.78%	29.41%
2010 Blue Drop Score		Not assessed	Not assessed	Not assessed	Not assessed
System Design Capacity (Ml/d)		0.4	0.6	0.28	0.4
Operational Capacity (% ito Design)		100.00	100.00	71.43	100.00
Population Served		1 200	3 000	800	1 200
Average daily Consumption (l/p/d)		333.33	200.00	250.00	333.33
Microbiological Compliance (%)		**>99.90%**	**>99.9%**	**>99.9%**	**>99.9%**
Chemical Compliance (%)		**99.3%**	**99.3%**	**>99.9%**	**98.7%**

Performance Area	Systems	Currieskamp	Kakamas Bulk Water	Keimoes Bulk Water	Lennerstville
Water Safety Planning (35%)		**77**	**75**	**74**	**77**
Treatment Process Management (10%)		**40**	**53**	**50**	**45**
DWQ Compliance (30%)		**100**	**100**	**100**	**100**
Management, Accountability (10%)		**28**	**23**	**35**	**28**
Asset Management (15%)		**18**	**33**	**28**	**28**
Bonus Scores		1.01	3.77	0.94	0.95
Penalties		0	-0.47	0	-0.24
Blue Drop Score		**67.34% (↑)**	**71.89% (↑)**	**69.47% (↑)**	**69.11% (↑)**
2011 Score		52.18%	53.35%	53.26%	42.84%
2010 Score		Not assessed	42.63%	Not assessed	Not assessed
System Design Capacity (Ml/d)		0.288	6	6	4.7
Operational Capacity (% ito Design)		100.00	100.00	100.00	100.00
Population Served		1 000	8 000	8 000	3 000
Average daily Consumption (l/p/d)		288.00	750.00	750.00	1566.67
Microbiological Compliance (%)		**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**
Chemical Compliance (%)		**>99.9%**	**99.0%**	**98.9%**	**>99.9%**

Performance Area	Systems	Lutzburg	Marchand	Riemvasmaak Sending	Riemvasmaak Vredesvallei
Water Safety Planning (35%)		**77**	**77**	**73**	**77**
Treatment Process Management (10%)		**40**	**40**	**40**	**40**
DWQ Compliance (30%)		**100**	**100**	**0**	**73**
Management, Accountability (10%)		**28**	**28**	**20**	**20**
Asset Management (15%)		**18**	**18**	**27**	**30**
Bonus Scores		1.01	1.01	1.50	4.91
Penalties		0	-0.51	-4.00	-1.23
Blue Drop Score		**67.34% (↑)**	**66.83% (↑)**	**33.23% (↑)**	**62.80% (↑)**
2011 Score		29.09%	53.21%	31.37%	52.15%
2010 Score		Not assessed	Not assessed	41.38%	37.00%
System Design Capacity (Ml/d)		0.4	0.6	0.44	0.38
Operational Capacity (% ito Design)		100.00	100.00	100.00	100.00
Population Served		1 200	1 200	1 360	460
Average daily Consumption (l/p/d)		333.33	500.00	323.53	826.09
Microbiological Compliance (%)		**>99.9%**	**>99.9%**	**87.0%**	**96.3%**
Chemical Compliance (%)		**98.9%**	**97.2%**	**86.7%**	**99.7%**

Performance Area	Systems	Soverby
Water Safety Planning (35%)		**77**
Treatment Process Management (10%)		**40**
DWQ Compliance (30%)		**100**
Management, Accountability (10%)		**35**
Asset Management (15%)		**18**
Bonus Scores		0.99
Penalties		0
Blue Drop Score		**68.06% (↑)**
2011 Score		52.45%
2010 Score		Not assessed
System Design Capacity (Ml/d)		0.28
Operational Capacity (% ito Design)		100.00
Population Served		800
Average daily Consumption (l/p/d)		350.00
Microbiological Compliance (%)		**>99.9%**
Chemical Compliance (%)		**98.2%**

Regulatory Impression

The consistent improvement of the !Kai !Garib Local Municipality's Blue Drop performance is noteworthy, and the Blue Drop Inspectors were particularly impressed with the municipal officials' dedication to improve drinking water quality management. While DWA gave recognition for the water safety planning process completed by !Kai !Garib, the WSA is again advised to develop this process further to ensure that system specific risks are identified and managed accordingly. The current water safety plan applies generic risks to all systems, irrespective of the source of water or treatment technology applied.

While DWA commends the municipality for maintaining the commendable monitoring in the supply systems, it was noted that monitoring was not maintained for all 12 months in all supply systems. Information on the Riemvasmaak-Sending supply system indicates that the water is not of the quality required by the South African National Standard (SANS 241) due to a significant number of *E. coli* and fluoride failures. The risk assessment process is required to clearly highlight this unacceptable situation which puts the health of consumers at risk.

!Kai !Garib is furthermore advised to closely monitor the occurrence of mercury concentrations which exceed the SANS 241 limit in the Alheit, Aughrabies, Cillie, Lutzburg, Marchand, Soverby, Kakamas - and Keimoes Bulk Water supply systems. Although the overall chemical compliance indicates that the drinking water is of excellent chemical quality, the mercury failures (and the cyanide failures in the Lutzburg and Soverby systems) need to be assessed in terms of their impact on the health of consumers living within the supply systems.

Improvements are also required in the area of Treatment Process Management since process control staff is still not confirmed as adequate to maintain treatment at all the systems over the vast distances within this Local Municipality. Development of O&M manuals for each of the treatment plants has also not yet been completed, and this, as well as shortcomings related to the lack of recording daily activities in logbooks, is considered to be a risk which could undermine the future ability of the WSA to continuously ensure safe drinking water.

Site Inspection Scores:

Keimoes:	**70%**
Kakamas:	**72%**

The Keimoes and Kakamas WTWs were visited to verify the Kai Garib Local Municipality Blue Drop findings. Overall, the site inspection impression was satisfactory, but many improvements in drinking water quality management are required.

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

- A Maintenance Logbook was not available at the Keimoes WTW, and similarly no O&M Manual was available at the site. However, there were operational monitoring procedures for determination of pH and chlorine;
- Further consideration of the safety, health and hygiene requirements of Process Controllers is needed:
    - No place to eat
    - Showers not in working condition
    - No emergency showers or eye washes

- Inadequate chlorine safety equipment (no alarm, detector or extractor fan)

- Coagulant dosing is not occurring at a predetermined rate since no jar testing is performed;
- **There was no standby chlorination dosing system and inadequate monitoring of the gas** remaining in the container (monitoring occurred via shaking the container instead of a scale, indicator, or switch over device);
- The general condition of the flocculation unit was not acceptable at the time of the inspection, with the walls covered with algae. There were no visible flocs at the end of the unit;
- Signs of floc carry over were observed at the clarifiers;
- The chlorine contact time in the reactor is less than 30 minutes and residual chlorine is not measured at a representative sampling point of the water as it leaves the Keimoes WTW;
- Inadequate sludge management: There were no sludge dams and the sludge gravitated to the nearest open field.

