

COSTS WITH WATER TREATMENT ARE CUT WITH ELIPSE E3 IN THE SOUTH OF BRAZIL

Solution developed by Elipse Software is employed by São Gabriel Sanitation to control reagents used in water treatment and reduce waste

Augusto Ribeiro Mendes Filho
Elipse Software's Media Relations

Needs

Established in 2012, São Gabriel Sanitation S.A. is part of the Solví Group, one of the largest Brazilian holdings for engineering and environment solutions. In order to modernize the water supply system of São Gabriel, a town in the South of Brazil, this provider has opted for Elipse E3.

Developed by Elipse Software, this platform allows monitoring and issuing remote commands in real time to several different devices on the municipality's sanitation network. It was installed in São Gabriel by RoqueCorreia Automação, a system integrator specialized in automation and industrial processes.

Elipse E3 has controlled São Gabriel Sanitation's Control Center (CCO) since May 2015, when the company signed a contract with the municipal government to improve São Gabriel's water supply system for the next 30 years via Elipse E3 and other automation technologies. Their goal, according to Mr. Hanokh Yamagishi, São Gabriel Sanitation's projects coordinator, is to offer a modern, efficient system that can also work as a future template for other water providers in other locations.



Figure 1. São Gabriel Sanitation's CCO

Solution

Elipse E3's screens and commands allow São Gabriel Sanitation's operators to view all devices and processes related to capturing, treating, and distributing water to the municipality. With the technology developed by Elipse Software, the operators can monitor and issue commands

to activate or deactivate the water pumps used for capturing water from Vacacaí River, and to treat and distribute drinking water to São Gabriel's 60,000 local residents. All these procedures take place remotely and in real time.

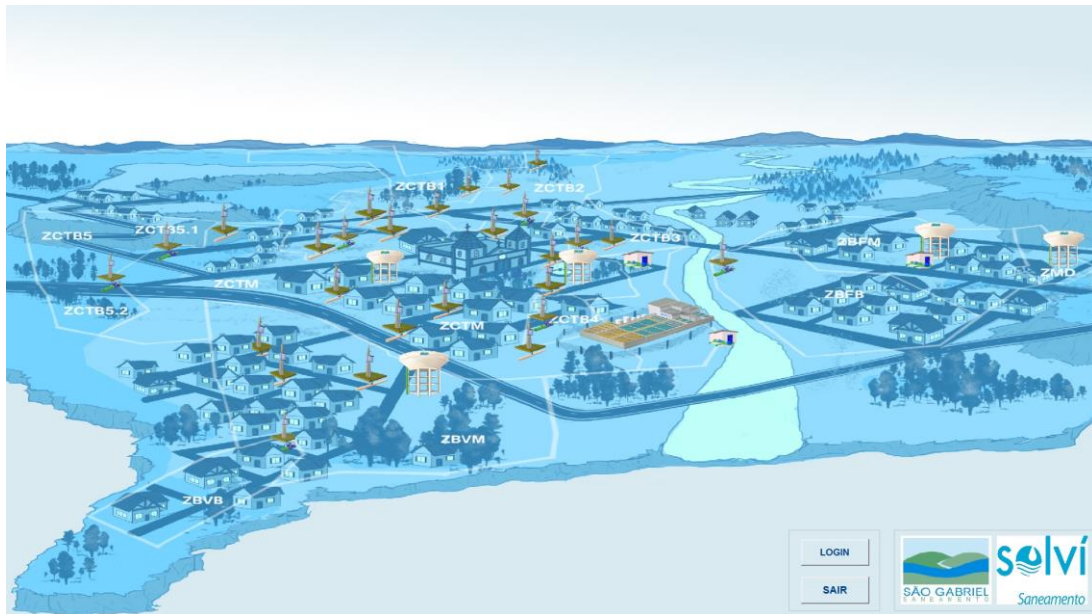


Figure 2. Application's initial screen

One of the system's highlights is its control over the Water Treatment Station (WTS) located 0.4 miles from Vacacaí River. With Eclipse E3 (accessed in the CCO installed in the WTS), it's possible to monitor the water levels of fluorine, chlorine, fluosilicic acid, calcium hydroxide, polymer, econox, and polyaluminum chloride (PAC). These products are used for preventing scaling in pipelines, decanting, regulating the water's pH levels, and reducing its turbidity.

