AS Tallinna Vesi

ENVIRONMENTAL REPORT 2011

Tallinna Vesi

April 2012

Contents

AS TALLINNA VESI IN BRIEF

General facts

- The largest water utility company in Estonia, providing drinking water and wastewater disposal services to approximately 1/3 of Estonia's population.
- The Company provides water and wastewater disposal services to over 22,000 customers and 430,000 end-consumers in Tallinn and its surrounding areas.
- The Company has the exclusive right to provide water and sewerage services the Tallinn service area until the year 2020.
- A Services Agreement with 97 Levels of Service has been concluded between the City of Tallinn and the Company for providing the services.
- The Company has two main treatment plants: Ülemiste Water Treatment Plant (WTP) and Paljassaare Wastewater Treatment Plant (WWTP).
- The first Ülemiste WTP started operating in 1927, a new water treatment plant was built in 1979.
- Water Treatment Plant produces an average of 60,000 m^3 of water per day.
- Almost 90% of drinking water is produced from surface water. The main drinking water source for the residents of Tallinn is Lake Ülemiste, which is why it is not a public water body. 10% of the consumers use regional ground water.
- Average water consumption in 2011 was 93.7 litres per inhabitant (95 litres in 2010).
- Paljassaare WWTP started operating in 1980.
- Wastewater Treatment Plant treats on an average 120,000 m^3 of wastewater per day.
- The Company has accredited water, microbiology and wastewater laboratories, which together conducted over 129,000 analyses in 2011 (72,000 chemical and 11,000 microbiological analyses from drinking water and 46,000 analyses from wastewater).
- • The public water supply system comprises almost 954 km of water networks, 17 water pumping stations and 64 ground water borehole pumping stations with 93 boreholes.
- • The public sewerage system comprises 921 km of wastewater networks, 414 km of storm water networks and over 146 sewerage pumping stations across the service area.
- In 2010 AS Tallinna Vesi founded its 100% owned subsidiary, OÜ Watercom, to diversify the Company product offering and pursue business development and growth.
- As of the end of 2011 the Company and its subsidiary employed a total of 311 employees. The number of full-time employees was on an average 299 in 2011.
- The Company´s shares are listed on the main list of Tallinn Stock Exchange.

Operational sites

- Head office, customer service, support services and OÜ Watercom are located in Ädala 10, Tallinn.
- Ülemiste water treatment plant, water and microbiological laboratory are located at Järvevana road 3, Tallinn.
- Paljassaare wastewater treatment plant, composting fields and wastewater laboratory at are located Paljassaare põik 14, Tallinn.
- Sludge composting and experimental site is located in Liikva village, Harju county
- The catchment area ca 1,800 square kilometres is located in Harju and Järva counties.

MISSION

We create a better life with pure water!

VISION

Everyone wants to be our customer, employee and partner, because we are the leading water services company in the Baltic's.

OUR VALUES

Commitment - We work with passion, doing the maximum to achieve the objectives

Customer focus - Our actions help our customers and colleagues to find solutions

Teamwork - We all form one team who knows that our success depends on the contribution of each individual

Creativity - We have the courage and the energy to seek new opportunities and achieve better results

Proactivity – We act today for a better tomorrow

CHAIRMAN'S STATEMENT

In 2011 AS Tallinna Vesi has demonstrated an extremely high level of resilience. Our company's privatisation contract, business model and operational standards have been questioned, and many declared illegal, by the new "price checker" the Competition Authority. Since taking over the "price checking" function from the City of Tallinn the Competition Authority has refused to engage with any aspect of our privatisation contract preferring to ignore the outstanding operational performance of the company, whilst declaring our privatisation contract "illegal".

During 2011 the Competition Authority refused to accept our tariff application for 3.5% tariff increase. We would like to highlight that our tariff application was made solely on the basis of the privatisation contracts that were approved by the City of Tallinn and the Estonian Government in 2001. Furthermore, in order to assist the Competition Authority with this tariff application we asked the international consultancy company Oxera to make an independent review of the company's economic performance and profits since privatisation in 2001. This review revealed that the profits made by the Company were not excessive, and that this could be proved by benchmarking against the profits allowed by the UK and Dutch regulators. A further benefit of obtaining an independent perspective is that it enables the company and the Competition Authority to have a professional and meaningful discussion based on the evidence presented, however in spite of our best efforts, to date we have not been able to engage in such discussions.

Unfortunately the Competition Authority refused to review any aspect of our application preferring to insist on the use of its own unverified internal guidelines. As a consequence in June 2011 we were forced to make a complaint to the courts to try to have the contractual rights upheld. To date, no court date has been set.

In October 2011, preferring to circumvent due legal process the Competition Authority used a ministerial decree in order to issue a prescription to ASTV demanding that we reduce our tariffs by 29%. This is in spite of the fact that these tariffs had been set in accordance with the privatisation contract and had been approved by the previous regulator the City of Tallinn. To prevent this we have issued a further complaint to the courts asking for an injunction to stop the 29% tariff cut at least until the courts have ruled on the legality of the terms and conditions of the privatisation contracts. On 6 February 2012 the courts gave a positive reply to the Company's injunction request. The Competition Authority appealed against this ruling on 17 February 2012. The Company is awaiting the Tallinn District Court's ruling on the matter, which should indicate whether the tariffs will be frozen until the court makes its final judgement on the legality of the privatisation agreements.

We do not believe that AS Tallinna Vesi, its owners, its employees, its customers and its business partners should be forced to defend itself in court for following the terms and conditions of the privatisation contract that were set by the Estonian authorities themselves. As a consequence, without the prospect of meaningful dialogue ASTV is faced with no option but to use all available legal means to protect its contractual rights.

In spite of all these political and contractual discussions I am delighted to report that in 2011 our operational and service performance has been the best ever. In August 2011 the biofilter, the new treatment stage at the WWTP (Wastewater treatment plant), came into operation. This improvement to the plant has significantly improved the quality of treated effluent discharged into the Baltic Sea, reducing the amount of nitrogen discharged by over 10%, and makes a significant contribution to Estonia's strategy for a cleaner Baltic Sea. In addition, in late 2010 we made some important changes to our structure and processes, and during this current year the results of these changes can clearly be seen in our performance. This improvement is a testimony to the attitude and commitment of our staff who have worked tirelessly to provide a better service for our clients. For this, on behalf of the Management Board, Supervisory Council and owners of the company, I would like to say thank you.

It is very pleasing to see that the quality of our governance and the transparency of our work have been recognised externally. At the NASDAQ OMX Baltic Stock Exchange awards for 2011 we once again won the award for the company with the best Investor Relations in Estonia and 2nd place in all three Baltic countries. These awards are clear demonstrations of the company's commitment to transparent reporting and high quality corporate governance, both of which are pre-requisites for any responsible utility company.

Operations performance – best ever across all business areas

We have continued to ensure we meet or exceed the services contract we have with the City of Tallinn. This services contract requires us to maintain a high standard of service to our customers across a range of over 90 levels of service, ensuring that we deliver a service to our customers that is second to none.

We invested 16.5 mln euros in 2011, with the main focus being our improvements into the wastewater treatment plants. In 2011, these investments and changes in working practices enabled us to improve our performance across all areas of our value chain, achieving the

highest standards ever for water quality, wastewater treatment, and the performance of our networks. The standards of water produced and wastewater treated will stand comparison with the very best in Western Europe, and of this we are rightly very proud!

Good customer service but with room for improvement.

This year our customer satisfaction rating declined from a TRI*M index high of 78 in 2010 to 72 points at the end of 2011. Whilst this rating is well above the European average for utility companies it is disappointing for our company to see that our customers think we have not performed as well as in the previous year. Although our operational results demonstrate the excellent progress we have made across all our main performance indicators in 2011 these improvements have not been recognised by our customers.

In 2012 we will of course carry on focussing on continuous improvement across all business areas. We understand that the provision of a high quality product and service 365 days a year, 24 hours a day is fundamental for all our customers. However, based on our 2011 results we can see that we must do more if we want to give the very best service to our customers. Therefore, during 2012 we will supplement performance improvement with better customer feedback, which will help us to understand what is important to our customers. In addition, we will look externally into the service environment in Estonia and across Europe to see where we can learn from our other utilities and service providing companies.

Developing opportunities for our people and teams

In 2011 the commitment of our workers was once again exemplary. Our staff has met the challenges of higher service standards and a new organisational structure and have delivered a world class service. The recognition of these successes can be seen in the results of our employee opinion survey. In 2011 employee satisfaction rose from 66 to 74, reflecting the increased motivation our staff feels as a result of working in meaningful and successful jobs.

We strive to give our staff the opportunity to develop within the company, and during the past year we have seen a number of our talented people rise into management and Board positions. In early 2012 we made some changes at Management Board level and as a result two of ASTV's senior managers were promoted to Management Board positions. By promoting from within we are sharing our success with our staff and demonstrating that significant

career opportunities exist in AS Tallinna Vesi. We remain committed to the personal and professional development of our staff as we believe it will make the company an attractive employer for the brightest and the best.

Stable Revenues, returns in accordance with other privatised utilities

We are a financially robust and resilient business. Our turnover from our main business activity, sales of water and wastewater increased by 3.0% to 46.5 mln euros and our operating profit from these activities increased by 5.2 % to 25.4 mln euros. The real return (net of inflation) on invested capital in our main business was 6.5% in 2011 and 7.0% over the five year period from 2007 to 2011, which is in accordance with the rates of return made by other privatised water utilities.

Limited growth potential at this point in time

Our excellent operational performance leaves us well placed to expand our service offering across the Baltic's. We already provide a very high quality service and we should be able to utilize this operational strength to increase revenues from activities outside of the City of Tallinn whilst bringing a better quality service to other municipalities at a lower cost. Unfortunately the new regulatory regime implemented in late 2010 lacks transparency which means that growth opportunities within Estonia are extremely limited. We will however continue to work with the various ministries and regulatory authorities to demonstrate the benefits that outsourcing in the water sector can bring for both customers and the environment.

Outlook

In the current political and regulatory environment the outlook for the company is very uncertain. Given that the Estonian authorities are unwilling to enter into any meaningful discussions over the privatisation contracts it appears that the company will be engaged in a long court process, which could last a number of years. It is apparent that the significant improvements in service count for very little within the new system of regulation. I would however like to ensure all our stakeholder groups, as a 100% professional organisation we are committed to delivering the best, and incomparable in Estonia, level of service to all our direct customers and service users.

Finally, I would like to thank my colleagues in Tallinna Vesi and Watercom, and all our suppliers and business partners for all their expertise, energy and support in serving our customers in this difficult time. It is because of all your efforts that we are once again able to report a level of operating and service performance that is second to none.

Ian Plenderleith,

Chairman of the Management Board

COMPANY'S GENERAL OBJECTIVES 2011

Objective	Evaluation base	Status
Customer service		
To increase customers' satisfaction with the service	Potential commitment for non-compliance with our promises (GSS) 15 000 euros (23 000 euros in 2010)	1150,2
To improve the speed of responding to customers	At least 90% of written contacts answered within 2 working days (82% in 2010)	95,9
To increase customers' satisfaction with the service	On at least 95% of occasions operations have notified customer service about unplanned interruptions in working day/hours and customers are informed at least 1 hr in advance	97,8
To increase customers' satisfaction with the service	On first phone call 90% of customers will know what will happen and by when and we'll keep our word	72,4
Operational performance		
To improve water quality	Compliance of water quality at customer taps with the requirements at least 99.31% (99.59% in 2010) (excl. Maardu)	99,66
To reduce water loss	Level of water loss in network less than 19.00% (21,12 in 2010) (incl Maardu)	17,57
To reduce the number of water interruptions	Reduction in the maximum hours of interruptions to less than 60 000 hours (75 000 in 2010)	49616
To increase customers' satisfaction with wastewater discharge service	90% of blockages and flooding events responded to within 2 hours	75
To improve wastewater treatment	Compliance of pollution parameters in effluent at the WwTP in at least 3 quarters (1 in 2010)	4
People		
Committed, creative, customer-focussed teams	Employee commitment and satisfaction with the Company is significantly higher than Estonian average (TRIM index 10 points higher) >50	74
To improve employees' feedback to management	Employee feedback to management is better than in 2009/2010 (based on employee satisfaction survey) ≥4,3	4,6
To improve inter-departmental cooperation	Improvement of inter-departmental cooperation compared to 2010 (Internal Customer Satisfaction Survey) very satisfied >40% and not satisfied <3%	44,9 ja 4,1
To reduce the number of work accidents that the employer is liable for	0 work accidents that the employer is liable for	1
To reduce the number of short-term sick leave days	Less than 1200 short term sick leave day's	828

Legend: achieved; not achieved

COMPANY'S ENVIRONMENTAL OBJECTIVES 2012

Drinking water quality

- ✓ Drinking water quality is in compliance with the SM 82 regulation over 99.31% at customers premises in all service areas
- ✓ To ensure the compliance of drinking water quality with regulatory requirements and requirements of the Services Agreement
- ✓ To replace at least 5 km of the depreciated water pipeline

Compliance with environmental requirements

- ✓ To ensure compliance with regulatory requirements and requirements of the Services Agreement
- ✓ To ensure the awareness of sub-contractors about significant environment related aspects of the Company

Usage of water resources

- ✓ To use water resources sparingly
- ✓ To ensure compliance with the requirements of water permits and the requirements of the Services Agreement
- ✓ Level of leakages in networks is less than 19%
- ✓ To effectively repair leakages on average in 48 hours or less
- ✓ To extend the use of online sensors for finding leakages, zoning and calibrating the networks model
- ✓ To ensure that customers have a timely calibrated water meter

Wastewater collection

- ✓ Compliance of pollution parameters is achieved at the Wastewater Treatment Plant and at the storm water outlets in all 4 quarters
- ✓ Number of information requests regarding sewer blockages, floodings and storm water is less than 2,250
- ✓ To carry out maintenance on 180 km of the sewerage network
- ✓ To replace at least 5 km of the depreciated wastewater pipeline
- ✓ To react in case of blockages and floodings within 2 hours in more than 90% of cases
- ✓ Total number of blockages caused by public sewerage system is less than 1,000

- ✓ To reduce potential pollution of natural environment by providing wastewater discharge service to new customers

Wastewater treatment

- ✓ To ensure the compliance of pollution parameters with regulatory requirements and the Services Agreement in all 4 quarters

Chemicals handling

- ✓ To control and optimise the usage of chemicals
- ✓ To reduce the risk of accidents or emergencies occurring as a result of chemical usage

Waste management

- ✓ To improve the efficiency of sorting and reusing waste
- ✓ To recycle all sludge and sell 32,000 tons of compost
- ✓ To ensure the compliance of sludge handling with the requirements of waste permit
- ✓ Reduction of hard copy invoices to 30%

Energy consumption

- ✓ To use energy more efficiently and sparingly and to prepare a long-term strategy for energy use
- ✓ To develop a business plan for improving sludge treatment aimed to make an efficient use of biogas
- ✓ To use transport more efficiently, to develop a long-term strategy for the means of transport

Air emissions

- ✓ To ensure the compliance with the requirements of air pollution permits

Ensuring continuous supply

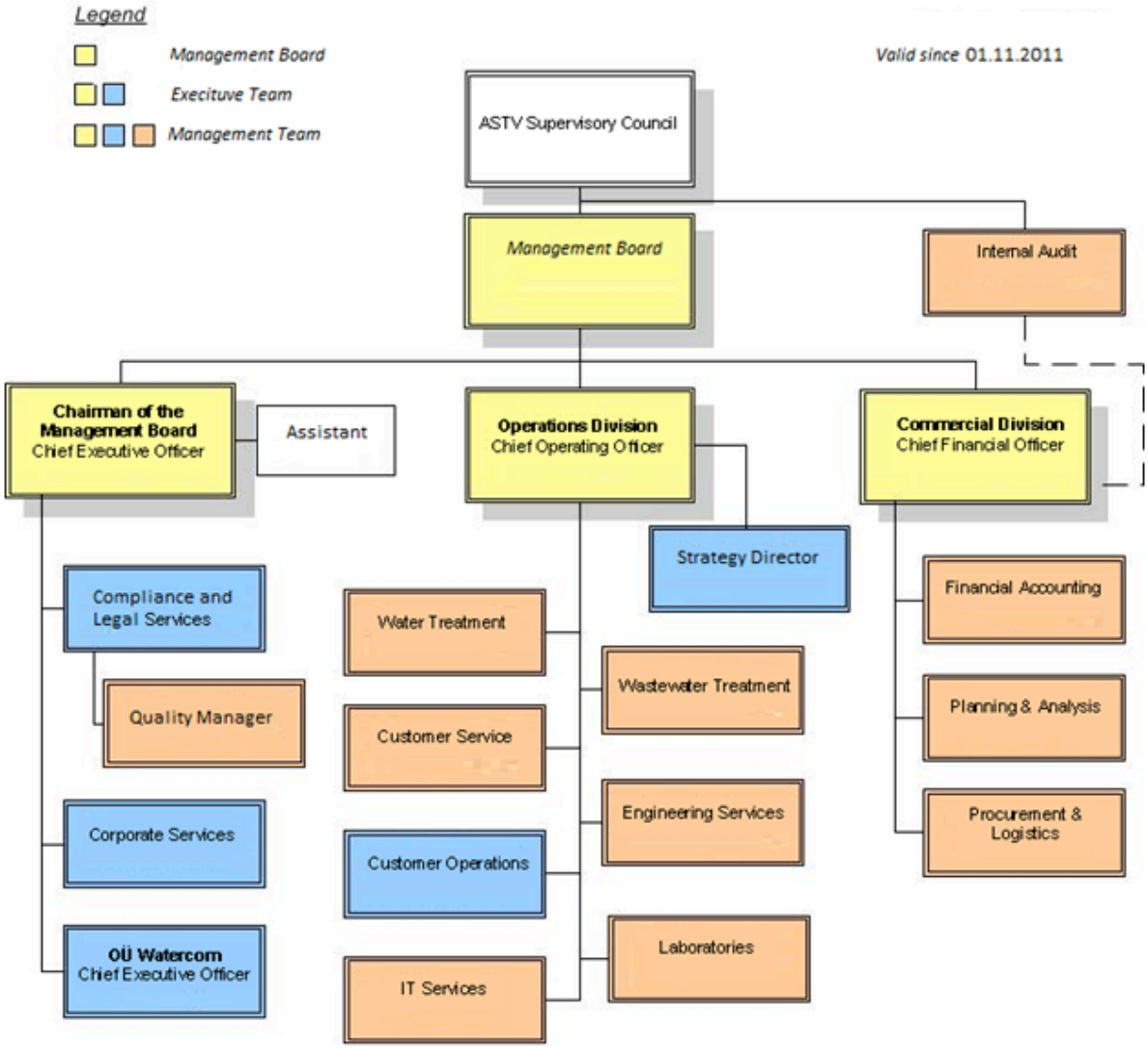
- ✓ To avoid emergencies, which cause significant damage to population and nature

Environmental awareness

- ✓ To support environmental, ecological and educational projects areas and activities according to the sponsorship principles
- ✓ To implement the Environmental Educational programme for schools
- ✓ To carry out Open Door Days at Ülemiste Water Treatment Plant and Paljassaare Wastewater Treatment Plant

- ✓ To create the Green Team of the Company and to carry out at least 2 successful environmental projects

COMPANY'S STRUCTURE



ENVIRONMENTAL POLICY

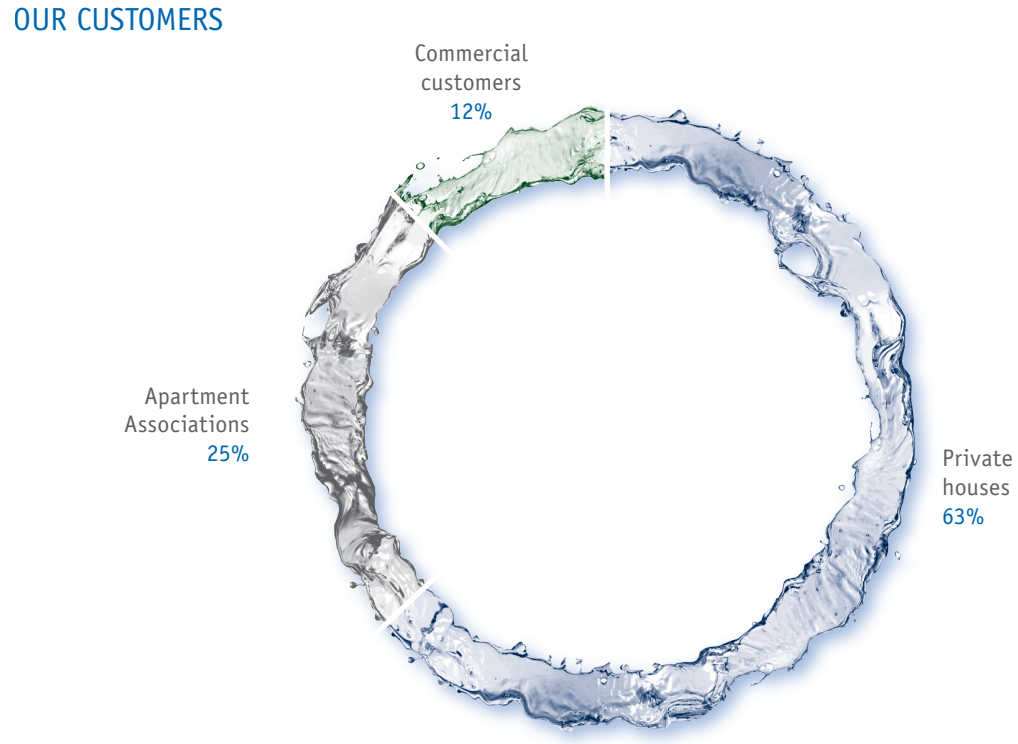
Quality and environmental policy approved by the Company´s Executive Team expresses the Company´s principles in organising activities related to corporate social responsibility and environment.