Operational monitoring equipment at the Keimoes WTW

Raw water pumps

Areas requiring improvement at the Kakamas WTW include:

- No evidence of calibration of operational monitoring equipment was available;
- No jar testing equipment was available and coagulant dosing was estimated at the item of inspection;
- There was no standby chlorination system;
- There was carryover of flocs from the clarifier to the filters;
- Further consideration of the Occupational Health and Safety requirements is needed:
  - No emergency showers or eye washes
  - Chlorine safety equipment was inadequate, with no alarms or detectors available at the time of inspection
- Chlorine contact time was less than 30 minutes. The Process Controller indicated that immediately after dosing, water is distributed to the reservoirs;
- Inadequate sludge management: There were no sludge dams, and the sludge gravitated back to the river.

Process Controller registration certificates

Dosing pumps at the Kakamas WTW

Water Services Authority	**!Kheis Local Municipality**
Water Services Provider(s)	**!Kheis Local Municipality**
Municipal Blue Drop Score:	**50.33%**

Performance Area	Systems	Boegoeberg / Brandboom	Gariep	Groblershoop	Grootdrink
Water Safety Planning (35%)		**65**	**61**	**63**	**63**
Treatment Process Management (10%)		**15**	**28**	**50**	**15**
DWQ Compliance (30%)		**34**	**61**	**61**	**61**
Management, Accountability (10%)		**14**	**14**	**14**	**14**
Asset Management (15%)		**46**	**34**	**46**	**46**
Bonus Scores		2.25	2.25	2.09	0.00
Penalties		-4.00	-1.50	-1.39	-1.50
Blue Drop Score (2012)		**40.79% (↓)**	**49.59% (↑)**	**54.28% (↓)**	**48.59% (↓)**
2011 Blue Drop Score		52.40%	47.35%	54.50%	52.60%
2010 Blue Drop Score		45.88%	Not assessed	45.88%	45.88%
System Design Capacity (Ml/d)		0.528	0.144	2.4	0.36
Operational Capacity (% ito Design)		100.00	100.00	100.00	100.00
Population Served		3 000	2 500	5 500	2 616
Average daily Consumption (l/p/d)		176.00	57.60	436.36	137.61
Microbiological Compliance (%)		**66.7%**	**>99.9%**	**>99.9%**	**>99.9%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**	**>99.9%**	**>99.9%**

Performance Area	Systems	Topline	Wegdraai
Water Safety Planning (35%)		**63**	**63**
Treatment Process Management (10%)		**28**	**28**
DWQ Compliance (30%)		**34**	**61**
Management, Accountability (10%)		**14**	**14**
Asset Management (15%)		**46**	**46**
Bonus Scores		0.00	0.00
Penalties		-4.00	-1.46
Blue Drop Score		**39.09% (↓)**	**55.00% (↓)**
2011 Score		52.51%	51.47%
2010 Score		45.88%	45.88%
System Design Capacity (Ml/d)		0.48	0.36
Operational Capacity (% ito Design)		100.00	100.00
Population Served		2 470	2 660
Average daily Consumption (l/p/d)		194.33	135.34
Microbiological Compliance (%)		**66.7%**	**>99.9%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**

Regulatory Impression

The Blue Drop performance of Kheis Local Municipality remained constant. The Department was, however, presented with evidence to confirm that the water safety planning process is underway in each of the supply systems. The DWA trusts that risks identified in this process and adaptations to both monitoring programmes and treatment processes will result in future performance improvements.

The WSA is now encouraged to take ownership of the process by addressing site specific risks. Without data to confirm that a full set of SANS 241 analyses had been conducted in each of the supply systems, the revised monitoring programmes cannot be deemed appropriate. Information will be also required in future to confirm the risks that apply to the various raw water sources that are treated.

DWA could not confidently confirm the excellent drinking water quality recorded in most of the supply systems because the scarcity of data submitted did not allow an statistically reliable compliance calculation. Monitoring should be maintained throughout the year, and the frequency of sampling should correspond to the risk-defined monitoring programmes. Operational monitoring was also found to be inconsistent and not aligned to the registered programmes, and it was clear from the site inspections that a number of instruments were not functional at the time of the inspection, resulting in a lack of credible data for process control. Available data shows that drinking water within the Boegoeberg/Brandboom and Topline supply systems poses an unacceptable risk to public health due to microbiological failures. While the WSA is required to improve disinfection, overall monitoring should also increase to allow a more accurate assessment of the quality of water in all the supply systems.

Not all Process Controllers were classified according Regulation 2834 (to be replaced by Regulation 17). While the WSA addresses this non-compliance, process controlling staff should also be confirmed as competent and sufficient to maintain the treatment process at the various plants. Recording of daily activities in logbooks should furthermore be undertaken at each of the treatment plants.

To ensure improved drinking water quality management, Kheis Local Municipality management is required to provide leadership and funding for the required asset management activities. Detailed process audits are required at each of the treatment systems, the asset register should be updated to include assets of the Gariep supply systems, and the WSA is advised to confirm the accuracy of information provided related to financial planning and expenditure. Officials also had difficulty providing confirmed data regarding the design and actual operating capacities of the various treatment systems; updated information is required to be readily available for day-to-day operational business and Blue Drop assessments.

Site Inspection Scores:

Boegoeberg:	**55%**
Groblershoop:	**57%**

The Boegeberg and Groblershoop WTWs were visited to verify the Kheis Local Municipality Blue Drop findings. In some areas, the site inspection impression was acceptable, but a water treatment process can never be operated optimally without adequate operational monitoring to guide the process.

Areas requiring improvement both at the **Boegoeberg** and **Groblershoop** WTW include:

- The WTW registration certificate was not displayed at either facility;
- Neither WTW has a Incident Management Protocol to guide Process Controller's action when a drinking water quality failure occurs;

- It is of significant concern that no operational monitoring has been undertaken due to non-functional equipment – this monitoring is essential to maintain process control within each WTW, to ensure optimal coagulant dosage and final water compliance with standards;
- There was no standby flocculant dosing pump or granular chlorine dosing system at the time of the inspection;
- Health and Safety issues require attention: No emergency showers, eye washes or chlorine safety equipment were available in the chemical dosing area;
- No sludge treatment was undertaken, and the sludge gravitated to an open field.

Specific areas requiring improvement at the **Boegoeberg** WTW include:

- No maintenance logbook was available at the Boegoeberg WTW;
- The Health and Hygiene requirements are not adequately considered as workers did not have a place to wash or eat;
- The clarification process requires optimisation: there was carryover of flocs and the weirs were overflowing (overloaded) at the time of the inspection;
- There was no standby for the raw water pump.

Flow measuring device in good working condition

Overflowing clarifier at Boegoeberg WTW

Specific areas requiring improvement at the **Groblershoop** WTW include:

- No O&M Manual was available at the Groblershoop WTW;
- Chlorine contact time was less than the required 30 minutes, and no free chlorine measurements were undertaken on the final water to assess the effectiveness of disinfection.

Operational monitoring equipment exists but is not functional at the Groblershoop WTW

Raw water pumps

Water Services Authority	**Magareng Local Municipality**
Water Services Provider(s)	**Magareng Local Municipality**
Municipal Blue Drop Score:	**72.66 %**

Performance Area	Systems	Warrenton
Water Safety Planning (35%)		**73**
Treatment Process Management (10%)		**77**
DWQ Compliance (30%)		**78**
Management, Accountability (10%)		**37**
Asset Management (15%)		**62**
Bonus Scores		4.12
Penalties		-0.92
Blue Drop Score (2012)		**72.66 % (↑)**
2011 Blue Drop Score		65.56%
2010 Blue Drop Score		54.00%
System Design Capacity (Ml/d)		8.4
Operational Capacity (% ito Design)		57.14
Population Served		20 858
Average daily Consumption (l/p/d)		230.13
Microbiological Compliance (%)		**98.6%**
Chemical Compliance (%)		**>99.9%**

Regulatory Impression

The Department notes the consistent improvement of drinking water quality management by the Magareng Local Municipality which is evidence of the commitment to adhere to the set regulatory requirements. This certainly is praise-worthy.

