

2014

Blue Drop Report



028_2012



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA



blue drop
CERTIFICATION

drinking water quality
REGULATION

FOREWORD

The Department of Water and Sanitation in 2009 started the incentive based regulation by introducing the Blue Water Services Audits to all Water Services Institutions with the aim of improving provision of water services across the country. This contributes to fulfilling the Department's legislative and strategic framework for water services to oversee the activities of all water sector institutions and regulate water services. This should enhance effective performance by municipalities of their Constitutional function of providing tap water that is sufficient and not harmful to human health. It also contributes to the Department's support and strengthening of the capacity of municipalities to manage their own affairs, to exercise their powers and to perform their potable water supply systems functions.

The municipal Audits provide a comprehensive status of municipal drinking water supply services in South Africa.

The success of the Audit in improving municipal drinking water services provision is evident from this 2014 Report: since 2009 the National Blue Drop score has improved substantially; the number of systems assessed more than doubled and the number of Blue Drop awarded increased despite the requirement for implementation of best practices. The drop in performance in general in 2014 is perturbing and water services authorities and their providers need to regain the progress made in 2012.

Congratulations for the excellence performance of Gauteng Province who achieved the top position with a score of 92% in the Audits; City of Tshwane Metropolitan Municipality with Blue Drop certification for 6 water supply systems, Witzenberg Local Municipality for 5 water supply systems, and Steve Tshwete Local Municipality for 4 systems.

The best performing water supply system is iLembe District Municipality's Dolphin Coast system at the whopping 99.19% with Umgeni Water and Sembcorp Siza Water as water service providers. This remarkable achievement is acknowledged and commended.

South Africa is especially proud of the 4 municipalities that scores more than 97% in the 2014 Audit: Msunduzi Local Municipality with the impressive 97.97%; Maluti-a-Phofung Local Municipality with 97.66%, Tlokwe Local Municipality with 97.20% and Steve Tswete Local Municipality with 97.14%. Really world class services being provided!

The Department will continue to reward excellence in local municipal drinking water service provision, and also maintain the extensive support provided to assist all water service authorities to attain excellence.

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LIST OF ABBREVIATIONS

BDRR: Blue Drop Risk Ratings
 BWSA: Blue Water Service Audit
 DM: District Municipality
 DWS: Department of Water and Sanitation
 ECP: Eastern Cape Province
 FSP: Free State Province
 GP: Gauteng Province
 KZP: KwaZulu-Natal Province
 LG: Local Government
 LP: Limpopo Province
 MP: Mpumalanga Province
 NCP: Northern Cape Province
 NWP: North West Province
 WP: Western Cape Province
 WSA: Water Service Authorities
 WSP: Water Service Providers

Quality of Drinking Water	
Colour Drop	Indication of Drop
	Blue Drop Certified, water is safe to drink
	Micro > 97% Chemical > 95%
	Micro > 97% Chemical < 95% (or no Information)
	Micro < 97% Chemical > 95%
	Micro > 90% < 95% Chemical > 90% < 95%
	Micro < 90% Chemical < 90%

CHAPTER 1 – NATIONAL OVERVIEW

Introduction

This is the fifth year since the Department of Water and Sanitation (DWS) introduced in 2009 the incentive based Blue Drop Water Service Audit (BWSA) system for drinking water quality in South Africa. Huge improvements have been made especially in potable water municipal supply services, and an extensive wealth of information is now available to provide exact detail on all aspects of the service provision. Associated with the system, is the requirement for the implementation of a risk based approach through the concept of water safety planning.

In most instances, municipal officials bought into the BWSA and municipal drinking water supplies improved accordingly. In some instances, services deteriorated but detail of the decline is available and intervention programmes can specifically address these.

Despite the excellent improvements reported during earlier years, the 2014 BWSA Report indicates a distinct sudden lapse in drinking water service provision with a decrease in the National Blue Drop Score to 79.64% in 2014, from the 2012 value of 87.6% - a significant decrease of 8%.

The best performing province in 2014 was Gauteng Province with a BWSA score of 92.1% while the poorest performing was Limpopo Province with 61.5%. In eight of the nine provinces the score decreased with the largest decrease reported in Limpopo Province where the decrease was 17.9%, with North West following with a decrease of 15.3%. Mpumalanga Province was the only province with an increased score which was 8.1% which led to the achieved 69% in 2014. This Province, together with Gauteng had the highest number of Blue Drop certified systems with 9 each. The number of Blue Drop certified systems decreased in all provinces in 2014, except in the Northern Cape where 1 more system, resulting in a total of 2 systems, were reported. Western Cape lost Blue Drop certification on 25 systems, Eastern Cape lost it on all 9 systems, while Gauteng lost it in 7 systems. In total the number of Blue Drop certified systems decreased from 98 in 2012 to 44 in 2014 – a reduction of 55%.

Water Services Authorities (WSAs) that maintained and even improved their Blue Drop scores in 2014 are applauded for this accomplishment and encouraged to continue on providing excellent water supply services in their areas of jurisdiction.

It is crucial that this deterioration reported in 2014 should cease and that the proud record documented since 2009 should resume. South Africa cannot afford that the huge strides made through hard toil in providing water services of the required quality and quantity are compromised at the local level.

Of importance, is that assessments were conducted by panels consisting of a qualified drinking water quality professional as Lead Inspector, 2-4 Inspectors and a Learner Assessor. The team selection is done based on the outcomes of a Blue Drop Examination which tests the assessors' knowledge and competence in the subject field. The Blue Drop Requirements for 2014 is attached as Annexure A.

Sites to be inspected in each WSA were selected randomly and were conducted using a Site Inspection Template (Annexure B).

The 2013 Blue Drop Risk Ratings were calculated mainly using the Blue Drop System and the Municipal Information Sheets. The 2014 Blue Drop Risk Ratings were calculated based on confirmed data and scores allocated during the 2014 Blue Water Services Audit. The Blue Drop Risk-Rating (Performance Assessment Tool, PAT) Assessment Criteria are attached as Annexure C.

Caution should be exercised not to correlate the Blue Drop scores directly with the Blue Drop Risk Ratings. The Blue Drop score reflects the result for the complete drinking water business for a specific system, while the Risk Ratings are only focused on specific areas within the drinking water business. Weights allocated to the various contributors to the scores and risks are different. Compliance to the draft Regulation 813(now Regulation 813) is used in the calculation of the risk, while it only contributes to a bonus point (with a very low weight) when determining the Blue Drop scores.

More specifically the 3 drinking water supply key areas in which risks were calculated, were process control (including classification of works & operational capacity and process control competency in terms of the draft Regulation 813), drinking water quality (consisting of compliance to the WSA monitoring programmes, microbiological and chemical compliance with SANS 241 standards) and risk management (based on continued water safety planning, conducting of a full SANS 241analyses and use of monitoring programmes that are risk informed).

In general a high Risk Rating was usually associated with lower Blue Water Services scores, but exceptions were evident during the Blue Water Services Audits. This is mainly due to the significant differences in the scoring methodologies as indicated above.

This Chapter provides an overview of the service provision by Water Services

Authorities (WSAs) through their individual water supply systems. The subsequent chapters then provide an overview and detail of water services being provided by each WSA within each Province in SA.

Municipal water supply

Drinking water services are provided by local government through a large number of Water Services Authorities and their Providers in South Africa. The fifth Blue Drop Water Services Assessment programme of 2014 verified the status of drinking water service delivery by 152 Water Service Authorities that provide services via an infrastructure network comprising of 1036 treatment systems (Table 1). In 2014 it was also the first time that 2 private institutions (15 systems) and the Department of Public Works (83 systems) were assessed.



The National Municipal Blue Drop Score recorded for 2014 was 79.64% with 44 Blue Drops awarded to 20 of the 152 Water Service Authorities (Table 1). Data suggests that the larger Water Services Providers, such as Water Boards, Eskom and Metropolitans, contributed significantly to the Blue Drops awarded.

Table 1: Some Blue Drop Statistics since 2009

Performance Category	2009	2010	2011	2012	2014
National Blue Drop Score	51.4	67.2	72.9	87.6	79.64
Number of WSAs assessed	107	153	162	153	152
Number of systems assessed	402	787	914	931	1036
Number of Blue Drops awarded	25	38	66	98	44

Purification plants providing water to the 152 WSAs varied in size (Figure 1) and are responsible for delivering an estimated total of 12,281.83 Megaliters/day (MI/d) of water to 46,295,337 people (mining and industrial water use included) – suggesting a daily per capita intake of 265 liters/person/day (l/c/d).

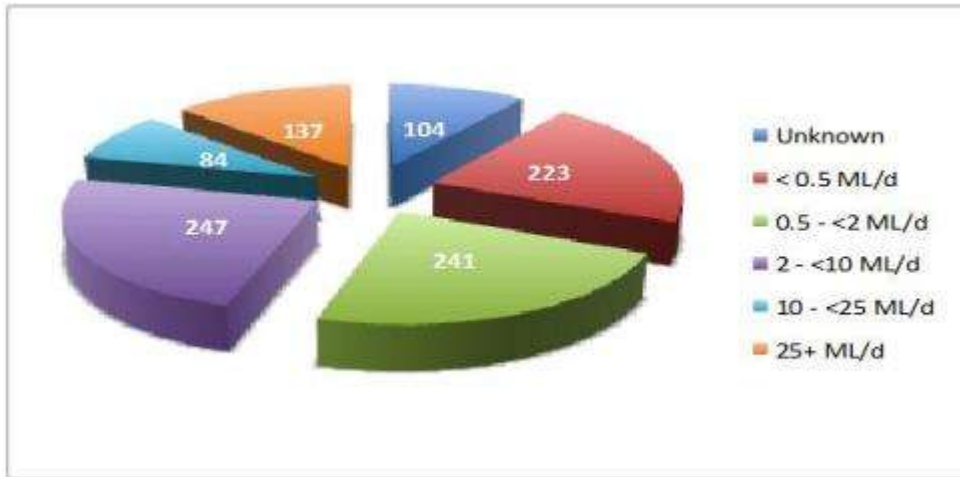


Figure 1: The size of drinking water plants in the audited systems

About 69% (711) of the plants in the audited systems in South Africa have a confirmed capacity of less than 10 ML/d (Table 2).