OUR CONTRIBUTION TO CUSTOMERS AND THE COMMUNITY

- Our customers have a possibility to continuously use pure drinking water and the possibility to discharge wastewater and storm water environmentally wisely.
- Our customers can communicate with us conveniently; we are fast and professional in finding solutions to their problems.
- We take responsibility and are aware of our impact on the health and quality of life of residents.
- We do more than required by the legal acts and we follow the best practices.
- We use natural resources sparingly.
- We shape the environmentally conscious way of thinking in our community by keeping an open dialogue, cooperation and valuing education.
- We proactively include various stakeholders, find sustainable solutions and constantly improve our services and work organisation.
- We are open and honest in providing regular information about our activities to our stakeholders.
- We strive to be a good neighbour in the community, by supporting water related activities that promote environmental awareness and healthy life style.

CUSTOMER SATISFACTION

In 2011, the Company provided water supply and sewerage services to a little more than 22,000 customers and 430,000 end users in Tallinn and its surrounding areas. The strategic objective of the Company is to offer the best water service in the Baltic states, so that anyone would wish to be our customer, employee and partner.



Annual customer satisfaction survey

In 2011 the Company made its best efforts to maintain the very good quality of drinking water and to further improve the service reliability. We also made efforts to enhance resolving customer contacts. The main focus was both on the speed of resolving the issues and on improving the customer awareness of the Company's actions. Although the customer satisfaction survey results indicate satisfaction with the quality of our services, they also refer to some room for development in terms of problem solving. Customer satisfaction has remained on less compared to the previous year. In comparison with the European utility and public sector, the satisfaction of the Company's customer is above the average. However, the Company is going to focus on the improvement of customer service also in 2012.

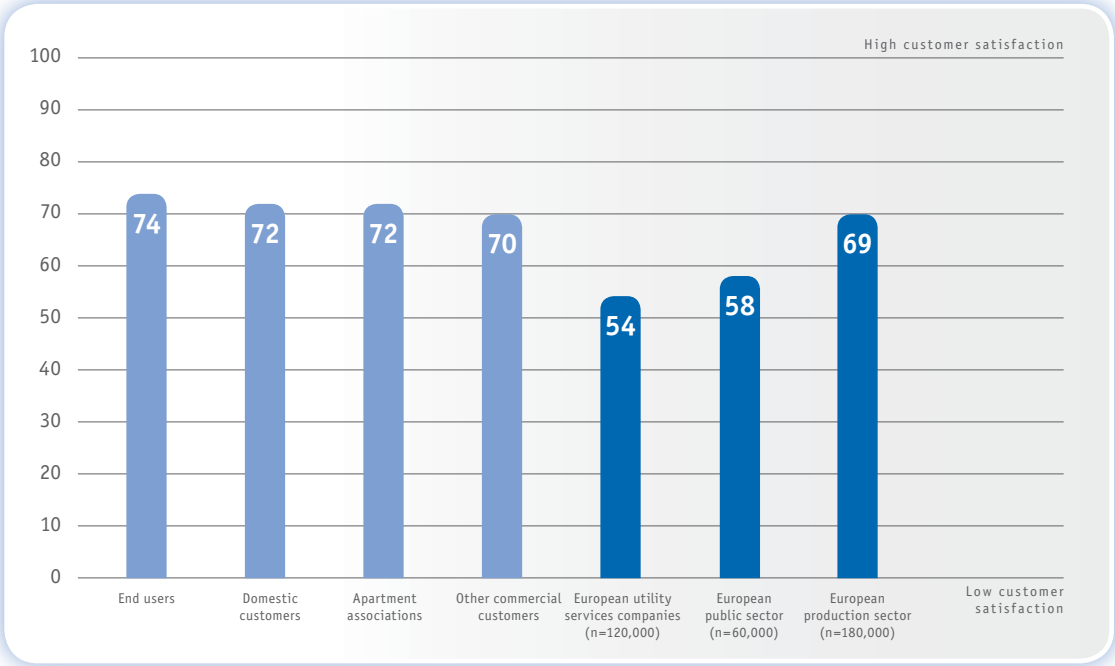
An independent market research company TNS Emor carried out a customer satisfaction survey, conducting phone interviews with 901 customers and end users regarding their satisfaction with the customer service of the Company in 2011. Satisfaction was measured on the basis of the TRI*M method developed by the research company to characterise the strength of customer relationships and to allow comparison with other companies. This model focuses on three elements:

• TRI*M index, which measures the strength of customer relationships and comprises further four elements – general satisfaction, recommendation, repeated use and usefulness/necessity of services products;
• TRI*M typology of customer relationships, describing the satisfaction and loyalty of customers;

• TRI*M grid analysis to highlight the strengths and weaknesses of a company.

The Company scored an average of 72 points among its customers and end users in the final TRI*M index of the customer satisfaction survey on a scale of 100. Thus the satisfaction of end users and customers has levelled off compared to 2010. The results of the survey show that the customer relationships continue to be strong in all customer segments in the Company, being at a uniform high level of 70-75 points in the TRI*M index.

SATISFACTION AMONG COMPANY'S CUSTOMERS AND END USERS IN 2011



Compared to other utility companies in Europe, the Company's customer relationships can continuously be considered to be very good. This means that customers are more satisfied with their service provider. The strength of customer relationships and customer satisfaction are first and foremost influenced by the quality of services, primarily the quality of drinking water, stability of service, the condition of infrastructure, the price of the service, and reputation of the Company, as well as the handling of problems and customer communications. The strength of customer relationship is also affected by the necessity of the service.

Generally, customer satisfaction has remained on a more or less same level compared to 2010. Positive movements can be highlighted in single areas. At the same time, dissatisfaction of the customers living in private houses with the handling of problems has grown. Water quality and stability of service can be pointed out as the main strengths. The price/quality relationship continues to require further attention in the eyes of both private and commercial customers.

The results of the survey give grounds to set more challenging objectives to the speed of eliminating emergencies and prevention of leakages.

Customers of the Company are satisfied with different service channels, the use of which, mainly the web-self-service but also the other electronic channels, follows a growing trend. The survey also shows that customers' satisfaction with the Company's contribution to the saving of natural environment and increasing consumer awareness continues to grow year on year.

CUSTOMER SATISFACTION WITH DIFFERENT ASPECTS OF SERVICES 2010-2011

On a scale of 5	Commercial customers		Private customers	
	2010	2011	2010	2011
Taste of water	3.8	3.8	3.9	4.1
Odour of water	3.9	4.0	4.0	4.2
Clarity of water	3.9	4.0	3.9	4.2
Stable water pressure	3.9	4.0	3.8	3.9
Low number of emergencies and interruptions	4.0	4.1	4.1	4.1
Price/quality relationship	2.7	2.8	2.8	3.0
Accuracy and clarity of invoices	4.2	4.3	4.2	4.3
Customer Information line	3.7	3.9	4.0	4.0
Communication by e-mail	4.1	4.2	4.0	4.1
Self service	3.8	3.8	3.9	3.8

Development of customer service

The Company considers it extremely important to continue focusing on the issues associated with the handling of problems. As per the results of the survey there are deficiencies in the speed of problem solving, suitability of solution, carrying out what has been promised and keeping the customer posted about the course of actions. Acting on the basis of the 2011 a customer satisfaction survey results, the Company contributed to continuous improvement also during the last year. The main activities in 2011 were as follows:

- Since August 2011, the Company automatically pays a compensation to customers upon failing a promise;
- In March, the Company amended the process of responding to written customer contacts. As a result of that above 95% of written requests are resolved within two working days and the average speed of responding to information requests was less than one working day.
- In order to ensure that the customers get informed of the time of Company's actions, inter-departmental cooperation was reorganised. This enabled to increase the proportion of informed customers significantly.
- The Company started a campaign "Cheers to nature – ask for tap water" together with several restaurants in Tallinn with the aim to encourage people to drink tap water with their meal.
- In order to reduce inconveniences experienced by customers due to interruptions to water supply, the Company notified the most of its customers of emergency water interruptions which took place during working days and –time.

ENVIRONMENTAL MANAGEMENT SYSTEM

The Company`s environmental activity is in compliance with the requirements of the international environmental management standard ISO 14001 and EU Eco Management and Audit Scheme (EMAS) Regulation.

The environmental management system forms a part of the Company`s management system, the objective of which is to avoid or at the least minimise environmental pollution via integrating the environmental management system elements into the daily activities of the Company.

The basis for the environmental management system is the identification of both negative and positive significant environmental aspects and impacts which form the basis for determining the Company`s environmental objectives and tasks for improving performance. Significant environmental aspects are those different facets of the Company`s activities, which, in contact with the surrounding environment, have the most serious consequences for the natural environment, the quality of life and the Company´s business activities.

An overview of the significant environmental aspects of the Company, their actual or potential environmental impact, the accompanying environmental objectives and tasks as well as progress against the objectives is presented in the next chapters of this Environmental Report.

Management of the environmental system has been established in accordance with the Company´s structural scheme, described on the page 13. The main responsibility for ensuring and improving the functioning of the environmental management system lies with the senior management and the heads of structural units. Unit managers involve their employees in setting and fulfilling environmental objectives and tasks.

COMPLIANCE OF THE ACTIVITIES WITH ENVIRONMENTAL REQUIREMENTS

SIGNIFICANT ENVIRONMENTAL ASPECTS	IMPACTS
Environmental management systems implemented Improvement activities carried out	Improvement of environmental performance, enhancement of cooperation with stakeholders
2011 OBJECTIVES AND TASKS	
To ensure compliance with regulatory requirements and requirements of the Services Agreement -	
To ensure the awareness of sub-contractors about significant environment related aspects of the Company +	

ENVIRONMENTAL LEGISLATION

The minimum requirement of environmental management system is compliance with environmental legislation. All improvements to the environmental management system must also be in accordance with the requirements and restrictions set out in applicable legislation.

To a large extent the Company´s environmental activities are regulated by requirements arising from EU as well as national and local government legislation.

Amongst these the Water Act, the Public Water Supply and Sewerage Act, the Waste Act, the Chemicals Act, the Ambient Air Protection Act and regulations adopted on the basis thereon have the most significant impact on the Company. In order to meet the minimum requirements, the Company systematically monitors the relevant environmental legislation and amendments thereto. Each month the area of the Company´s activities affected by the amendments are determined and the managers responsible for the particular areas are notified thereof. Managers of the respective areas ensure that the required changes are carried out.

In 2011 the Company actively participated in the approvals round of the new draft acts related to water economy and environment mainly via Estonian Water Works Association, by submitting its opinions and making amendment proposals with regard to the draft legislation under discussion. With Estonian Water Works Association the Company has participated in the working groups for developing legislation related to water economy and environment and expressed its opinion with regard to draft legislation directly to the institutions processing the draft legislation (Ministry of Environment, Ministry of Justice, Ministry of Economic Affairs and Communications).

Draft act on the amendment to the PWSSA, Ministry of Environment regulation "Procedure on discharging waste water into water bodies or soil" related to wastewater treatment and the draft legislation for amending the Metrology Act can be highlighted amongst the significant draft legislation, in regard to which the Company actively made preliminary work.

ENVIRONMENTAL PERMITS

The Company must act in accordance with the conditions set out in the environmental permits issued to the Company. The main licensing authority for the Company is the Environmental Board's Harju-Järva-Rapla regional department, who has issued the following environmental permits to the Company as until 31.12.2011:

- 4 special use of water permits (details on page 37);
- 2 waste permits (details on page 64);
- 2 ambient air pollution permits (details on page 74).

In 2011 the Company operated in accordance with the conditions established in the valid environmental permits in all aspects. Issues related to the environmental permits were solved in cooperation with the Environmental Inspectorate and the Environmental Board of Harju County. In 2011 the level of manganese increased in the water of Lake Ülemiste (in raw water). As the water treatment process has not been designed for removing specifically manganese, then in case of extraordinary weather conditions the level of manganese may increase above the indicatively allowed level. As a result of the measures implemented, the content of manganese was considerably reduced within water treatment process - the level of manganese was constantly monitored. With the melting of the ice water was saturated with oxygen and the level of manganese was quickly normalised. As the limit value of manganese has been set as an indicator and it does not have any consequences of health risk, then the Company informed the Heath Board about the situation, explained the measured implemented and asked for a permission to continue supplying water. This permission was granted with the letter No 9.2-3/3885 of 02.05.2011 from the Health Board. The Company does not have any outstanding commitments arising from the above to the state.

REQUIREMENTS OF THE SERVICES AGREEMENT

Besides legislation, the activities of the Company are also regulated by the Services Agreement concluded between the Company and the City of Tallinn for ensuring 97 Levels of Services. Performance of the Service Agreement is supervised by the Supervisory Foundation for the Water Companies in Tallinn, appointed by the local government, to whom the Company annually submits a detailed report on compliance with the requirements of the Service Agreement.

96 Levels of Service out of 97 were met in 2011, exceeding the agreed objectives with regard to several levels of service, i.e. achieving a better result than the minimum required by the law or agreement. The only level of service, which the Company did not manage to fulfil in 2011, concerned interruption to supply, which lasted longer than 12 hours (in one case it took longer than 12 hours to eliminate the emergency). Average duration of an interruption to water supply of customer per hour has reduced from 4.62 to 3.14 compared to 2010. Reduction in the duration of water interruption was conditioned by planning the emergency works in advance.

REQUIREMENTS TO CONTRACTUAL PARTNERS

Considering the requirements set for the Company, the Company also requires it’s suppliers to meet environmental and work environment requirements.

To ensure the above, the Company has established environmental and work environment criteria for the qualification of suppliers in its procurement procedures. Bidders for

construction works must confirm, that they apply health and safety and environmental protection measures at the construction sites.

Company's employees as well as the supervision staff of the Company's subsidiary OÜ Watercom monitor the suppliers' activities with regard to health and safety and environment at sites. After the term of the contract the supervision staff assesses the activities of suppliers in ensuring compliance with the requirements in case of larger contracts (construction works starting from 65,000 euros, other services starting from 15,000 euros). In 2011 the average assessment given to the environmental activities of the suppliers was 4.81 on a scale of 5 points, which can be considered as a very good result.

In order to improve the awareness of suppliers, opening meetings were carried out for all construction and reconstruction sites in 2011 (except for the constructions of individual connection points). The aim of the opening meetings was to additionally introduce to the contractors the Company's objectives, contractual requirements, construction norms and the quality, environment and occupational safety requirements applicable to the Company before the commencement of the construction works.

MANAGEMENT SYSTEM CONTROL AND AUDITS

In 2011 several authorities monitored the compliance of Company's activities, incl. environmental activities, with the requirements. Assessments and precepts related to environment or work environment were issued by the Transport Department of the City of Tallinn, the North-Estonian Regional Rescue Centre and The Estonian Technical Surveillance Authority. The Company has presented its solutions for the received precepts, which have been approved by the authorities.

In addition to supervisory authorities, the Company´s compliance with environmental legislation and Services Agreement requirements as well as with other intra-Company requirements is also monitored in the course of internal and external audits of the management system.

In the course of internal audits carried out in 2011 the internal auditors put forward a total of 43 non-conformities and 64 proposals, which formed a good source of management system improvement ideas for the managers.

In 2011 recertification external audits were carried out in the Company by accredited certifier Det Norske Veritas in order to evaluate the compliance of the management system with the requirements of ISO 9001, ISO 14001, OHSAS 18001 standard and with the EU (EMAS) Regulation 1221/2009.

As a result of external audit Det Norske Veritas confirmed the compliance of the management system and the compliance of EMAS Report with the abovementioned requirements and issued new management system compliance certificates for the next 3-year period. During the external audit no non-conformities to the requirements of ISO standards were discovered.

There were 4 minor non-conformities in EMAS. On the basis of the compliance certificate of the EMAS Report, the Estonian Environment Information Centre issued to the Company the compliance certificates for environmental management and environmental auditing system.

COMPANY'S ECOLOGICAL FOOTPRINT*

The basis for the calculation of ecological footprint is land as a limited resource, which people use for satisfying their needs. The surface of the globe is divided into categories:

- Bioproductive land (arable land, pasture and woodland);
- Bioproductive sea (main territory for fishing);
- Energy land (land required for the producing energy and distribution systems);
- Built land (buildings, roads, etc);
- Biodiversity (unspoilt nature);
- Other land (rocks, deserts, etc).

Ecological footprint is a measure of human demand for the use of natural resources for its activities. Ecological footprint assesses the use of room accompanying the lifecycle of a product or service and can be measured in hectares per year (hereinafter ha per year). The Ecological Footprint Index demonstrates how much water and productive land is occupied for producing using and absorbing materials to be consumed.

In the calculation of a company's ecological footprint, two simple matters of fact are taken as the basis:

- It is possible to monitor and detect the majority of the resources, which the company consumes and several outputs produced;
- It is possible to measure the majority of the resources and waste flows in terms of biologically productive area, which is required for producing these resources and for disposing and neutralising waste.**

Ecological footprint factor*** is a conversion unit, which helps to equalize the measured source data so that the result would be easily understandable and comparable.

**According to the Estonian Fund for Nature (hereinafter EFN), the method of ecological footprint is one of the best and globally increasingly more used method, which enables in a complex manner to assess the impact of the activities of organisations and states to the environment.*

*** The load of the states to the ecosystems from "Ecological Footprint of Nations", 1997, page 32.*

**** Ecological footprint factors were taken from the book by Chambers et al "Sharing Nature`s Interest" 2000 available in the library of EFN).*

ENVIRONMENTAL IMPACT MEASURED ON THE BASIS OF THE ECOLOGICAL FOOTPRINT METHOD

11* different components** have been taken into account in the calculation of the ecological footprint (details on page 72), which correspond to the products and services used or produced

in the Company's activity. Components have respectively been divided between five fields (water, waste, electricity, heating, transport). In order to get a better comparison, the ecological footprint per one employee has been pointed out separately. It must be emphasised that it is fair to compare the ecological footprints per person of various companies only in case the companies provide similar products or services and the ecological footprint has been calculated for the same indicators.

**Before was 12 components – transport for people and transport of goods. Now we don´t see these types of transport separately.*

***These components have been taken into account for the calculation of which there is a respective factor.*

TREATMENT PROCESSES

WATER TREATMENT PROCESS

1. Surface water is gathered to Lake Ülemiste and directed to Ülemiste Water Treatment Plant.
2. Raw water passes through screens and microfilters, which remove algae and plankton from the water.
3. Water is led into reservoirs, where a mixture of ozone in air is injected into the water to deactivate microorganisms and oxidize organic substances.
4. A water treatment chemical coagulant is added to clarify the water.
5. During the clarification phase particulate matter, chemical flocs and precipitates are removed from the water.
6. Water passes through filters. In summer, dependent on the quality of raw water coming into the plant, activated carbon may be added in order to remove any remaining particles and to improve the taste of the drinking water.
7. Chlorine is added to the water for disinfection purposes.
8. The water is directed to drinking water reservoirs, from which it is pumped to the city water network in accordance with demand.

WASTEWATER TREATMENT PROCESS

1. Wastewater collected through the sewerage network is directed into the Main Pumping Station. Storm water is also collected into the combined sewerage system and directed to the Main Pumping Station.

2. Storm water collected in the areas of separate sewerage network is led to the storm water outlets through a separate storm water network.

3. In the mechanical treatment stage, the wastewater is screened to remove larger solids and the grit removal tanks remove grit and sand from the wastewater.

4. Smaller solid particles are removed in the primary sedimentation basins, formed sludge is removed from the process.

5. Coagulant is added to the wastewater for the chemical treatment of the phosphorus.

6. For the biological treatment the wastewater is conducted to the aeration tanks where the vital activity of various bacteria helps to remove nitrogen and biologically decomposing substances from the wastewater. To ensure a living environment suitable for the bacteria and to make their work more efficient, air and additional carbon in the form of methanol is injected.

7. Activated sludge that has formed in aeration tanks is settled in the secondary sedimentation basins.

8. Additional volume of nitrogen and biodegradable pollutants are removed from wastewater in biofilter as a result of the vital processes of the bacteria. Additional carbon in the form of methanol is added to increase the efficiency of the work of the bacteria.

9. Treated wastewater i.e. effluent is pumped via a deep sea outlet into the sea.

10. Sludge removed during the different phases of the treatment process is pumped to the sludge treatment plant.

11. Sludge is digested and stabilised in anaerobic digesters where bacteria make the organic matter decompose.

12. The biogas created in the course of anaerobic sludge digestion is used for the technological process and heating in the plant.

13. The stabilised sludge is dried and mixed with peat.

14. The outcome – sludge mixture with high nutrient content - is used in cultivation.

DRINKING WATER QUALITY

SIGNIFICANT ENVIRONMENTAL ASPECTS	IMPACTS
Opportunity to connect the water network	Maintaining and improving the quality of life and the status of the environment
Compliance with drinking water requirements	Retaining and improving quality of life
Non-compliant drinking water in Maardu area	Danger to population's health

2011 OBJECTIVES AND TASKS
To replace at least 5 km of the depreciated water pipeline +
To ensure compliance of drinking water quality with the SM 82 regulation over 99,31% at customers premises in all activity areas (excl Maardu) +

Customer satisfaction survey has demonstrated that drinking water quality is one of the main factors influencing customer satisfaction. (See more details on page 17)

Drinking water quality must comply with the Minister of Social Affairs Decree No 82 from 31 July 2001 " Quality and Control Requirements and Analysis Methods for Drinking Water" (hereinafter referred to as Decree No 82) that originates from the Estonian Water Act and the European Union Drinking Water Directive 98/83/EC.