However there remain areas that require improvement before the step towards certification qualification is made. The monitoring of chemical determinants is not up to standard as yet even though the full SANS 241 results show no failures in this regard. It remains a risk area which can only be adequately managed should the municipality compile and implement an acceptable chemical monitoring programme. Unfortunately this is a plea from the Department which was not adhered to even though it was mentioned in previous Blue Drop reports as well. Once again the municipality is urged to at least incorporate the minimum chemical determinants as expected by the South African National Standards (SANS) 241.

Management Accountability and Local Regulation did not score well due to the audit finding that no effort could be detected to inform the community of drinking water quality status within Magareng, no evidence of drinking water quality management being included as a key performance area in the performance agreement of the responsible municipal official, as well as strategic documentation not bearing any evidence of managerial approval.

Nevertheless, should the municipality give attention to these identified shortcomings an even better performance is surely possible.

Water Services Authority	**Mier Local Municipality**
Water Services Provider(s)	**Mier Local Municipality**
Municipal Blue Drop Score:	**25.03%**

Performance Area	Systems	Swartkopdam	Rietfontein	Philandersbron	Askham
Water Safety Planning (35%)		**13**	**47**	**41**	**47**
Treatment Process Management (10%)		**40**	**11**	**0**	**0**
DWQ Compliance (30%)		**0**	**53**	**11**	**53**
Management, Accountability (10%)		**8**	**16**	**11**	**16**
Asset Management (15%)		**8**	**28**	**28**	**28**
Bonus Scores		0	0	0	0
Penalties		-1.50	-1.50	-4.00	0
Blue Drop Score (2012)		**8.96% (↓)**	**37.41% (↑)**	**18.94% (↓)**	**37.86% (↑)**
2011 Blue Drop Score		42.09%	32.94%	29.88%	27.72%
2010 Blue Drop Score		40.75%	25.10%	25.10%	25.10%
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		150	2 544	1 102	800
Average daily Consumption (l/p/d)		No Information	No Information	No Information	No Information
Microbiological Compliance (%)		**87.5%**	**99.9%**	**81.8%**	**99.9%**
Chemical Compliance (%)		**0.0%**	**99.9%**	**99.9%**	**99.9%**

Performance Area	Systems	Loubos	Mier Boorgate	Noenieput	Andriesvale
Water Safety Planning (35%)		**41**	**41**	**47**	**32**
Treatment Process Management (10%)		**0**	**0**	**0**	**0**
DWQ Compliance (30%)		**39**	**55**	**0**	**25**
Management, Accountability (10%)		**16**	**16**	**8**	**8**
Asset Management (15%)		**28**	**28**	**28**	**8**
Bonus Scores		0	0	0	0
Penalties		0	0	-4.00	-1.50
Blue Drop Score (2012)		**31.64% (↑)**	**36.51% (↑)**	**17.36% (↓)**	**19.11% (↓)**
2011 Score		25.96%	25.96%	24.24%	22.61%
2010 Score		25.10%	25.10%	25.10%	25.10%
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		1 129	1 208	159	795
Average daily Consumption (l/p/d)		No Information	No Information	No Information	No Information
Microbiological Compliance (%)		**99.9%**	**99.9%**	**70.0%**	**99.9%**
Chemical Compliance (%)		**99.9%**	**50.0%**	**50.0%**	**99.9%**

Performance Area	Systems	Welkom
Water Safety Planning (35%)		**39**
Treatment Process Management (10%)		**0**
DWQ Compliance (30%)		**41**
Management, Accountability (10%)		**11**
Asset Management (15%)		**28**
Bonus Scores		0
Penalties		-1.50
Blue Drop Score (2012)		**29.74 % (↑)**
2011 Score		22.44%
2010 Score		25.10
System Design Capacity (Ml/d)		No Information
Operational Capacity (% ito Design)		No Information
Population Served		689
Average daily Consumption (l/p/d)		No Information
Microbiological Compliance (%)		**99.9%**
Chemical Compliance (%)		**50.0%**

Regulatory Impression

Mier Local Municipality's Blue Drop scores reflect a drinking water quality management situation which is not favourable at all; this in spite of the fact that tap water quality compliance improved significantly since the inception of the National Drinking Water Quality Regulation programme. There is room for improvement in almost each one of the key performance areas of the Blue Drop certification programme.

The monitoring programme can be appreciably improved. It should be noted that an insufficient number of microbiological samples were taken and even less chemical samples. Due to the remote location of water supply systems, the department would require the water service authority to commence participation in the University of Cape Town's microbiological operational monitoring programme to ensure that the current sampling efforts are augmented with additional high frequency monitoring. This will instil enhanced confidence in the creditability of tap water quality information on all Mier water supply systems.

The adoption of the water safety planning process by Council is regarded as a certain positive step but it is trusted that this planning process will be implemented to ensure that all risks area managed and that control measures are put in place where so required.

The department is not clear on the use of laboratory since and Upington unit was listed as contracted but the accreditation certificate of the Port Elizabeth branch was submitted.

In addition to this it should be agreed that there is no asset as important as the ground water aquifers serving as water source for each of the towns within the jurisdiction of this municipality. It therefore remain most concerning that once the audits reveal that groundwater abstraction occurs without abstraction rates being measured.

The department would certainly appreciate it if this water services authority can put in a concerted effort to amend the less positive image portrayed on its drinking water quality management

commitment. Note the lead inspector's remarks: "*Mier Local Municipality was unenthusiastic during the assessment and hesitant in sharing their information. Very little information was loaded on the BDS. This information was either outdated or loaded in the incorrect location.*

They manage their systems by providing only the essentials. They operate most of their systems without proper supervision and with unregistered operators. "

Site Inspection Scores:

Askam:	**12%**
Rietfontein:	**18%**

The Askam and Rietfontein WTWs were visited to verify the Mier Local Municipality Blue Drop findings. Overall, the site inspection impression was very poor with inadequate drinking water quality management occurring.

Areas requiring improvement at both the **Askam** and **Rietfontein** WTW include:

- The overall appearance of the WTWs was of poorly maintained facilities, and the WTW registration certificate was not displayed at either facility;
- The following critical documents were not present at either WTW:
  - Maintenance Logbook
  - O&M Manual
  - Drinking water quality Incident Management Protocol and list of contact details
- No operational monitoring equipment was available, and thus no operational monitoring was undertaken and no records were maintained.

Specific areas requiring improvement at the **Askam** WTW include:

- The flow meter was out of order at the time of the inspection, and no flow records were available.

Specific areas requiring improvement at the **Rietfontein** WTW include:

- The flow meter was not functioning correctly as some readings were not recorded;
- The standby raw water pump was out of operation for maintenance at the time of the inspection;
- There was no disinfection of the water as it left the Rietfontein WTW: No chlorine (HTH) was dosed into the reservoir.

