

## **Excursion report Guanabara Bay Clean-up Program (PDBG)**

### **Excursion reporters:**

Ferdinand van den Brink

Bert Lankheet

Tuesday October 5<sup>th</sup>,

Today we went to a sewage treatment plant of CEDAE to get informed about their activities and their in particular their role in the clean-up of the Guanabara Bay. José Maria Mesquita, responsible for the treatment plant, started with a presentation about the sewage treatment plant. In the afternoon a second presentation was given by Carlos Braz about the Guanabara Bay clean up programme.

During the first presentation the three steps of sewage treatment was explained. First a preliminary treatment is executed to filter out garbage which actually should not be in the effluent. Afterwards a primary treatment filters out oils and suspended material by slowing down flow velocities and removing floating and sedimented substances. Finally a secondary treatment is executed to further degrade oxygen demanding material. The degraded material is filtered out after sedimentation of the particles. The filtrate is flushed into a river and is much better in quality than the surface water surrounding the plant, i.e. the water of the Guanabara Bay. The banks of the bay were covered with a layer of all kinds of waste.

CEDAE considers itself as a company that cares about society, because it participates in various programmes. First of al, they use the residue of both the primary and secondary treatment is to obtain biofuel. Biogas is used for the electricity supply of the plant itself, while biodiesel can be used for other purposes. A small part is used as compost. Furthermore they participate in projects on the planting of trees and on resocializing of prisoners.

The treatment plant was the biggest of its kinds of Brazil. Furthermore, it is unique because usually the secondary treatment is not executed done if waste water is treated.

In the second presentation, the program-manager, Carlos Braz, again explained about the treatment process. After this he gave a short explanation about the clean-up program and about the progress of their engineering work. Their part involves the construction of a main sewage system that connects several locally existing sewage systems to the treatment plant. These local systems disposed of their effluent directly to the surface water. The system consists of 16 km pipeline at a depth of at least 10 meter below the ground surface. Part of it still has to be constructed. This has not been financed yet, but funding is already ensured by the government of Rio de Janeiro state before the Olympic Games.

Since the plant has been brought into use, the water quality of the bay slightly improved. However, it is uncertain whether this is due to the plant or due to other actions. The project mainly aims at the long term and is part of the arrangements for the Olympic Games.

During the presentation it appeared that CEDAE was only responsible for the sewage collection and treatment. They had nothing to do with the other activities concerning the clean-up. The leading party in the clean-up seemed to be the state government of Rio de Janeiro.