The software also allows monitoring and issuing commands to metering pumps, filters, decanters, and floc tanks, which are all used in this step of the process. Before Eclipse E3 had been installed, these devices were controlled manually by São Gabriel's operators every 60 minutes; nowadays, the reagents dosage can be checked remotely within seconds, in a more rational and accurate way, with less waste and more financial gains for the provider.

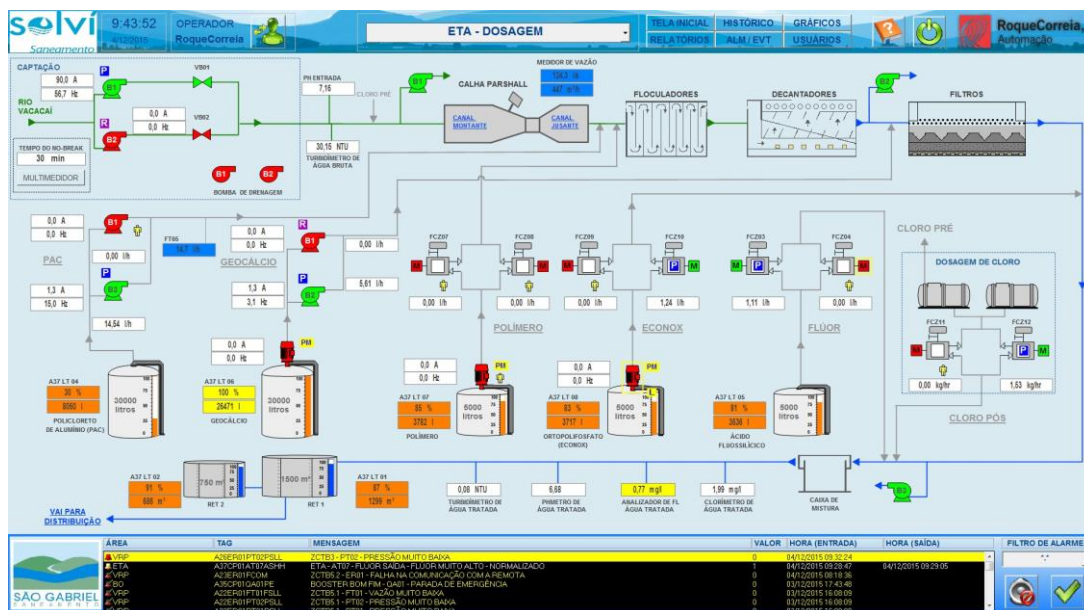


Figure 3. Controlling reagents and devices used for water treatment

Once the water undergoes this process, it becomes potable and can then be distributed. During this stage, all pumps, lifting units, and reservoir levels are controlled by Elipse E3 to make sure all of São Gabriel's 11 reservoirs are always replenished. Additionally, the system will monitor all data captured by the 21 pressure points installed in the town, allowing Elipse E3 to control the pressure range of the water being pumped, which must remain between 10- and 40-water-column-meter high to meet the requirements from the regulating agencies delegated by the municipal government.