Water Services Authority	Nama Khoi Local Municipality
Water Services Provider(s)	Nama Khoi Local Municipality; Sedibeng Water [a]
Municipal Blue Drop Score:	**63.47%**

Performance Area	Systems	Carolusburg [a]	Sonop [a]	Rooiwinkel [a]	Springbok [a]
Water Safety Planning (35%)		**57**	**57**	**57**	**57**
Treatment Process Management (10%)		**58**	**58**	**58**	**58**
DWQ Compliance (30%)		**45**	**73**	**45**	**45**
Management, Accountability (10%)		**48**	**48**	**48**	**48**
Asset Management (15%)		**82**	**82**	**82**	**82**
Bonus Scores		2.62	2.13	2.62	2.62
Penalties		-2.18	0.00	0.00	-2.18
Blue Drop Score (2012)		**56.75% (→)**	**66.69% (→)**	**58.93% (→)**	**56.75% (→)**
2011 Blue Drop Score		Not assessed	Not assessed	Not assessed	Not assessed
2010 Blue Drop Score		Not assessed	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		500	250	500	230 000
Average daily Consumption (l/p/d)		98.00	128.00	100.00	58.70
Microbiological Compliance (%)		**83.0%**	**95.5%**	**73.0%**	**92.0%**
Chemical Compliance (%)		**97.5%**	**98.0%**	**97.0%**	**99.4%**

Performance Area	Systems	Bulletrap [a]	Steinkop [a]	Okiep [a]	Nababeep [a]
Water Safety Planning (35%)		**57**	**57**	**57**	**57**
Treatment Process Management (10%)		**58**	**58**	**58**	**58**
DWQ Compliance (30%)		**100**	**86**	**86**	**45**
Management, Accountability (10%)		**48**	**48**	**48**	**48**
Asset Management (15%)		**82**	**82**	**82**	**82**
Bonus Scores		1.63	1.88	1.88	2.62
Penalties		0.00	0.00	0.00	0.00
Blue Drop Score		**74.44% (→)**	**70.57% (→)**	**70.57% (→)**	**58.93% (→)**
2011 Score		Not assessed	Not assessed	Not assessed	Not assessed
2010 Score		Not assessed	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		1 000	230 000	1 000	1 000
Average daily Consumption (l/p/d)		480.00	60.87	520.00	440.00
Microbiological Compliance (%)		**98.5%**	**98.5%**	**96.8%**	**79.9%**
Chemical Compliance (%)		**99.7%**	**99.7%**	**98.0%**	**98.0%**

Performance Area	Systems	Concordia [a]	Buffelsrivier	Goodhouse	Komaggas
Water Safety Planning (35%)		**57**	**46**	**42**	**46**
Treatment Process Management (10%)		**58**	**52**	**63**	**52**
DWQ Compliance (30%)		**45**	**40**	**92**	**40**
Management, Accountability (10%)		**48**	**56**	**56**	**56**
Asset Management (15%)		**82**	**55**	**43**	**55**
Bonus Scores		2.62	0.00	0.00	0
Penalties		-2.18	-2.50	0.00	-2.5
Blue Drop Score		**56.75% (→)**	**44.44% (↓)**	**60.24% (↑)**	**44.44% (↓)**
2011 Score		Not assessed	52.37%	41.55%	51.72%
2010 Score		Not assessed	27.50%	11.25%	26.75%
System Design Capacity (Ml/d)		No information	2.289	No information	2.289
Operational Capacity (% ito Design)		No information	13.11	No information	17.47
Population Served		500	800	250	2 104
Average daily Consumption (l/p/d)		180.00	375.00	180.00	190.11
Microbiological Compliance (%)		**89.3%**	**90.9%**	**>99.9**	**90.9%**
Chemical Compliance (%)		**97.5%**	**>99.9**	**>99.9**	**>99.9**

Performance Area	Systems	Rooiwal	Vioolsdrift
Water Safety Planning (35%)		**48**	**46**
Treatment Process Management (10%)		**45**	**45**
DWQ Compliance (30%)		**90**	**45**
Management, Accountability (10%)		**56**	**56**
Asset Management (15%)		**43**	**29**
Bonus Scores		0	0
Penalties		0	-2.5
Blue Drop Score		**60.09% (↓)**	**41.36% (↓)**
2011 Score		63.21%	44.87%
2010 Score		25.75%	25.00%
System Design Capacity (Ml/d)		No information	No information
Operational Capacity (% ito Design)		No information	No information
Population Served		300	300
Average daily Consumption (l/p/d)		166.67	133.33
Microbiological Compliance (%)		**>99.9%**	**90.9%**
Chemical Compliance (%)		**>99.9%**	**>99.9**

Regulatory Impression

Nama Khoi Local Municipality, assisted by Sedibeng Water can be satisfied with a commendable performance. Although the overall municipal performance reflects a slight improvement from 57.96% to 63.5%, the increased number of supply systems presented for evaluation implies that the municipality and Sedibeng Water is in process of developing more system specific drinking water quality management systems for the areas previously all assessed under the Namakwa Water Board supply system.

Efforts should persist to effect a positive change in the quality of service provided to residents of Nama Khoi. While the WSA and WSP jointly develop and define system specific water safety plans, monitoring should improve to ensure availability of sufficient data to confidently access the microbiological and chemical quality of the water available for consumption. The WSA and WSP should also synchronise their supply systems as registered on the Blue Drop System. Compliance of drinking water in systems receiving water from the Henkries treatment facility has been calculated from data submitted by both the WSA and WSP, DWA however requires additional information related to flow of water to ensure that the weighted compliance truly signifies the water available for consumption in the respective water supply systems.

Nama Khoi needs to commence monitoring of chemical determinands in all the supply systems, the WSA and WSP should also prioritise the areas plagued by microbiological failures for treatment and in particular, disinfection process optimisation. Data available to the Department infers that water in the Carolusberg, Springbok, Nababeep, Concordia, Buffelsrivier, Kommagas and Vioolsdrift are of a microbiological quality not compliant with the requirements of the South African national standard for drinking water (SANS 241). Water to Fonteintjie, Bergsig and Matjieskloof also appears to pose a risk of infection, the latter three systems were however again not presented for Blue Drop evaluation.

Water Services Authority	Phokwane Local Municipality
Water Services Provider(s)	Phokwane Local Municipality; Sedibeng Water [a]
Municipal Blue Drop Score:	**60.16%**

Performance Area	System	Hartswater	Jan Kempdorp	Pampierstad [a]
Water Safety Planning (35%)		**47**	**47**	**84**
Treatment Process Management (10%)		**49**	**28**	**75**
DWQ Compliance (30%)		**45**	**73**	**100**
Management, Accountability (10%)		**23**	**23**	**69**
Asset Management (15%)		**26**	**22**	**73**
Bonus Scores		4.4	4.1	3.1
Penalties		-2.5	-2.5	0
Blue Drop Score (2012)		**42.88 % (↑)**	**48.10 % (↑)**	**87.38 % (↑)**
2011 Blue Drop Score		22.83%	24.21%	89.48%
2010 Blue Drop Score		50.88%	50.88%	22.33%
System Design Capacity (Ml/d)		5	7	9.6
Operational Capacity (% ito Design)		80.00	85.71	54.17
Population Served		5 098	29 000	29 695
Average Daily Consumption (l/p/d)		784.62	206.90	175.11
Microbiological Compliance (%)		**71.7%**	**95.6%**	**99.0%**
Chemical Compliance (%)		**100.0%**	**100.0%**	**99.0%**

Regulatory Impression

It is evident that the municipality made a concerted effort to improve on the 2011 performance. This is evident through the 100% improvement in scores in two of its systems. It is also remarkable that with the assistance of Sedibeng Water the performance of Pampierstad is more or less maintained within the context of even more stringent regulatory requirements.