The Company has a detailed Drinking Water Quality Monitoring Programme for 2010-2013, approved by the Northern Department of the Health Board, which includes separate quality control requirements set for the water treatment plant, the ground water system and the city network. The named programme details the frequency of taking samples and the parameters to be determined.

Conditions of ground water usage have been determined in the permits for special use of water HR01037 (L.VV.HA-171414), HR1112 (L.VV.HA-194367), HR0960 (was valid until 06.11.2011), HR0961 (was valid until 06.11.2011), HR0885 (was valid until 31.10.2011), HA0382 (L.VV/320972) and HA1106 (L.VV/320980) issued to the Company. Although the usage of ground water is limited by water permits, it is possible to cover the ground water demand and still have sufficient reserves to replace partially some of the surface water supply in case there should be any problems with regard to the drinking water supplied from Ülemiste Water Treatment Plant.

Drinking water quality analyses are carried out by the Company's water laboratory, which is accredited on the basis of the internationally recognised ISO 17025 standard. In 2011 the water laboratory and microbiology laboratory performed a total of 83,000 analyses.

TREATED WATER QUALITY AT ÜLEMISTE TREATMENT PLANT

In 2011 the treated water quality at Ülemiste Water Treatment Plant was compliant with the requirements of Decree No 82, as provided in the table on page 34. The quality of drinking water is mostly ensured by the quality of surface water and the effectiveness of the treatment process.

SURFACE WATER QUALITY

In 2011 the quality of raw water taken into the treatment system complied with the class A2 requirements of the European Council Directive 75/440/EC. To ensure compliance, the raw water quality indicators are checked once per day at the intake to the treatment system.

Raw water pollution indicators, such as total phosphorus and total nitrogen, are checked once per week. Additionally, a detailed in-depth analysis of raw water is carried out once per month in accordance with the Drinking Water Quality Monitoring Program.

Surface water quality is dependent on weather conditions – e.g. precipitation and thaw water, but also on the geographical conditions of the catchment area – moors, wetlands, areas of karst and forest, etc.

In 2011, the permanganate oxygen demand was slightly lower compared to 2010. Water colour indicators in raw water were slightly higher in 2011 compared to 2010.

PERMANGANATE OXYGEN DEMAND IN RAW WATER 2007–2011

mg/l	2007	2008	2009	2010	**2011**
COD_{MN}	9.3	9.3	10.2	9.7	**9.4**

RAW WATER COLOUR 2007–2011

degrees	2007	2008	2009	2010	**2011**
Colour	43	45	53	54	**56**

DRINKING WATER QUALITY IN ÜLEMISTE WATER TREATMENT PLANT 2007–2011

Parameter	Unit	Average results					Decree no 82 EU directive 98/83/EC
		2007	2008	2009	2010	**2011**	
Odour	points	1	1	1	1	**1**	Acceptable to consumer
Taste	points	1	1	1	1	**1**	Acceptable to consumer
Turbidity	NTU	0.10	0.13	0.11	0.12	**0.11**	1.0
Colour	Pt mg/l	2	3	3	2	**3**	Acceptable to consumer
Dry residue	mg/l	276	274	280	263	**258**	
pH		7.36	7.36	7.33	7.31	**7.30**	6.5 – 9.5
Conductivity	µS/cm	438	441	435	373	**366**	2,500
Alkalinity	mg-ekv/l	2.72	2.70	2.80	2.76	**2.83**	
Total hardness	mg-ekv/l	4.15	4.16	4.14	3.95	**3.87**	
Temporary hardness	mg-ekv/l	2.72	2.70	2.80	2.76	**2.83**	
Permanent hardness	mg-ekv/l	1.44	1.45	1.35	1.20	**1.07**	
Permanganate index (COD Mn)	mg O_2/l	3.2	3.2	3.3	3.0	**3.0**	5.0
Total organic carbon (TOC)	mg/l	6.2	5.9	6.0	6.0	**5.9**	Without unusual changes
Free CO_2	mg/l	14	14	16	16	**16**	
Carbonates CO_3^{2-}	mg/l	0	0	0	0	**0**	
Bicarbonates HCO_3^-	mg/l	165	166	171	168	**171**	
Chlorides Cl^-	mg/l	25.5	26.8	26.8	26	**25.1**	250
Sulphates SO_4^{2-}	mg/l	46.2	40.1	34.0	28	**25**	250
Orthophosphates PO_4^{3-}	mg/l	<0.01	<0.01	<0.01	<0.01	**<0.02**	
Fluoride F^-	mg/l	0.10	0.09	0.07	0.08	**0.09**	1.5
Nitrates NO_3^-	mg/l	3.4	3.3	2.7	1.9	**2.9**	50
Ammonium NH_4^+	mg/l	0.003	0.003	0.003	0.005	**<0.006**	0.50
Calcium Ca	mg/l	67.3	70.3	68.2	65	**65.7**	
Magnesium Mg	mg/l	8.5	8.1	7.8	7.15	**7.3**	
Total iron Fe	µg/l	<10	<10	<10	<10	**<10**	200
Manganese Mn	µg/l	3.0	2.5	6.7	12.5	**13.2**	50
Aluminium Al	µg/l	82	93	95	108	**101**	200
Sodium Na	mg/l	6.7	7.1	6.8	6.1	**6.6**	200
Potassium K	mg/l	2.6	2.7	2.8	2.7	**2.8**	
Chromium Cr	µg/l	0.50	0.66	0.56	0.62	**0.65**	50
Copper Cu	µg/l	0.67	0.96	0.33	0.42	**0.4**	2,000
Mercury Hg	µg/l	0.02	<0.05	<0.05	<0.05	**<0.1**	1
Lead Pb	µg/l	0.03	0.05	0.02	0.01	**<0.02**	10
Selenium Se	µg/l	<0.4	<0.4	<0.4	<0.4	**<0.7**	10
Zinc Zn	µg/l	0.41	0.59	0.18	0.30	**0.51**	
Acrylic Amide	µg/l	0.014	0.015	0.016	0.016	**0.014**	0.10
Chloroform	µg/l	20	20	21	25	**24**	
THM	µg/l	25	26	26	30	**29**	100*
Enterococh	CFU/100ml	0	0	0	0	**0**	0
No of colony forming units at 22°C	CFU/ml	3	1	0	0	**0**	Without unusual changes
Coliform bacteria	CFU/100ml	0	0	0	0	**0**	0
Escherichia coli	CFU/100ml	0	0	0	0	**0**	0
Clostridium perfringens	CFU/100ml	0	0	0	0	**0**	0

** Trihalogenmethane (THM) permitted level decreased from 150 to 100 from 01.01.2009 by EU directive 98/83/EC and Decree no 82*

ÜLEMISTE SANITARY PROTECTION ZONE

Lake Ülemiste is the drinking water source for Tallinn and thus, pursuant to the Water Act, it is not a public water body. Taking into account the requirements set for the water quality of a lake used as a drinking water resource and the need to ensure that these are also met in the future, a sanitary protection zone of Lake Ülemiste catchment area was approved in 2009. The sanitary protection zone shall include the lake, the water catchment facilities thereof, the bank reinforcement facilities and the area surrounding the lake, which must be kept in its natural condition. Under the Water Act, entry into the sanitary protection zone is permitted only for persons performing duties related to environmental supervision and health protection, servicing of water intake facilities and forest maintenance, mowing of grass plants and water monitoring.

EFFICIENCY OF THE WATER TREATMENT PROCESS

Requirements established with regard to raw water quality are the basis for the design of the treatment process. Based on the quality of surface water in Lake Ülemiste the use of physicochemical treatment – prechlorination, coagulation, sedimentation, filtering and disinfection - is foreseen by legislative acts for ensuring the quality of drinking water. The treatment process in Ülemiste Water Treatment Plant is more efficient than prescribed by the compulsory requirements, as ozonation, which ensures the high quality of drinking water more effectively, is used instead of prechlorination and preliminary filtration. Moreover, ozon is an environmentally friendlier and safer chemical than chlorine.

During the last year the filter material was replaced in three filters. In one of these a thorough maintenance of the filter up to the bottom was carried out. Filter nozzles were cleaned, new supporting layers were formed and the filter was filled with new sand and anthracite. Maintenance significantly improved the work of the filter. At the same time this showed the need to perform the same works with other filters, which has also been planned. Post chlorination points were renewed in the Water Treatment Plant, an outflow valve was installed for clean water reservoir No 5. These measures enable to control the quality of chlorination in the Water Treatment Plant more efficiently. At the end of the year new water meters were installed to the clarifiers in B-building. This provides a better control over the water treatment process. Reconstruction works were commenced at the substation located in the microfilter building, and during these works the entire high-voltage and low-voltage

switchyard was renewed, the reliability of the equipment was improved and the substation was brought into compliance with the valid requirements.

In connection with an exceptionally long winter with large volume of snow, there was an oxygen shortage in Lake Ülemiste. The Company implemented additional measures, such as flooding additional raw water through the lake, switching Kuma wetland off the work, which to some extent mitigated the situation. Due to oxygen shortage the anaerobic processes intensified in the lake's bottom layer, and the manganese included in the sediment started to dissolve into the raw water. In 2011 the level of manganese increased at the intake to the Water Treatment Plant 90 µg/l and at the farther part of the lake to 120 µg/l.

Although in raw water the allowed level is higher; in water of quality class II it may be up to 100 µg/l and in water of quality class III it may even be 1000 µg/l, in drinking water the allowed level of manganese is 50 µg/l. As the water treatment process has not been designed for removing specifically manganese, due to weather conditions this may turn into a problem. The level of manganese in the raw water of Water Treatment Plant was 71.1 µg/l in March and 90.6 µg/l in April. Nevertheless, the water treatment process managed to reduce the content of manganese considerably and only in April for a short period the level of manganese increased to 56.1 µg/l. The level of manganese was constantly monitored and after the ice melted and water was saturated with oxygen, the level of manganese quickly reduced below the critical level. As the limit value of manganese has been set as an indicator and it does not have any consequences of health risk, AS Tallinna Vesi immediately informed the Heath Board about the situation and asked for a permission to continue supplying water. As the processes were caused by exceptional weather conditions and the exceeding of the limit was short-term, the Health Board accepted the situation.

GROUND WATER QUALITY

Approximately 10% of consumers in Tallinn, in the districts of Nõmme, Pirita, Merivälja, Laagri and Tiskre, are supplied with water produced from the Cambrian-Vendi or Cambrian-Ordovician aquifers. Ground water is also used in the Saue City, Maardu City and the Harku Rural Municipality.

In 2011, the quality of drinking water at the borehole pumping stations complied with the requirements of Decree No 82 of the Minister of Social Affairs and the parameters deriving therefrom, which are presented in the table on page 34. There were no cases of ground water pollution or potential pollution in 2011, demanding notification to the City and the Health Board.

Pursuant to the requirements established in the permits for special use of water and the drinking water quality monitoring programme, the Company monitors all quality parameters, which are of decisive importance in evaluating the condition of the ground water.

Water samples are taken from all boreholes that are in use in order to carry out a detailed chemical analysis. In addition to the full chemical analysis required by the permit for the special use of water, the Company also studies the content of 12 micro-components and analyses the water from both the Cambrian-Vendi and the Cambrian-Ordovician aquifer. The Company additionally partially monitors ground water for substances listed as dangerous to the water environment in the Water Act, e.g. the content of mercury, antimony, arsenic, cadmium, boron, barium and others. In addition, the Company studies the quality of treated ground water (content of iron, manganese, ammonium) in 21 ground water pumping stations.

According to the Water Framework Directive (Directive 2000/60/EC), the qualitative or chemical condition of ground water is regarded to be good if the concentration of pollutants does not indicate an inflow of salty water or other water and does not exceed the respective quality standards.

The natural radioactivity of Estonian ground water has been thoroughly studied by the Geological Survey of Estonia as well as the Estonian Radiation Centre. The results of these studies have shown that the majority of ground water samples from the Cambrian-Vendi aquifer do not meet the levels stipulated in the Estonian regulation.

In relation to the radionuclides content in the ground water in Estonia, the Health Board carried out a health risk assessment in ground water areas (incl. Nõmme, Maardu, Saue, Tiskre, Pillado, Pirita, Merivälja, Pärnamäe) in 2010. Based on the results of the risk assessment, any health damage of accidental nature resulting from the content of radionuclides in the water is unlikely. According to the opinion of the Health Board there is no need to apply supplementary measures in Tallinn to reduce the content of radionuclides in drinking water.

Additional information on this topic is available on the website of the Health Board and the relevant information is also available on the Company's website.

GROUND WATER TREATMENT

The ground water used for producing drinking water is of quality classes I-III. Quality class I water needs no treatment – all Ordovician-Cambrian aquifer boreholes in Nõmme fall under this category. Ground water from the Cambrian-Vendi aquifer, which forms the main part of ground water used as a source of drinking water, mostly falls under quality classes II and III and needs respective treatment. Water quality classes II and III are usually caused by an

excessive iron, manganese and ammonium content and the non-compliance of colour with the raw water requirements.

The Company uses filters and aeration as ground water treatment methods to ensure the compliance of drinking water with requirements. Pressure filters have been installed to ground water borehole-pumping stations for the removal of excess iron and manganese. Raw ground water is aerated and filtered in the pressure filters, no chemicals are used. Water samples taken show that treatment reduces water turbidity, iron and manganese content, improves colour and the stability index and increases the content of oxygen in the water.

The mixing of water from the two aquifers is also used for improving water quality.

The Company's monitoring data are used in national ground water monitoring when evaluating the condition of ground water quality in the region of Tallinn.

GROUND WATER QUALITY IN PUMPING STATIONS (EXCL. MAARDU CITY) 2007-2011

Parameter	Unit	Average results					Decree no 82 EU directive 98/83/EC
		2007	2008	2009	2010	**2011**	
Odour	points	1.1	1.02	1.12	1	**1**	Acceptable to consumer
Taste	points	1	1	1	1	**1**	Acceptable to consumer
Temperature	°C	8.9	8.3	7.75	8.4	**8.9**	
Colour	mg Pt/l	4.56	3.69	4.17	3.6	**4**	Acceptable to consumer
Turbidity	NTU	0.46	0.37	0.45	0.5	**0.48**	Acceptable to consumer
Dissolved O_2	mg/l	5.3	6.6	6.5	5.4	**5.4**	
pH	pH unit	8	8	7.99	8.00	**8.05**	>6.5 and <9.5
Conductivity	µS/cm	568	596	594	518	**493**	2,500
Permanganate index (COD Mn)*	O_2mg/l	0.7	0.75	0.75	0.7	**0.66**	5.0
Total organic carbon	mg/l	1.0	0.8	0.72	0.7	**0.75**	Without unusual changes
Alkalinity	mg-ekv/l	2.51	2.52	2.54	2.49	**2.52**	
Total hardness	mg-ekv/l	3.27	3.51	3.57	3.4	**3.23**	
Temporary hardness	mg-ekv/l	2.49	2.50	2.52	2.5	**2.49**	
Permanent hardness	mg-ekv/l	0.78	1.01	1.05	0.9	**0.75**	
Free CO_2	mg/l	3	3	3.39	3.5	**3**	
Total iron Fe	mg/l	0.05	0.02	0.055	0.05	**0.056**	0.2
Fluoride F^-	mg/l	0.58	0.61	0.61	0.59	**0.61**	1.5
Manganese Mn	mg/l	0.024	0.009	0.0169	0.014	**0.014**	0.05
Ammonium NH_4^+	mg/l	0.143	0.114	0.127	0.135	**0.124**	0.5
Nitrites NO_2^-	mg/l	0.012	0.009	0.0114	0.022	**0.013**	0.5
Nitrates NO_3^-	mg/l	0.731	0.743	0.788	0.75	**0.8**	50
Stability index		0.15	0.14	0.14	0.09	**0.22**	
Sulphides S_{2-}	mg/l	0.004	0.005	0.0045	0.005	**0.004**	
Dry residue	mg/l	307	324	346	312	**304**	
Calcium Ca	mg/l	47	50	50	47	**45**	
Magnesium Mg	mg/l	12	13	11	12	**12.1**	
Sodium Na	mg/l	42	43	47.4	41	**43.3**	200
Potassium K	mg/l	6.7	6.7	7.12	6.8	**6.88**	
Sulphates SO_4^{2-}	mg/l	14	19	18.5	20	**18.4**	250
Bicarbonates HCO_{3-}	mg/l	152.9	153.6	154.9	152	**153.5**	
Chlorides Cl^-	mg/l	90.1	101	89	83	**82.8**	250
Boron B	mg/l	0.17	0.17	0.1558	0.17	**0.176**	1
Aluminium Al	µg/l	0.91	1.27	2.843	1.03	**0.91**	200
Arsenic As	µg/l	0.09	0.10	0.106	0.11	**<0.1**	10
Cadmium Cd	µg/l	<0.01	<0.01	0.01	0.02	**0.01**	5
Chromium Cr	µg/l	0.45	0.58	0.5	0.45	**0.50**	50
Copper Cu	mg/l	0.0045	0.0064	0.0067	0.0056	**0.0033**	2
Mercury Hg	µg/l	<0.02	<0.05	<0.05	<0.05	**0.06**	1
Nickel Ni	µg/l	1.81	2.40	2.1	1.24	**1.0**	20
Lead Pb	µg/l	0.13	0.41	0.325	0.23	**0.14**	10
Antimony Sb	µg/l	0.009	0.01	0.01	0.02	**0.02**	5
Selenium Se	µg/l	0.44	0.4	<0.4	0.58	**0.51**	10
Enterococci	CFU/100ml	0	0	0	0	**0**	0
No of colony forming units at 22°C	CFU/ml	13	5	12	9	**6**	Without unusual changes
Coliform bacteria	CFU/100ml	0	0	0	0	**0**	0
Escherichia coli	CFU/100ml	0	0	0	0	**0**	0

** Minister of Social Affairs Decree No 82 does not establish a requirement to determin e COD in drinking water, provided that total organic carbon has been determined. The listed indicator has been determined in the drinking water sources and the content of that does not change after going through filters.*

Sampling for dry residue, potassium, sulphate, sodium, boron, aluminium, arsenic, cadmium, chromium, copper, mercury, nickel, lead, antimony, selenium and magnesium have not been required by the Decree No 82. However, the listed substances have been determined in the drinking water sources and the content of these does not change after going through filters.

The Company started operating the assets of Maardu City water company on July 1st 2009. This gives the residents of Maardu the opportunity to access Company's fully EU compliant water. In September 2011 the water supply in the City of Maardu was partially transferred to Ülemiste surface water and as at the end of the year only Muuga area was with constant ground water supply.

