



BERGRIVIER municipality

ANNUAL WSDP PERFORMANCE AND WATER SERVICES AUDIT REPORT FOR 2015/2016

EXECUTIVE SUMMARY

Bergrivier Municipality is required in terms of Section 18 of the Water Services Act, 1997 (Act No.108 of 1997), as well as the "Regulations relating to compulsory national standards and measures to conserve water", as issued in terms of sections 9(1) and 73(1)(j) of the Water Services Act, to report on the implementation of its WSDP during each financial year and to include a water services audit in such an annual report.

Section 62 of the Water Services Act requires the Minister to monitor every WSI in order to ensure compliance with the prescribed national standards. This regulation requires a WSA to complete and submit a WSDP Performance- and Water Services Audit Report every financial year.

The WSDP Performance- and Water Services Audit is designed to monitor the compliance of the WSA and other WSIs with these regulations. The Water Services Act allows the audit to be used as a tool to compare actual performance of the WSA against the targets and indicators set in their WSDP. The Water Services Audit also assists local communities and DWS to assess how well WSAs are performing relative to their stated intentions and their capacity.

The WSDP Performance- and Water Services Audit Report will give an overview of the implementation of the Municipality's previous year's WSDP, for the 2015/2016 financial year, and can be seen as an annexure to Bergrivier Municipality's Annual Report. The Annual Report is compiled as required by the Local Government: Municipal Systems Act, Act no 32 of 2000 (Section 46) and the Local Government: Municipal Finance Management Act, Act no 56 of 2003 (Section 121).

Availability of the Water Services Audit Report: The WSDP Performance- and Water Services Audit Report is a public document and must be made available within four months after the end of each financial year and must be available for inspection at the offices of the WSA. It is also recommended that the document be placed on the Municipality's website and that copies of the document be placed at the public libraries. The WSDP Performance- and Water Services Audit Report also needs to be made available to the Minister of the DWS, the Minister of the Department of Cooperative Governance, the Province and to SALGA, as required by the Water Services Act, 1997.

The WSDP Performance- and Water Services Audit Report include the following detail information:

- The Municipality's performance with regard to their KPIs for water and sewerage services for the 2015/2016 financial year, as included in the Municipality's SDBIP.
- The Municipality's Performance with regard to DWS's Blue and Green Drop Assessments. Blue drop status is awarded to those towns that comply with 95% criteria on drinking water quality management. Green drop status is awarded to those WWTWs that comply with 90% criteria on key selected indicators on waste water quality management.
- DWS's Scorecard for assessing the potential for WC/WDM efforts in the Municipality.
- Information to be included in a WSDP Performance- and Water Services Audit as stipulated in regulations under section 9 of the Water Services Act, "Guidelines for Compulsory National Standards" and also required by DWS's 2014 WSDP Performance- and Water Services Audit Report guidelines.
- Information on the implementation of the various WSDP activities, as included under the WSDP Business Elements in DWS's WSDP guidelines.

The Municipality has a comprehensive Performance Management System in place. The SDBIP is the process plan and performance indicator / evaluation for the execution of the budget. The SDBIP is being used as a management, implementation and monitoring tool that assists and guide the Executive Mayor, Councillors,



Municipal Manager, Senior Managers and the community. The plan serves as an input to the performance agreements of the Municipal Manager and Directors. It also forms the basis for the monthly, quarterly, mid-year and the annual assessment report and performance assessments of the Municipal Manager and Directors.

The following water and sanitation related investigations were successfully completed during the last financial year.

