ANGOLA WATER FOR ALL

Containerized Drinking Water Treatment Systems

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Water for All - Containerized Drinking Water Treatment Systems

- **Mitrelli** Group is a global enterprise dedicated to the design, implementation and execution of large-scale turnkey projects
- The Water For All is a national Angolan project aims to construct the infrastructure to supply thousands of remote villages throughout Angola with fresh, clean, potable water, and to ensure that the supply continues.
- In each village, depending on the village size, at least two public showers are and will be installed, as well as basins, laundry tubs and sewage control.
- Funded by the Angolan Government and enabled by Mitrelli's expertise, the project is trying to do something that no other organization has attempted.
- Mitrelli is one of the participating enterprises and was awarded with the execution of water systems in 212 villages off which 132 are already in operation for the last 5 years and 80 will be functional during 2018-19. Due to the success of the current project, Mitrelli is expecting to be awarded the next phases of Water For All.
- The effect of these facilities on the villages will be an astronomic improvement in health and quality of living.
- **YAMIT FILTRATION LTD,** a global provider of water filtration and treatment systems was assigned by Mitrelli to design, construct and supply 40 containerized drinking water systems for the Water For All project.

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About Yamit Filtration LTD

Yamit Filtration LTD manufactures high quality water filtration and water treatment systems for the past 30 years.

Yamit's Filters and systems are installed and operating in thousands of locations worldwide.

We provide solutions for surface and underground water, seawater and wastewater in the most challenging environments such as seawater desalination plants, petrochemical plants, oil drilling platforms, coal mines, steel mills and municipal drinking and wastewater treatment plants.

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Angola - 40 Units Containerized Drinking Water Treatment Systems

Region:	Africa - Angola
Project Name:	Water Treatment Project
Water Source:	River Water
Application:	Drinking Water Containerized Systems
Treatment Process:	Coarse Screen Filter, Flocculation, Low Media Filters, High media Filters, Chlorination.
Operation:	Yamit Controller.
Flow Rate:	various (Total 40 units) – 5/10/20/25/30/40 M^3h
Operation Pressure:	4 bar

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DRINKING WATER TREATMENT SYSTEM - INTRODUCTION

- The water treatment system is based on a number of principal components detailed below, which describe the process and the stages of the water treatment. Every component is responsible for achieving one or more aims. Together, all the components achieve the aim for which the system was built – to obtain water of the required quality, maintained for an unlimited time, provided that maintenance and servicing are performed on a regular basis.

- The containerized water treatment system works as one automatic unit, carrying out the whole process continuously. The components of the system are presented according to the order in which they appear in the process.

- The water flows through several stages, including chemical and physical processes which together achieve the desired water quality.

SYSTEM - GENERAL DESCRIPTION AND YAMIT'S SCOPE OF SUPPLY (1)

The process of water treatment consists of the following:

1. **Aluminum Sulfate (Alum, the coagulant) dosing station**.
   The dosing station is composed of an electric dosing pump and a chemical storage tank. The dosing pump is connected to a solar cell rechargeable battery.

2. **Hypochlorite dosing station**
   Chlorine will be injected to the water in order to eliminate from biomass to grow on the media and in the treated water.
   The station is composed of an electric dosing pump and a chemical storage tank. The dosing pump is connected to a solar cell rechargeable battery.

3. **A semiautomatic screen filter to remove large solids**

4. **Pretreatment single media filtration**
   Single-media filters unit with a single layer. The main duty of this treatment is to act as a pre- filtration and reduce turbidity and suspended solids level.

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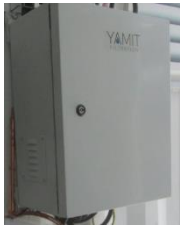
SYSTEM - GENERAL DESCRIPTION AND YAMIT'S SCOPE OF SUPPLY (2)

5. **Multi-media filters unit**
   Based on depth filtration of the feed water by multi filtering layers.
   The main duty of this treatment is to further reduce turbidity and finer suspended solids level.