Table 2: Design capacity of plants as per design capacity intervals

Number of Plants per size interval (Design capacity)					
Unknown	<0.5 ML/d	0.5 - <2 ML/d	2 – <10 ML/d	10 – <25 ML/d	≥25 ML/d
104	223	241	247	84	137

The majority of the plants are also classified as Class C and Class D plants that imply standard unit treatment processes used (Figure 2).

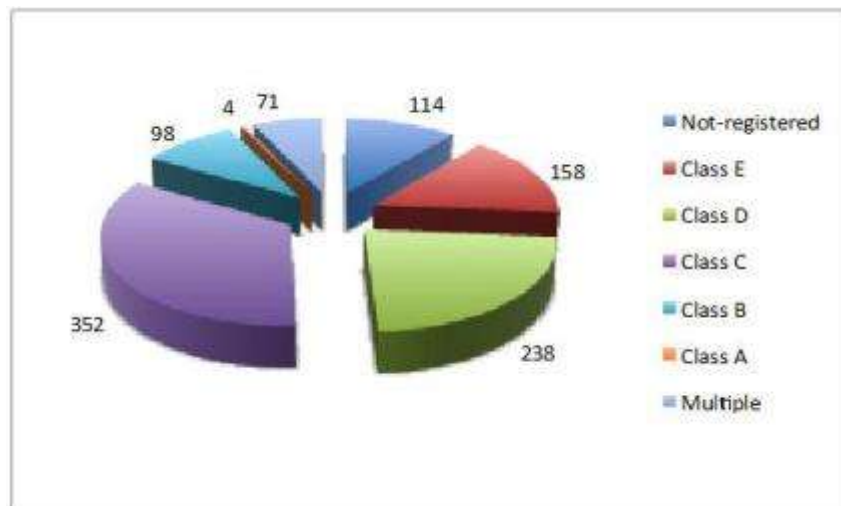


Figure 2: Classification of drinking water plants

Comparing the estimated design capacity with the operational capacity, as reported during the assessment, it is clear that 75% of the capacity of plants is already being utilised to supply water to consumers (Figure 3).

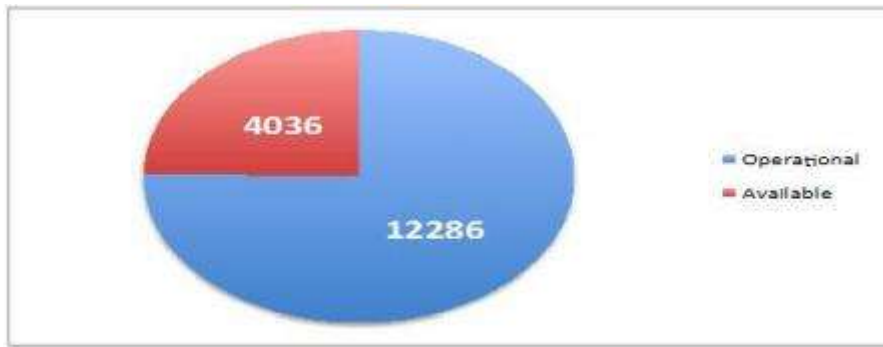


Figure 3: Available versus total operational capacity of drinking water plants

The National Blue Drop Score for 2014 is 79.64%. Although Figure 4 indicates an eight percent decrease in the National average Blue Drop Score, since the 2012 assessment (89.6%), it is still significantly more than the National Blue Drop score of 51.4% during 2009 (See Figure 4). The downward trend experienced in 2014 must be turned around as a matter of urgency.

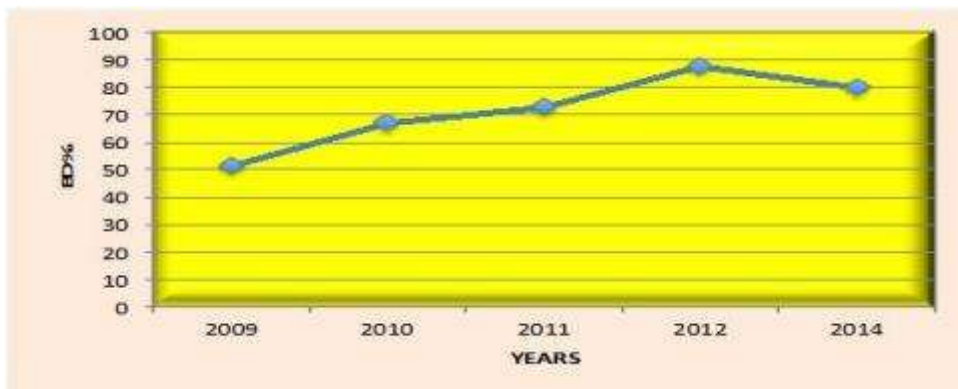


Figure 4: Average National Blue Drop score since 2009

Concurrently with the 2014 decline, the number of Blue Drops awarded also more than halved from 98 in 2012 to 44 in 2014 (Figure 5) – a decrease of 55%.

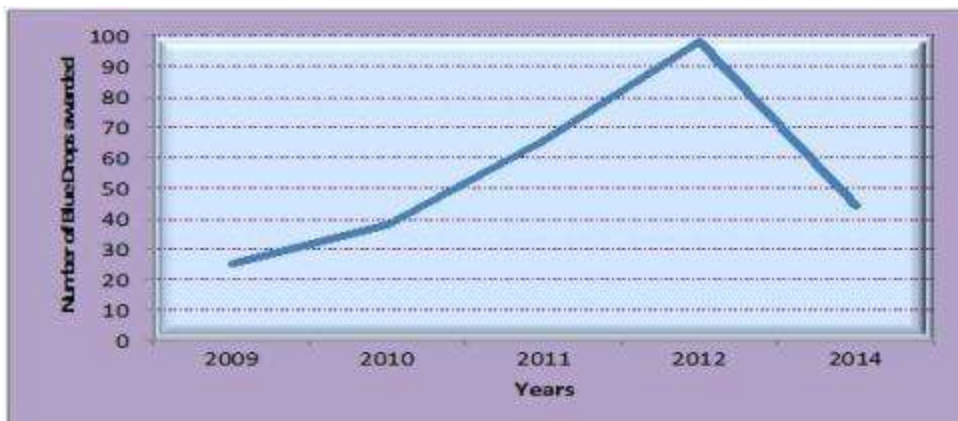


Figure 5: Number of Blue Drops awarded since 2009

The lower average national Blue Drop Score for 2014 and the lower number of Blue Drops awarded in 2014, compared with that in 2012 (see Table 1), can be attributed to three factors:

- The inclusion of Risk based scoring associated with a poor chemical monitoring programme
- Lower scoring associated with limited application of the Water Safety Plans
- The addition of the Water Efficiency (No Drop) criteria not present in previous years.

The lower Blue Drop Score is also true for most of the provincial scores, except for Mpumalanga whose provincial score increased (Figure 6 and Table 3).

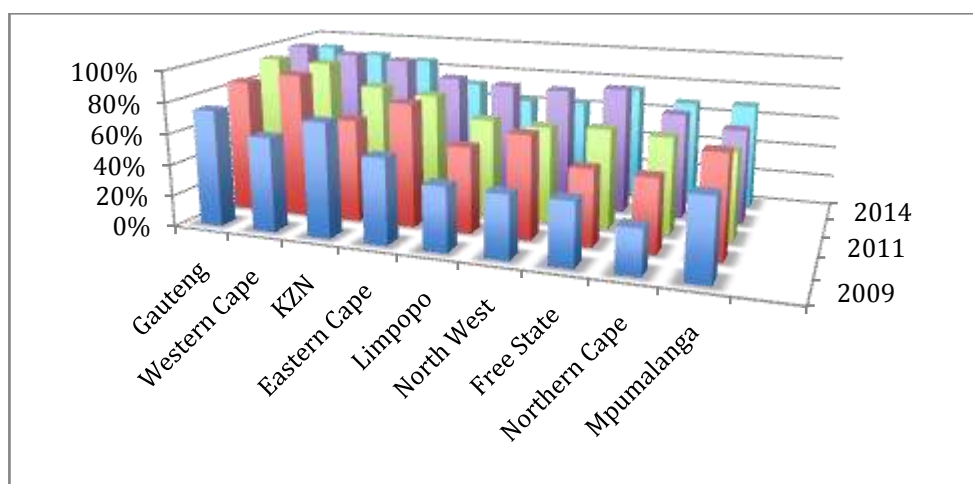


Figure 6: Trends in the average Provincial Blue Drop scores over time (2009 to 2014)

Table 3: Blue Drop Provincial trends from 2009 to 2014

Blue Drop Provincial trends					
Province	2009	2010	2011	2012	2014
Gauteng	74%	86%	95%	98%	92%
Western Cape	60%	92%	94%	94%	89%
KZN	73%	66%	80%	92%	86%
Eastern Cape	54%	79%	77%	82%	72%
Limpopo	41%	55%	64%	79%	62%
North West	40%	66%	62%	79%	63%
Free State	40%	49%	64%	82%	75%
Northern Cape	28%	47%	62%	68%	68%
Mpumalanga	51%	65%	57%	61%	69%

The 44 systems that achieved the Blue Drop Status are truly **excellent**(Table 4). These municipalities are congratulated for their devoted efforts.