- The WSDP Performance- and Water Services Audit Report for the 2014/2015 financial year was finalised and approved by Council as part of the Annual Report. The NRW water balance models were also updated for each of the distribution systems (Up to the end of June 2015) as part of the Water Services Audit Process.
- Bergrivier Municipality continues with the implementation of their Drinking Water Quality and Effluent Quality Sampling Programmes (Both Operational and Compliance Monitoring). Sample results are loaded on a monthly basis onto DWS's BDS and GDS. All the WTWs and WWTWs are also registered on the BDS and GDS websites.
- Detail WWTW Process Audits were completed for the Piketberg, Porterville and Velddrif WWTWs.
- MIG Technical Report was compiled for the upgrading of St Christopher Sewer Pump Station and rising main in Velddrif.
- MIG Technical Report was compiled for the upgrading of the Disa Street sewer in Porterville.
- A Technical Report for the upgrading and refurbishment of the Porterville WWTW was compiled.
- The Water and Sewer Master Plans were updated for all the water distribution systems and sewer drainage systems.
- The Asset Register was updated to include all the water and sewerage capital projects completed during the 2015/2016 financial year.
- The Municipality's WSDP was updated according to the DWS's latest eWSDP guidelines.

The following awards / acknowledgements were also received by the Municipality:

- The Municipality's overall Blue Drop score came down from 90.60% for 2012 to 63.79% for 2014. The highest blue drop score was 72.93% for Porterville and the lowest blue drop score was 49.29% for Eendekuil. The DWS mentioned that Bergrivier Municipality was well prepared for the assessment and demonstrated a positive approach to the Blue Drop Certification Programme. Consequently, it is anticipated that through acknowledgement of the identified gaps that progressive improvement in compliance will once again be achieved in future assessments.

The overall 2014 Risk Rating for Bergrivier Municipality is 52%. This risk value is based on Process Control RR, Drinking Water Quality RR and Risk Management RR, with scores above 50% (medium to critical risks) for Process Control in 4 of the 6 systems and Drinking Water Quality in 3 of the 6 systems.

- The overall Green Drop Score of the Municipality came down from 70.00% in 2011 to 44.21% in 2013 and was performing below average with regard to wastewater quality management. The highest Green Drop Score of 62.60% was for the Porterville WWTW and drainage system and the lowest Green Drop Score of 24.23% was for the Eendekuil WWTW and drainage system. The Green Water Services Audit revealed substantial shortcomings in the areas of risk- and asset management, as well as effluent quality.

The CRRs decreased in two of the systems (Dwarskersbos and Eendekuil) and stayed roughly the same for Piketberg, Porterville and Velddrif during the 2013/2014 Green Drop Progress Reporting in 2014. Upgrades to the system have been made, resulting in improved compliance at most plants. However, the Velddrif and Eendekuil plants are not meeting standards. A W₂RAP is in place and are being implemented to ensure that high risk areas are abated. Flows are monitored at each site, with the



exception of Dwarskersbos which receive low flow to the pond system. All indicators are that Bergrivier is showing PROGRESS against the CRR rating over the 2011 to 2012 assessment year. The team is congratulated for their preparedness and positive contribution to the PAT assessments.

- Bergrivier Municipality achieved 100% expenditure in the 2015/2016 financial year on their MIG (DLG) funding received.

Quantity of Water Services Provided (Water Balance)

Detail water balance models are in place for each of the distribution systems in Bergrivier Municipality's Management Area. These models include the volume of potable water supplied to the Bergrivier Municipality by the West Coast District Municipality, the volume of water abstracted from the Municipality's own water resources, the treated volume supplied from the WTW (System Input Volume) and the billed metered consumption for each of the distribution systems. The volume and percentage of NRW were also calculated from the available data. The flows at the WTWs and WWTWs are also recorded by the Municipality.

Water Services Delivery Profile

The number of consumer units per category or user type is available for each of the distribution systems. All the households in the urban areas of Bergrivier Municipality's Management Area are provided with water connections inside the erven. Informal areas are provided with shared services as an intermediary measure. Bergrivier Municipality is committed to work with the private landowners to ensure that at least basic water and sanitation services are provided to those households in the rural areas with existing services still below RDP standard.

Cost Recovery and Free Basic Services

A detail nine block step tariff system is implemented by Bergrivier Municipality. This tariff system discourages the wasteful or inefficient use of water. It is expected that this tariff structure will continue to be implemented in the future. The sustainable supply of potable water is however becoming an ever increasing challenge, due to the huge bulk infrastructure needs of Bergrivier Municipality over the next number of years.