GROUND WATER QUALITY IN MAARDU PUMPING STATIONS 2009-2011

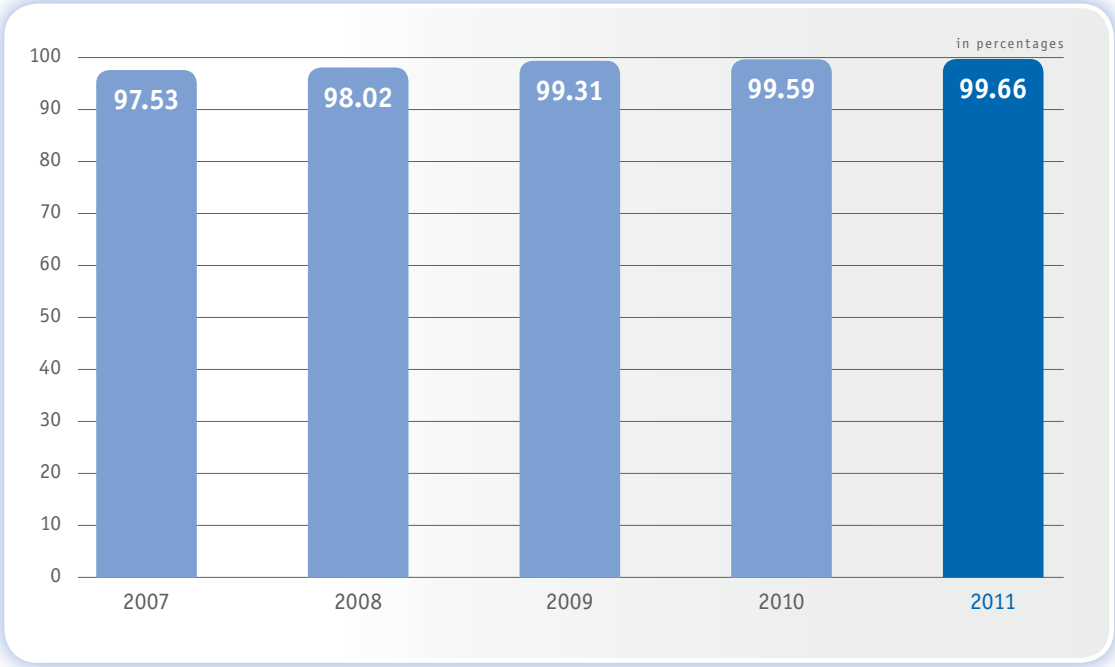
Parameter	Unit	Average results			Decree no 82 EU directive 98/83/EC
		2009	2010	**2011**	
Odour	points	1	1	**1**	Acceptable to consumer
Taste	points	1	1	**1**	Acceptable to consumer
Temperature	°C	8.2	8.5	**11**	
Colour	mg Pt/l	4	3.6	**4**	Acceptable to consumer
Turbidity	NTU	1.55	1.55	**1.91**	Acceptable to consumer
Dissolved O_2	mg/l	3.9	3.3	**3.1**	
pH	pH unit	7.96	7.99	**7.95**	>6.5 - <9.5
Conductivity	µS/cm	1159	1052	**918**	2,500
Permanganate index (COD Mn)	O_2mg/l	1.26	0.93	**1.17**	5
Total iron Fe	mg/l	1.16	0.165	**0.158**	0.2
Fluoride F^-	mg/l	0.38	0.415	**0.37**	1.5
Manganese Mn	mg/l	0.063	0.072	**0.068**	0.05
Ammonium NH_4^+	mg/l	0.462	0.511	**0.49**	0.5
Nitrites NO_2^-	mg/l	0.005	0.004	**0.004**	0.5
Nitrates NO_3^-	mg/l	0.5	0.53	**1.2**	50
Calcium Ca	mg/l	94.5	88	**101**	
Magnesium Mg	mg/l	17.3	17	**17.6**	
Sodium Na	mg/l	100.2	90	**101**	200
Potassium K	mg/l	10.2	10.4	**10.2**	
Sulphates SO_4^{2-}	mg/l	5	3.67	**5.72**	250
Chlorides Cl^-	mg/l	266	265	**305**	250
Boron B	mg/l	0.073	0.082	**0.06**	1
Aluminium Al	µg/l	0.84	1.88	**1.0**	200
Arsenic As	µg/l	<0.1	0.1	**<0.1**	10
Cadmium Cd	µg/l	<0.01	0.01	**<0.02**	5
Chromium Cr	µg/l	0.4	0.77	**0.39**	50
Copper Cu	mg/l	0.75	1.02	**0.002**	2
Mercury Hg	µg/l	<0.05	<0.05	**<0.1**	1
Nickel Ni	µg/l	0.67	0.74	**0.56**	20
Lead Pb	µg/l	0.08	0.135	**0.07**	10
Antimony Sb	µg/l	<0.01	0.01	**0.01**	5
Selenium Se	µg/l	<0.4	0.4	**<0.7**	10
Enterococci	CFU/100ml	0	0	**0**	0
No of colony forming units at 22°C	CFU/ml	21	4	**15**	Without unusual changes
Coliform bacteria	CFU/100ml	0	0	**0**	0
Escherichia coli	CFU/100ml	0	0	**0**	0

**Sampling for potassium, sulphate, sodium, boron, aluminium, arsenic, cadmium, chromium, copper, mercury, nickel, lead, antimony and selenium have not been required by the Decree No 82. However, the listed substances have been determined in the drinking water sources and the content of these does not change after going through filters.*

WATER QUALITY AT THE CONSUMERS PREMISES

The Company has monitored drinking water quality in compliance with Drinking Water Quality Monitoring Programme for 2010-2013 approved by the Northern Department of the Health Board. During 2011 the Company took samples twice a month from sampling points agreed with the Northern Department of the Health Board. A total of 2,921 samples were taken from the city water network during the year. In 2011, 99.66% of all samples taken, including 100% of microbiological samples, complied with the requirements of Directive 98/83/EU and Minister of Social Affairs Decree No 82.

COMPLIANCE OF THE QUALITY OF DRINKING WATER WITH THE REQUIREMENTS SET OUT IN MINISTER OF SOCIAL AFFAIRS DECREE NO 82 IN 2007-2011



WATER NETWORKS MAINTENANCE AND INVESTMENTS

Preventive works in the form of networks flushing and renovation of old water networks are carried out to maintain and improve the quality of drinking water used in the homes of the consumers. 151 km of water pipes were cleaned using the air-scouring method in 2011. Extraordinarily cold winter and high amount of snow constituted the main reason for a reduction in the volume of network cleaning compared to the previous years. Temperature below -10°C and a lot of snow make the works very difficult. During this cleaning process, air is directed into the water pipes where it mixes with water, helping to remove sediments from the walls of the pipes, which is one of the main methods for improving the water quality in distribution pipes.

CLEANED WATER NETWORK, 2007-2011

	2007	2008	2009	2010	2011
kilometers	227	229	232	165	**151**

Investments in replacing old water pipes and network extensions have facilitated improvement in water quality and more efficient usage of water resources. 5.1 kilometres of water pipes were renovated and 0.003km of new water pipes were constructed in 2011, providing an opportunity to connect to public water supply network for one property. AS Tallinna Vesi had agreed upon the networks extension programme with the City of Tallinn for the years 2008-2012 (final deadline 30.03.2012). The majority of works were done in 2008-2009. In 2011, very few works outstanding from previous periods were done.

WATER NETWORK RECONSTRUCTION 2007-2011

km	2007	2008	2009	2010	2011
Reconstructions	6.9	16.7	23.8	16.7	**5.1**

WATER NETWORK EXTENSIONS AND CONNECTION OPPORTUNITIES 2007-2011

	2007	2008	2009	2010	2011
Network extensions km	2.6	3.0	5.5	6.2	**0.003**
Number of new customers given access to water network	26	86	80	126	**1**

USAGE OF WATER RESOURCES

SIGNIFICANT ENVIRONMENTAL ASPECTS	IMPACTS
Interruptions to water supply	Decrease in the quality of life
Metered and provided drinking water	Overview of the consumption of water resources
Local floodings due to blockages and technical failures	Decrease in the quality of life and property damage

2011 OBJECTIVES AND TASKS
To use water resources sparingly +
To ensure compliance with regulatory requirements and requirements of the Services Agreement -
To effectively repair leakages on average in 60 hours or less +
To extend the use of online sensors for detecting leaks and zoning +

SPECIAL USE OF WATER

The activities of water undertaking in using water resources are regulated by the Water Act and its implementing provisions. For operating a water company must have a permit for special use of water and pay a fee for the water resource used.

The permit for special use of water defines different activities, for instance the amount of water that the Company may extract, water quality monitoring requirements, requirements set for calculation of water extracted, the permitted limits of pollutants contained in effluent, pollutants monitoring requirements and measures reducing the impact of special use of water.

All requirements established in the permits for special use of water were met in 2011.

The fee for special use of water is paid for the amount of water taken into Ülemiste Water Treatment Plant and for water pumped from ground water aquifers. In 2011 the fee for special use of water amounted to 3.47% of the operating costs.

VALID WATER PERMITS OF AS TALLINNA VESI

Permit	Valid until	Description of special use of water
Permit for special use of water No HR1112 (L.VV.HA-194367)	31.10.2013	**Harju County. Saue City** Extraction of ground water from boreholes, over 5 m^3/day. Collection of wastewater and directing wastewater to Paljassaare Wastewater Treatment Plant owned by AS Tallinna Vesi.
Permit for special use of water No HR01037 (L.VV.HA-171414)	01.04.2013	**Tallinn public water supply and sewerage system main operating area, Tallinn surface water catchment system facilities area in Harju and Järva Counties** Regulating surface water resources in water bodies of Ülemiste-Pirita-Jägala surface water system, water extraction from Lake Ülemiste, extracting ground water from Ordivician-Cambrian and Cambrian-Vendi aquifers through Tallinn public water supply and sewerage system boreholes, for discharging biologically treated effluent through a deep-sea outlet pipe into Tallinn Bay and for discharging mechanically treated storm water into the sea, Mustjõe Stream and Pääsküla Wetland.
Permit for special use of water No HR0960 (L.VV.HA-138048)	31.12.2011	**Harju County. Harku Municipality, Tiskre Village** Põhjaveevõtt puurkaevust üle 5 m^3/ööpäevas. Kogu reovee suunamine Paljassaare reoveepuhastusjaama.
Permit for special use of water No HR0961 (L.VV.HA-138050)	31.10.2011	**Harju County. Harku Municipality, Harku Village** Extraction of ground water from borehole, over 5 m^3/day. Directing all wastewater to Paljassaare Wastewater Treatment Plant.
Permit for special use of water No HR0885 (L.VV.HA-47734)	23.03.2011 Extended until 31.10.2011	**Maardu City public water supply and sewerage system operating area** Extraction of industrial and drinking water from Cambrian-Vendi aquifers at the expense of 40 ground water deposits of Harju County in order to supply water to the institutions, enterprises and inhabitants of Maardu City, Kallavere and Muuga area, and to discharge industrial wastewater, storm water and excess water to the receiving waters (wastewater in Muuga area is discharged to storage tanks, in Kallavere area wastewater is discharged to Muuga wastewater treatment facilities).
Permit for special use of water No L.VV/320972	06.11.2016	**Harju County. Harku Municipality, Tiskre Village** Extraction of ground water from borehole, over 5 m^3/day. Directing all wastewater to Paljassaare Wastewater Treatment Plant.
Permit for special use of water No L.VV/320980	31.10.2016	**Maardu City public water supply and sewerage system operating area** Extraction of industrial and drinking water from Cambrian-Vendi aquifers at the expense of 40 ground water deposits of Harju County in order to supply water to the institutions, enterprises and inhabitants of Maardu City, Kallavere and Muuga area. In 2011 wastewater from Kallavere is partially discharged to Tallinn public sewerage system. During 2012 wastewater from all connectees to Kallavere and Maardu public sewerage system will be discharged to Tallinn public sewerage system.

USAGE OF SURFACE WATER RESOURCES

The Company receives surface water from an extensive water catchment system encompassing the river basins of Soodla, Jägala and Pirita River with a total area of ca 1,800 km^2, covering mostly the Harju sub-basin. Water catchment system consists on hydropoints constructed on rivers and of water reservoirs as well as the connecting canals.

The most important water reservoir is Lake Ülemiste with a net volume of 15.8 million m^3 on a normal headwater level. Additional water reserves for dry periods have been accumulated to Paunküla water reservoir on the headwaters of the Pirita River (9.9 million m^3) and to Soodla water reservoir on the Soodla River (7.4 million m^3).

The extent of water resources in Tallinn's surface water catchment system primarily depends on the amount of precipitation and its distribution over the year. In a year of average rainfall approximately 50% of the possible water resources in the system are used up.

In 2011 the runoff or rivers as a whole was 10% higher than the long-term average. Runoff in January and February formed up to 10-100% of the norm. The average flow volumes in March formed 30-90% of the norm.

Water level did not increase at the end of March and the flood's high-water period was in April.

All in all, the runoff in 1st and 2nd quarters was respectively 10% and 20% higher compared to the long-term average.

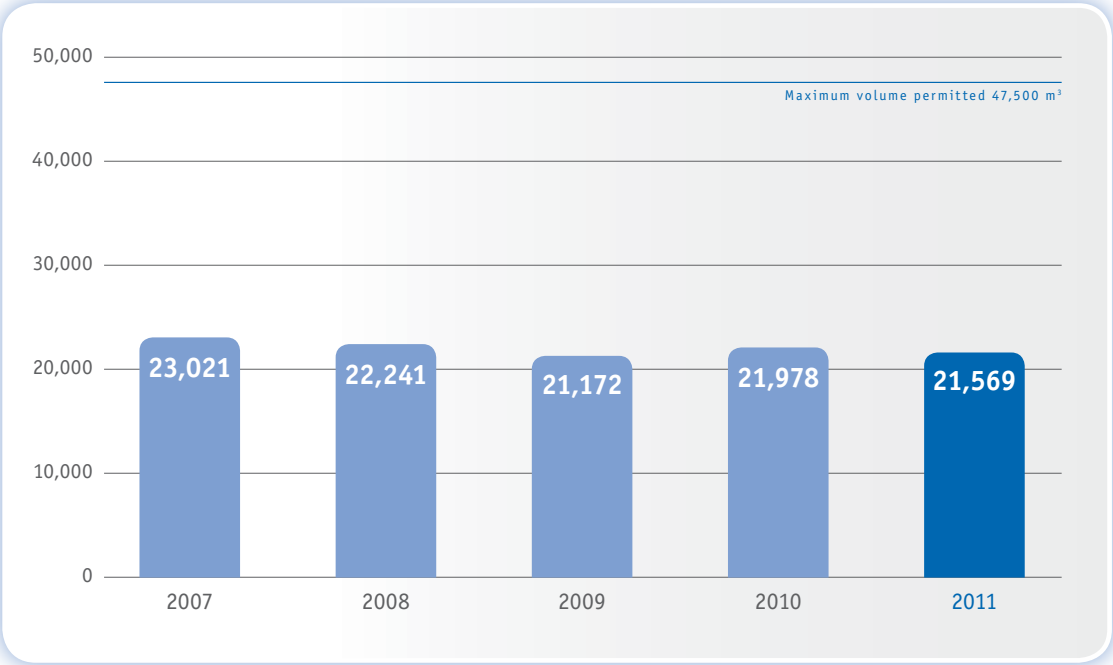
High precipitation in July was followed by August and September with low precipitation and all in all the runoff in 3rd quarter was 10% lower than the long-term average.

4th quarter is characterised by high precipitation and warm temperature, providing 30% higher runoff compared to the long-term average.

In 2011 less water was taken from the Pirita River to Lake Ülemiste compared to the previous year. This was conditioned by a high volume of melt-water in spring period and reduced drinking water consumption. In order to improve the balance of oxygen, water was taken to the lake also during winter. The quality of water in Lake Ülemiste with regard to the parameters of the content on organic matter was generally stable during 2011. Colour of the water in lake has increased continuously from 2007, as water extraction has been increased in order to avoid unwanted changes.

(With the permit for special use of water HR01037 (L.VV.HA-171414; valid 01.04.2008-01.04.2013) the Company is allowed to extract 47,500 thousand m^3 of surface water per year from Lake Ülemiste. The actual surface water use in 2011 was 21,569 thousand m^3.)

USAGE OF SURFACE WATER FROM LAKE ÜLEMISTE AND COMPLIANCE WITH SPECIAL USE OF WATER PERMIT NO HR01037, thousand m^3



In 2011, the Company used 709,800 m3 of water for its own use, which creates an ecological footprint of 56.78 ha/y (see page 71). Ecological footprint is not calculated for water production, because those numbers are included in the end-users' ecological footprint.

Continuous overview of flow volumes allows the Company to use water resources in a more sustainable way. In order to regulate water resources in an optimal and precise manner, water metering points have been constructed to all hydropoints, allowing the measurement of both flow volumes directed into canals as well as the so-called sanitary flow volumes remaining in rivers. Measuring is carried out on a regular basis, following the requirements of the permit for special use of water.

USAGE OF GROUND WATER

The Company regularly measures ground water levels in order to continuously control the condition of ground water resources in Tallinn. Automatic hydrostatic pressure sensors, enabling the measurement of ground water level, have been installed at all of Company's operating ground water facilities. Measurement of the water level in boreholes shows an increase in the pressure level of the aquifers in use and thus also the recovery of the ground water resources.

The Company met all requirements established in the special use of water permits in 2011.

USAGE OF GROUND WATER AND COMPLIANCE WITH PERMITS FOR SPECIAL USE OF WATER NO HR01037, HR1112, HR0885 (validity terminated in November, new permit for special use of water is L.VV/320980), HR0960, HR0961 (the validity of the two latter permits for special use of water terminated in November, instead of the two permits one permit for special use of water L.VV/320972 was issued), m^3

	2007	2008	2009	2010	**2011**
Actual usage by Tallinn	2,457,784	2,450,533	2,552,685	2,461,524	**2,229,612**
Incl from Cambrian-Vendi aquifer	2,134,427	2,168,265	2,186,521	2,042,743	**1,803,412**
Maximum volume permitted	6,880,250	6,676,945	6,676,945	6,676,945	**6,676,945**
Actual usage by Saue	247,553	214,028	202,621	222,473	**213,701**
Incl from Cambrian-Vendi aquifer	233,682	166,770	146,184	165,110	**187,074**
Maximum volume permitted	460,250	474,500	474,500	474,500	**474,500**
Actual usage by Tiskre	40,813	39,661	41,733	43,513	**45,471**
Maximum volume permitted	65,700	65,700	65,700	65,700	**65,700/ 71,800*** **
Actual usage by Harku* Settlement	32,308	6,372	703	0	**12,697**
Incl from Ordovician-Cambrian aquifer					**10,308**
Maximum volume permitted	51,100	51,100	51,100	51,100	**51,100/ 66,320*** **
Actual usage by Maardu City**			766,505	714,454	**618,751**
Maximum volume permitted			1,383,350	1,383,350	**1,383,350/ 1,382,400*** **

** In 2009, the Harku borehole pumping station was stopped, since the Harku settlement is supplied with surface water from Ülemiste Water Treatment Plant. In 2011, one bore-well (Rukkilille bore-well) extracting water from Cambrian-Ordovician aquifer was added to the list of Harku group bore-wells.*

***The Company signed in 2008 an agreement with the City of Maardu and AS Maardu Vesi for operating the public water supply and sewerage infrastructure assets in the City of Maardu and started its activity in summer 2009.*

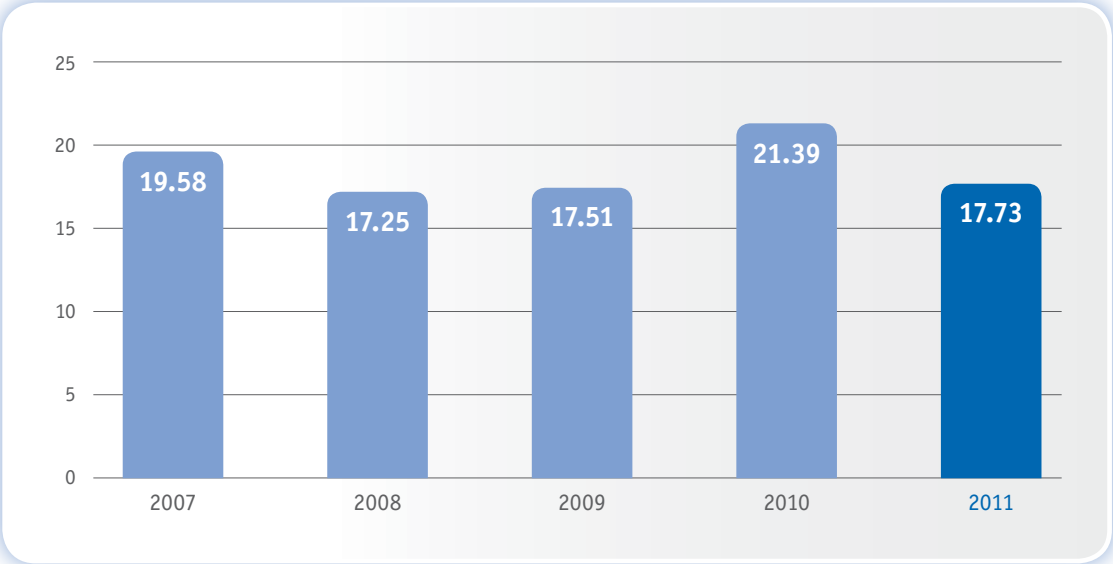
**** Maximum volumes permitted by the new permits for special use of water (L.VV/320980 and L.VV/320972).*

LEAKAGES AND WATER SUPPLY INTERRUPTIONS

Another important aspect of water usage is the reduction of water losses in the network. In 2011 the Company achieved a leakage level of 17.73% which is better than the Company's commitment deriving from the Service Agreement (26%). To achieve this, new leakage detection and remote reading devices were obtained and remote control system was upgraded. A new correlator for detecting leakages and acoustics equipment were obtained.

Small water tanks enable to offer temporary water supply to customers fast and in a more flexible manner even in case of water interruptions of short duration. Small water tanks can be transported to the emergency site with a regular car and the volume of water discharged into sewerage system later is lower. In addition the Company has 5 large water tanks with a capacity of 5m³ and a truck carrying a water tank. In case house connection is closed for sensitive customers, if necessary, temporary water connections to water metering points are constructed and temporary water supply is ensured with an air-water pressure tank.

LEAKAGE LEVEL 2007–2011, %



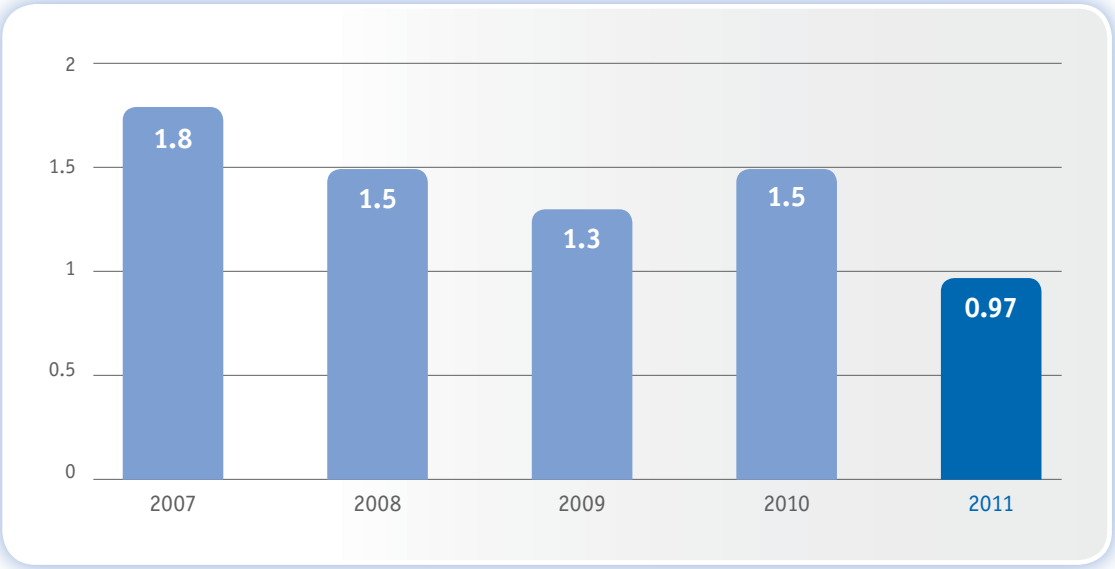
Quick detection and elimination of leakages help to reduce the leakage level. Daily work is supported by an updated water supply network information system, leakage specialists have special equipment for leakage detection, and along with the network zoning and remote reading system it allows detecting possible water leakages on the network rapidly.