However there is also room for improvement within many aspects of the Blue Drop indicators. The inspectors could not be convinced of at least a good performance in most of the key performance areas assessed. In Hartswater and Jan Kempdorp the municipality should proceed on the improvement curve to ensure the desired level of performance.

The Department is concerned with the fact that average daily consumption figures of Hartswater are reasonably high. Attention should be given to this to ensure that water losses are reduced through the implementation of a practical water use efficiency strategy.

Treatment operations and management is not up to standard either. This situation demands the attention of management to ensure that all possible risks are identified and addressed. Failure to do so will transpire in poor microbiological and chemical water quality compliance which would be indicative of a public health risk.

Site Inspection Report

Hartswater WTW	**38.0%**
Jan Kempdorp WTW	**19.0%**

The site inspection scores reflect a situation which is not favourable at both water treatment facilities, even though the appearance of Hartswater was judged as fair.

The following findings were noted at the Hartswater WTW:

- Most Disconcerting is the fact that absolutely no disinfection was applied during the time of the site inspection. This is truly unacceptable since it would be such practices that place the health of the public at risk. Contingency plans should be in place to prevent such incidences at all cost.
- An operations logbook is not maintained even though it was reported to be in place.
- The Department is not convinced that the Operations and Maintenance manual is authentic but this will be verified in due course.
- The on-site operational monitoring equipment is not in a good condition. There is also an unfortunate lack of operational monitoring record-keeping on site which handicaps effective drinking water quality management.
- It is a risk that only one process controller was reported to be able to perform operational monitoring (especially jar testing).
- The working environment for process controllers and other treatment facility staff can certainly be improved.
- Attention should be given to the condition of filter media. The visible cracking is a risk factor to effective treatment of water.

The following findings were noted at the Jan Kempdorp WTW:

- The working environment is far from satisfactory.
- No operational monitoring records are in place and only one person is capable of operating the monitoring equipment. This person was not available during the inspection to verify his capability in the presence of the inspectors.
- The flocculation process is not effective due to non-standard introduction of supernatant half-way through the process. This disturbs floc formation and eventual turbidity removal.

Water Services Authority	**Renosterberg Local Municipality**
Water Services Provider(s)	**Renosterberg Local Municipality**
Municipal Blue Drop Score:	**17.60%**

Performance Area	Systems	VanderKloof	Philipstown
Water Safety Planning (35%)		**30**	**26**
Treatment Process Management (10%)		**15**	**45**
DWQ Compliance (30%)		**0**	**0**
Management, Accountability (10%)		**46**	**38**
Asset Management (15%)		**5**	**5**
Bonus Scores		0	0
Penalties		0	0
Blue Drop Score (2012)		**17.39% (↓)**	**18.24% (↓)**
2011 Blue Drop Score		36.88%	16.34%
2010 Blue Drop Score		25.00%	36.00%
System Design Capacity (Ml/d)		3	No Information
Operational Capacity (% ito Design)		No Information	No Information
Population Served		8 602	3 100
Average daily Consumption (l/p/d)		34.88	No Information
Microbiological Compliance (%)		**93.8%**	**77.8%**
Chemical Compliance (%)		**No information**	**No Information**

Regulatory Impression

Even though the recorded performance is far from satisfactory, the Lead Inspector noted the following: "*Under challenging circumstances Mr Hennie du Plessis, a DBSA deployee and Ms Novoyizana, did their best to ensure that all information they were able to attain was made available. While the scores reflected are very poor, there is a great effort to get systems in place that will improve overall Drinking Water Quality Management; in particular the initiation of a comprehensive Water Safety Plan and DWQ monitoring programme which will include a full SANS241 analysis. The sustainability of these efforts however lies in the municipality's commitment to taking ownership of these systems being put in place.*

***Sadly the absence of municipal representation at the Blue Water Services confirmation session may be seen as a lack of such commitment**."*

The Department will give specific attention to this municipality's ability to perform all responsibilities pertaining to drinking water quality as per Blue Drop requirements.

Water Services Authority	Richtersveld Local Municipality
Water Services Provider(s)	Richtersveld Local Municipality
Municipal Blue Drop Score:	**36.77%**

Performance Area	Systems	Eksteenfontein	Kuboes	Lekkersing	Port Nolloth / Alexander Bay
Water Safety Planning (35%)		**48**	**39**	**39**	**53**
Treatment Process Management (10%)		**28**	**28**	**28**	**28**
DWQ Compliance (30%)		**75**	**34**	**75**	**45**
Management, Accountability (10%)		**3**	**11**	**3**	**6**
Asset Management (15%)		**23**	**23**	**23**	**23**
Bonus Scores		0.00	0.00	0.00	0.00
Penalties		-1.50	-2.50	-1.50	-4.00
Blue Drop Score (2012)		**44.13% (↓)**	**28.53% (↑)**	**41.15% (↓)**	**34.76% (↑)**
2011 Blue Drop Score		45.28%	26.03%	44.09	25.93%
2010 Blue Drop Score		25.87%	25.87%	26.63%	23.63%
System Design Capacity (Ml/d)		0.2	No information	No information	No information
Operational Capacity (% ito Design)		100.00	No information	No information	No information
Population Served		1 120	1 650	1 638	14 000
Average daily Consumption (l/p/d)		178.57	181.82	183.15	71.43
Microbiological Compliance (%)		**>99.9%**	**63.6%**	**>99.9%**	**87.1%**
Chemical Compliance (%)		**>99.9%**	**>99.9%**	**>99.9%**	**97.1%**

Performance Area	Systems	Sanddrift
Water Safety Planning (35%)		**51**
Treatment Process Management (10%)		**0**
DWQ Compliance (30%)		**75**
Management, Accountability (10%)		**3**
Asset Management (15%)		**23**
Bonus Scores		0.00
Penalties		-1.50
Blue Drop Score		**42.43% (↑)**
2011 Score		40.88%
2010 Score		26.63%
System Design Capacity (Ml/d)		No information
Operational Capacity (% ito Design)		No information
Population Served		2 180
Average daily Consumption (l/p/d)		137.61
Microbiological Compliance (%)		**>99.9%**
Chemical Compliance (%)		**>99.9%**

Regulatory Impression

It is unfortunate to report that the municipality of Richtersveld has shown little improvement in their approach to drinking water quality management. Compliance monitoring programmes have not yet been aligned to findings from the apparently desktop risk assessment process. Overall monitoring frequencies did not improve and at least 12 continuous months of microbiological data were not submitted for each of the supply systems. Available data did, however, again confirm that the municipality did not improve the disinfection processes, and that water provided to residents of Kuboes and Port Nolloth / Alexander Bay continued to pose a microbial risk to public health. DWA finds the failure of municipal management to improve the situation unacceptable.