6. **A solar paneled control system**
   Includes: a solar panel, rechargeable battery, converter AC/DC and charge controller. The system provides electricity to the dosing pumps and flushing system controller from the battery which is recharged by the solar panel installed on the roof.



7. **Flushing system controller**
   The filters self-cleaned system consists of a hydraulic back wash valve and DC controller.
   The back wash process is activated either by DP, preset time interval or manually.
   The water source for backwash is treated water from the outlet of the filters.

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Customer's responsibility

- Infrastructure including inlet and outlet water connections.
- Electricity
- Water supply at 2.5 – 3 bar pressure and maximum 30 ppm suspended solids/50 NTU.
- Coagulant and chlorine supply
- Treated water accumulation tank

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Ready for Assembly - Angola

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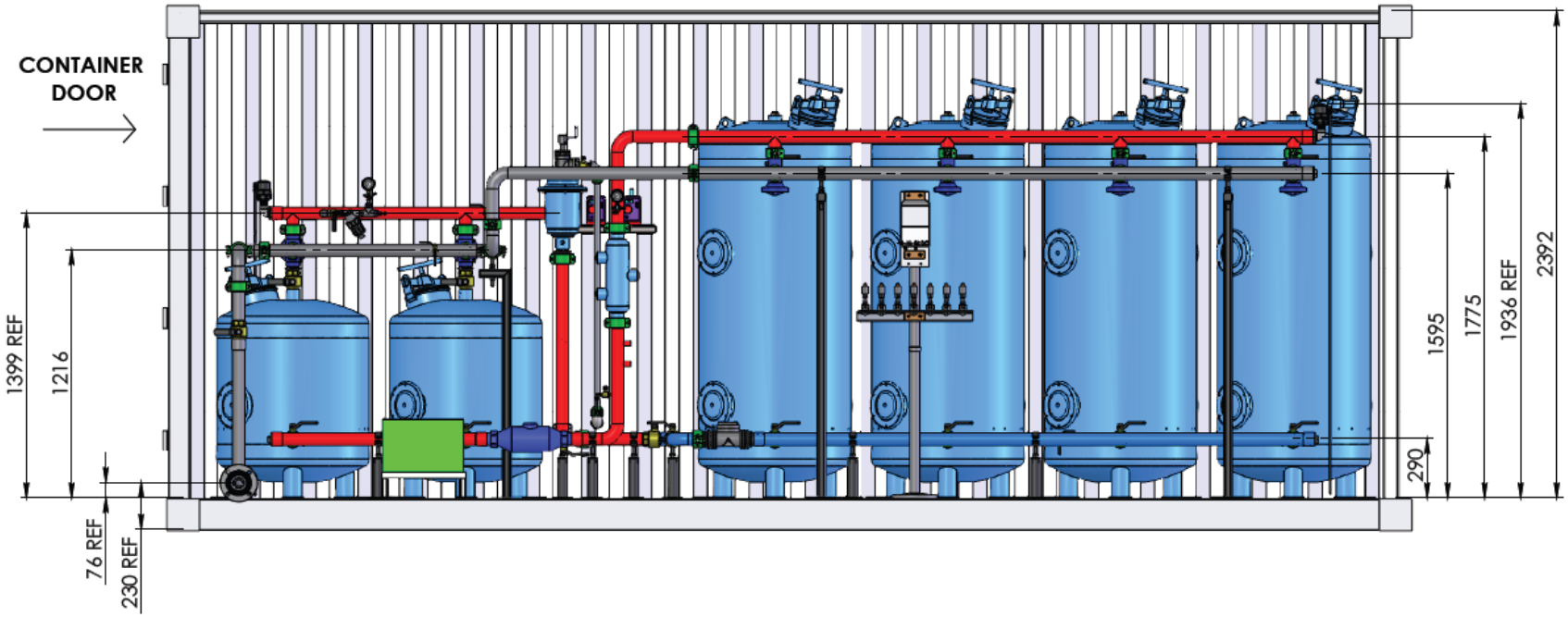
System Layout - Angola



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