The optimum leakage level calculation made for Tallinn shows that the suitable indicator in our conditions falls within the range of 15-18%. The leakage data has been compared to the Helsinki Region Environmental Services Authority (Helsinki seudun ympäristöpalvelut, hereinafter HSY), where the average leakage level has been ca 17% in previous years.

The Company will continue work in 2012 to reduce the leakage level in order to achieve the optimum leakage level. The optimum leakage level is considered to be the level where the

further reduction of leakages would cost more than water production. Factors such as the cost of finding and repairing leakages and the cost of water production are taken into account in calculating the optimum leakage level.

AVERAGE TIME FOR ELIMINATING LEAKAGES 2007-2011, in days



It is important for customers to have a 24-hour access to water with excellent quality indicators and correct pressure. The likelihood of water interruptions cannot entirely be excluded. Nevertheless, it is possible to reduce the number and duration of interruptions and notify the customers in advance. The Company's objective is to notify customers of any possible interruptions, however, in case of unplanned interruption it cannot always be done in a timely manner. The 2011 objective was to reduce the number of such cases, where the customers were not informed of unplanned interruptions beforehand, from 699 in 2010 to 560. In 2011 there were 76 unplanned interruptions when customers were not informed. This result is significantly well above the target.

WATER METERING

All customers of the Company have been equipped with water meters. In total over 21,569 water meters have been installed to customers' connection points, facilitating to achieve more accurate accounting for the usage of water resources.

In 2005-2011 the Company took in usemore reliable and accurate single jet class C water meters. As a result, the number of expert analyses ordered by customers for verifying the accuracy of the water meters has decreased. While a total of 540 expert analyses were carried out in 2007, this number was 391 in 2008, 487 in 2009, 308 in 2010 and 235 in 2011. The increase in 2009 is explained by the fact that new customers from Maardu City were highly interested in verifying the accuracy of their water meters.

The Company has the obligation to replace water meters every two years and the replacement of water meters takes place on the basis of a respective programme. In 2011 11,223 water meters were replaced.

WASTEWATER COLLECTION

SIGNIFICANT ENVIRONMENTAL ASPECTS	IMPACTS
Extensive floods	Pollution of the ground and sea water, danger to population´s health, decrease in life quality, damage to the assets of the population
Opportunity to connect to the public wastewater network	Maintaining and improving the quality of life and the status of the environment

2011 OBJECTIVES AND TASKS
To ensure compliance at all outlets +
Number of information requests regarding sewer blockages, floodings and storm water is less than 2550 +
To carry out maintenance on 180 km of the sewerage network +
To rehabilitate or replace at least 5 km of the existing sewerage mains +
To identify over polluters and invoice all identified over polluters +
To react in case of blockages and floods within 2 hours more than 90% of cases -
Of the subsidy connection that received usage permit in 2008-2010 connection contract has been concluded with 1000 customers by the end of 2011 -

The main measures for ensuring the collection and discharge of wastewater are linked to preventive flushing of wastewater network as well as reconstruction and extension of sewerage and storm water network; additionally wastewater concentration levels are regularly monitored in order to prevent failures of the treatment process.

CLEANING AND MAINTENANCE OF THE WASTEWATER NETWORK

The purpose of wastewater network cleaning is preventive maintenance in order to avoid flooding and reduce blockages. At the same time it must be noted that pressure washing may not directly reduce the number of blockages as it depends on various factors.

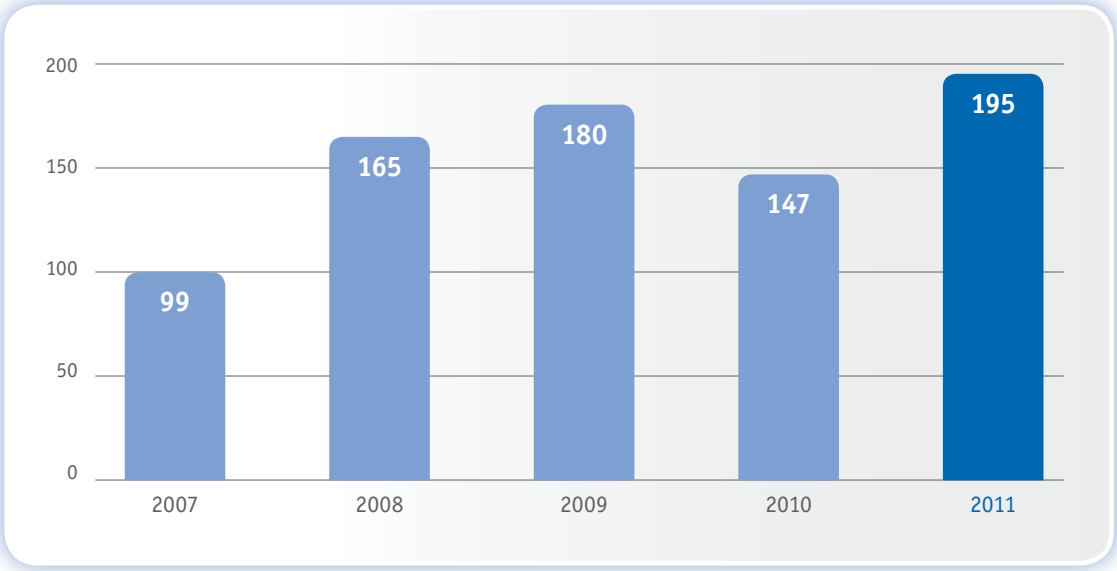
Blockages are mainly caused by sediments settling in wastewater pipes. Lower water consumption of recent years has resulted in the reduction of flow volumes and flow speeds, which in turn increases the risk of blockages. Additionally, continuous extension of sewerage network should be taken into account when assessing the total number of blockages.

For flushing the pipe, first, flow speed is generated with high pressure, which carries sediment into cesspool. Sediment is then collected to pressure washing trucks and transported to wastewater treatment plant. Pressure washing truck with recycle system enables to use the water required for flushing repeatedly. Earlier, the Company carried the flushing works on the

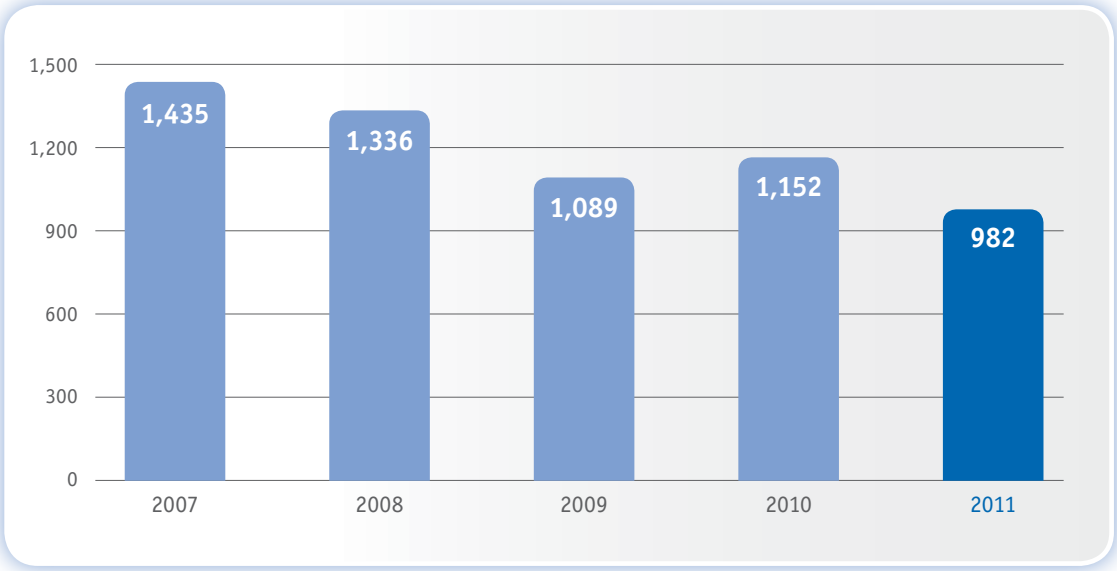
pipes out itself. Since the launch of the subsidiary Watercom OÜ, this service is outsourced from the subsidiary.

Despite the continuous expansion of the service area, the number of blockages is still maintained at a level lower than the set requirement, and the total number of blockages has decreased. One reason behind this is the systematic work on databases and increasing the volume of pressure washing works carried out on sewerage systems. Additionally, after each blockage an analysis is carried out to identify the causes and remove them.

WASTEWATER NETWORK FLUSHED 2007-2011, km



NUMBER OF BLOCKAGES 2007-2011



WASTEWATER NETWORKS RECONSTRUCTION AND NETWORK EXTENSIONS

Investments into the replacement of depreciated sewerage network and construction of new network contribute to the improvement of the quality of environmentally friendly service and to creating a safe opportunity to discharge wastewater for end-users who did not have this opportunity so far.

During 2011 the Company renovated 5.7 km of the existing sewerage network. 0.09 km of new sewerage systems and 2.3 km of storm water systems were constructed. AS Tallinna Vesi had agreed upon the networks extension programme with the City of Tallinn for the years 2008-2012 (final deadline 30.03.2012). The majority of works were done in 2008-2009.

In 2011 sewerage networks extension works were performed and storm water facilities were constructed on the basis of the amendments that have been made into the construction programme later.

WASTEWATER AND STORM WATER NETWORK RECONSTRUCTION 2007-2011

km	2007	2008	2009	2010	2011
Reconstructions	5.2	5.9	5.5	5.7	**5.7**

WASTEWATER AND STORM WATER NETWORK EXTENSIONS 2007-2011

	2007	2008	2009	2010	2011
Sewerage network extensions. km	13	34.1	42.8	41	**0.09**
Storm water network extensions. km	11.5	14.3	8.2	14.6	**2.3**
Properties with connection opportunity	618	1,204	1,423	1,176	**25**

CONTROLLING OVERPOLLUTION CAUSED BY CUSTOMERS

In order to ensure acceptable concentrations of pollution in the wastewater reaching the wastewater treatment plant, the Wastewater Inspectorate of the Company regularly monitors and checks the compliance with regulatory requirements at (industrial) commercial sites where wastewater is discharged into the public sewerage system. The majority of the industrial wastewater in the sewerage system is from the food processing industry.

The Wastewater Inspectorate of AS Tallinna Vesi regularly monitors the sewerage systems of the sites in Tallinn and Maardu. In 2011, 619 control raids were made for identifying inspection wells, for checking local treatment facilities and boundary drawings.

1,467 wastewater samples, incl. 510 mainly storm water monitoring samples, were taken for determining the wastewater pollution load at sites. Over-pollution instances were identified and over-pollution fees were applied on 385 occasions.

Information on the average pollution indicators of major industries is also regularly submitted to the Environmental Board's Harju-Järva-Rapla regional department.

STORM WATER OUTLETS

In 2011 the Company monitored, pursuant to the requirements set forth in the water permit, 23 storm water outlets, the largest of which are the Lasnamäe, Harku and Mustoja outlets. The storm water outlets of Kopliranna and Kadriorg were added in 2011.

Samples for determining pollutants are taken regularly from storm water outlets pursuant to the sampling procedure determined in the permits for special use of L.VV.HA-171414 and L.VV/320980. Four storm water outlets have been equipped with local treatment facilities such as sand and oil traps, in order to avoid possible environment pollution. Maintenance and cleaning of traps takes place regularly.

The requirements set forth in the water permit were met in 2011.

In total 6,002,180 m^3 of stormwater, carrying pollutants to the environment, was discharged trough these outlets in 2011. Pursuant to Environmental Charges Act the wastewater concentrations did not exceed the allowed limits and pollution charge was not applied.

STORM WATER VOLUME 2007-2011

m^3	2007	2008	2009	2010	**2011**
Storm water volume	5,180,175	5,414,016	5,468,711	5,698,232	**6,002,180**

POLLUTANTS FROM THE MAIN OUTLETS 2007-2011

in tons	2007	2008	2009	2010	**2011**
Suspended solids	89	109	90.9	110.6	**114.5**
Oil products	3.6	4.5	3.4	0.4	**0.5**

WASTEWATER TREATMENT RESULTS

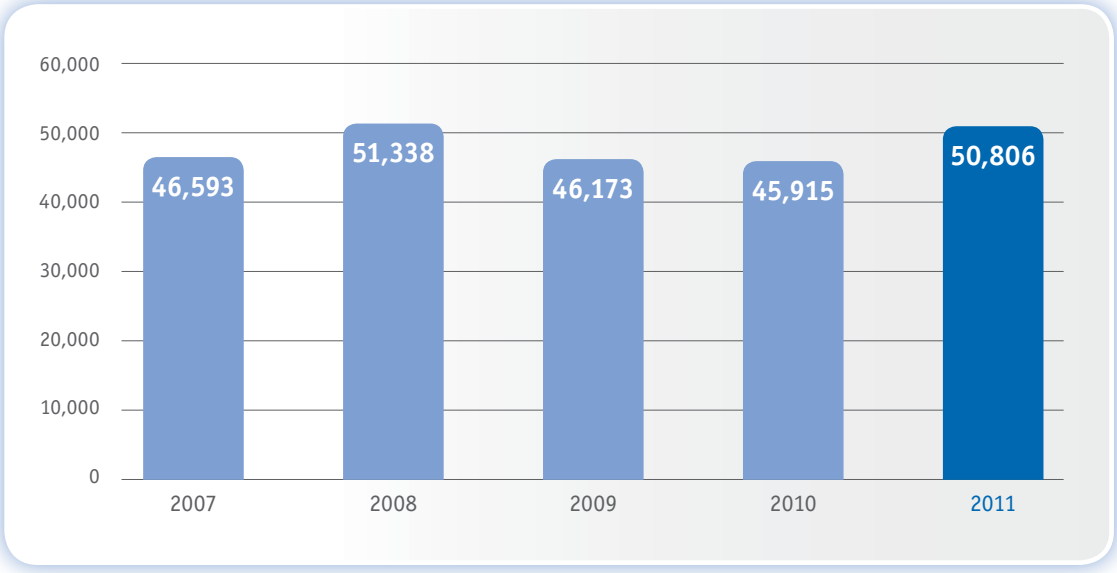
SIGNIFICANT ENVIRONMENTAL ASPECTS	IMPACTS
Wastewater compliant with the requirements discharged into the sea	Retaining the condition of sea water
Wastewater non-compliant with the requirements discharged into the sea	Deterioration of the condition of sea water
Flooding of wastewater collection area	Deterioration of human environment and sea water, pollution of the ground

2011 OBJECTIVES AND TASKS
To ensure compliance of waste water pollution parameters with regulatory requirements and requirements of the Services Agreement in 3 quarters as minimum +
To finish the construction of biofilter in 3rd quarter of 2011 +
To continue with improvement of waste water mechanical treatment process to finish the project in 2012 +

50,805,879 m^3 of wastewater was treated at Paljassaare Wastewater Treatment Plant in 2011.

Wastewater volumes in 2011 were 10% higher than in 2010; at the same time, the daily volumes fluctuated a lot – during the thaw period in the beginning of April and in December, the maximum daily flows exceeded 350,000 m^3/d. The thunder storms, which occurred in the 2nd half of the year caused short-term flow peaks, which in turn caused hydraulic shocks in treatment facilities.

TREATED WASTEWATER VOLUME, thousand m^3/year

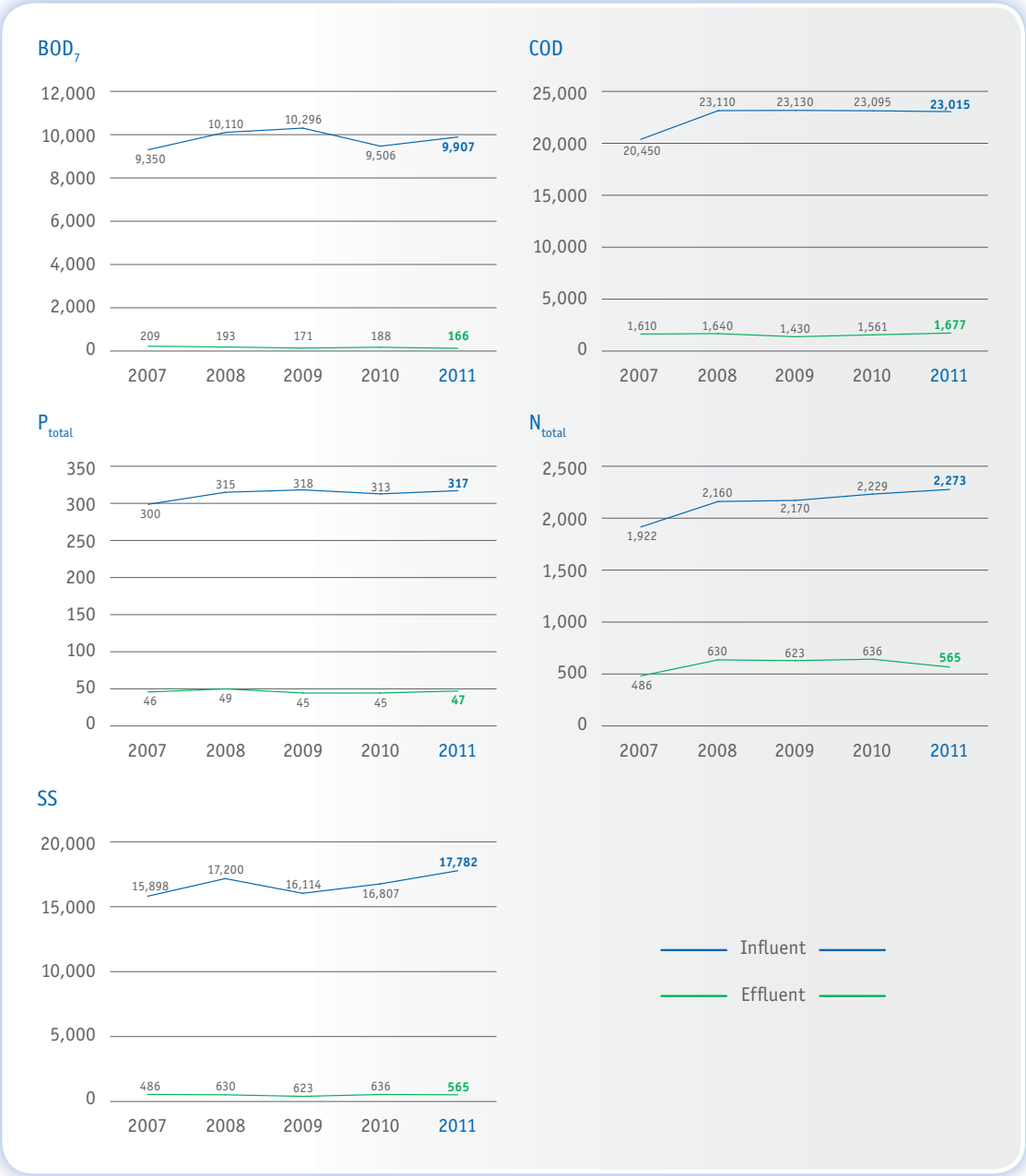


The quality of water discharged to the sea is set by legislation and the permit for special use of permit HR01037. The concentration of pollutants in sewage led to the treatment plant and in the wastewater led from treatment, as well as the efficiency of the treatment process are monitored in order to assess the quality of wastewater. The following are the most significant indicators monitored:

- Biological oxygen demand (BOD_7) shows the amount of oxygen required for the defined biological decomposition of organic matter in the course of 7 days;
- Total phosphorus (P_{tot}) and total nitrogen (N_{tot}) are elements contained in nutrient salts, which increase the growth of plankton in water. If the content of nutrient salts is too high, such growth can be so strong that oxygen is used up and a shortage of oxygen arises;
- Suspended solids (SS) shows the volume of solid matter in water which is caught in a filter with a defined mesh size;
- Chemical oxygen demand (COD_{Cr}) is a measure of the decomposition of organic matter, measured as the consumption of oxygen in chemical oxidation of all organic matter in water;
- Oil products show the amount of light (like petroleum) and heavy (like heavy fuel oil) oil products.

About pollution loads: content of organics in wastewater (BOD_7, COD) and suspended solids have decreased by 5% compared to the previous year; the amount of phosphorus and nitrogen were equal to these of the previous year. At the same time it must be noted that the daily incoming pollution loads is still uneven, varying by 3-6 times for different pollutants and the high peaks of pollution loads are still related to heavy rains, which refers to the fact that the pollutants are washed with storm water from the city's territory into combined sewer system.

AMOUNTS OF POLLUTANTS COMING INTO THE WASTEWATER TREATMENT PLANT AND DISCHARGED INTO THE SEA 2007-2011, in tons



The wastewater laboratory conducted approx. 46,000 analyses in 2011.

In the reporting year, the operation in all stages of the treatment process was continuously improved, in order to achieve maximum treatment results in the conditions where the pollution loads (especially for nitrogen compounds) exceed the process capacity. In August also the 3rd treatment stage – biofilter – was launched. Thanks to the very good operating work, use of chemicals and electricity without any resource restrictions and the 3rd treatment stage launched in the second half of the year, the Company achieved full compliance of

wastewater leaving the wastewater treatment plant with all regulatory requirements in all 4 quarters and also as an average of the year.