**Four percent of the systems provide
Excellent water services (44 Blue Drops)
translating into 41.1% of the people served
by audited systems**

Table 4: Municipal water supply systems that achieved Blue Drop certification (≥95%)

Province	WSA	System	WSP	2011 BD	2012 BD	2014 BD
KwaZulu-Natal	Rembe District Municipality	Dolphin Coast	Umgeni Water, Semicorp Siza Water	97.03%	98.30%	98.19%
Mpumalanga	Steve Tshwete Local Municipality	Hendrina OCH	Optimum Coal Holdings	97.98%	98.25%	99.07%
KwaZulu-Natal	Msunduzi Local Municipality	Msunduzi	Umgeni Water	95.60%	95.38%	97.97%
Free State	Maluti-a-Phofung Local Municipality	Makwane	Maluti-a-Phofung LM, MAP Water	95.74%	97.20%	97.90%
Free State	Maluti-a-Phofung Local Municipality	Fika Pitso	Maluti-a-Phofung, MAP Water	86.54%	87.28%	97.65%
Mpumalanga	Steve Tshwete Local Municipality	Middelburg Mhluzi	Steve Tshwete LM	97.53%	98.25%	97.63%
Gauteng	City of Tshwane Metropolitan Municipality	Rietriet	City of Tshwane, Rand Water	97.22%	99.20%	97.56%
Free State	Maluti-a-Phofung Local Municipality	Harrismith	Maluti-a-Phofung, MAP Water	95.74%	96.32%	97.56%
Mpumalanga	Steve Tshwete Local Municipality	Komati Power Station	Eskom, Steve Tshwete LM	92.37%	97.00%	97.36%
Free State	Matjhabeng Local Municipality	Virginia	Sedibeng Water	79.80%	95.24%	97.27%
Gauteng	City of Tshwane Metropolitan Municipality	Rooiboskust	City of Tshwane	95.48%	96.88%	97.22%
North West	Tlokwe City Council Local Municipality	Tlokwe	Tlokwe City Council LM	96.87%	98.45%	97.20%
Mpumalanga	Mbombela Local Municipality	Nelspruit	Semicorp-Silulumanzi	96.11%	98.15%	97.13%
Gauteng	City of Tshwane Metropolitan Municipality	Bronkhorst-spruit	City of Tshwane	81.24%	95.33%	96.80%
Mpumalanga	Mbombela Local Municipality	Matzulu	Semicorp-Silulumanzi	95.50%	96.22%	96.68%
Gauteng	Ekurhuleni Metropolitan Municipality	Ekurhuleni Metropolitan Municipality	Rand Water	97.44%	98.95%	96.62%
Mpumalanga	Steve Tshwete Local Municipality	Amot / Redhill Power Station	Eskom, Steve Tshwete LM	97.36%	95.29%	96.56%
Western Cape	Overstrand Local Municipality	Greater Hermanus	Overstrand LM	87.23%	97.93%	96.44%
KwaZulu-Natal	eThekweni Metropolitan Municipality	eThekweni Water	Umgeni Water, Tongaat Hulett, eThekweni MM	96.05%	98.79%	96.18%
Northern Cape	//Khara Hais Local Municipality	AH September (Upington)	//Khara Hais LM	43.96%	72.32%	96.17%
Gauteng	City of Johannesburg Metropolitan Municipality	Greater Johannesburg	Rand Water, Johannesburg Water	97.63%	98.92%	96.06%
Gauteng	City of Tshwane Metropolitan Municipality	Findley Fountains	City of Tshwane	92.22%	97.02%	96.04%
KwaZulu-Natal	Rembe District Municipality	Grootevlei	Umgeni Water	95.01%	95.94%	96.01%
Western Cape	Witzenberg Local Municipality	Wolseley	Witzenberg LM	96.55%	96.99%	96.00%
Western Cape	Witzenberg Local Municipality	Tulbagh	Witzenberg LM	95.68%	95.64%	95.89%
Western Cape	City of Cape Town Metropolitan Municipality	City of Cape Town	City of Cape Town	97.61%	98.14%	95.86%
Western Cape	Witzenberg Local Municipality	Ceres	Witzenberg LM	98.75%	98.44%	95.84%
Mpumalanga	Mbombela Local Municipality	Karino	Semicorp-Silulumanzi		98.25%	95.81%
KwaZulu-Natal	uMgungundlovu District Municipality	Howick, Camperdown & Mchwanthi	uMgeni Water, uMgungundlovu DM	98.12%	98.78%	95.69%
Gauteng	City of Tshwane Metropolitan Municipality	Summerplace	City of Tshwane		86.33%	95.53%
KwaZulu-Natal	City of uMhlabuze	Nesel	uMhlabuze Water	88.90%	98.39%	95.38%
Mpumalanga	Steve Tshwete Local Municipality	Hendrina Pullenshope Power Station	Eskom, Steve Tshwete LM	97.75%	96.26%	95.27%

Northern Cape	//Khara Hais Local Municipality	Ntsikelelo	//Khara Hais LM	32.94%	37.61%	95.24%
Western Cape	Beaufort West Local Municipality	Beaufort West	Beaufort West LM	95.44%	96.27%	95.22%
Free State	Matjhabeng Local Municipality	Ventersburg	Sedibeng Water	80.81%	95.24%	95.11%
Gauteng	Midvaal Local Municipality	Meyerton	Rand Water	85.73%	85.95%	95.10%
Western Cape	Witzenberg Local Municipality	Prince Alfred Hamlet	Witzenberg LM	98.19%	96.51%	95.09%
Limpopo	Polokwane Local Municipality	City Polokwane	Lepelle Northern Water	95.05%	92.03%	95.08%
Mpumalanga	Mbombela Local Municipality	Primkop	Sembcorp Sikulumanzi	91.13%	97.97%	95.06%
Western Cape	Witzenberg Local Municipality	Op die Berg	Witzenberg LM	95.00%	96.36%	95.06%
Gauteng	City of Tshwane Metropolitan Municipality	Cullinan	Magalies Water			95.05%
KwaZulu-Natal	iLembe District Municipality	Ndwedwe	Umgeni Water	72.41%	96.72%	95.04%
KwaZulu-Natal	City of uMhlatuze	Ngwelezane	WSSA	91.35%	96.37%	95.02%
Free State	Matjhabeng Local Municipality	Hennenman	Sedibeng Water	80.78%	95.24%	95.01%

Although the Blue Drop score is lower than that of 2012, a significant number (533 or 51%) of systems showed an increase in their Blue Drop score (Figure 7). Worth mentioning is Ntsikelelo (//KharaHais Local Municipality, Northern Cape), Reitz, Lindley, Arlington and Petrus Steyn (all in Nketonane Local Municipality, Free State) and Nyathi (Nkomazi Local Municipality, Mpumalanga), all with an improvement of more than 50%.

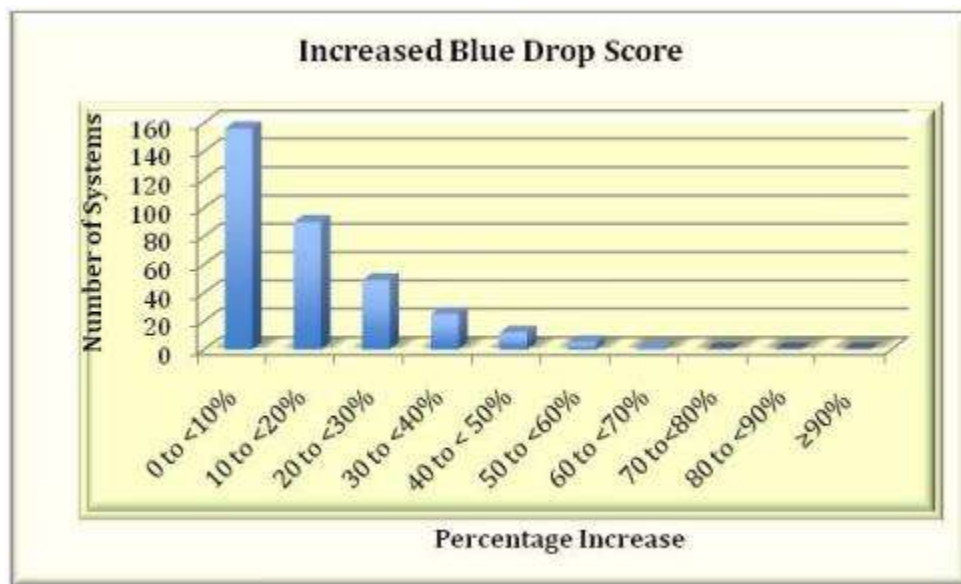


Figure 7: Percentage increase in Blue Drop scores in systems audited



Even more worthwhile mentioning is the seven systems that were awarded the Blue Drop for the first time, having not achieved such status in 2012. These are shown in Table 5 below:

Quality is never an accident. It is always the result of intelligent effort! - John Ruskin

<u>Province</u>	<u>Local Authority</u>	<u>System</u>
Free State	Maluti-a-Phofung	PikaPatso
Gauteng	City of Tshwane	Cullinan
		Summerplace
Northern Cape	//KharaHais	Meyerton
		A H September (Upington)
Limpopo	Polokwane	Polokwane

Table 5: Municipal water supply systems that were awarded Blue Drop certification ($\geq 95\%$) for the first time

The table below (Table 6) below indicates the Performance Log of the Municipal Blue Drop Scores for 2014.

Table 6: Performance Log of the Municipal Blue Drop Scores for 2014

WSA	Province	2014 National Log Position	Blue Drop Score 2014
Msunduzi Local Municipality	KwaZulu-Natal	1	97.97%
Maluti-a-Phofung Local Municipality	Free State	2	97.66%
Tlokwe City Council Local Municipality	North West	3	97.20%
Steve Tshwete Local Municipality	Mpumalanga	4	97.14%
Ekurhuleni Metropolitan Municipality	Gauteng	5	96.62%
City of Johannesburg Metropolitan Municipality	Gauteng	6	96.06%
eThekweni Metropolitan Municipality	KwaZulu-Natal	7	95.90%
City of Cape Town Metropolitan Municipality	Western Cape	8	95.86%
Witzenberg Local Municipality	Western Cape	9	95.77%
//KharaHais Local Municipality	Northern Cape	10	95.66%
Midvaal Local Municipality	Gauteng	11	94.65%
City of Tshwane Metropolitan Municipality	Gauteng	12	94.43%
Matjabeng Local Municipality	Free State	13	93.60%
Polokwane Local Municipality	Limpopo	14	92.48%
Randfontein Local Municipality	Gauteng	15	91.60%
Overstrand Local Municipality	Western Cape	16	90.79%
Bitou Local Municipality	Western Cape	17	90.43%
uMgungundlovu District Municipality	KwaZulu-Natal	18	89.94%