On a positive note, the Department can acknowledge that the municipality has commenced with chemical compliance monitoring in each of the supply systems. DWA regards this attempt to address the lack of comprehensive monitoring as a constructive sign that the business of water services delivery is able to improve in the Richtersveld Local Municipality. Staff, in particular Mr Heinrich Cloete and Mr Abrey Mouton whose skills the DWA Inspectors considered to be under-utilised, was deemed capable of improving the drinking water quality management performance of the municipality. However, without the support of municipal management, and funding to improve treatment processes and appoint competent staff, Blue Drop performance is unlikely to improve. The absence of the municipality during the confirmation session was of significant concern to the Department, and is hopefully not indicative of the Richtersveld Local Municipality's commitment to continual improvement.

Site Inspection Scores:

Eksteenfonein Boreholes and Port Nolloth WTW: 65%

The Eksteenfonein Boreholes and Port Nolloth WTW were visited to verify the Richtersveld Local Municipality Blue Drop findings. Overall, the site inspection impression was satisfactory, but further conclusions could not be drawn due to lack of information.

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

- The flowmeters at the Eksteenfonein Boreholes were not functional at the item of inspection;
- Inadequate disinfection at the item of the inspection: HTH tablet inserters were missing from the chlorine tank.

Areas requiring improvement at the **Port Nolloth** WTW (Alexkor Mine WTW, with no municipal access) include:

- The Richtersveld Local Municipality only has access to the reservoir supplied by the WTW.

Water Services Authority	**Siyancuma Local Municipality**
Water Services Provider(s)	**Siyancuma Local Municipality**
Municipal Blue Drop Score:	**19.66%**

Performance Area	Systems	Douglas	Griekwastad	Schmidtsdrift	Campbell
Water Safety Planning (35%)		**44**	**44**	**39**	**39**
Treatment Process Management (10%)		**0**	**0**	**0**	**0**
DWQ Compliance (30%)		**0**	**3**	**0**	**3**
Management, Accountability (10%)		**3**	**3**	**3**	**3**
Asset Management (15%)		**24**	**15**	**24**	**24**
Bonus Scores		4.5	0	0	0
Penalties		0	0	0	0
Blue Drop Score (2012)		**23.80%** (↓)	**18.85%** (↑)	**17.55%** (↓)	**18.45%** (↑)
2011 Blue Drop Score		36.86%	16.58%	33.49%	14.44%
2010 Blue Drop Score		63.63%	44.13%	36.63%	44.13%
System Design Capacity (Ml/d)		5	0.6	0.1	0.16
Operational Capacity (% ito Design)		0.00	0.00	0.00	0.00
Population Served		16 000	6 000	1 000	1 600
Average daily Consumption (l/p/d)		31.25	10.00	10.00	10.00
Microbiological Compliance (%)		**84.0%**	**90.9%**	**0.0%**	**0.0%**
Chemical Compliance (%)		**84.0%**	**0.0%**	**0.0%**	**0.0%**

Regulatory Impression

Again, this municipality presents an unacceptable performance. For the first time the Department is forced to repeat the previous year's *Regulatory Impression* verbatim. This would be due to a complete disregard of the municipality for the Blue Drop findings in spite of the vast risks posed to the health of the public depending on tap water from systems managed by this municipality.

In spite of a very good effort by the municipal representatives, Siyancuma Local Municipality's overall Blue Drop performance was measured to be unsatisfactory in spite of the fact that the limited monitoring indicated that the tap water quality complied rather well with the standards set. The current form of operations does not create confidence that all risks posed to the supply of safe drinking water are being managed and contained at a continuous basis. The decline in Blue Drop performance should become an issue for both municipal management and decision makers since this is a public health issue.

The municipality is encouraged to prioritise the supply of safe drinking water by focusing on improving the Blue Drop performance, which will result in a sustainable turn around.

Findings:

- *The Blue Drop inspectors were astonished by the vast lack of information on most aspects of the drinking water quality business. This is deemed as a huge risk to the continued supply of safe drinking water.*
- *Special attention is required to improve the monitoring programme to ensure that the water quality is continuously compared to the standard limits. (Legislated Requirement)*

Site Inspection Report

Douglas WTW (score) **31%**

An overloaded clarifier on the left and a sand-filter that requires a lot of attention on the right. A flocculation dosing tank with innovative "home-made" adjustments below.

The operations at the Douglas water treatment facility are not according to the expected regulatory requirements. The municipality is expected to have a process optimisation audit conducted and an implementation plan drafted according to the recommendations of a qualified and experienced process engineer. **This is a matter of urgency and should be done within 60 days of the release of this report.**

Water Services Authority	**Siyathemba Local Municipality**
Water Services Provider(s)	**Siyathemba Local Municipality**
Municipal Blue Drop Score:	**62.40%**

Performance Area	Systems	Prieska	Niekerkshoop	Marydale
Water Safety Planning (35%)		**56**	**54**	**54**
Treatment Process Management (10%)		**24**	**15**	**15**
DWQ Compliance (30%)		**91**	**32**	**18**
Management, Accountability (10%)		**69**	**66**	**69**
Asset Management (15%)		**61**	**46**	**49**
Bonus Scores		0	0	0
Penalties		0	0	0
Blue Drop Score (2012)		**65.25%** (↑)	**43.19%** (↓)	**40.00%** (↓)
2011 Blue Drop Score		37.52%	56.56%	50.85%
2010 Blue Drop Score		52.83%	52.83%	52.83%
System Design Capacity (Ml/d)		15	0.21	0.457
Operational Capacity (% ito Design)		33.33	No Information	No Information
Population Served		16 000	2 500	3 200
Average daily Consumption (l/p/d)		312.50	84.00	142.81
Microbiological Compliance (%)		**97.7%**	**89.6%**	**91.2%**
Chemical Compliance (%)		**99.0%**	**99.9%**	**99.9%**

Regulatory Impression

It is evident that the Water Services Authority made a conscious decision to invest in the improvement of the Prieska system and this ensured that an impressive improvement is recorded. The hard work that went into this is acknowledged and commended. However the decline in the other two smaller systems is unfortunate and hopefully will receive the attention required to ensure a balance in the improvement.

Another point that impressed is the valiant efforts made to commence with the water safety planning process, especially the fact that a full SANS 241 was conducted in the system of Prieska. The municipality is encouraged to use the valuable information presented by the full spectrum of chemical analyses done to inform the risk assessment process and subsequent monitoring programme.

The Blue Drop inspectors were left positive by the great efforts of Mr. Bardenhorst (who represented the municipality during audit) since he certainly did his utmost to ensure that all information was provided to give an honest reflection of drinking water quality management. They were unfortunately left concerned with the shortage of staff to ensure that this task is effectively sustained. The Lead Inspector stated: "*Plant visits clearly indicated that infrastructure are old and in a poor condition and that the experience of staff is not sufficient to optimise operation and to maximise maintenance. Assistance in the form of human resources with technical expertise is required to ensure that management of these systems as required by legislation is increased. The potential for these systems to become BD certified is evident but the further neglect of the required skills & personnel will prevent Blue Drops from appearing.*"

Site Inspection Report

The inspectors spent time at the Marydale water supply system and found the infrastructure to show signs of insufficient maintenance even though very well secured. The following findings were made:

- There would also be a complete lack of operation and maintenance manual for any of the pump stations leaving it at risk of being operated or maintained not according to specification.
- No operational monitoring taking place; no equipment to do this either.
- No standby capacity for any of the 6 pumps in this supply system.
- The process of identifying chlorination demand (according to taste) would be high risk and should be amended to be based upon operational (chlorine measurement).
- Attention could be given to the covering of borehole 6.

