OPENING THE SITE TO THE PUBLIC

The wastewater treatment plant is open to any interested person. As the biggest environmental service provider of the country, we consider it being important, that interested persons have the possibility to get closer to our activities. Furthermore, we pay special attention to the environment-focused education of the growing up generation. After prior notice our experts are at the disposal of visitor groups.

South-Pest Wastewater Treatment Plant

The location of the first wastewater treatment plant of Hungary was determined by the National Planning Office on December 23, 1952. The plant was designed to treat the wastewaters of Pesterzsébet, Kispest and Pestlőrinc, despite multiple modifications of the investment plan, it was constructed without interruption and has been in full operation since September 14, 1966. The extension of the plant continued in the 80s and now it is the most modern wastewater treatment plant of Hungary.

Key developments:
• In 1983, the hydraulic capacity of the plant was extended by two additional parallel basins.
• In the middle of the decade, the automated dewatering of the sludge, generated in anaerobic mesophilic digesters, started.
• In 1986 surface aeration was replaced with the more efficient fine bubble aeration technology.
• In 1989, biogas exploitation was started; the energy produced by the gas engines ensures the operation of the air blowers of the activated sludge system.
• In 1990, biological phosphorus removal was achieved by upgrading the aeration unit.
• In 1992 the hydraulic capacity was further expanded, when the new mechanical pre-treatment unit was built, also ensuring removal of grease and sand from the effluents.
• In 1997 new shareholders (the French Veolia Water and the German Berlinwasser) invested in the Budapest Sewage Works Pte Ltd., which resulted in a significant quality development at the South-Pest plant, too. The wastewater treatment and the sludge treatment sections were renewed and complemented.
• In 1999 the plant became capable of the full biological treatment of 80 thousand m³ wastewater per day, also including the two-stage nitrogen and phosphorus removals.
• In 2001, the sludge treatment process was renewed and extended: a new covered gravity thickener equipped with a biofilter for odor removal was built, the centrifuges serving the automated sludge dewatering were put in operation, the gas engine producing electric energy from the produced biogas was extended, and a new gas engine producing electric energy from the produced biogas was put in operation.
• In 2005 the high nutrient containing waste receiving station was handed over and the biogas engine-based sludge dewatering system of our country, as well as an additional high capacity biogas engine-based power station.
• In 2007 the capacity of the activated sludge process' aerators was expanded, a new aeration unit began operation, and the structure receiving incoming wastewaters was fully covered. Biofilters operate in order to prevent odors, which neutralize 100 thousand m³ of odorous air per hour.
• In 2009 a piece of equipment for separating flaky materials, and a new heat and a large-scale engine house started operation.
• In 2012 the structure receiving incoming wastewaters was fully covered. Biofilters operate in order to prevent odors, which neutralize 100 thousand m³ of odorous air per hour.
• The Organic® Food Chain Reactor (FCR) was also handed over in 2012, which can be regarded as a breakthrough in wastewater treatment.
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• In 2012 the previous chlorinating solution serving the disinfection of the treated effluents from the plant was replaced by the much safer and more environmentally friendly UV disinfection.

PLANT HISTORY
The wastewater treatment plant operates with the most modern and most efficient technology. It continuously receives and treats the wastewaters from the areas of Budapest (6 district), the second district of Pest county, and the suburbs operating them. The waste water treatment plant is an important part of the technological training of specialists and in the practical education of students.

**Experimental and training base**

The experimental and training base is better than the parameters defined in the EU regulations; it serves as temporary storage for dewatered wastewater sludge, and it is at the forefront in Europe with regard to its technology, its equipment and its cleaning completeness.

**Quality parameters**

The treatment plant uses only the traditional two-harmonological biological treatment process, which is characteristic to many plants and the functional system, close to biogas development, the Digester (Biogas: climax reactor (FR), the Digester is at the second district of Pest area and the Biological treatment process is based exactly on the processes are based exactly on the European standards. The next chapter contains the most modern international and automatic knowledge of wastewater treatment, and it is at the forefront in Europe with regard to its technology, its equipment and its cleaning completeness.

**Parameters of influents and effluents (2012)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Influent (mg/l)</th>
<th>Effluent (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>220</td>
<td>10</td>
</tr>
<tr>
<td>Biological oxygen demand (BOD)</td>
<td>66</td>
<td>10</td>
</tr>
<tr>
<td>Total nitrogen</td>
<td>6.8</td>
<td>0.2</td>
</tr>
<tr>
<td>Total phosphorous</td>
<td>0.8</td>
<td>0.0</td>
</tr>
<tr>
<td>Total suspended matter</td>
<td>13</td>
<td>3</td>
</tr>
</tbody>
</table>

**Equipment of the treatment plant and its operation**

1. **Biological treatment**
   - In the aerobic basins the oxygen is injected by impeller pumps from the lower section and a thin bubble film.
   - Phosphate in the wastewater is removed by means of phosphorus removal.
   - During the degradation process, sludge rich in microorganisms is generated.
   - The sludge is removed by the need of biological process.

2. **Mechanical treatment**
   - Aerobic floating sludge is removed by means of impeller pumps from the lower section and a thin bubble film.
   - Phosphate in the wastewater is removed by means of phosphorus removal.
   - During the degradation process, sludge rich in microorganisms is generated.
   - The sludge is removed by the need of biological process.

The wastewater treatment plant is an important part of the technological training of specialists and in the practical education of students.

**Porter’s service, entrance of the plant.**

- Office buildings.
- Maintenance workshop.
- Gas engine generator units
- Biofilter
- Sludge digester
- Gas boilers
- UV disinfection
- Thermal energy
- Downer
denitrification, aerobic granular sludge, biological filter, denitrification, air filtration, denitrification, air filtration. In the nitrification filters, the microorganisms attached to the carriers, on the contrary, are aerobic microorganisms attached to the carriers (aerobic granular sludge). Biogas production is performed in an anaerobic digester with continuous feed, where the microorganisms are provided with a constant higher oxygen demand. The microorganisms biodegrade the dissolved organic matter by means of bacteria.

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