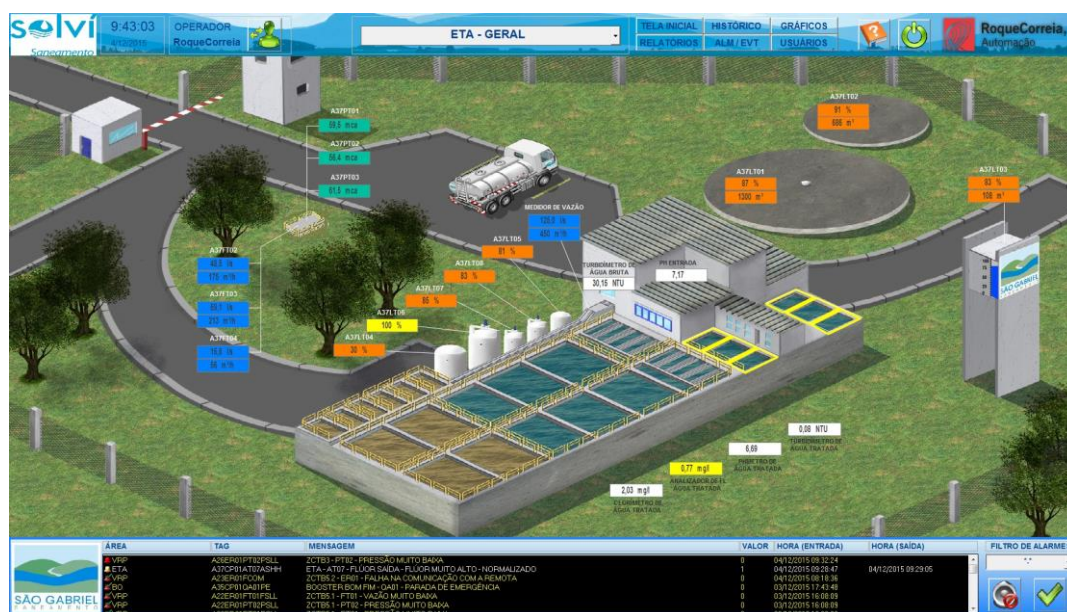


Figure 4. WTS overview

However, all these water pressure and overflow variables need not only to be controlled, but also to be documented. To do so, the system will issue reports, charts, and track records containing all the information on the water supply process to be sent to those agencies.

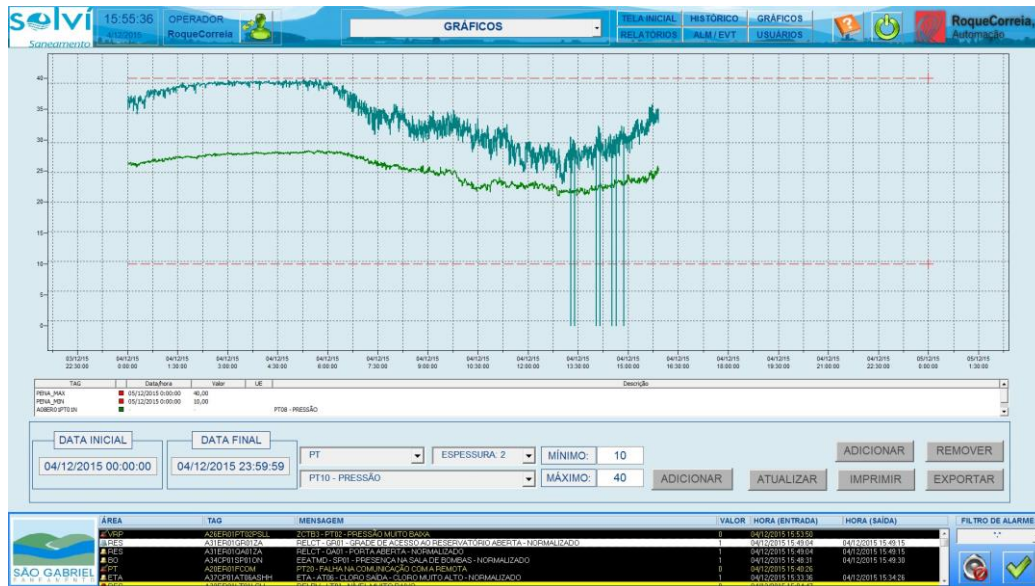


Figure 5. Water pump pressure data from December 4, 2015 (sample)

Finally, Elipse E3 displays an alarms system that warns the operational team on any water leaks, pressure drops, or any other damages to the supply system. This system can be set up for any period, and only alarms from that time frame will be displayed in it.