Water Services Authority	**Sol Plaatje Local Municipality**
Water Services Provider(s)	**Sol Plaatje Local Municipality**
Municipal Blue Drop Score:	**72.10%**

Performance Area	Systems	Riverton (Kimberley)	Richie
Water Safety Planning (35%)		**68**	**45**
Treatment Process Management (10%)		**70**	**40**
DWQ Compliance (30%)		**45**	**90**
Management, Accountability (10%)		**73**	**65**
Asset Management (15%)		**75**	**57**
Bonus Scores		9.47	4.16
Penalties		0	0
Blue Drop Score (2012)		**72.34%** (↓)	**65.61%** (↑)
2011 Blue Drop Score		84.74%	65.28%
2010 Blue Drop Score		64.58%	54.58%
System Design Capacity (Ml/d)		108	3.42
Operational Capacity (% ito Design)		83.33	100.00
Population Served		250 000	20 000
Average daily Consumption (l/p/d)		360.00	171.00
Microbiological Compliance (%)		**94.7%**	**97.7%**
Chemical Compliance (%)		**99.3%**	**99.9%**

Regulatory Impression

The Inspectors once again were left rather impressed by the display of commitment of management to the Blue Drop certification process. This commitment was further underlined by the Municipal Manager's participation in the process, as well as a technical assessment and report drafted by the municipal manager himself, and the display of the Deputy Manager Infrastructure during the confirmation session. The general preparation done for the assessments led by the Compliance Manager also impressed. However somehow, the Blue Drop performance is not up to the expected standard as yet. In depth retrospect is required to plot the way forward over the next two years to ensure that Sol Plaatje fills its rightful place on the national Blue Drop performance log at the release of the next report.

The Lead Inspector noted: "*It must certainly be noted that Sol Plaatje Local Municipality made significant efforts in getting their drinking water quality management in place with Blue Drop criteria. Feedback with recommendations from the Lead Inspector and Moderator was certainly taken seriously. Commitment from staff at water treatment works is however still questionable as per plant inspections at Riverton & Richie water treatment facilities. Improvement in their Blue Drop scores is achievable but measures need to be put in place for operational monitoring & procedures*."

While this performance cannot be labelled as poor at all (in comparison with many other municipalities); by the standards this water services authority sets for itself, it unfortunately is deemed as an under-performance.

The monitoring and analyses procedures requires special attention since the Lead Inspector was left convinced that the relatively high number of microbiological failures cannot be a true reflection of the actual water quality. The laboratory procedures will be audited separately by the Department to assist

in this regard. The municipality must ensure that samplers are trained and given performance agreements stipulating requirements for sampling procedures to be followed. Another crucial point would be to make amendments as per recommendation during the on-site inspection to the specific sample points which present doubtful results.

Site Inspection Report

Richie Water Treatment Works	**43%**
Riverton WTW	**47%**

The inspectors found the Richie water treatment facility in fairly neat surroundings (grass recently cut prior to the assessment) but generally in an unsatisfactory state. It is requires some clean up to present the image of a facility which purifies drinking water.

The followings findings were made during the Richie water treatment works:

- No flow recordings are made and two of the three flow meters are out of order. (the purification of drinking water cannot be effectively managed if the daily volume is not known);
- No operational monitoring taking place and no monitoring equipment available. This leaves the process controllers to operate "blindly" since there would be no mean of verifying whether operations are within limits;
- As previously reported; there remain various areas at this plant that do not comply with Occupational Health and Safety measures;
- The chemical dosing point is not optimally place and therefore does not allow for adequate mixing. This point needs to be shifted;
- A lot of scum present in the flocculation channel which suggests possible chemical over-dosing
- The backwash process needs urgent revision. Filters are put into operation after backwashing with dirty backwash water still on top.

In spite of all these findings the Lead Inspector is of the opinion that this is a gem of works with great potential. Should the right resources and rectification plan be implemented, Blue Drop certification would not be a far fetched possibility.

The inspectors also found the Riverton works to require housekeeping even though the cutting of the grass projected a positive image. The following findings were made:

- The operational monitoring equipment was found to be in place but the chlorine comparator might not be effective for drinking water quality management (reading limits too far apart);
- Whilst the dosing point is not found at highest point of turbulence, the flash mixers was not in operation at the time of the inspection;
- Dosing rate of chemicals is questionable; this has to be verified by means of proper jar testing;
- Chorine operations can be improved as well since less than 30 day stock was available as well as no proper content measurement.
- At the clarifiers there was evidence of floc carry-over and algae stained weirs. Must be cleaned.
- The sand filter efficiency can be improved if attention is given to the filter bed media and nozzles that were found to be broken.
- Again was it found that process controllers put filters back into operation (after back-washing) with dirty filter water still on the filter bed. The backwashing procedure must be documented and ensure that all process controllers are fully trained on this.

Water Services Authority	**Thembelihle Local Municipality**
Water Services Provider(s)	**Thembelihle Local Municipality**
Municipal Blue Drop Score:	**72.82%**

Performance Area	Systems	Hopetown	Strydenburg
Water Safety Planning (35%)		**82**	**78**
Treatment Process Management (10%)		**60**	**60**
DWQ Compliance (30%)		**100**	**45**
Management, Accountability (10%)		**58**	**58**
Asset Management (15%)		**23**	**23**
Bonus Scores		3.9	6.6
Penalties		0	0
Blue Drop Score (2012)		**77.71% (↑)**	**62.49% (↑)**
2011 Blue Drop Score		54.08%	29.44%
2010 Blue Drop Score		56.28%	52.13%
System Design Capacity (Ml/d)		3.7	1.75
Operational Capacity (% ito Design)		100.00	100.00
Population Served		10 500	3 000
Average daily Consumption (l/p/d)		352.38	583.33
Microbiological Compliance (%)		**98.0%**	**84.0%**
Chemical Compliance (%)		**98.8%**	**98.0%**

Regulatory Impression

The Department salutes the tremendous efforts made by Thembilihle Local Municipality to improve previous audit performance challenges. As a small municipality with an even smaller revenue base, Thembilihle displays what is possible if those responsible are dedicated to manage drinking water quality according to the set regulatory requirements. The Department congratulates all involved.

The four non-complying microbiological results in the Strydenburg water supply system slightly spoiled the performance. But it is trusted that disinfection procedures and the full implementation of the water safety planning process will ensure a turn-around in this regard.

Average consumption figures are reasonably high. It is therefore required that the municipality would give attention to this aspect of the water business, especially in light of the arid nature of the two Northern Cape towns, which the municipality is taking responsibility for.