WSA	Province	2014 National Log Position	Blue Drop Score 2014
City of uMhlathuze	KwaZulu-Natal	19	89.60%
Beaufort West Local Municipality	Western Cape	20	89.52%
Dr JS Moroka Local Municipality	Mpumalanga	21	89.26%
Breede Valley Local Municipality	Western Cape	22	89.16%
Newcastle Local Municipality	KwaZulu-Natal	23	89.06%
Mbombela Local Municipality	Mpumalanga	24	88.88%
Mogale City Local Municipality	Gauteng	25	88.80%
Emfuleni Local Municipality	Gauteng	26	88.16%
Lesedi Local Municipality	Gauteng	27	87.75%
iLembe District Municipality	KwaZulu-Natal	28	86.72%
Westonaria Local Municipality	Gauteng	29	86.33%
Rustenburg Local Municipality	North West	30	86.15%
Lephalale Local Municipality	Limpopo	31	85.46%
Merafong City Local Municipality	Gauteng	32	84.56%
Metsimaholo Local Municipality	Free State	33	84.52%
Chris Hani District Municipality	Eastern Cape	34	83.42%
George Local Municipality	Western Cape	35	82.77%
Hantam Local Municipality	Northern Cape	36	82.41%
Ubuntu Local Municipality	Northern Cape	37	82.37%
Sol Plaatje Local Municipality	Northern Cape	38	81.46%
Nala Local Municipality	Free State	39	81.29%
Amathole District Municipality	Eastern Cape	40	80.41%
Stellenbosch Local Municipality	Western Cape	41	80.12%
Mossel Bay Local Municipality	Western Cape	42	78.76%
uMzinyathi District Municipality	KwaZulu-Natal	43	78.02%
Mangaung Metropolitan Municipality	Free State	44	77.47%
City of Matlosana Local Municipality	North West	45	77.29%
Goven Mbeki Local Municipality	Mpumalanga	46	77.22%
Kgatelopele Local Municipality	Northern Cape	47	77.10%
Khai-Ma Local Municipality	Northern Cape	48	76.53%
Emthanjeni Local Municipality	Northern Cape	49	74.84%
Joe Gqabi District Municipality	Eastern Cape	50	74.69%
Swartland Local Municipality	Western Cape	51	74.26%
uThungulu District Municipality	KwaZulu-Natal	52	74.08%
Victor Khanye Local Municipality	Mpumalanga	53	73.50%
Thembelihle Local Municipality	Northern Cape	54	73.23%
Buffalo City Metropolitan Municipality	Eastern Cape	55	72.79%
Nelson Mandela Bay Metropolitan Municipality	Eastern Cape	56	72.43%
Langeberg Local Municipality	Western Cape	57	72.30%

WSA	Province	2014 National Log Position	Blue Drop Score 2014
Drakenstein Local Municipality	Western Cape	58	72.14%
!Kai !Garib Local Municipality	Northern Cape	59	71.42%
Nketoane Local Municipality	Free State	60	71.40%
Phokwane Local Municipality	Northern Cape	61	71.28%
Capricorn District Municipality	Limpopo	62	70.87%
Makana Local Municipality	Eastern Cape	63	70.83%
Tswelopele Local Municipality	Free State	64	70.10%
Tsantsabane Local Municipality	Northern Cape	65	70.07%
Cape Agulhas Local Municipality	Western Cape	66	69.48%
Saldanha Bay Local Municipality	Western Cape	67	69.38%
Thembisile Local Municipality	Mpumalanga	68	67.56%
Kopanong Local Municipality	Free State	69	67.29%
Ugu District Municipality	KwaZulu-Natal	70	66.29%
Mohokare Local Municipality	Free State	71	65.30%
Bushbuckridge Local Municipality	Mpumalanga	72	64.24%
Theewaterskloof Local Municipality	Western Cape	73	64.18%
Nama Khoi Local Municipality	Northern Cape	74	63.94%
Bergrivier Local Municipality	Western Cape	75	63.79%
Harry Gwala District Municipality	KwaZulu-Natal	76	63.41%
Alfred Nzo District Municipality	Eastern Cape	77	62.87%
Modimolle Local Municipality	Limpopo	78	62.84%
Maquassi Hills Local Municipality	North West	79	62.74%
Letsemeng Local Municipality	Free State	80	62.56%
Siyathemba Local Municipality	Northern Cape	81	62.36%
Mopani District Municipality	Limpopo	82	61.98%
Knysna Local Municipality	Western Cape	83	61.62%
Dihlabeng Local Municipality	Free State	84	61.59%
Phumelela Local Municipality	Free State	85	61.31%
Dikgatlong Local Municipality	Northern Cape	86	61.28%
Camdeboo Local Municipality	Eastern Cape	87	61.01%
Mogalakwena Local Municipality	Limpopo	88	60.49%
Moghaka Local Municipality	Free State	89	60.16%
Madibeng Local Municipality	North West	90	58.38%
Amajuba District Municipality	KwaZulu-Natal	91	58.18%
uMkhanyakude District Municipality	KwaZulu-Natal	92	57.87%
Joe Morolong Local Municipality	Northern Cape	93	57.61%
Moretele Local Municipality	North West	94	57.49%
Swellendam Local Municipality	Western Cape	95	57.25%
Tokologo Local Municipality	Free State	96	56.81%

WSA	Province	2014 National Log Position	Blue Drop Score 2014
Moses Kotana Local Municipality	North West	97	55.87%
Thabazimbi Local Municipality	Limpopo	98	55.81%
Ngwathe Local Municipality	Free State	99	55.43%
Hessequa Local Municipality	Western Cape	100	55.18%
Siyancuma Local Municipality	Northern Cape	101	54.02%
Umsobomvu Local Municipality	Northern Cape	102	53.90%
Chief Albert Luthuli Local Municipality	Mpumalanga	103	53.16%
Kareeberg Local Municipality	Northern Cape	104	52.91%
Mantsopa Local Municipality	Free State	105	52.78%
Kouga Local Municipality	Eastern Cape	106	51.83%
Nkomazi Local Municipality	Mpumalanga	107	51.47%
Oudtshoorn Local Municipality	Western Cape	108	51.29%
Zululand District Municipality	KwaZulu-Natal	109	51.18%
Gamagara Local Municipality	Northern Cape	110	50.10%
Emakhazeni Local Municipality	Mpumalanga	111	50.00%
Ndlambe Local Municipality	Eastern Cape	112	49.47%
Karoo Hoogland Local Municipality	Northern Cape	113	49.28%
Matzikama Local Municipality	Western Cape	114	48.64%
Greater Sekhukhune District Municipality	Limpopo	115	47.65%
eMalahleni Local Municipality	Mpumalanga	116	43.84%
PixleyKaSeme Local Municipality	Mpumalanga	117	43.40%
Bela-Bela Local Municipality	Limpopo	118	43.11%
Naledi Local Municipality	Free State	119	42.91%
Richtersveld Local Municipality	Northern Cape	120	42.25%
Setsoto Local Municipality	Free State	121	42.21%
Ga-Segonyana Local Municipality	Northern Cape	122	40.62%
Kamiesberg Local Municipality	Northern Cape	123	40.54%
Cederberg Local Municipality	Western Cape	124	39.96%
OR Tambo District Municipality	Eastern Cape	125	39.88%
Vhembe District Municipality	Limpopo	126	39.33%
Renosterberg Local Municipality	Northern Cape	127	38.06%
Sundays River Valley Local Municipality	Eastern Cape	128	35.96%
Blue Crane Route Local Municipality	Eastern Cape	129	35.10%
uThukela District Municipality	KwaZulu-Natal	130	34.50%
Prince Albert Local Municipality	Western Cape	131	34.18%
Mkhondo Local Municipality	Mpumalanga	132	32.40%
Kannaland Local Municipality	Western Cape	133	31.66%
NgakaModiriMolema District Municipality	North West	134	30.35%
Dr Ruth SegomotsiMompoti District Municipality	North West	135	30.14%

WSA	Province	2014 National Log Position	Blue Drop Score 2014
Masilonyana Local Municipality	Free State	136	29.64%
Magareng Local Municipality	Northern Cape	137	29.00%
Mafube Local Municipality	Free State	138	28.75%
!Kheis Local Municipality	Northern Cape	139	28.01%
Baviaans Local Municipality	Eastern Cape	140	26.47%
Mookgopong Local Municipality	Limpopo	141	26.40%
Laingsburg Local Municipality	Western Cape	142	26.06%
Kou-Kamma Local Municipality	Eastern Cape	143	25.77%
Ventersdorp Local Municipality	North West	144	25.35%
Mier Local Municipality	Northern Cape	145	22.33%
Lekwa Local Municipality	Mpumalanga	146	20.56%
Umjindi Local Municipality	Mpumalanga	147	18.77%
Msukaligwa Local Municipality	Mpumalanga	148	18.06%
Kgetlengrivier Local Municipality	North West	149	17.62%
Ikwezi Local Municipality	Eastern Cape	150	14.51%
Dipalasang Local Municipality	Mpumalanga	151	10.60%
ThabaChweu Local Municipality	Mpumalanga	152	9.09%

Review of the different Blue Drop Requirements in Municipal systems

During the 2014 BWSA six main criteria, as set out in Table 7 below, were used.

Table 7: Criteria used during the 2014 Blue Water Services Assessments

Table 7: Blue Water Services Criteria	Weight
Water Safety Planning	35%
DWQ Process Management & Control	8%
Drinking Water Quality Compliance	30%
Management, Accountability & Local Regulation	10%
Asset Management	14%
Water Use Efficiency & Water Loss Management	3%

Table 7 indicates that the Water Safety Planning and the Drinking Water Quality Compliance carry the largest weight of the six criteria. This is in alignment with international trends.

*From a national perspective, an impressive **96.04%** compliance against the Drinking Water Quality Process Management & Control was recorded, followed by an **84.07%** compliance to the Water Safety Planning criteria. Compliance to the other four criteria indicates room for improvement (Table 8). Compliance with the other criteria was lower and especially the 33.7% recorded for Water Use & Water Loss Management is of major concern to the DWS.*

Table 8: National percentage compliance of the different Blue Drop criteria

National Score	Water Safety Planning	DWQ Process Management & Control	Drinking Water Quality Compliance	Management, Accountability & Local Regulation	Asset Management	Water Use Efficiency & Water Loss Management
	84.07%	96.04%	79.22%	69.74%	76.29%	33.72%

Water Safety Planning

Water Safety Planning is seen as a strategic approach for pro-active management of risks in the water business. The weight of 35% for Water Safety Planning in the calculation of the Blue Drop score is therefore necessary. Water Safety Planning scored a good compliance of 84.07% for the 1036 systems assessed (Figure 8). Note that the figure indicates the percentage compliance for the different weighted criteria mentioned in Table 8.



Figure 8: National percentage compliance of the different Blue Drop criteria, highlighting the Water Safety Planning criterion

Gauteng, Kwazulu-Natal and Western Cape are congratulated for setting the example of good water safety planning.