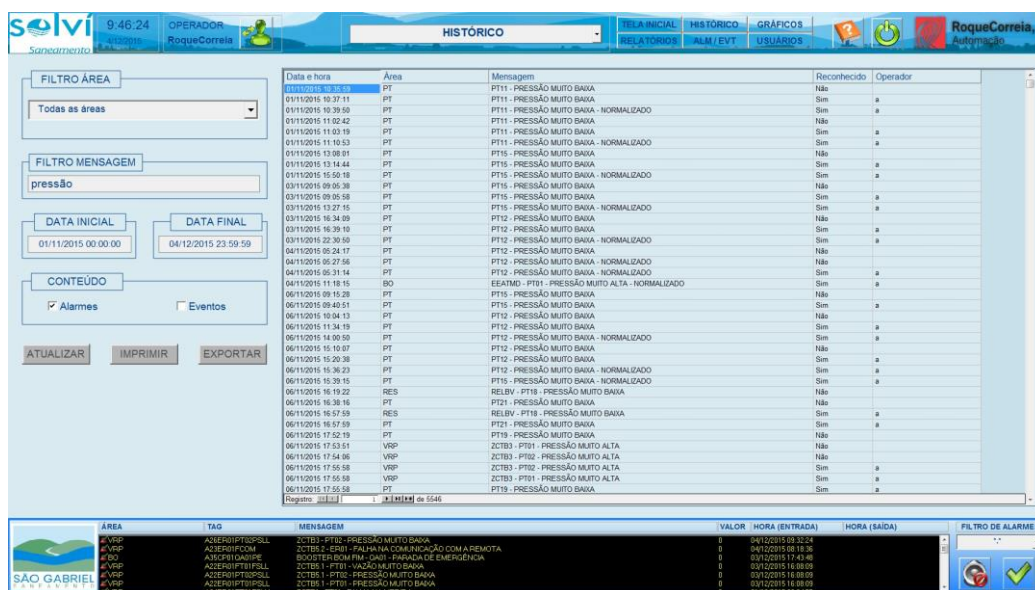


Figure 6. Track record for alarms between November 1 and December 4, 2015

Benefits

According to Mr. Hanokh Yamagishi, Elipse E3 allows the staff to notice any possible failure on the supply network much sooner than they would without it, which then reduces the response time for fixing the issue. The system's interface is very clean and user-friendly, which speeds up the access to information.

"There are absolutely no complaints about Elipse E3. It works wonderfully, and fulfils its role exactly as expected," says Mr. Yamagishi.

To Mr. Humberto Schimieguel, RoqueCorreia's projects coordinator and the responsible for implementing Elipse E3 in this project, one of the application's biggest assets is the possibility of reusing both its graphic and data objects. Thanks to this, the system is greatly improved in time and quality: standardization and processing speed are higher, and the time spent in development tends to be shorter and shorter. Below, you can see the full list of benefits provided by Elipse E3 to São Gabriel's water supply system:

- Clear, user-friendly interface that simplifies the access to information about the supply system;
- Reagents dosage control: cuts costs and generates less waste;
- Pumps control: keeps all 11 reservoirs in town continuously replenished;
- Water pressure control: keeps its default value ranging between 10- and 40-water-column-meter high;
- Faster response time on any eventual supply issues, thanks to the software's alarm system;
- Service quality documented by reports, charts, and track records, and sent to regulatory agencies named by the municipal government.

TECHNICAL INFORMATION

Client: São Gabriel Sanitation S.A. - Solví

Systems integrator: RoqueCorreia, Automation

Elipse product used: Elipse E3

Number of copies: 7

Platform: Windows 7

Number of I/O points: 2057

I/O driver: Modbus TCP