

# **Water supply of Tallinn**

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# Water supply

- 90% of Tallinners drinking water is produced out of surface water from Lake Ülemiste.
- 10% of consumers in Tallinn are supplied with groundwater, which produced from the Cambrian-Vendi or Cambrian Ordovician aquifers.
- The public water supply system comprises almost 900 km of water networks.

# Groundwater area

- Resource of groundwater in Tallinn is 68 000 m<sup>3</sup>/d.
- In the districts which are supplied with groundwater (Nõmme, Pirita, Merivälja, Mähe, Kloostrimetsa, Kakumäe) are in use 29 wells.

# Wells

DISTRICT	IN USE	RESERVE
Surface water supplied area	-	33
Nõmme	20	16
Merivälja	3	-
Kloostrimetsa	2	-
Mähe	1	1
Kakumäe	2	2
Pirita	1	5

# Groundwater

- There are problems in groundwater with concentrations of iron, manganese, ammonium and radionuclides.
- The operators of drinking water use filters and aeration as groundwater treatment methods to ensure drinking water compliance with requirements.



# Surface water

- The natural catchment area of Lake Ülemiste is quite small (52 km<sup>2</sup>).
- Catchment system has been set up making use of rivers located nearby - Pirita, Jägala, Soodla, Pärnu.



# Water treatment process

- Raw water quality indicators are checked once per day at the intake to the treatment system.
- Raw water pollution indicators, such as total phosphorus ( $P_{tot}$ ) and total nitrogen ( $N_{tot}$ ), are checked once per week.
- Detailed in-depth analysis of raw water is carried out once per month.



# Water treatment process

- The maximum production of the Treatment Plant is 123 000 m<sup>3</sup> drinking water per day.
- Water Treatment Plant produces on an average 60 000 m<sup>3</sup> of drinking water per day.
- Ülemiste Water Treatment Plant treats water following a classical treatment scheme: micro filtering, pre-ozonation, coagulation, clarification, filtering and post-chlorination.

# Quality control

- Water quality parameters are determined daily in raw water and in treated water. Nearly three thousand samples taken from the city's waterworks during the year, including also the indicators set.

# Emergency landing

- Lennart Meri Tallinn Airport is located on the eastern shore of the lake and aircrafts regularly land over the lake.
- On 18 March 2010 a Polish transport aircraft (Antonov An-26) made an emergency landing on the ice of Lake Ülemiste.
- No-one was injured in the incident.





# Emergency landing

- 1.5 tons of aircraft fuel had spilled from the plane.
- 500 litres of fuel has flown into the lake.

# Measures

- Rescue workers pumped fuel out from the plane's tanks and collected it with absorbent.



# Measures

- The water utility company AS Tallinna Vesi pumped the water for purification from the deeper layers of the lake.
- The quality of raw water followed closely in order to take extra measures if necessary.
- Tallinna Vesi installed absorbents and ordered chemicals and active carbon for the additional purification of water contaminated with fuel.







**Bedankt!**