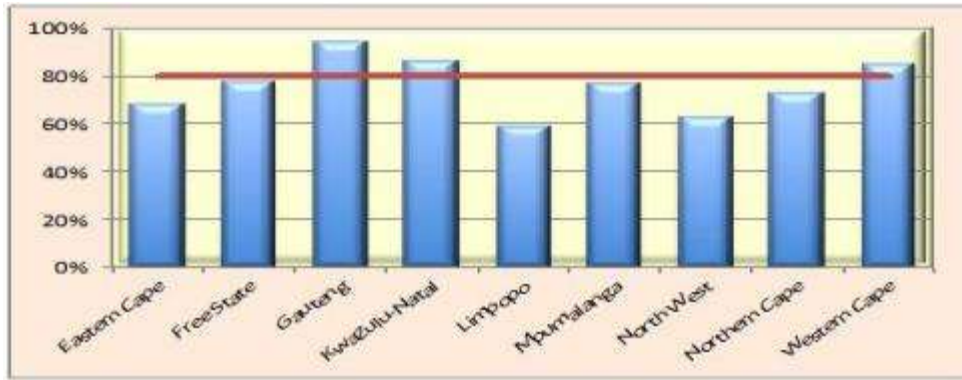


Figure 9: Average Water Safety Planning score for each of the provinces

The Water Safety Planning criterion is made up of the different criteria, each with a different weight, as indicated in Table 9 below.

Table 9: Different criteria used to assess the quality of Water Safety Planning at different Water Services Institutions

Performance Classes	Weight	Critical	Very Poor	Average	Good	Excellent
		0 – 30	30 - 50	50 - 80	80 - 90	>90
Water Safety Planning	10	28	8	22	5	37
Risk Assessment	35	32	10	34	8	16
Operational Monitoring	15	33	8	22	13	23
Compliance Monitoring	15	21	19	35	12	11
Credibility of DWQ Data	15	5	0	26	7	62
Incident Management	10	11	1	40	19	29

For all the performance classes (water safety planning criteria), an average to excellent performance was recorded in 58% or more of the systems.

★ **Ninety five percent of the systems recorded 'Average to Excellent' Credibility for the drinking water quality data submitted to the BDS.**

Risk assessment and the monitoring programmes require special attention.

Assessing the implementation of the Incident Management Plan and corporate communication of the Water Safety Plan indicated a poor performance in 12% of the systems.

Drinking Water Quality Process Management & Control

National percentage compliance of the different Blue Drop criteria, highlighting the DWQ Process Management & Control is shown in the diagram below.



This second Blue Drop criterion focuses on Process Management and Control. It contains three sub-criteria, with the Process Controller Registration carrying 50% of the weight (Table 9 below).

- ★ **The Department congratulates all the Institutions that contributed to a category score of 96.04% for this category.**
- ★ **Excellent performance was recorded for the registration of 87% of purification plants with the DWS (Table 10 below).**

Most of the unregistered works are small borehole systems. The implementation of the water treatment logbook at several of the plants needs attention.

Table 10: The percentage of systems that reflect classes of performance for DWQ Process Management & Control

DWQ Process Management & Control	Weight	Critical	Very Poor	Average	Good	Excellent
		0 – 30	30 - 50	50 - 80	80 - 90	>90
Works Classification	15	12%	0%	1%	0%	87%
Process Control Registration	50	32%	1%	44%	0%	23%
Water Treatment Works Logbook	35	33%	2%	14%	2%	49%

It also seems that the compliance of the Process Controllers, as required by Regulation 2834, presents a challenge to the water institutions with only 23% of the plants having excellent Process Controller registration and related compliance. This requires considerable attention.

This low percentage may be explained by the challenging administrative requirement for registration, as well as the Process Controllers not being correctly qualified to operate a specific plant. The lack of relevant training in more than 65% (Figure 10 below) of the systems, does not assist with the essential up-skilling of Process Controllers.



Figure 10: Accredited training performance at the different systems

Part of the Blue Water Services Assessment was also to determine the compliance level of Process Controllers, in comparison with the published draft Regulation 813 as bonus to the Water services institution but not as Blue Drop criterion. More than 70% of the systems recorded a critical non-compliance to draft Regulation 813 (Figure 11) which is unacceptable.



Figure 11: Process Controller compliance to Draft Regulation 813 in the different systems

Drinking Water Quality Compliance

National percentage compliance of the different Blue Drop criteria, highlighting the Drinking Water Quality Compliance is shown in the diagram below.



This third criterion, as set against SANS 241:2011 was completed during the 2014 assessment. Water quality data on the BDS is based on a large number of samples taken by the different Water Services Institutions (Figure 12).

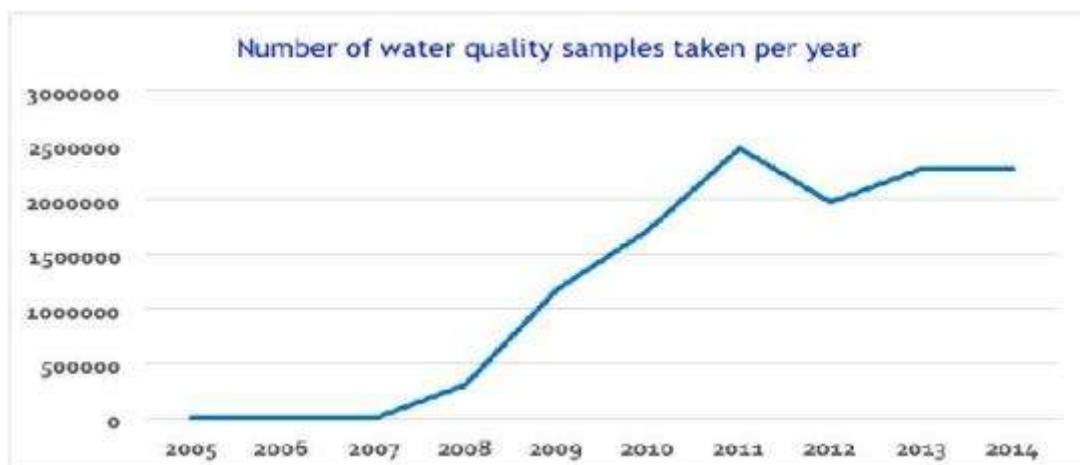


Figure 12: Number of water samples taken for water quality assurance



From the statistics presented in Table 10 it is evident that more than 80% of the systems demonstrated a 'good to excellent' compliance regarding microbial water quality criteria, as set out in SANS 241.

The Chemical criteria follows the same trend, except that poor compliance experienced with chemical monitoring requirements, as required by SANS 241, add significant risk in terms of chemical quality assurance. When the number of chemical determinands and frequency of sampling were considered by the Inspectors (Risk based chemical compliance), the percentage of systems with good and excellent performance dropped to 24%.

Table 11: Drinking Water Quality compliance

Drinking Water Quality Compliance	Weight	Critical	Very Poor	Average	Good	Excellent
		0 – 30	30 - 50	50 - 80	80 - 90	>90
DWQ Compliance (Microbiological)	50	4%	1%	9%	12%	74%
DWQ Compliance (Chemical)	45	14%	1%	3%	2%	80%
Operational Compliance	5	7%	1%	23%	22%	48%
<i>BONUS: Aesthetic DWQ Compliance</i>		27%	2%	19%	0%	52%
<i>Risk Based Chemical Compliance</i>		31%	3%	42%	1%	23%

Gauteng, KwaZulu-Natal and Western Cape demonstrated acceptable levels of drinking water quality compliance. In the other provinces the risk based chemical compliance is considered as unacceptable.

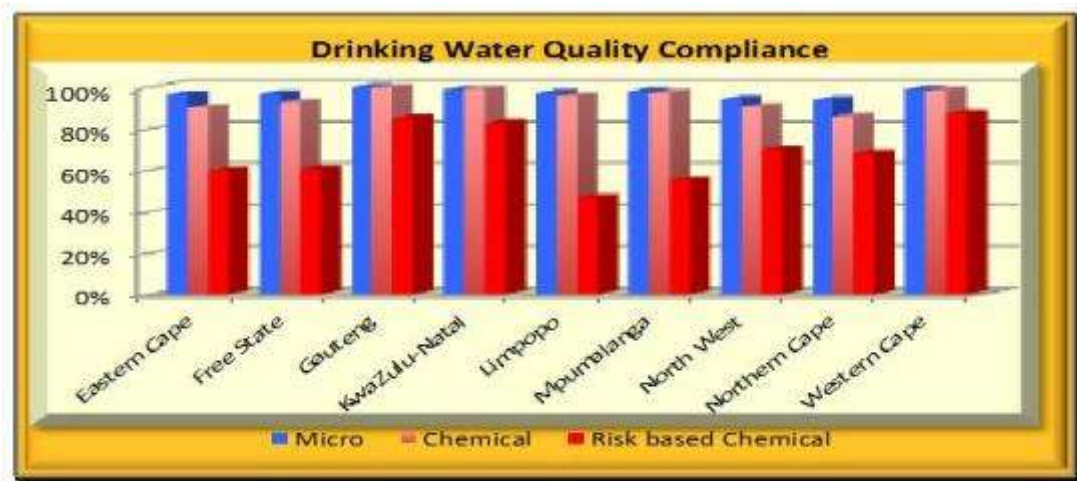


Figure 13: Drinking Water Quality compliance in the different provinces

Management, Accountability & Local Regulation

National percentage compliance of the different Blue Drop criteria, highlighting the Management Accountability is shown in the diagram on the right.

The water business cannot be sustainable without proper management, management systems and regulation. An overall average national score for this criterion, 69.74% was recorded (pie diagram below).



Table 12: System performance for the different Management criteria

Management, Accountability & Local Regulation	Weight	Critical	Very Poor	Average	Good	Excellent
		0 – 30	30 - 50	50 - 80	80 - 90	>90
Management Commitment	30	28%	16%	17%	17%	22%
Publication of Performance	25	31%	6%	11%	9%	42%
Service Level Agreement	15	31%	1%	25%	0%	42%
Submission of DWQ Data	30	38%	2%	38%	1%	20%

From Table 12, it is evident that managerial aspects of the water business could improve significantly.

Asset Management

National percentage compliance of the different Blue Drop criteria, highlighting the Asset Management is shown in the diagram below.



All assets for which a WSA is responsible, must be captured on an Asset Register and should be operated, maintained, budgeted for, refurbished and replaced in accordance with an effective Asset Management Plan. This component of the Water business received an average score of 76.29%.