In 2011 there were several planned replacements of equipment, the condition of the fixed assets was repaired with capital repairs, the replacement of mixers in activated sludge process continued, additional electric air blower was installed to the biological treatment, during the extensive renovation of the 1st treatment process the screen system of the main pumping station as well as the technological equipment of the entire screen building were replaced. The latter project will continue in 2012.

The 2012 investment plan foresees the planned replacement of process equipment, continuing the renovation of the 1st treatment stage, installing an additional electric air blower to the biological treatment and completing some of the projects commenced in 2011.

The treatment results of 2011 were in compliance with the HELCOM requirements, which are similar to the requirements set by legislation. The Helsinki Commission, or HELCOM, organizes intergovernmental cooperation between countries located round the Baltic Sea in order to protect the Baltic Sea environment from all sources of pollution.

AVERAGE POLLUTION INDICATORS IN TREATED WASTEWATER 2007-2011 compared to regulatory requirements and the results of HSY*, mg/l

Until 2009, the results were compared to those of Helsingi Vesi Oy, which since 01.01.2010 operates under the Helsinki Region Environmental Services Authority

***In line with the applicable legal acts, the compliance of total nitrogen has not been analysed at the wastewater temperature below 12°C.*

WASTEWATER TREATMENT PLANT TREATMENT EFFICIENCY 2007-2011 in percentage terms, compared to the regulatory requirements, Estonia´s average results* and the results of HSY

** The most recent data on Estonia's average are available for 2009. The calculation is based on the data from the five largest water companies in Estonia.*

OUTLETS TO THE SEA

Throughout the year, 23,604 m³ of highly diluted wastewater, which underwent mechanical treatment, was discharged to the sea through the deep-sea outlet due to the shock loads, which exceeded the biological treatment capacity.

The majority of partly treated wastewater was discharged to the sea in April during the thaw period, the rest of the volume during some days of heavy rains, i.e. in extraordinary weather conditions.

In case of extraordinary weather conditions (heavy showers of a long duration) of 30 July to 31 July 2011 the emergency outlet was opened and 107,510 m^3 of wastewater diluted with storm water (1/6) was conducted to environment to avoid major damages.

WASTEWATER TREATMENT PLANT OVERFLOWS 2007-2011

m^3/year	2007	2008	2009	2010	2011
Untreated wastewater discharged to the sea	0	12,489	0	0	**107,510**
Partly treated wastewater discharged to the sea	395,810	61,386	64,181	173,941	**23,604**

ENVIRONMENTAL CHARGES

The Company has the obligation to pay a pollution charge for pollutants discharged to water bodies. Taxable pollutants contained in treated effluent and storm water, which are established for the specific outlet in the special use of water permit, are included in the pollution charge calculations.

Both the receiving water coefficient of the specific outlet as well as compliance with the pollutant limit value in effluent are taken into account in pollution charge calculations. In case the limit value is exceeded, a ten-fold pollution charge is set for the exceeding amounts of pollutants; if the pollutant levels remain below the limit value or are equal to it, legislation foresees a possibility to apply for a 50% reduction of the pollution charge. A reduction of the pollution charge is only possible when the results of all outlets comply with the water permit requirements.

The pollution charge amounted to 5.44% of operating expenses in 2011 compared to 9.12% in 2010.

CHEMICALS HANDLING

SIGNIFICANT ENVIRONMENTAL ASPECTS	IMPACTS
Drinking water compliant with requirements	Retaining and improving life quality
Wastewater compliant with the requirements discharged into the sea	Retaining the condition of sea water

2011 OBJECTIVES AND TASKS
To monitor and optimise the usage of chemicals +
To reduce the risk of chemical accidents or emergencies +

The Company uses approximately 450 hazardous and less hazardous chemicals in its operating activities. On one hand chemicals become hazardous primarily due to their characteristics, which pose a danger to the population and the environment, on the other hand, the level of hazardousness depends on the amount of chemical used.

Large amounts chemicals and more hazardous chemicals are used at the Company's treatment plants. The amounts of chemicals used at the treatment plants predominantly depend on the volume and characteristics of the water reaching the plants, which, in turn, depend on weather conditions in the case of surface water and on the level of pollution in the case of wastewater.

WATER TREATMENT CHEMICALS

CHLORINE

Under the Chemicals Act the Company has been classified as a category B Company with risk of a major accident due to the large amounts of chlorine used in the water treatment process.

In the water treatment process water is disinfected, so which the water would be safe to human health. The most common disinfectant in use is chlorine, which is effective and has a longer-term effect in the water distribution network. As a chemical, chlorine that is a poisonous gas, is heavier than air, causes irritation, has a corrosive effect and affects mucous membranes both internally and externally. Thus in the case of a chlorine emergency the people in the affected area may suffer serious damage to health or die.

The likelihood of accidents involving chlorine has been minimized by applying all necessary safety requirements.

A crisis action plan has been put in place in order to be able to liquidate an unlikely but still possible chlorine emergency. In addition to the annual instruction and practical training on safety of chemicals given to the employees, practical trainings of chlorine emergency liquidation are frequently carried out in cooperation with the Rescue Centre. In 2011 a

theoretical training was carried out for employees with practical use of protective equipment. The training was attended by the security company G4S and the representative of the Rescue Centre. The training was aimed at increasing employees' awareness and practicing cooperation with the staff on site as well as the coordination between different institutions in managing the elimination of an accident involving hazardous substances. The Company compiled and sent an informative leaflet to the residents and companies located in the risk area for acting in case of chlorine accident situation.

OZONE

The usage of chlorine has decreased considerably over the past decade. The main reason behind the reduction is the replacement of water prechlorination with ozonation. Ozone effectively breaks down organic matter and disinfects water. Ozone is produced locally in the Company and only in amounts needed. Thanks to the closed process and the fact that no stock is kept, the risk for the environmental is minimal.

An ambient air pollution permit has been issued to the Company for limiting the residual ozone emissions and the permit was renewed in 2010 (see more details on page 74). A thermic destructor of residual ozone has been integrated into the process in order to meet the requirements of the ozone plant pollution permit. With temperature increasing, residual ozone emitted from the system is in turn broken down into oxygen and thus no ozone is emitted into ambient air. 100% of the residual ozone was broken down in 2011.

COAGULANTS AND POLYMERS

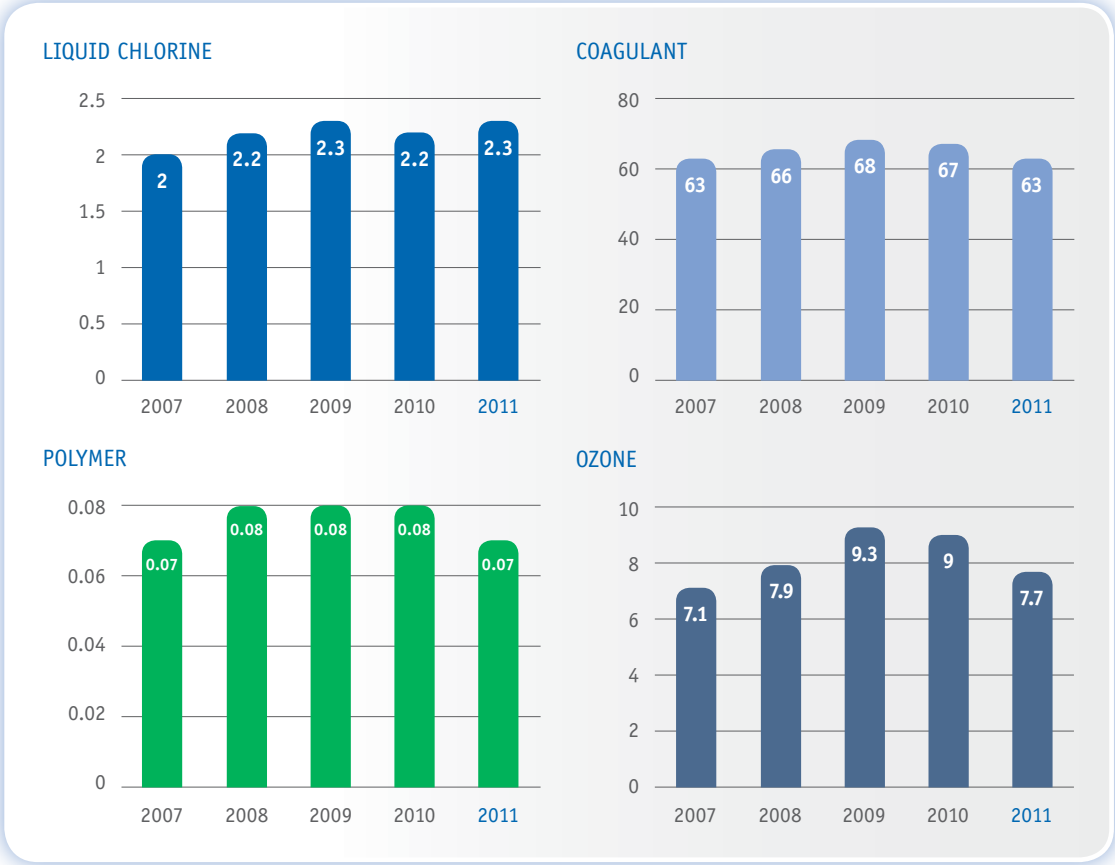
Significant amounts of coagulants and polymers, which help to remove the particular matter, suspended solids, etc. from water, are used in the treatment process. Both coagulants and polymers are used in liquid form. These do not possess as toxic characteristics as chlorine and provided that the safety requirements are met, they do not pose a danger to the environment or the population.

USAGE OF WATER TREATMENT CHEMICALS

Despite the very different characteristics of water and the highly variable weather conditions the usage of chemicals has remained relatively stable. Chemicals usage is directly depended on the surface water quality. The Company is obliged to ensure that the quality of supplied water complies with legal requirements and regarding some parameters, as set out in the objectives of the Company, the legal standards are to be outperformed. In 2011, the Company set an annual target for reducing the content of organic matter in drinking water and the Water Treatment Plant achieved this target. Additional amounts of treatment chemicals and optimum treatment process are required to achieve better performance. In connection with exceptionally warm weather the temperature of raw water also increased, in connection to that the characteristics of raw water deteriorated in summer period. Lake Ülemiste bloomed, the number of plankton exceeded the limit of 1 million individuals in 1 ml. Load to treatment facilities was higher, at the same time the removal of organic matter in treatment process was more effective, the chemicals doses were somewhat lower compared to the average in 2010. The volume of ozone used was higher in summer period and lower in spring and autumn when the quality of raw water stabilised and altogether remained lower than in previous periods.

USAGE OF WATER TREATMENT CHEMICALS 2007-2011, in tons

AVERAGE USAGE OF WATER TREATMENT CHEMICALS PER UNIT OF PRODUCTION 2007-2011, g/m³



WASTEWATER TREATMENT CHEMICALS

METHANOL

Due to the methanol used in wastewater treatment, the Company has been classified as a hazardous company on the basis of chemical legislation. Methanol is used to increase the efficiency of the nitrogen removal activities of the bacteria participating in the biological treatment process.

COAGULANTS AND POLYMERS

Significant amounts of coagulants and polymers are used in the wastewater treatment process. Coagulants are used for the chemical processing of wastewater to remove phosphorus. Polymers are used to change the qualities of sludge and adding them makes it easier to remove water from the sludge. Provided that safety requirements are followed, these are not hazardous to the environment or the population.

USAGE OF WASTEWATER TREATMENT CHEMICALS

USAGE OF WASTEWATER TREATMENT CHEMICALS 2007-2011, in tons

AVERAGE USAGE OF WASTEWATER TREATMENT CHEMICALS PER UNIT OF PRODUCTION 2007-2011, g/m³

ENSURING CHEMICALS SAFETY

The likelihood of accidents involving chemicals has been minimized, as the chemicals handling systems are compliant with the security and safety requirements.

The necessary conditions for the storage and use of all chemicals have been created, also the information from the chemicals safety data sheets, the regulatory requirements and the safety instructions are followed. Chemicals safety data sheets are available in the Company both electronically as well as in hard copy at the handling sites of the given chemical.

Absorbents and personal protective equipment are also available at the chemical handling sites. The sites for handling hazardous chemicals are equipped with automated alarm and degassing system for the early detection and liquidation of possible leakages.

The Company has established procedures for ensuring the training of employees and the liquidation of emergencies. Provided that the security and safety requirements are followed, the likelihood of chemicals emergencies (chlorine, methanol, biogas) with serious consequences to human health and the environment is small. As a rule, chemicals emergencies constitute smaller leakages, which do not escape the purposefully adapted production premises and do not damage the environment or people.

There were no reported chemicals accidents in 2011, which would have caused damage to people or the environment.

WASTE MANAGEMENT

SIGNIFICANT ENVIRONMENTAL ASPECTS	IMPACTS
Recycling sludge into compost	Reducing and recycling of waste, improving the qualities of the ground and natural environment

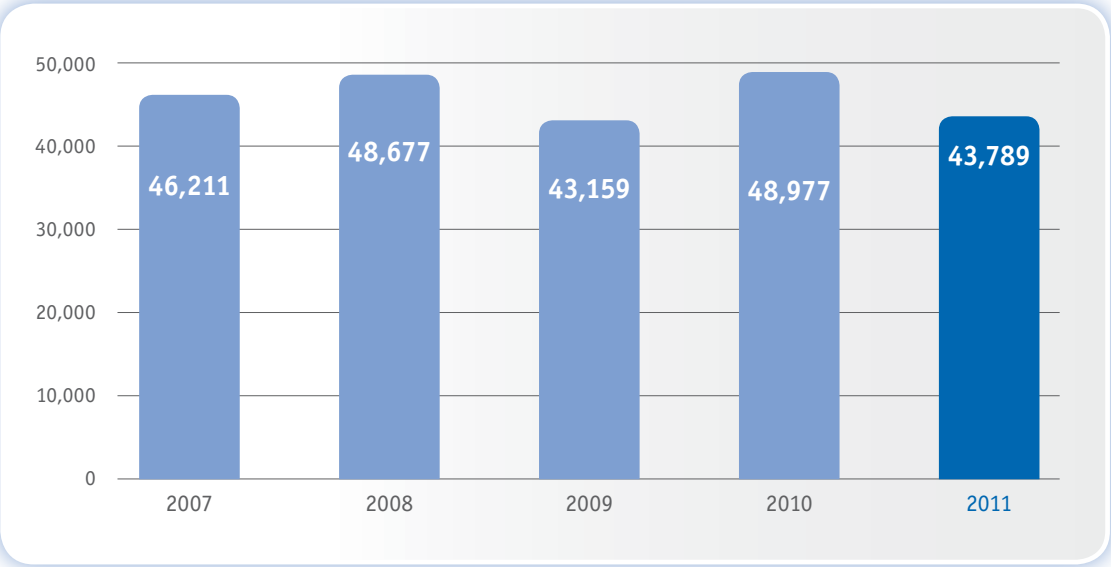
2011 OBJECTIVES AND TASKS
To reduce the waste produced +
To continue with sorting and recycling of the waste produced compared to the previous year +
To recycle all sludge and sell 32 000 tons of compost +
To ensure the sludge handling compliance with the requirements of the waste permit +
To increase the proportion of e-invoices sent out by Customer Service +

A total of 43,789 tons of waste, which is over 5,000 tons less than during the previous year, was produced in Company in 2011.

In 2011, mixed municipal waste created an ecological footprint of 452.3 ha per year, in 2010 it was 690.5 ha per year.

Most of the waste produced is non-hazardous waste. The majority of the Company´s waste is produced at the Wastewater Treatment Plant and in the Customer Operations Department.

WASTE PRODUCED 2007-2011, in tons



WASTE RELATED TO WASTEWATER TREATMENT

The largest share, i.e. over 70% of non-hazardous waste was wastewater sludge as a by-product from the wastewater treatment process. Other treatment process related waste such as waste from screens and sand traps' sludge is also produced in significant amounts.

The amount of sludge, but also of waste from screens and sand trap grids, depends directly on the amount of incoming wastewater, the weather conditions and the efficiency of the city's road cleaning service. In 2011 the amount of sludge from treatment equipment was lower than in 2010, but the volume of collected waste from screens was higher.

All sludge is reused. Possibilities for additional treatment of other waste created in wastewater treatment and reduction of waste going to landfill are explored by the Company.

In 2011the project aimed at making the mechanical treatment of wastewater treatment more efficient and reducing the volume of waste was completed. During this project sand washers and screen presses with washers were installed to the Wastewater Treatment Plant.

EXCAVATION WASTE

The amount of excavated soil and stones form the bulk of the waste produced at networks maintenance and repair works. The amount has increased in recent years in connection with the redaction Tallinn City Council Regulation No 28 of 20.05.2010 of Tallinn City Excavation Works Regulation enforced on 29.05.2010, which set an obligation on the performers of excavation works to carry out asphalt reinstatement works in a larger volume. In connection to that also the volumes of asphalt waste increased.

SORTED OFFICE WASTE

In 2011 the Company continued to separate paper and cardboards as well as packages from mixed municipal waste, in order to allow further recycling and reuse. The proportion of electronic bills to be sent to customers was increased and double-sided printing was made automatic, where possible, in order to reduce the amount of paper used. In 2011, wastepaper and cardboards created an ecological footprint of 34.3 ha per year, in 2010 it was 34.3 ha per year too.

The Company also collects biodegradable waste separately from mixed municipal waste since 2008 in order to ensure compliance with legislation.

HAZARDOUS WASTE

The share of hazardous waste in the total volume of waste is small, below 1%, and its amounts have remained stable over recent years. The largest category of hazardous waste is old oil and oil waste, which is the result of maintenance works in machinery and equipment.

Similarly to the recent years, the proportion of reusable waste from ordinary waste is over 90%, with both sludge reusage and reusable waste delivered to partners taken into account.

TYPES AND AMOUNTS OF THE MORE SIGNIFICANT WASTE 2007-2011, in tons

Type of waste	2007	2008	2009	2010	2011
Mixed municipal waste	134	115	145	171	**112**
Paper and cardboard	14	14	13	14	**14**
Packages	2	4	4.7	4.7	**4.5**
Biodegradable waste		2.5	5.2	5.4	**5.3**
Waste from screens	275	286	337	303	**596**
Wastewater sludge	33,834	35,691	31,087	33,885	**28,763**
Sandtraps grid	957	1 105	975	716	**509**
Excavated stones and soil	10,432	10,334	9,569	11,750	**12,417**
Asphalt waste	489	1 021	947	1 790	**1 161**
Mixed building waste	31	33	43	18	**30**
Concrete and bricks	8	48	29	40	**38**
Metal scrap	28	14	0.5	26.7	**23.6**
Hazardous waste	3.5	5	4	3.5	**2.1**
Other waste	1.5	4.5	1	250.2*	**115.7**
TOTAL	**46,209**	**48,678**	**43,159**	**48,977**	**43,791**

Possible to reuse

** Includes 248 tons of mineral snowcleaning waste*

SLUDGE REUSAGE

The main part of recycled waste was wastewater sludge. Sludge mixed with peat, i.e. the sludge mixture, can be used for landscaping and horticulture. Sludge mixture is prepared on 14 ha of composting fields constructed on the territory of the wastewater treatment plant, a part of the sludge is also transported to the Company's field in Liikva.

The Wastewater Laboratory monitors the sludge mixture quality on a regular basis. The results of analyses confirmed the compliance of the sludge mixture with regulatory requirements. 34,995 tons of sludge mixture was sold to customers in 2011.

RESEARCH INTO SLUDGE REUSAGE POSSIBILITIES

Based on the studies to date, the peat soils of bogs are the most suitable soil for afforestation. The tolerance of different tree species towards the amount of sludge used differs, being higher among bigger plants with a stronger root system. The main factors hindering tree growth in bogs are the insufficient air content of the soil, an excess amount of sludge as well as wild animals, to whom the trees in areas processed with sludge serve as a tasty forage.

WASTE PERMITS

Permit	Valid until	Description of waste permit
Waste Permit no L.JÄ/317241	09.09.2014	Issued for recycling stabilised waste in Paljassaare regarding part of stabilised waste, domestic wastewater sludge and biodegradable waste.
Waste Permit no L.JÄ/317829	30.12.2014	Issued for recycling stabilised waste and for transporting waste to Liikva as well as for recycling biodegradable waste.

The conditions of waste permits related to sludge recycling were met in 2011.

COMPLIANCE WITH PALJASSAARE WASTE PERMIT L.JÄ.HA-317241, in tons

Type of waste	Permitted	Actual				
		2007	2008	2009	2010	**2011**
Domestic wastewater treatment sludge	450,000	33,834	35,691	31,087	30,986	**34,968**
Stabilised waste	45,000	24,429	26,270	16,784	20,480	**28,960**
Biodegradable waste	10,000	0	0	0	0	**0**

COMPLIANCE WITH LIIKVA WASTE PERMIT L.JÄ.HA-317829, in tons

Type of waste	Permitted	Actual				
		2007	2008	2009	2010	**2011**
Stabilised waste	15,000	9,405	9,421	14,303	10,506	**6,008**
Biodegradable waste	3,000	0	0	0	0	**0**

ENERGY CONSUMPTION

SIGNIFICANT ENVIRONMENTAL ASPECTS	IMPACTS
Biogas produced and consumed	Reduction in the consumption of fossil fuels
Electricity and thermal energy consumed	Contributing to the pollution of the environment due to the production of electricity, decrease in natural resources
2011 OBJECTIVES AND TASKS	
To use energy resources more efficiently +	
To increase the effective usage of biogas -	
To make the use of transport more efficient +	

ELECTRICITY CONSUMPTION

The majority of electricity consumed is used for running the core processes of the Company – in the Water and Wastewater Treatment Plants, and in the Networks to operate pumping stations and other equipment.