Water Services Authority	Tsantsabane Local Municipality
Water Services Provider(s)	Tsantsabane Local Municipality; Sedibeng Water [a]
Municipal Blue Drop Score:	**66.18%**

Performance Area	Systems	Postmasburg [a]	Groenwater	Jenn Haven [a]	Postdene
Water Safety Planning (35%)		**53**	**56**	**56**	**56**
Treatment Process Management (10%)		**16**	**35**	**35**	**35**
DWQ Compliance (30%)		**62**	**69**	**69**	**69**
Management, Accountability (10%)		**82**	**69**	**54**	**69**
Asset Management (15%)		**57**	**55**	**55**	**55**
Bonus Scores		10.73	9.93	10.29	9.93
Penalties		0	0	-1.29	0
Blue Drop Score (2012)		**66.01% (↓)**	**68.56% (↑)**	**66.13% (↑)**	**68.56% (↑)**
2011 Blue Drop Score		73.81%	49.79%	52.81%	48.27%
2010 Blue Drop Score		70.40%	72.08%	70.58%	Not Assessed
System Design Capacity (Ml/d)		36,37	No Information	No Information	No Information
Operational Capacity (% ito Design)		No Information	No Information	No Information	No Information
Population Served		40 000	2 500	120	500
Average daily Consumption (l/p/d)		675.00	No Information	No Information	No Information
Microbiological Compliance (%)		**94.2%**	**99.0%**	**99.0%**	**99.0%**
Chemical Compliance (%)		**99.0%**	**99.0%**	**99.0%**	**99.0%**

Performance Area	System	Skeyfontein
Water Safety Planning (35%)		**56**
Treatment Process Management (10%)		**35**
DWQ Compliance (30%)		**69**
Management, Accountability (10%)		**54**
Asset Management (15%)		**55**
Bonus Scores		10.29
Penalties		-1.29
Blue Drop Score (2012)		**66.13% (↑)**
2011 Score		29.65%
2010 Score		70.40%
System Design Capacity (Ml/d)		No Information
Operational Capacity (% ito Design)		No Information
Population Served		94
Average daily Consumption (l/p/d)		No information
Microbiological Compliance (%)		**99.0%**
Chemical Compliance (%)		**99.0%**

Regulatory Impression

The Tsantsabane Local Municipality (together with Sedibeng Water) evidently adhered to the 2011 Blue Drop Report request for a strategic approach towards a turn-around. A commendable improvement was recorded during the latest audits.

The Lead Inspector commented: "*Good participation from municipality with presence of municipal manager for more than 4 hours; he participated in the assessment and gave positive comments. Sedibeng water was also well-prepared and a team of 6 people presented the required information. The municipality is making promising attempts to comply with the regulatory requirements but there remains room for improvement especially with regards to the Water Safety Planning. The WRC tool kit was used to identify risks but the action plan section was not completed. The concept of risk-based monitoring is not implemented as per regulatory requirements as yet and compliance monitoring is based on recommendations of the laboratory alone.*

A site inspection was conducted to two reservoirs and a pumpstation that are operated by Tsantsabane. The reservoirs and pump stations were fenced, clean and well maintained. The impression was that the borehole systems are monitored on a daily basis to ensure effective operation, however the lack of chlorine meters and other monitoring equipment poses a real risk and this must be addressed as a matter of urgency."

The municipality is encouraged to proceed on the path of improvement. With the display of management's commitment in this regard together with the passion that prevails within the ranks of the Sedibeng Water operations team, the Department is confident that Tsantsabane Local Municipality has the potential to gain the coveted Blue Drop certification status soon.

Site Inspection Report

Vaal Gamagara WTW (score) **95.0%**

The knowledgeable process controllers and laboratory staff together with the the clean, well maintained and impressive operations left the Blue Drop inspectors impressed with this Sedibeng Water treatment facility. This facility is remotely located within the Northern Cape but operated with the pride and excellence required from all entities responsible for treating water for drinking purposes. It is a truely exemplary performance.

Other than the finding of no mechanism to remove solids at inlet and no access control, the inspectors found no shortcomings to be reported.

Water Services Authority	**Ubuntu Local Municipality**
Water Services Provider(s)	**Ubuntu Local Municipality**
Municipal Blue Drop Score:	**72.63%**

Performance Area	System	Victoria West	Loxton	Richmond
Water Safety Planning (35%)		**81**	**80**	**80**
Treatment Process Management (10%)		**100**	**100**	**100**
DWQ Compliance (30%)		**45**	**86**	**0**
Management, Accountability (10%)		**92**	**89**	**89**
Asset Management (15%)		**93**	**93**	**93**
Bonus Scores		2.26	1.20	3.53
Penalties		0	0	0
Blue Drop Score (2012)		**77.18%** (↑)	**87.85%** (↑)	**64.31%** (↓)
2011 Blue Drop Score		68.44%	81.76%	81.69%
2010 Blue Drop Score		65.13%	65.13%	67.63%
System Design Capacity (Ml/d)		1.11	0.22	1.02
Operational Capacity (% ito Design)		No Information	No Information	No Information
Population Served		8 000	1 000	4 500
Average daily Consumption (l/p/d)		138.75	220.00	224.44
Microbiological Compliance (%)		**87.5%**	**96.7%**	**89.3%**
Chemical Compliance (%)		**99.9%**	**99.9%**	**0.0%**

Regulatory Impression

The small municipality of Ubuntu continues to perform very well within the Blue Drop certification programme in spite of all the challenges faced. The slight improvement on last year's performance is a major accomplishment which is made possible by the municipality's commitment to adhere to regulatory requirements.

The Lead Inspector noted: "*There is commitment and enthusiasm to do more than the Blue Drop requirements within the municipality. However, there are limitations in meeting these requirements due to limited resources and human capacity (relevant skills). The municipality need to pay more attention to their disinfection system as it presents a major drawback in meeting the drinking water quality compliance and impacts negatively on their overall performance.*"

Water Services Authority	**Umsobomvu Local Municipality**
Water Services Provider(s)	**Umsobomvu Local Municipality**
Municipal Blue Drop Score:	**15.76%**

Performance Area	Systems	Colesberg	Noupoort	Norvalspont
Water Safety Planning (35%)		**22**	**21**	**17**
Treatment Process Management (10%)		**28**	**15**	**15**
DWQ Compliance (30%)		**0**	**0**	**0**
Management, Accountability (10%)		**35**	**31**	**28**
Asset Management (15%)		**38**	**32**	**32**
Bonus Scores		0	0	0
Penalties		-1.25	-4.00	-4.00
Blue Drop Score (2012)		**18.41% (↓)**	**12.63% (↑)**	**10.93% (↑)**
2011 Blue Drop Score		35.81%	08.63%	03.13%
2010 Blue Drop Score		22.88%	24.13%	23.13%
System Design Capacity (Ml/d)		3.54 Ml/day	No information	No information
Operational Capacity (% ito Design)		No Information	No Information	No Information
Population Served		14 000	8 000	1 200
Average daily Consumption (l/p/d)		No Information	No Information	No Information
Microbiological Compliance (%)		**70.6%**	**57.1%**	**62.5%**
Chemical Compliance (%)		**No Information**	**No Information**	**No Information**

Regulatory Impression

The Blue Drop performance record of Umsobomvu Local Municipality suggests that this water services authority does not have the required commitment or skill to effectively deal with the risk posed to drinking water quality management in all three towns within their area of jurisdiction. The challenge would not only be quality inclined but also quantity. It was found during the audit that water supply is erratically available since the municipality cannot meet the high demand, yet was there signs of further development which would exacerbate the water scarcity situation.

The Department is left extremely concerned about the health of the general public (especially the immune-compromised) who are exposed to consuming water which at times far exceeds the national standard limits for microbiological parameters. There would be no records for chemical compliance since this is not being monitored. (Note the picture of “treated water” at Norvalspont.)

The communities and visitors to the towns of Colesberg, Norvalspont and Noupoort 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.

The Norvalspont treatment works "ruins". Urgent attention is required.