What is encouraging is the number of systems (68%) that have a 'good to excellent' performance for the status of the asset register (Table 13).

Table 13: The number of systems with different performance criteria for Asset Management

Asset Management	Weight	Critical	Very Poor	Average	Good	Excellent
		0 – 30	30 - 50	50 - 80	80 - 90	>90
Annual process Audit	20	639	5	240	16	136
Asset Register	15	168	40	122	197	509
Availability & Competence	15	109	22	387	50	468
Operation & Maintenance Manual	15	412	97	242	73	212
Operation & Maintenance Budget and Expenditure	20	405	9	15	12	9
Design Capacity vs Operational Capacity	15	562	176	173	7	118

There are however Asset Management components that require urgent attention from most of the WSA's, i.e. annual process audits, availability of comprehensive Operations and Maintenance manuals as well as availability of credible information about the design capacity and the volume of water produced are also required.

With regards to the latter, Table 14 indicates that at 48% of the plants, the plants are already being operated at 75% or more of the design capacity. This would suggest that, besides other things and despite some key asset management ingredients being in place, asset management is still not being implemented effectively, otherwise this scenario would not exist. This is a critical component to be addressed if we are to have design life sustainability of South Africa's infrastructure.

Table 14: Number of plants with operational capacity expressed in terms of design capacity

Operational Capacity		
Category	Number	%
<=75%	541	52%
>75%	495	48%
	1036	100%

Water Use Efficiency & Water Loss Management

National percentage compliance of the different Blue Drop criteria, highlighting the Water Use Efficiency & Water Loss Management is shown in the diagram below.



Given high volumes of water lost during the purification and distribution of drinking water, a sixth criterion was incorporated into the Blue Water Services Audit of 2014. This criterion only contributed three percent to the total Blue Drop score.

The poor national average performance (33.72%) confirms the DWS's intent to focus on water loss management as an area of importance for the next few years. Only 191 plants (18%) indicated a good to excellent performance for this criterion.



The following authorities have to be congratulated for achieving a score of 100% for the criterion (Table 15):

Table 15: Systems with 100 % compliance with the Water Use Efficiency & Water Loss Management criterion

PROVINCE	WSA	SYSTEM
KwaZulu-Natal	iLembe District Municipality	Dolphin Coast
	uThungulu District Municipality	Mbonambi / Umfolozi
		Melmoth
		Middeldrift
		Mtonjaneni Rudimentary Boreholes
		Nkandla
		Nkandla Rudimentary Boreholes
		Ntambanana
Ntambanana Rudimentary		
North West	Tlokwe City Council Local Municipality	Tlokwe
Western Cape	Beaufort West Local Municipality	Merweville
	Swartland Local Municipality	Malmesbury
	Drakenstein Local Municipality	Bainskloof
		Gouda
		Hermon
		Saron
	Knysna Local Municipality	Rheenendal
	Theewaterskloof Local Municipality	Sedgefield
		Genadendal
		Grabouw
		Tesselaarsdal
	Overstrand Local Municipality	Villiersdorp
		Baardskeerdersbos
		Buffeljags Bay
		Buffels River
Greater Gansbaai		
Greater Hermanus		
Kleinmond		
Pearly Beach		
Stanford		

For more information about this criterion please see the No Drop 2014 report published by the Department of Water and Sanitation.

NATIONAL MUNICIPAL BLUE DROP RISK-RATING- the regulatory impression

Experience build-up during the past four Blue Drop assessments, was used by the DWS during the 2014 assessment, to formulate a Blue Drop Risk Rating (BDRR) tool with the aim to identify, quantify and manage the risks associated with drinking water services provision in the nine provinces. It is not the purpose of this assessment to criminalise poor or high risk drinking water services and water quality, but rather to act as a precautionary tool, warning the Water Services Institutions in the country about the level of risk at which water services and water quality is delivered to the citizens of South Africa. The further aim of the Blue Drop Risk Rating

tool is to contribute to the overall risk assessment of the Water Services Institutions. In so doing, the organisation will be empowered to take relevant strategic management and operational decisions to support and improve on long term sustainable water services.

This report provides information on the risk levels of specific critical components at water services delivery level, for the period January 2013 to December 2013. The methodology (Progress Assessment Tool) used will be discussed in Annexure C to this chapter.

This National Regulatory Impression will not only provide information for the country against the aspects included for evaluation during this assessment cycle, but will also clarify the interpretation of some of the statistics.

General Summary and Information

All Water Services Authorities and their respective Water Services Providers in South Africa were assessed, covering more than 1000 different water supply systems currently registered on the Blue Drop System (BDS) (see Table 16).

Table 16: General water supply system information

INFORMATION CATEGORY	STATISTICS			
	2011	2012	2013	2014
Number of Municipalities (Water Services Authorities) Assessed	162	153	152	152
Number of drinking water supply systems assessed	914	931	1009	1036
Number of Blue Drop Awards	66	98	NA	44

A comparison of the respective water supply system Blue Drop Risk-ratings (BDRR), calculated for each of the systems per Water Services Authority per Province, and then compared to the Blue Drop Risk-rating categories (Table 16), clearly revealed that:



- ◆ **Gauteng Province presented with the highest percentage of Low-Risk systems while**
- ◆ **North West Province with the highest percentage of systems in the Critical-Risk Category (Figure 14) both in 2013 and 2014.**



Encouraging is the significant decrease in the percentage of critical risksystems in 2014, compared to those recorded in 2013 (Compare the Bar-graphs in Figure 14).

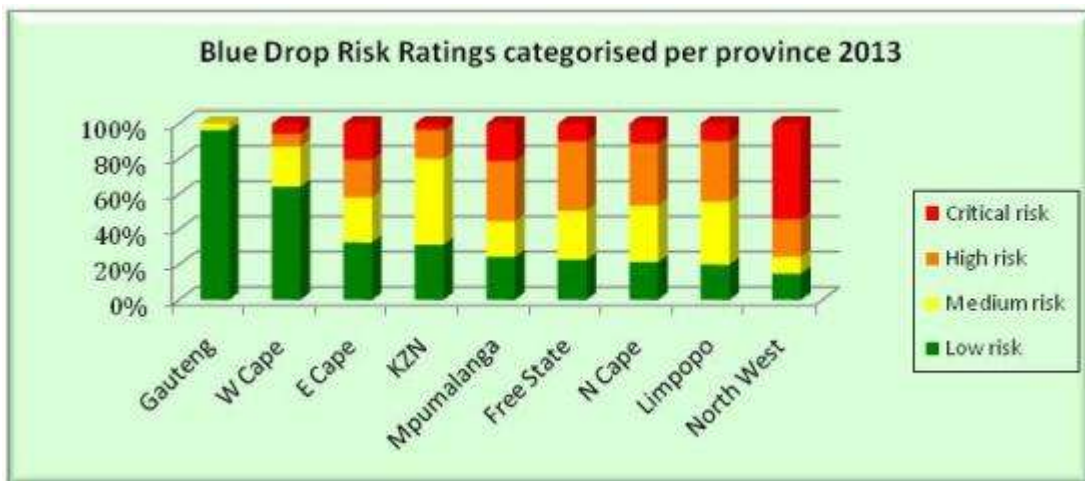
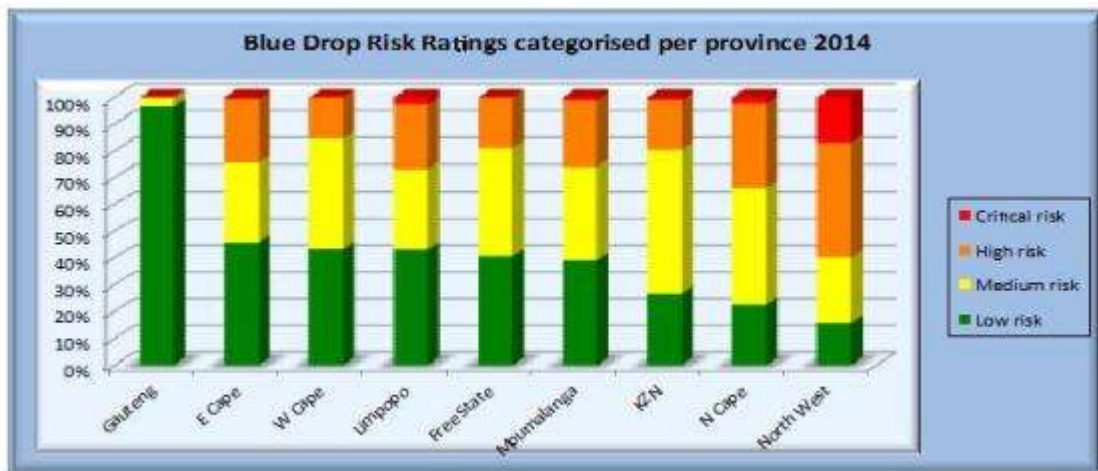


Figure 14: Proportion of systems per Blue Drop Risk-rating category per province for 2014 and 2013

Ranked according to the percentage of systems per province occurring in the Low-risk Blue Drop Risk category, Gauteng as a province can be regarded to be performing the best measured against the 2014 Blue Drop PAT criteria, since it presented the most systems in the Low-risk category. Eastern Cape is followed by Western Cape as provinces with the most number of supply systems characterised with good drinking water quality management in place. Table 17 below, supplements Figure 14 and provides more information on the ranking of the respective provinces, as well as the percentage of systems per Blue Drop Risk-rating category

Table 17: Distribution of the number of systems per risk category

Province	Blue Drop Risk Rating Category			
	<50%	50% to <70%	70% to <90%	90% to 100%
	Low risk	Medium risk	High risk	Critical risk
Gauteng	97%	3%	0%	0%
E Cape	46%	30%	24%	1%
W Cape	43%	41%	16%	0%
Limpopo	43%	30%	24%	3%
Free State	41%	41%	19%	0%
Mpumalanga	39%	35%	25%	1%
KZN	27%	54%	19%	1%
N Cape	23%	43%	32%	2%
North West	16%	24%	43%	17%

The 2014 assessment also indicated several positive changes since the first assessment in 2012 (See Figure 15):



- A reduction in the number of critical system from 234 systems to 26 systems;
- The number of systems in the high risk category also decreased from 580 to 249;
- At the same time the number of systems in the low risk category increased from 16 to 365.