The total consumption of electricity by the Company had steadily increased up to 2008, mostly due to updating the technological process of wastewater treatment and due to extending the operating area of the networks' pumping stations.

Electricity generated from biogas compensates the use of grid electricity to a certain degree (see more further).

ELECTRICITY CONSUMPTION 2007-2011, kWh

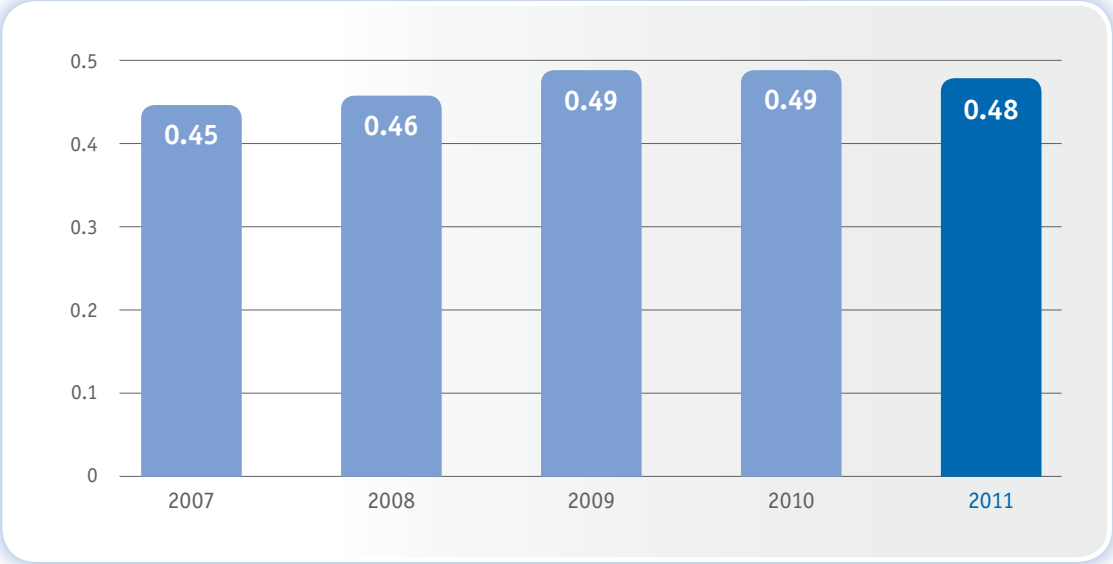
Unit	2007	2008	2009	2010	2011
Water Treatment	10,389,547	10,237,200	10,371,961	10,656,875	**10,381,797**
Wastewater Treatment *Incl electricity from biogas*	19,443,371 *1,159,057*	20,167,157 *1,390,471*	19,645,827 *730,299*	19,749,590 *1,966,080*	**21,720,862** ***764,786***
Networks pumping stations	5,588,984	6,213,493	5,964,515	6,432,559	**6,324,407**
Maardu*			383,728	693,265	**719,450**
Other	994,502	924,809	885,720	865,723	**799,763**
TOTAL	**36,416,336**	**37,543,659**	**37,251,751**	**38,398,012**	**39,946,279**

**The Company started operating the assets of the water company of Maardu City on July 1st 2009.*

Ecological footprint is calculated in the Company only with regard to the volume of electricity purchased from Eesti Energia in ha per year per MWh. The use of biogas belongs to green energy, regarding which there is no specific calculation factor. In 2011, an ecological footprint of 6,308.3 ha per year was made and in 2010 ecological footprint was 5,865.55 ha per year. Footprint increased as in 2011 the use of biogas reduced by 1,709,424 kWh and by that amount more electricity produced on the basis of oil shale was used in the Wastewater Treatment Plant.

In the water treatment process, electricity is mostly used for pumping water in the various stages of the treatment process and into the water supply system, a significant part of electricity is used for producing ozone. Compared to 2010 electricity consumption has reduced (0.489 kWh/m^3 in 2010, 0.481 kWh/m^3 in 2011). Electricity consumption in Water Treatment Plant has reduced in connection with the reduction in the production (21,389,599 m^3 in 2010, 20,859,977 m^3 in 2011).

ELECTRICITY CONSUMPTION PER UNIT PRODUCED AT THE WATER TREATMENT PLANT 2007-2011, kWh/m^3



The increase in energy demand linked to the new technology used in wastewater treatment is also illustrated by electricity consumption per unit of wastewater treated, which has been almost the same for the last five years since the reconstruction of the process, but has stabilized. Electricity consumption is to a large degree also impacted by the weather, because combined sewerage system is being used to a great extent, as a result of which a large volume of storm water is directed to the wastewater treatment process.

ELECTRICITY CONSUMPTION PER UNIT PRODUCED AT THE WASTEWATER TREATMENT PLANT 2007-2011, kWh/m^3

CONSUMPTION OF HEAT ENERGY

The majority of heat energy consumed is used for running the core processes – for heating the operations and office buildings.

Heat energy is purchased from AS Eesti Gaas and AS Tallinna Küte. To some extent the use of heat energy is compensated by the heat energy received from the biogas in Wastewater Treatment Plant.

CONSUMPTION OF HEAT ENERGY 2007-2011, MWh

Unit	2007	2008	2009	2010	2011
Water Treatment	5,475.90	5,142	4,264	5,617.60	4,357.6
Wastewater Treatment *Incl electricity from biogas*	6,765 *4,447.80*	7,423 *4,654*	6,515 *5,032.50*	8,176 *4,505.60*	6,634 *5,133.7*
Territory of Ädala office	983.5	960.4	956.6	1,256.70	1,176.24
Maardu*	0	0	66.6	38.4	0**
TOTAL	**13,224.40**	**13,525.40**	**11,802.20**	**15,097.70**	**12,167.84**

**The Company started operating the assets of the water company of Maardu City on 1 July 2009.*
***In 2011, the heat consumption of AS Tallinna Vesi in Maardu was 0, because the tenant of adjacent premises pays for the heating in pumping station.*

Cost of heat energy has reduced in 2011, as the winter was warmer this year compared to 2010. In 2011, the ecological footprint related to the consumption of heat energy was 409.6 ha per year in Water Treatment Plant and in 2010 it was 528.1 ha per year. Part of the heat used in Wastewater Treatment Plant is produced from biogas; ecological footprint was calculated for the use of natural gas. In 2011 it was 141 ha per year and in 2010 it was 345 ha per year. The ecological footprint of the territory of Ädala office in 2011 was 110.57 ha per year and in

2010 it was 118.13 ha per year. In total the ecological footprint of the Company in relation to the heat energy produced from natural gas in 2011 was 661.21 ha per year and in 2010 it was 995.66 ha per year.

USE OF ENERGY

GREEN ENERGY

An excellent opportunity for reducing damage to the environment is the use of green energy. For the Company this means above all maximum usage of biogas created as a result of sludge fermentation in wastewater treatment in other work processes, however, at the same time the Company is trying to find also other environmentally-friendly solutions.

In 2010 three feasibility studies were ordered regarding the opportunities of producing green energy. Two of these were regarding the opportunities of combined heat and power in Wastewater Treatment Plant and the third feasibility study was regarding the heat pumps in Water Treatment Plant. The project of combined heat and power plant is ongoing (in 2012 possible suppliers will be identified, price offers will be taken as well as other preparatory works will be carried out). On the basis of the calculations installing heat pumps to Water Treatment Plant and Wastewater Treatment Plant is not feasible, thus this project is closed.
For details on hydro energy, please refer to page 71.

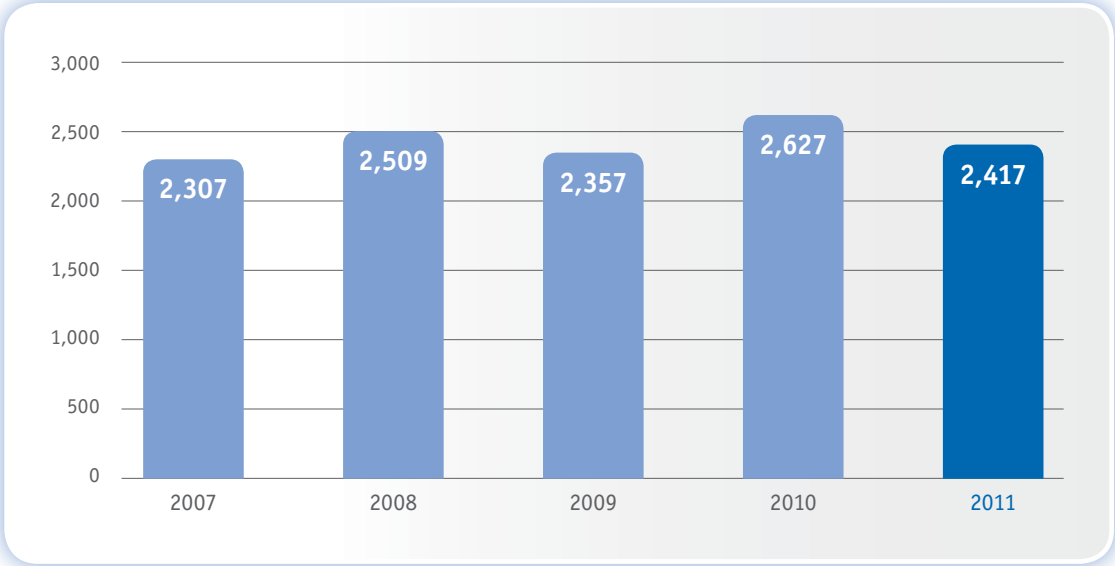
BIOGAS REUSAGE

Over recent winters the production of biogas has been hindered by wastewater collected from the streets, which has mixed with snow clearing chemicals and causes disruptions in the digesters' fermentation process. In 2011, digesters were operated by using an operating tactic implemented in 2008, which helped to keep the biogas production at the same level as in the previous year.

In 2011, a total of 2,417,000 m^3 of biogas was produced in Paljassaare Wastewater Treatment Plant digesters. Biogas is directed to a boiler house for heat production and until July 2011 also to an air blower operating on a gas engine, which produces air necessary for the biological treatment bacteria. In August 2011 the gas engine broke and has stopped working since. At the moment the procedure for choosing and procuring a combined plant operating on a biogas is ongoing; installing and launching the combined plant is planned for 2012.

In 2011, 76% (1,836,593 m^3) of biogas was used for operating the gas engine or for heat production. A part of the biogas produced was burned in connection with emergency interruptions of the gas engine.

BIOGAS PRODUCTION 2007-2011, th m^3



BIOGAS USAGE 2007-2011. %

Biogas contains about 70% of methane, which is explosive and is one of those gases recognized as having a negative impact on the ozone layer. In 2011, there were no accidents related to biogas.

OPPORTUNITIES FOR PRODUCING HYDRO ENERGY

The operating hydropower plants in the Company's hydropoints of Kaunissaare and Soodla and Kaunissaare are also related to the production of green energy. The maximum capacities of these hydropower plants are ca 260 kW and 170 kW respectively. These hydropower plants do not belong to the Company, however, cooperation contracts have been concluded and the Company is participating in operating the plants. The Company is closely cooperating with the owners of the hydropower plants and creates maximum conditions possible for the use of hydro energy.

FUEL CONSUMPTION

The Company has 98 vehicles for carrying out different operating tasks, over half of them use petrol for fuel. The biggest group of vehicles is passenger cars and operating vehicles, including minivans and team vans. A smaller group of vehicles includes special purpose vehicles such tractors and trucks.

Fuel consumption has decreased significantly compared to the previous year. Decrease in consumption is due to many factors, for example the number of vehicles has reduced, vehicles were equipped with GSM monitoring systems, which make work with vehicles more efficient and logistically better manageable. The Company controls fuel consumption primarily through limits set for car users.

FUEL CONSUMPTION IN LITRES, 2007-2011

Unit	2007	2008	2009	2010	2011
Petrol	135,251	141,644	126,286	85,735	**66,418**
Diesel	210,827	205,738	201,351	170,365	**140,331**
TOTAL FUEL	346,078	347,382	327,637	256,100	**206,410**
Total number of vehicles	135	140	137	124	**98**

TRANSPORT

The Company does not keep a separate record of the mileage covered, but this can be calculated per vehicle type, taking into account average fuel consumption. In 2011 the mileage of vehicle transport was 2,993,963 km and in 2010 the respective figure was 2,717,092 km (all km of transport is calculated for people transport because we can`t calculate exact km for the transport of goods). In 2011, vehicle transport created an ecological footprint of 180 ha per year and in 2010 it was 163 ha per year.

In 2011 bus service was used for transporting people on 5 occasions and altogether a distance of 815 km was covered, the related ecological footprint of 0.025 ha per year. In 2010 bus

service was used on 3 occasions, in total covering a distance of 525 km, thus creating an ecological footprint of 0.02 ha per year.

Company's employees have business trips also outside Estonia. To some extent travelling by ship has been used, however, travelling by plane has been used more often. 534 km was covered by ship in 2011 and 712 km in 2010, and the ecological footprint related thereto in 2011 was 0.005 ha per year and the respective figure in 2010 was 0.007 ha per year.

In 2011 Company's employees used plane transport only for short-distance flights (less than 5,000 km). Altogether 90,518 km was covered, the ecological footprint of which is 8.15 ha per year. In 2010 also only short-distance flights were used flights (less than 5,000 km), totalling 115,668 km, creating an ecological footprint of 10.4 ha per year.

SUMMARIZED TABLE OF THE COMPANY´S ECOLOGICAL FOOTPRINT

The environmental impact of 11 different aspects was measured on the basis of the ecological footprint method.

Aspects that serve as the basis for calculating the ecological footprint		Consumption/ production (rounded)	Ecological footprint per employee (ha per year per employee)	Ecological footprint (ha per year)
Water (m^3)				
1.Water consumed	2011	709,800	0.19	56.78
	2010	624,149	0.164	49.93
Waste (t)				
2. Recycled paper	2011	14	0.115	34.3
	2010	14	0.112	34.3
3. Recycled metal	2011	23.6	0.087	25.96
	2010	26.7	0.096	29.37
4. Concrete (to a landfill)	2011	38	0.013	3.8
	2010	40	0.013	4
5. Mixed municipal	2011	112	1,513	452.3

waste (to a landfill)	2010	171	2,264	690.5
Electricity (MWh)				
6. Electricity from oil shale	2011	39,182	21,098	6,308.3
	2010	36,432	19,231	5,865.55
Heat energy (MWh)				
7. Heat energy produced from natural gas	2011	7,034.14	2,211	661,21
	2010	10,592.1	3,264	995.66
Transport for people (km)				
8. By car	2011	2,993,963.33	0.601	179.64
	2010	2,717,092.47	0.535	163.03
9. By plane	2011	90,518	0.027	8.15
	2010	115,668	0.034	10.4
10. By bus	2011	815	0.0001	0.025
	2010	525	0.0001	0.02
11. By ship	2011	534	0	0.005
	2010	712	0	0.007
TOTAL	2011		25.85	7,730.43
	2010		25.470	7,771.33

The Company has the greatest impact on the environment through the use of electricity, followed by the use of heat energy. Use of electricity and heat energy are in a close and inevitable connection with the Company's core activity and with the expansion of the activities also the ecological footprint inevitably increases. Efficient and sustainable use of electricity and heat energy are being thoroughly controlled in the Company.

AIR EMISSIONS

SIGNIFICANT ENVIRONMENTAL ASPECTS	IMPACTS
Emission of exhausts	Polluting the air

2011 OBJECTIVES AND TASKS

To ensure compliance with the requirements of the environmental permits +

In order to reduce ambient air pollution, the Company focuses on limiting the amount of pollutants emitted from Ülemiste and Paljassaare boiler houses, particularly the pollutants of primary importance, such as nitrogen dioxide, carbon monoxide and volatile organic compounds as well as CO_2 greenhouse gas emissions. Also the emissions of ozone produced for drinking water treatment are regulated.

The Company pays a pollution charge for pollutants emitted into ambient air. In 2011 the charge remained under 1% of the total pollution charge paid. The requirements set with the ambient air pollution permits were all met in 2011.

Permit	Valid until	Description of ambient air pollution permit
Pollution permit no L.ÕV.HA 48701	termless	Valid for Paljassaare Wastewater Treatment Plant pollution sources – the chimney of the boiler house, exhaust pipes, the chimney of the combined heat plant. Establishes the list of pollutants emitted into ambient air and the annual permitted emission amounts thereof.
Pollution permit no L.ÕV/319438	termless	Valid for Ülemiste Water Treatment Plant pollution sources – the chimney of the boiler house, ozonisation, diesel generator. Establishes the list of pollutants emitted into ambient air and the annual permitted emission amounts thereof.

Ambient air pollution from Water Treatment Plant pollution sources 2007-2011, in tons

Pollutant	2007		2008		2009		2010		2011	
	Allowed	Actual	Allowed	Actual	Allowed	Actual	Allowed	Actual	Allowed	Actual
Nitrogen dioxide	2.4	1.5	2.4	1.4	2.4	1.4	2.4	1.5	1.954	1.3
Carbon monoxide	1.9	1.5	1.9	1.3	1.9	1.3	1.9	1.4	1.846	1.19
Volatile organic compounds	0.17	0.1	0.17	0.1	0.17	0.09	0.17	0.1	0.125	0.08
Carbon dioxide	1,691	1,360	1,691	1,209	1,691	1, 145	1,691	1,271	1,688	1,081
Sulphur dioxide	0.01	0	0.01	0	0.01	0	0.01	0.007	0	0
Total solid particles	0.05	0.002	0.05	0.002	0.05	0.003	0.05	0.003	0.004	0.004

Since 2011, a new ambient air pollution permit (L.ÕV/319438) is valid in the Water Treatment Plant, replacing also the special pollution permit for ozone.

Ambient air pollution from Wastewater Treatment Plant pollution sources 2007- 2011, in tons

Pollutant	2007		2008		2009		2010		2011	
	Allowed	Actual	Allowed	Actual	Allowed	Actual	Allowed	Actual	Allowed	Actual
Nitrogen dioxide	29.8	14.9	29.8	17.4	29.8	10.6	29.8	23.5	29.8	11
Carbon monoxide	210	96.5	210	115	210	62.3	210	161.9	210	64.9
Volatile organic compounds	14	6.4	14	7.7	14	4.2	14	10.8	14	5
Carbon dioxide	4,440	4,798	4,440	3,697	4,440	3,229	4,440	4,135	4,440	3,298
Hydrogen sulphide	17.8	18.7	17.8	17.5	17.8	16.9	17.8	16.9	17.8	17.4

ENVIRONMENTAL PERFORMANCE

In addition to the data on ecological footprint and as set out by the requirements of EMAS III, the Company outlines below its main indicators of the environmental performance regarding energy efficiency, material efficiency, water, waste, biological diversity and emissions. 3 elements have been presented for each main indicator:

- figure A, which stands for the total annual input/impact in the respective area
- figure B, which stands for the total gross sale revenue of the organisation in millions of Euros,
- figure R, which stands for the ratio A/B

Main indicators of environmental performance		Consumption (rounded) i.e. annual input (figure A)	Annual output of the Company (figure B)	Ratio R (A/B)
Energy Efficiency				
Electricity (MWh)				
Electric power produced from oil shale	2011	39,182	51.24	764.68
	2010	36,431.9	49.68	733.33
Electric power produced from biogas	2011	764.8	51.24	14.93
	2010	1,966.1	49.68	39.58

Heat (MWh)				
Heat produced from natural gas	2011	7,034.14	51.24	137.28
	2010	10,592.1	49.68	213.21
Thermal energy produced from biogas	2011	5,133.7	51.24	100.19
	2010	4,505.6	49.68	90.69
Material Efficiency				
Handling of chemicals (t)				
Liquid chlorine	2011	50	51.24	0.98
	2010	49	49.68	0.99
Coagulant	2011	3,203	51.24	62.51
	2010	3,306	49.68	66.55
Polymer	2011	56.25	51.24	1.10
	2010	60.2	49.68	1.21
Ozone	2011	167	51.24	3.26
	2010	197	49.68	3.97
Methanol	2011	2,149	51.24	41.94
	2010	2,539	49.68	51.11
Water (th m^3)				
Surface water	2011	21,569	51.24	420.94
	2010	21,978	49.68	442.39
Ground water	2011	3,111	51.24	60.71
	2010	3,442	49.68	69.28
Effluent	2011	50,806	51.24	991.53
	2010	45,915	49.68	924.21
Waste (t)				
Mixed municipal waste	2011	112	51.24	2.19
	2010	171	49.68	3.44

Recycled paper and cardboard	2011	14	51.24	0.27
	2010	14	49.68	0.28
Recycled packages	2011	4.5	51.24	.09
	2010	4.7	49.68	0.09
Recycled biodegradable waste	2011	5.3	51.24	0.10
	2010	5.4	49.68	0.11
Waste from screens	2011	596	51.24	11.63
	2010	303	49.68	6.1
Recycled sludge	2011	28,763	51.24	561.34
	2010	33,885	49.68	682.07
Sandtraps grid	2011	509	51.24	9.93
	2010	716	49.68	14.41
Recycled excavated stones and soil	2011	12,417	51.24	242.33
	2010	11,750	49.68	236.51
Asphalt waste	2011	1,161	51.24	22.66
	2010	1,790	49.68	36.03
Mixed building waste	2011	30	51.24	0.59
	2010	18	49.68	0.36
Concrete and bricks	2011	38	51.24	0.74
	2010	40	49.68	0.81
Recycled metal	2011	23.6	51.24	0.46
	2010	26.7	49.68	0.54
Hazardous waste	2011	2.1	51.24	.02
	2010	3.5	49.68	0.07
Other	2011	115.7	51.24	2.26
	2010	250.2	49.68	5.04
Biological diversity (m^2)				