The first six (6) kl of water is provided free to all indigent households. Bergrivier Municipality's tariffs support the viability and sustainability of water supply services to the poor through cross-subsidies (where feasible). Free basic water and sanitation services are linked to the Municipality's Indigent Policy and all indigent households therefore receive free basic water and sanitation services. This implies that either the equitable share is used to cover this cost, or higher consumption blocks are charged at a rate greater than the cost in order to generate a surplus to cross-subsidies consumers who use up to six (6) kilolitres per month.

The operational budget of the past five financial years for water and sanitation services is summarised in the table below:

Service	Expenditure / Income	Actual 15/16	Actual 14/15	Actual 13/14	Actual 12/13	Actual 11/12
Water	Expenditure	R19 439 616-11	R17 622 645-14	R16 489 805-52	R17 977 803-63	R14 372 824-55
	Income	-R41 302 944-69	-R38 793 306-82	-R21 182 113-66	-R19 773 371-64	-R17 327 831-49
	Surplus / Deficit	R21 863 328-58	R21 170 661-68	R4 692 308-14	R1 795 568-01	R2 955 006-94
Sanitation	Expenditure	R9 728 729-15	R6 717 358-48	R8 359 993-41	R7 955 336-06	R7 717 089-03
	Income	-R18 266 193-46	-R18 005 379-38	-R27 065 082-86	-R21 107 779-12	-R18 071 571-79
	Surplus / Deficit	R8 537 464-31	R11 288 020-90	R18 705 089-45	R13 152 443-06	R10 354 482-76



Water Quality

Operational and Compliance Water Quality sampling programmes are implemented by the Bergrivier Municipality and the West Coast District Municipality. Operational and Compliance Final Effluent Quality sampling programmes are also implemented by Bergrivier Municipality at the various WWTWs.

The percentage compliance of the water quality samples taken over the period July 2015 to June 2016 for the various distribution systems are summarised in the table below (SANS 241:2015 Limits).

Distribution System	Acute Health Microbiological	Chronic Health	Aesthetic	Operational Efficiency
Porterville	95.2%	100.0%	100.0%	91.1%
Piketberg	87.5%	100.0%	98.0%	90.8%
Dwarskersbos	80.3%	98.6%	100.0%	92.9%
Velddrif	84.2%	98.4%	100.0%	97.0%
Aurora	95.2%	100.0%	99.4%	97.1%
Eendekuil	100.0%	100.0%	100.0%	89.7%
Redelinghuys	79.1%	98.0%	96.4%	91.8%

The overall percentage compliances of the final effluent compliance samples taken over the period July 2015 to June 2016 at the Dwarskersbos, Eendekuil, Piketberg, Porterville and Velddrif WWTW (General Limits) are summarised in the table below.

WWTW	Microbiological	Chemical	Physical
Dwarskersbos	100.0%	0.0%	29.2%
Eendekuil	100.0%	41.7%	100.0%
Piketberg	100.0%	97.9%	97.2%
Porterville	81.8%	97.7%	100.0%
Velddrif	100.0%	83.3%	86.1%
Overall Compliance percentage	96.6%	82.2%	85.0%

WC/WDM

Bergrivier Municipality's WC/WDM Strategy was updated during 2014/2015 and was previously approved by Council in 2013. The implementation of Bergrivier Municipality's WC/WDM Strategy has been extremely successful and the Municipality was able to reduce the water requirements of the towns significantly. The average annual growth percentage in total raw water requirements for Bergrivier Municipality over the period 2010/2011 to 2015/2016 was 0.48 %/a.

The overall percentage of NRW for all the internal distribution systems was only 12.11% for the 2015/2016 financial year, which is very good. The table below gives a summary of the NRW and the ILI for each individual distribution system in Bergrivier Municipality's Management Area.