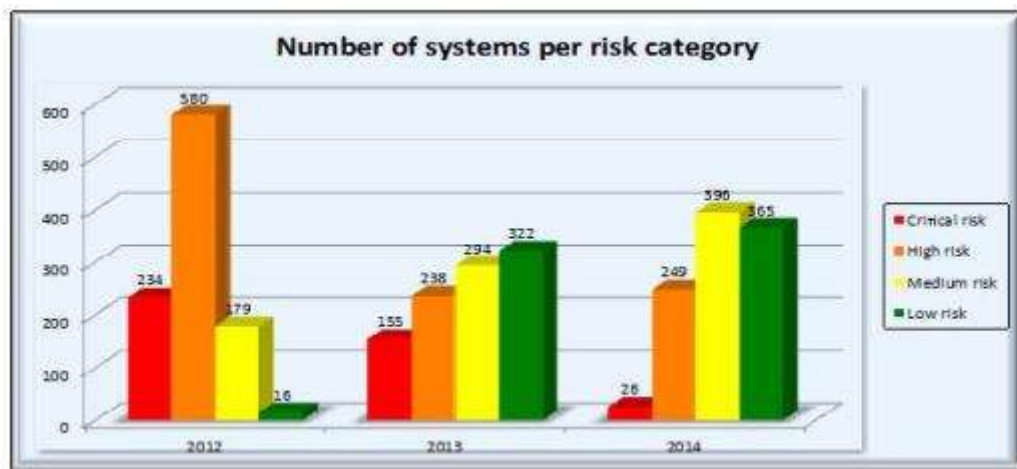


Figure 15: Number of systems per risk category since 2012

In addition to the overall reduction in the Blue Drop Risk Rating, a further analysis of the changes in the BDRR indicates that many more systems were evaluated since 2012(See Figure 16).

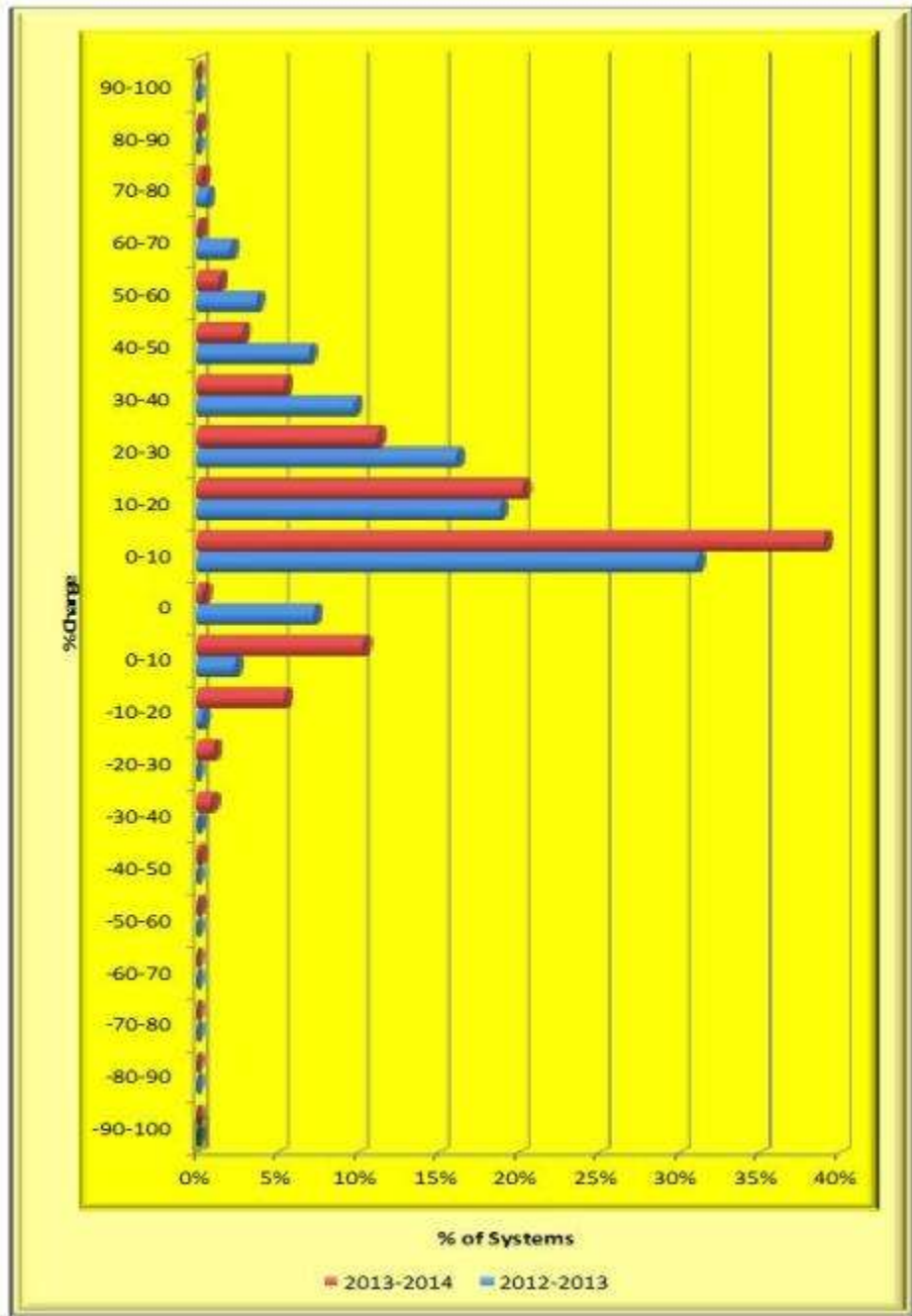


Figure 16: Percentage change in the Blue Drop Risk Ratio within the systems since 2012



The DWS acknowledges the top 50 performing systems with a BDRR of less than 21% (Table 18):

Table 18: Municipal Water Supply Systems with the Lowest Risk Ratings in 2014

Province	WSA	System	WSP	2014 BDR
Gauteng	City of Tshwane Metropolitan Municipality	Rietvlei	City of Tshwane, Rand Water	12.16%
Gauteng	City of Tshwane Metropolitan Municipality	Roodeplaas	City of Tshwane	12.16%
KwaZulu-Natal	Msunduzi Local Municipality	Msunduzi	Umgeni Water	12.16%
Northern Cape	//Khara Hais Local Municipality	AH September (Upington)	//Khara Hais LM	12.50%
Gauteng	City of Tshwane Metropolitan Municipality	Cullinan	Magalies Water	12.52%
Gauteng	Randfontein Local Municipality	Randfontein	Rand Water	13.87%
Gauteng	Ekurhuleni Metropolitan Municipality	Ekurhuleni Metropolitan Municipality	Rand Water	14.18%
KwaZulu-Natal	eThekweni Metropolitan Municipality	eThekweni Main	Umgeni Water, Tongaat Hulett, eThekweni MM	14.18%
Gauteng	Westonaria Local Municipality	Waterpan	Rand Water	14.38%
Gauteng	City of Johannesburg Metropolitan Municipality	Greater Johannesburg	Rand Water, Johannesburg Water	15.15%
Free State	Matjabeng Local Municipality	Allanridge	Sedibeng Water	15.18%
Mpumalanga	eMalahleni Local Municipality	Kendal Power Station	Eskom Kendal Power Station	15.19%
Free State	Matjabeng Local Municipality	Hennenman	Sedibeng Water	15.33%
Free State	Matjabeng Local Municipality	Ventersburg	Sedibeng Water	15.33%
Gauteng	Westonaria Local Municipality	Glenharvie	Rand Water	15.45%
Gauteng	Westonaria Local Municipality	Suurbekom	Rand Water	15.45%
Gauteng	Westonaria Local Municipality	Wagterskop	Rand Water	15.45%
Gauteng	Westonaria Local Municipality	Westonaria	Rand Water	15.45%
Western Cape	Bitou Local Municipality	Plettenberg Bay	Bitou LM	15.76%
Free State	Matjabeng Local Municipality	Odendaalsrus	Sedibeng Water	15.89%
Western Cape	Mossel Bay Local Municipality	Mossel Bay / Grootbrak / Kleinbrak	Mossel Bay LM	16.02%
Western Cape	Beaufort West Local Municipality	Beaufort West	Beaufort West LM	16.17%
Gauteng	Westonaria Local Municipality	Bekkersdal	Rand Water	16.32%
Mpumalanga	Dr JS Moroka Local Municipality	Dr JS Moroka Local Municipality	Dr JS Moroka LM	16.39%
North West	Rustenburg Local Municipality	Manikana	Rand Water, Rustenburg LM	16.56%

North West	Rustenburg Local Municipality	Marikana	Rand Water, Rustenburg LM	16.56%
Free State	Ngwathe Local Municipality	Heilbron	Ngwathe LM, Rand Water	16.79%
Gauteng	Lesedi Local Municipality	Lesedi Main	Rand Water	16.82%
Limpopo	Mopani District Municipality	Haenertsburg	Mopani DM, Lepelle Northern Water, Tzaneen LM	16.86%
Free State	Matjabeng Local Municipality	Welkom	Sedibeng Water	17.08%
Western Cape	Overstrand Local Municipality	Greater Hermanus	Overstrand LM	17.18%
Free State	Metsimaholo Local Municipality	Sasolburg	Rand Water	17.65%
Free State	Nala Local Municipality	Bothaville	Sedibeng Water	17.76%
Eastern Cape	Makana Local Municipality	Riebeeck East	Amatola Water	17.91%
KwaZulu-Natal	iLembe District Municipality	Groutville	Umgeni Water	18.25%
Gauteng	Mogale City Local Municipality	Mogale City	Rand Water , City of Johannesburg	18.36%
KwaZulu-Natal	Newcastle Local Municipality	Newcastle	uThukela Water	18.37%
Eastern Cape	Amathole District Municipality	Willowvale	Amatola Water, Amathole DM	19.16%
Eastern Cape	Amathole District Municipality	Fort Beaufort	Amatola Water, Amathole DM	19.51%
Northern Cape	Hantam Local Municipality	Calvinia	Hantam LM	19.87%
Gauteng	Midvaal Local Municipality	Meyerton	Rand Water	19.92%
KwaZulu-Natal	iLembe District Municipality	Dolphin Coast	Umgeni Water, Sembcorp Siza Water	19.99%
KwaZulu-Natal	iLembe District Municipality	Ndwedwe	Umgeni Water	20.19%
Gauteng	Merafong City Local Municipality	Carletonville	Rand Water	20.25%
Free State	Matjabeng Local Municipality	Virginia	Sedibeng Water	20.29%
Eastern Cape	Joe Gqabi District Municipality	Steynsburg	Amatola Water, Joe Gqabi DM	20.44%
Gauteng	Merafong City Local Municipality	Fochville	Rand Water	20.68%
Western Cape	Cape Agulhas Local Municipality	Arniston / Waenhuiskrans	Overberg Water	20.81%
Free State	Maluti-a-Phofung Local Municipality	Fika Patso	Maluti-a-Phofung, MAP Water	20.92%
Gauteng	Merafong City Local Municipality	Wedela	Rand Water	20.96%