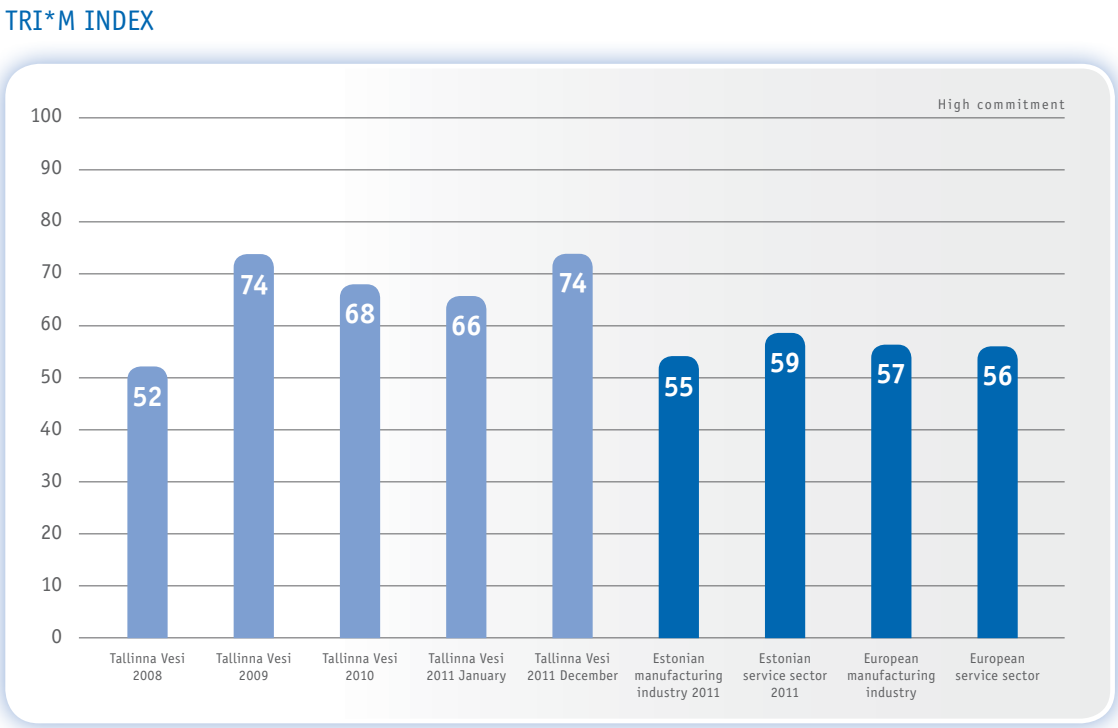
Land use, land carrying buildings	2011	657,272	51.24	12,827.3
	2010	456,702	49.68	9,192.87
Emissions (t)				
Nitrogen dioxide	2011	12.3	51.24	0.24
	2010	25	49.68	0.5
Carbon monoxide	2011	66.1	51.24	1.29
	2010	163.3	49.68	3.29
Volatile organic compounds	2011	5.08	51.24	0.10
	2010	10.9	49.68	0.22
Carbon dioxide	2011	4,379	51.24	85.46
	2010	5,406	49.68	108.82
Sulphur dioxide	2011	0	51.24	0
	2010	0.007	49.68	0
Total solid particles	2011	0.004	51.24	0
	2010	0.003	49.68	0
Hydrogen sulphide	2011	17.4	51.24	0.34
	2010	16.9	49.68	0.34

ORGANISATION AND EMPLOYEES

During the second part of 2011, the departments in operations division went through significant rearrangements both in terms of the responsibilities of managers and work allocation. Management Team of the Company deems the involvement of Employees in the decision making process, regular informing and equal treatment of staff very important. For that purpose, members of the Management Board had meetings with the staff at least once a quarter and monthly newsletter was issued to provide an update on the delivery of objectives as well as results.

At the end of 2011, the Company and its Subsidiary employed a total number of 311 employees under permanent employment contracts. This number has reduced by 2.5% compared to the same period previous year when 319 people were working for the Company. The average number of full-time employees was 299 in 2011 and 303.3 in 2010. Reduction in staff resulted mainly from the reorganization of the operations division where the number of middle-level managers has decreased compared to previous years.

Employee commitment and satisfaction was considerably higher in comparison to both Estonian and European average in industry and service sector in 2011. Satisfaction has significantly increased compared to 2010. (Figure 1).



Development of employees

The sufficient number of committed employees with necessary qualification is still one of the most important priorities for the Company. The average age of the staff in the Company and the Subsidiary is high (46.5 and 45.11 years respectively) and in bigger operational units a considerable number of employees are over 50 years old. Thus a significant number of staff is going to be in a retirement age in the next few years. In order to ensure the delivery of the Company´s business objectives, maintaining the know-how and developing a new generation of operational specialists is one of the key priorities for the Company.

The Company has launched several employee development programmes with the aim to provide all employees, who have such will and readiness, with an opportunity to develop themselves in their speciality as well as professionally. The Management of the Company deems it the most important method for growing a new generation of specialists, supporting the organisation in adapting to changes and maintaining the high commitment of employees. Emphasis is also on expanding multi-functionality and flexibility of the workforce instead of specializing on a narrow are as this enables the employees to rotate smoothly onto new positions. Development of the staff forms a part of the remuneration and recognition system of the Company and is a key for planning a career in the Company.

There were 635 training days in total in 2011, which amounts to an average of approximately two training days per employee. Although the number of training days has decreased almost by one-third compared to 2010, the change has occurred primarily in the methodology and approach. There was a significant increase in involvement of in-house guidance and mentors (incl. outside of the company) in which case the sharing of knowledge has been from one colleague to another or then from mentor to mentee. Almost 20% of the Company´s employees participate in various long-term development programmes .

Occupational health and safety

Work environment related activities of the Company are in compliance with the requirements of legislation and the international occupational health and safety management system standard OHSAS 18001.

Work environment management system is based on an assessment of risks in the work environment area and execution of activities aimed at preventing or reducing these risks. Workplaces are under constant internal monitoring and internal as well as external audits of the management system are carried out.

In 2011, special focus was on the improvement in following work safety requirements at the excavation sites of both the Company and subcontractors as well as on internal and external occupational health and safety trainings, development of methods that increase the knowledge of safety requirements and constant improvement of the work environment in accordance with the rules of OHSAS 18001:2007.

In 2011, 5 occupational accidents occurred, of which 4 were in AS Tallinna Vesi and 1 in its Subsidiary OÜ Watercom. The number of lost days derived from occupational accidents decreased in comparison to 2010 from 159 to 91 working days. The causes of all occupational accidents were thoroughly analysed by the Work Environment Council. Action plans to prevent any further occupational accidents of a similar type were put together and the timely delivery of those action plans is constantly monitored by the Work Environment Council. For better staff involvement and improvement of occupational safety awareness, the Company organized internally an occupational health and safety slogan competition. The best slogans are planned to be used on work cars, personal protection equipment, work clothes, posters, and calendars.

The Company focused on the development of new awareness methods. "Terve Tilgu" traffic sign was set up and this reflects the achievement of the Company´s occupational health objectives on a weekly basis. During the Company´s summer days a quiz on occupational health and safety was carried out, a crossword on occupational health and safety was published in the Company´s newsletter, occupational

safety posters with photos of employees under a topic „Will you help your colleague out of trouble?“ were issued, occupational safety data on displays was updated on regular basis, also thematic information materials were distributed.

Work environment trainings

The implementation and results of work environment related actions are largely dependent on the awareness of employees and, therefore, much attention is paid to work environment training, information materials and other actions as well as channels to raise awareness of the issues related to work environment. In 2011 the following training events in the field of occupational safety were carried out:

- theoretical chlorine safety training in the Water Treatment Plant in co-operation with G4S and a joint training with airport in order to carry out the rescue works at lake Ülemiste. As a result a new access to the lake and a place for flight rescue service to let a boat into water was established;
- regular trainings on pressure equipment;
- first-aid training and in-service training;
- ergonomics and occupational hygiene training;
- training on the ergonomics of workplaces;
- training on temporary traffic reorganisation (marking road works) in realistic conditions and briefing on the new Traffic Act;
- training on the usage of trench support and trainings for building site´s co-ordinator;
- fire, electrical, chemical and gas work safety trainings.

Continuous improvement in the field of occupational safety

Several actions for improving the work environment were carried out in 2011 at the treatment plants, water and sewerage networks, laboratories, and offices. Among the most important works were:

- renewal of the Company´s work environment risk analysis, amongst other things an additional questionnaire to assess the psychological risk factors in all departments was carried out. In accordance to the risk analysis and the questionnaire´s results, action plans for the improvement of work environment for 2012 has been started;
- during the cold winter period, temperature was measured in various rooms of the building on a regular basis and heating was regulated accordingly. If necessary, electric convectors were added to rooms;
- several substations were reconstructed and internal as well as external lightening was repaired;
- ventilation survey in various buildings was carried out and as a result the system was reconstructed, put in order or regulated; conditioners were installed into some rooms;
- trainings introducing HAZOP (Hazard and operability study) methodology which were followed by relevant analyses in various parts of the treatment plants´ operational processes. This activity continues in 2012;
- improvement of the ergonomics of computer workstations.

Promoting occupational health

For the seventh year, the Company successfully participated in the "Health Promoting Work Places" project, aimed at developing a healthy work environment, primarily by changing mindsets and increasing the mutual involvement of both employers and employees.

The Company organises various sports activities for its employees to promote a healthy lifestyle. Employees of the Company have the opportunity to use two gyms, as well as squash and ball courts, and also take part in the Company´s sports events.

In order to raise awareness on health-related mattes among the employees, then a foot sole computer check or foot sole computer diagnostics were carried out in the Company´s medical office in co-operation with Extra Comfort Eesti OÜ. During the period of 17.-24. April, a Heart Week took place all over Estonia and within this event, the Company organized various activities in order to raise the awareness of health-related issues: heart-healthy meals at the canteen, fire safety training followed by a stimulating exercise schedule in the gathering point, and calculating of body mass index (BMI) and fat percentage in the medical office. The employees also had an opportunity to read materials promoting healthy lifestyle which were issued by National Institute for Health Development. In addition to the activities organized within the Company, also other activities taking place within the Heart Week were promoted.

Employees attend regular health checks, as foreseen by law, which provide the basis for adjustment of working conditions where necessary. In addition to the procedures foreseen by legislation, the Company provides influenza vaccinations to all interested Employees and prophylactic massage according to the prescription of the occupational health doctor. Also, the occupational health doctor can be consulted in the medical office of the Company.

INVOLVEMENT OF EMPLOYEES

The Company values its staff as versatile personalities and considers the various needs of people in work organisation. The Company aims at supporting the employees´ voluntary contribution to community projects. Strong attention is also turned to the work environment related activities and improvement of the employees' awareness of (occupational) health. Through voluntary activities and support, the Company strives to give its contribution to the community. This is part of the social responsibility of the Company. In order to increase the environmental awareness of employees, the Company persistently introduces various environmental and energy saving subjects in the internal newspaper "Infotilk", Intranet and information stands as well as involves its staff in decision making processes and joint actions.

Together with employees, the project of renovating the gym at the Paljassaare Wastewater Treatment Plant was completed in 2011. During an event especially organised for the gym, the employees removed the old floor of the gym and painted the radiators. The staff now have better conditions for organising different sports events in the gym.

For better staff involvement and improvement of the awareness of occupational safety, the Company organized an internal competition for the best occupational health and safety slogans and messages. Response to the competition was extremely positive – approximately 100 fine, sensible and relevant slogans were received. The best slogans are planned to be used on the Company's helmets, work cars, cups, note books etc.

The Company's internal newspaper "Infotilk", Intranet and information stands (so-called Green Stand) and posters are used to improve the environmental awareness of employees. Also relevant regular in-house trainings and excursions are being organised. In 2011, a sign „Terve Tilgu" was set up in the lobby of the Company demonstrating the occupational health performance of the Company and allowing all staff to be informed of the occurrence or non-occurrence of work accidents.

In 2011, the Company´s "Good deed projects" attracted a participation of over 40 employees who contributed voluntarily into the community´s development. The Company´s employees participated in the Estonian Food Bank´s food collecting campaign „Notice an empty stomach" by forwarding relevant information as well as collecting food products. Collecting, transporting and distributing necessary food products to families in need was carried out in co-operation with a non-profit association Nõmme Child Welfare Organization. The Company´s employees also visited a kindergarten "Õunake" which is a nursery for children with special needs to bake ginger breads together with the children and gave them lots of drawing paper as a gift. Traditionally, the Company used the creation of "Õunake" kindergarten children for its Christmas card design.

On the 7th of May, during the cleaning up event „Let´s get it done“, Pikakari´s beach on Paljassaare peninsula was cleaned up. In addition to the Company´s employees and their family members, also the employees of Coca-Cola HBC Eesti AS and the Embassy of the United States as well as the local residents of Paljassaare participated in the cleaning event. Around 150 volunteers contributed to cleaning up the beach area.

In addition to visiting kindergartens and talking about saving water, the Company´s employees participate almost every year also in the „Back to School“ programme during which they distribute relevant information and experience in various areas in school lessons. The Company wishes to establish interest in a more environment-friendly and sustainable development among the youth, but also in general public educating our future clients as well as consumers. In 2011, the Company’s specialists gave lessons in five educational institutions in Tallinn.

All staff continues to have the opportunity to submit their ideas for improving the environment, quality and work environment to the Bank Of Good Ideas, where the ideas which get approved are going to be delivered and the authors of the idea will be recognised.

In 2011, the Company’s employees were involved in various actions in several cases. For example, the photos of the Company’s staff are decorating the occupational safety posters. Numerous employees of different departments are involved in organising the Open Door Days at the treatment plants. Approximately 10% of the Company’s staff participates in carrying out the annual internal environmental audits, whereas the auditors take regular additional training courses. For already the third year in a row, voluntary project management trainings take place providing the participants with an opportunity to organise and carry out all big internal events of the Company (winter and summer days, Christmas Party), also environmental projects and projects aimed at increasing the awareness of the employees.

OUR COMMUNITY

Being Estonia´s largest water company, our activity affects the quality of life of almost one third of Estonia´s residents and its surrounding natural habitat. Supplying good quality drinking water to the population as well as the disposal and treatment of wastewater and stormwater, and leading it back to the nature takes lot of efforts and arduous contribution of our highly professional staff.

In 2011, the Company's target was to contribute to the promotion of environmental activities and raising awareness. Community and environmental projects are part of the Company´s day-to-day operations and the Company continues to focus on promotion of environmentally-conscious and sustainable mindset.

Co-operation and involvement

The Company sees its employees as the biggest asset which is why significant attention is paid to activities connected to work environment and raising awareness of health-related issues among the staff. Also, the Company supports the employees´ voluntary contribution into community projects in order to give its contribution for the well-being of the community.

- The Company renewed its co-operation contract with the no 1 Estonian decathlete Mikk Pahapill as well as with the Sports Union of Tallinn University of Technology (TUT). In 2011, Mikk Pahapill was also the campaign face of „Drink tap water" and participated in various events aimed for the staff.

- The Company continued co-operation with the Estonian Union of Sports for the Disabled. AS Tallinna Vesi supports the trainings of the swimming team and their preparation for 2011 European Championship and 2012 London Paralympic Games.

- The Company became a godparent to a polar bear mother Vaida living in Tallinn Zoo.

- During the over-Estonia cleaning up event „Let´s get it done", Pikakari´s beach on Paljassaare peninsula was cleaned up. In addition to the Company´s employees and their family members, also the employees of Coca-Cola HBC Eesti AS and the Embassy of the United States as well as the local residents of Paljassaare participated in the cleaning event. Around 150 volunteers contributed in cleaning up the beach area.

- The Company continued supporting various outdoor and sports events with providing pure drinking water. During the Athletics Championships which took place in summer, the Company offered clean and refreshing drinking water to athletes as well as spectators. Tap water was also provided for an office rat race charity event, Stamina health run and walk series, the Flower Festival and Tallinn Student Days. The Company was also the main sponsor for organizing the unique opera "Parsifal", an open-air concert "Freedom Song" and a film festival "Ideals Matter" that is focusing on raising environmental consciousness among people.

- 2011 was the year of the European voluntary action. Within that was established in co-operation with non-governmental organisations and ministries a pilot programme with an aim to create in Estonia voluntary actions plan for supporting environment. In addition to establishing the programme´s content, the Company´s specialists also assisted a non-profit association Kodukant Läänemaa with training as well as legal consultation.

Activities aimed towards citizens

The Company wishes to develop an environmentally-friendly mindset and increase the awareness of the Company´s activities among its consumers. In addition to the investments which allow offering constantly improving services to consumers, AS Tallinna Vesi also supports a variety of water-related endeavours. Putting into practice a socially responsible action plan requires consistent work with an aim to combine the existent environmental and community projects with day-to-day activities.

- Traditional Open Door Days at Paljassaare Wastewater Treatment Plant on the 4th of June 2011 brought together approximately 250 visitors who all came to see the plant. Open was also the children area where Pippi Longstocking and the Company´s mascot Tilgu introduced to children environmental-friendly water consumption via a variety of playful activities.

- Open Door Days at Ülemiste Water Treatment Plant took place on the 27th of August 2011. During the Open Door Days, the Company´s employees took the visitors on excursions and introduced the functioning of the treatment processes to them. The Ülemiste Open Door Days coincided with the running competition around Lake Ülemiste and Lotte Children´s Run that attracted many old and young sports lovers. The run around Ülemiste is popular among Tallinn citizens, partially due to the fact that under usual circumstances the naturally picturesque territory surrounding the lake is closed to the public. The event was attended by approximately 1,500 participants, of which around 400 also came to see the water treatment processes. The Company´s children´s tent where children of each age group could draw and play water-related games proved to be especially popular.

- In spring, the Company organized a social campaign „Cheers to nature - drink tap water“ in order to draw attention to tap water´s good quality and help people to acknowledge the global crises related to the lack of pure water.
- The Company started to co-operate with Tallinn eating places in order to encourage people to drink tap water with their meal. The Company sees in that venture a possibility to change people´s mindset and also raise awareness of environment- as well as health-related issues among them.
- At the beginning of summer, the Company installed drinking water taps in Tallinn Old Town, Tammsaare park and Tallinn Zoo so that during warm summer days people would have an opportunity to refresh themselves with tap water which is free of charge. The main objective was to get people drinking tap water by giving them a chance to be convinced of its quality by trying it out themselves. Installation of taps was part of the „Cheers to nature - drink tap water“ campaign that draws people´s attention to a responsible usage of environment and encourages people to drink tap water.

Children and education

Water is one of the most valuable natural resources upon which depends the activity of all living organisms. AS Tallinna Vesi´s activity affects environment as well as almost one third of Estonia´s population´s quality of life which is why the Company considers it important to give its contribution to the population´s environmental and community education. In 2011, at the Enterprising Day, the Company was awarded with the most children- and youth-friendly company´s title in Tallinn. This acknowledgement was possible due to employees who, besides their main job, also contributed into raising the environmental awareness. The Company continues carrying out distribution of information and co-operational work on environmental education for various age groups.

- In 2011, a thorough renewal in the external look of the Company´s website was carried out. In the process was established a site for children and teachers which focuses on environmental education. This site contains all information and materials to do with the Company´s educational programme. A relevant theme site is also included to the Company´s web campaign: www.jookraanivett.eu
- Within the environmental education programme, the Company´s specialists organize water-related discussions in kindergartens. Children are explained how natural water circulation and water treatment process work. Also tips are given on how to save water, experiments are made, a movie is watched and water-related games are played. In 2011, the Company´s employees visited nearly 50 Tallinn kindergartens and with this activity they promoted environmental awareness among more than 3,000 children.
- In addition to visiting kindergartens, the Company´s employees participate almost every year also in a "Back to School" programme during which they distribute relevant information and experience in school lessons as well as in various fields of business. The Company wishes to establish interest for a more environment-friendly and sustainable development among the youth, but also in general public, through having an open discussion which is why educating future clients as well as consumers is considered of high importance.
- In order to celebrate the World Water Day, in co-operation with Lasteveeb OÜ a cartoon was made in an internet portal www.lastekas.ee where Bunny Juss introduces Ülemiste water treatment plant. The aim of this animation movie was to raise environmental awareness among children in a playful and violence-free manner. This channel directed specially for children allowed reaching most kindergarten and also a large number of first level school children. In 2011, a colour book of the same subject on how Bunny Juss and his friends discover their way to pure drinking water, was created.
- Besides our main assignments - producion of drinking water and treating of wastewater - the Company´s plants fulfill also an important role in raising the population´s awareness. Excursions in Ülemiste water treatment plant as well as in Paljassaare wastewater treatment plant are still carried out in order to introduce to the interested people the treatment process as well as the lab work. In 2011, the Company´s plants were visited by altogether approx. 2000 people from schools as well as from other companies.

EMAS VERIFICATION

DNV Certification Oy/Ab has an accredited verifier (FI-V-0002) examined the environmental management system and the information given in the 2011 environmental report of AS Tallinna Vesi. It has been verified on 3 May 2012 that both the environmental management system and the environmental report (original version in English) fulfill the requirements of EU Council Regulation 1221/2009 of Eco Management and Audit Scheme EMAS. The environmental report is available on the website at www.tallinnavesi.ee. Next report will be published before the end of August 2013.