

Trailer Type Drinking Water Treatment System Case Study

CURRENT SITUATION ANALYSIS



In disaster and field conditions, available **water sources contain high and variable turbidity and microbiological contamination, and raw water quality** can change rapidly, especially after disasters and heavy rainfall.

Existing temporary solutions and bottled water transportation are **not sustainable in terms of logistics and cost**; therefore, there is a need for mobile treatment systems that can be supplied **from different sources**, can be rapidly commissioned, and can reliably produce drinking water.

TECHNICAL SOLUTION APPROACH



The project was developed to provide continuous drinking water production with high hygiene standards despite variable raw water characteristics in disaster, drought, and field conditions. The system was designed with an optimized treatment infrastructure in terms of energy and chemical consumption, targeting **< 0.5 NTU turbidity, 0 CFU/100 mL microbiological quality, and a capacity of 2.5 m³/h.**

Considering variable raw water conditions and potential shock loads, a multi stage barrier process architecture consisting of active glass media filtration, activated carbon, RO, and ozone disinfection was implemented. This structure ensured process stability and maintained microbiological safety and drinking water quality at a stable level.

All units were designed as trailer integrated, compact, and resistant to field conditions. The system was commissioned as a project specific **turnkey mobile treatment solution**, meeting the requirements of speed, mobility, and reliability needed for disaster and field operations.



PROJECT INFORMATION



Trailer Type Drinking Water Treatment System



70 m³/day X 9



Central African Republic



Humanitarian Aid and Emergency Water Supply Infrastructure



High Hygiene



Plug-and-Play



Energy Efficiency



Stable and Continuous Operation



Rapid Commissioning

Trailer Type Drinking Water Treatment System Case Study

ACHIEVED RESULTS

Performance tests confirmed that the system provides stable and continuous drinking water production even under variable **raw water conditions**.

Thanks to the trailer mounted structure, local water sources can be utilized directly on site, reducing dependence on bottled water logistics.

With optimized process design and automation infrastructure, energy and chemical consumption were reduced, while maintenance needs and operation-related environmental impacts were minimized.

By reducing long distance water transportation, the system contributes to a **lower carbon footprint** and provides a **sustainable and reliable water supply solution for disaster and emergency conditions**.



KEY RESULTS



< 0.5 NTU Treated Water Turbidity
0 CFU/100 mL Microbiological Safety



2.5 m³/h Continuous Production Capacity



≈ 70 M³/DAY
Drinking Water Production



STABLE OPERATION

Under Variable Raw Water Conditions