Description	Unit	15/16	Record : Prior (Ml/a)				
			14/15	13/14	12/13	11/12	10/11
Porterville	Volume	97.391	122.740	64.188	57.359	77.961	69.434
	Percentage	18.9%	22.1%	13.9%	12.3%	16.4%	14.0%
	ILI	2.57					
Piketberg	Volume	69.401	75.956	171.938	137.581	157.934	79.080
	Percentage	8.3%	9.0%	20.5%	17.2%	19.4%	9.6%
	ILI	0.85					
Velddrif	Volume	103.854	158.547	80.910	82.753	10.066	16.242
	Percentage	10.4%	17.8%	9.1%	9.1%	1.9%	3.2%
	ILI	2.19					
Dwarskersbos	Volume	4.860	-0.073	7.806	17.381	4.796	7.376



Description	Unit	15/16	Record : Prior (MI/a)				
			14/15	13/14	12/13	11/12	10/11
	Percentage	4.7%	-0.1%	7.5%	17.5%	5.1%	8.9%
	ILI	0.85					
Aurora	Volume	1.090	-3.388	5.572	-0.887	-5.448	-5.406
	Percentage	2.3%	-8.2%	13.1%	-2.3%	-13.6%	-13.2%
	ILI	0.03					
Eendekuil	Volume	26.295	12.584	-7.452	7.033	0.101	0.134
	Percentage	27.0%	15.6%	-12.0%	9.1%	0.1%	0.2%
	ILI	4.69					
Redelinghuys	Volume	19.034	21.917	24.531	23.314	24.820	19.546
	Percentage	35.7%	36.5%	39.6%	39.9%	40.3%	31.0%
	ILI	7.33					
Total	Volume	321.925	388.283	347.493	324.534	270.230	186.406
	Percentage	12.11%	15.14%	14.13%	13.24%	10.93%	7.21%
	ILI	1.54					

Note: Infrastructure Leakage Index (ILI) for Developed Countries = **1 – 2 Excellent (Category A)**, **2 – 4 Good (Category B)**, **4 – 8 Poor (Category C)** and **> 8 – Very Bad (Category D)**

Category A = No specific intervention required.

Category B = No urgent action required although should be monitored carefully.

Category C = Requires attention

Category D = Requires immediate water loss reduction interventions

Water Services Infrastructure Management

Bergrivier Municipality’s Asset Register needs to be updated to include the CRC of all the water and sewerage infrastructure. The Municipality also needs to ensure that all the existing water and sewerage infrastructure are included in the Asset Register. The tables below give an overview of the Opening Costs, Book Values, RUL, Age distribution and Condition grading of the water and sewerage assets currently included in the Asset Register (June 2016).

Asset Type	Opening Costs	Book Values	% Book Values / Opening Costs		
Water Infrastructure	R75 043 218	R59 683 967	79.53%		
Sewerage Infrastructure	R67 847 056	R54 050 097	79.66%		
Remaining Useful Life (Opening Costs)					
Asset Type	0 – 5 yrs	6 – 10 yrs	11 – 15 yrs	16 – 20 yrs	> 20 yrs
Water Infrastructure	R12 775 216	R6 265 079	R1 628 823	R0	R54 374 100
Sewerage Infrastructure	R1 756 826	R20 591 320	R67 624	R0	R45 431 286
Age Distribution (Opening Costs)					
Asset Type	0 – 5 yrs	6 – 10 yrs	11 – 15 yrs	16 – 20 yrs	> 20 yrs
Water Infrastructure	R44 817 294	R30 225 924	R0	R0	R0
Sewerage Infrastructure	R44 474 886	R23 372 171	R0	R0	R0
Condition Grading (Opening Costs)					
Asset Type	Very Good	Good	Fair	Poor	Very Poor
Water Infrastructure	R33 536 933	R0	R11 939 726	R29 566 559	R0
Sewerage Infrastructure	R29 867 648	R103 349	R2 224 040	R35 543 596	R108 423

The above table means that 20.46% of the water infrastructure and 20.34% of the sewerage infrastructure has been consumed. It is important for Bergrivier Municipality to allocate adequate funds for the rehabilitation and maintenance of their existing infrastructure, which is critical to ensure the sustainability of the services that are provided by the Municipality. All possible external sources of funding to assist with the development of the bulk infrastructure and additional sources need to be identified.