A special compliment is due to the following systems, arranged alphabetically, which performed all within the residual risk range of 12.5% (Table 19):

Table 19: Municipal supply systems that performed within the Risk Rating of 12.5%

Province	WSA	System	WSP	2014 BDR
Gauteng	City of Tshwane Metropolitan Municipality	Rietvlei	City of Tshwane, Rand Water	12.16%
Gauteng	City of Tshwane Metropolitan Municipality	Roodeplaat	City of Tshwane	12.16%
KwaZulu-Natal	Msunduzi Local Municipality	Msunduzi	Umgenti Water	12.16%
Northern Cape	//KharaHais Local Municipality	AH September (Upington)	//KharaHais LM	12.50%
Gauteng	City of Tshwane Metropolitan Municipality	Cullinan	Magalies Water	12.52%

Specific Blue Drop Risk-Rating information

It is generally accepted that excellent drinking water quality (low risk) produced by a drinking water treatment plant is a function of both technology and the human skill to maintain and control the technology and unit processes.

In terms of the microbiological water quality, Table 20 indicates that only 301 systems (29% some bulk supply points included) reported a minimum compliance of 95%, at a monitoring frequency of 80% or more (green). An additional 322 (31%) of the systems reported a minimum microbiological quality compliance of 95%, completed at a monitoring compliance of less than 80% (orange). The monitoring frequency completed at less than 80%, questions both the credibility of high quality compliance statistics, and raises a further concern about the actual number of quality non-compliance areas where non-compliance are recorded (299, 29% of systems; See the red section of Table 20). The remaining systems (114 or 11%) reflect microbiological water quality compliance of less than 90% but at a monitoring compliance between 80% and 100%. The DWS views the poor quality and monitoring compliance in a serious light.

Table 20: Microbiological water quality compliance versus monitoring compliance

		Micro Quality Compliance (%)					
		< 90	90<95	95<96	96<97	97<98	98+
Micro Monitoring compliance (%)	< 30	91	21	5	6	6	64
	30 < 50	40	29	3	9	7	60
	50 < 70	56	27	11	14	10	62
	70 < 80	15	20	5	4	10	46
	80 < 90	25	16	6	9	10	62
	90 +	38	35	11	23	18	162

The credibility of chemical quality compliance data is also dependent on the monitoring frequency. Unfortunately, the chemical *monitoring* compliance was not recorded during this assessment. The chemical quality compliance is however of concern, with 797 of the system/ bulk supplier points (77%), recording a quality compliance of 95% and lower (Table 21).

Table 21: Chemical water quality compliance

Nr of systems/WSPs	Chemical Risk Compliance (%)					
	< 90	90<95	95<96	96<97	97<98	98+
	797	0	0	0	2	237

The above information should therefore be considered when the Drinking Water Quality Risk Rating (DWQRR; Table 21) is interpreted. A significant number of the 661 systems in the Low Risk category may have recorded a higher DWQRR if chemical monitoring frequency were considered. Of concern, is the 36% of the systems that have recorded a medium to high DWQRR (Table 22).

Table 22: National Drinking Water Quality Risk Ratios

DWQRR	Category	Number	%
90 - 100	Critical risk	8	0.8%
70<90	High risk	315	30.4%
50<70	Medium risk	52	5.0%
<50	Low risk	661	63.8%
		1036	100.0%

As mentioned earlier in the document, the above water quality and monitoring statistic is in some way a function of the human skills and competence available to control unit treatment processes and distribution of water. Table 23 reflects the latter, with 41.5% of the systems recording a 'high to critical' risk in terms of Process Control.

Table 23: The National Process Control Risk Ratios

DWQRR	Category	Number	%
90 - 100	Critical risk	82	7.9%
70<90	High risk	348	33.6%
50<70	Medium risk	392	37.8%
<50	Low risk	214	20.7%
		1036	100.0%

These high risk ratios are due to limited compliance in terms of suitably qualified Supervisors and Process Controllers. Only 39% of the systems have the required number of compliant supervisors employed, and 58% of the systems operated without suitable qualified supervisors (Figure 17).

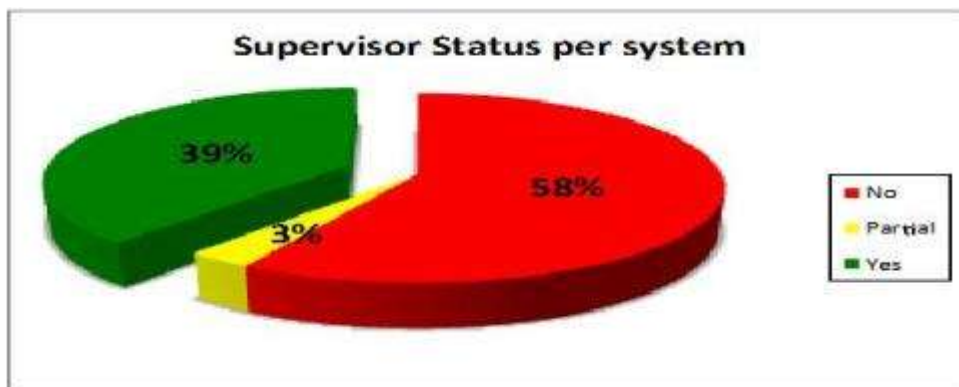


Figure 17: National Supervisor Status

An additional contributing factor to the high Process Control Risk ratings is the unavailability of suitably qualified Process Controllers. From Figure 18, it is evident that only 8.4% of the systems assessed have Process Controllers complying in terms of draft Regulation 813 and DWS requirements.

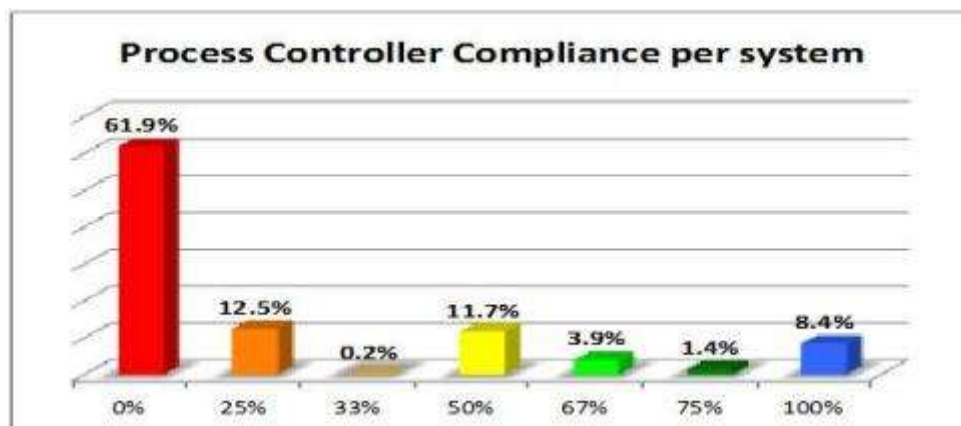


Figure 18: National Process Controller compliance

The water quality risk is also influenced by the treatment capacity available to produce safe water. The current assessment indicated that 48% of the systems operated at more than 75% of design capacity (See Table 24). In these systems very little space is available, even for competent Process Controllers, to carry out maintenance and deal with technical challenges

Table 24: Available operational capacity

Operational Capacity		
Category	Number	%
≤75%	541	52%
>75%	495	48%
	1036	100%

Given all the critical issues mentioned above, one would expect a high level of Water Safety Planning established, as introduced by the DWS a few years ago. This is unfortunately not the case. Figure 19 clearly indicates that only 37% of the systems have active Water Safety Planning processes in place. An alarming 24% of systems do not implement any water safety planning activities at all.



Figure 19: The national Water Safety Planning status

From Figure 20, it is also evident that risk programmes relating to only 15% of the systems, are informed by full SANS241 analysis and Risk Defined Monitoring programmes. A major concern to the DWS is that 19% of the systems have no full SANS241 and / or Risk-defined monitoring activities at all.

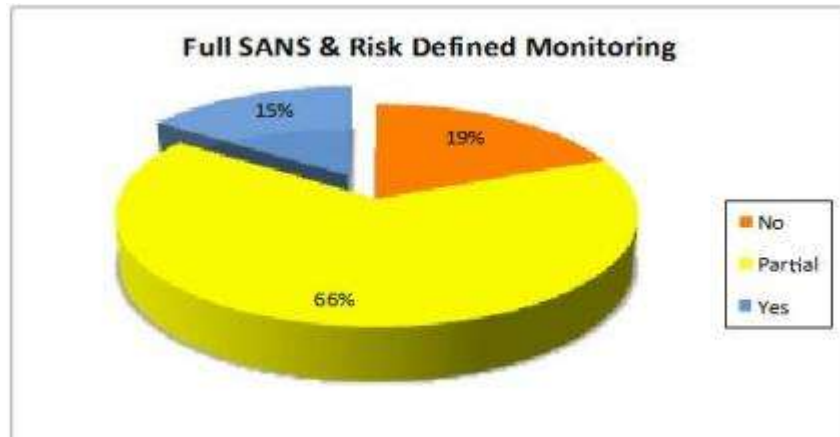


Figure 20: Full SANS241 analysis and Risk Defined Monitoring status in South Africa

Because these processes form the basis of any institutional risk management programme, the absence or poor performance in terms of water business risk management, is a serious concern for the DWS.

This chapter provided a national overview of the service provision by Water Services Authorities (WSA's) through their individual water supply systems. The subsequent chapters provide an overview and detail of water services being provided by each WSA within each province in South Africa.