Associated Services



All schools and medical facilities in Bergrivier Municipality's Management Area are supplied with adequate water and sanitation services.

Water Resources

A Service Level Agreement is in place with the West Coast District Municipality for the provision of bulk potable water to Velddrif and Dwarskersbos. The West Coast District Municipality is however over their water allocation from the Berg River for the last number of years and applied to the DWS for an increased allocation from the Berg River. The allocation from the Berg River for Piketberg is also exceeded for the last number of years and the Municipality needs to apply to the DWS for an increased allocation from the Berg River for Piketberg. The safe yields of the Redelinghuys and Aurora sources need to be determined in order to determine whether the yields from these resources are adequate to meet the town's future water requirements. The yield from the existing resources for Eendekuil is adequate to meet the short to medium future water requirements of the town.

The table below gives an overview of the years in which the annual water requirement will exceed the sustainable yields / allocations from the various resources.

Distribution System	Allocation (A) / Yield (Y) (Ml/a)	Annual Growth on 2015/2016 requirement (%)	Annual Growth on 2015/2016 requirement (%)	WSDP Projection Model
Porterville	711.385 (Y)	2040 (1%)	2027 (2%)	2031
Piketberg	945.075 (A)	2016 (3%)	2016 (4%)	2016
Velddrif	WCWSS	Over (2%)	Over (3%)	Over
Dwarskersbos	WCWSS	Over (2%)	Over (3%)	Over
Aurora	56.000 (A)	2023 (1.5%)	2020 (2.5%)	2017
Eendekuil	116.435 (Y)	2018 (2%)	2017 (3%)	2021
Redelinghuys	46.500 (A)	Over (1%)	Over (2%)	Over

Note: The sustainable yield of the Aurora and Redelinghuys water resources needs to be determined, which might impact on the figures included in the above table.

Institutional Arrangement Profile

Bergrivier Municipality is the WSA for the entire Municipal Management Area. A Service Level Agreement is in place with the West Coast District Municipality for the provision of bulk potable water to Velddrif and Dwarskersbos. The Municipal staff is continuously exposed to training opportunities, skills development and capacity building at a technical, operations and management level in an effort to create a more efficient overall service to the users. A Workplace Skills Plan is compiled annually and the specific training needs of the personnel, with regard to water and wastewater management are determined annually.

Social and Customer Services Requirements

A comprehensive Customer Services and Complaints system is in place at Bergrivier Municipality and the Municipality has maintained a high and a very consistent level of service to its urban water consumers. After hour emergency requests are being dealt with by the control room on a twenty four hour basis.

Bergrivier Municipality further developed a Client Services Charter in collaboration with various stakeholders to affirm their commitment to providing unsurpassed service delivery within the Bergrivier Municipality's Management Area.

“Community involvement and excellent client services are the building blocks of Bergrivier Municipality”



Barriers implemented by Bergrivier Municipality against contamination and deteriorating water quality include the following:

- Service Delivery Agreement between the West Coast District Municipality and Bergrivier Municipality. A Monitoring Committee is also in place.
- Participate in catchment management and water source protection initiatives.
- Protection at points of abstraction such as river intakes and dams (Abstraction Management).
- Correct operation and maintenance of the WTWs (Coagulation, flocculation, sedimentation and filtration).
- Protection and maintenance of the distribution systems. This includes ensuring an adequate disinfectant residual at all times, rapid response to pipe bursts and other leaks, regular cleaning of reservoirs, keeping all delivery points tidy and clean, etc.

Three other important barriers implemented by Bergrivier Municipality against poor quality drinking water that are a prerequisite to those listed above are as follows:

- A well informed Council and municipal managers that understand the extreme importance of and are committed to providing adequate resources for continuous professional operation and maintenance of the water supply system.
- Competent managers and supervisors in the technical department who are responsible for water supply services lead by example and are passionate about monitoring and safeguarding drinking water quality.
- Well informed community members and other consumers of water supply services that know how to protect the water from becoming contaminated once it has been delivered, that have respect for water as a precious resource and that adhere to safe hygiene and sanitation practices.