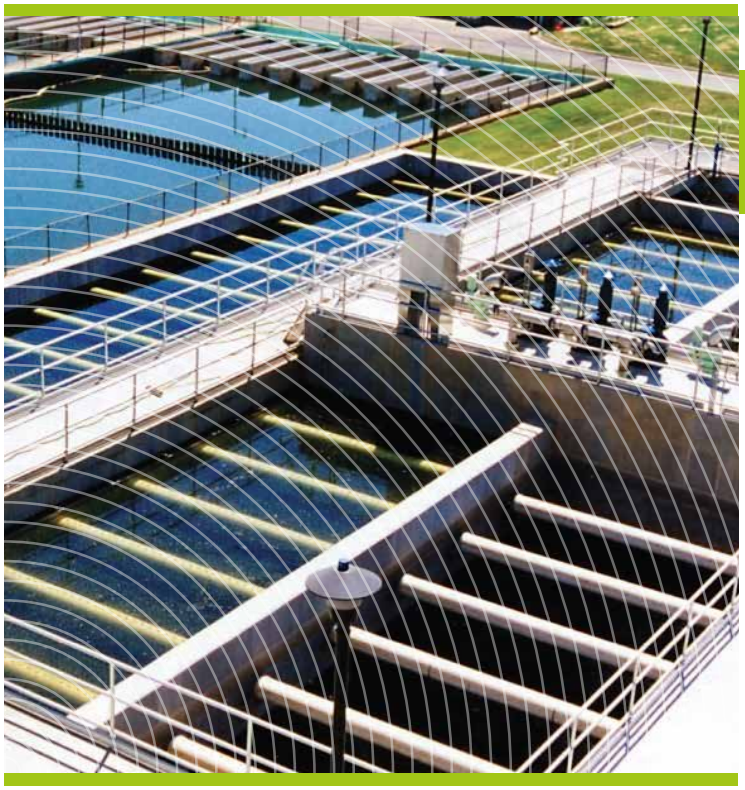
Pulsagreen

tertiary adsorption process for micropollutants removal

- **urban wastewater**



eliminate micropollutants* with reduced energy costs and optimized management of carbon

savings

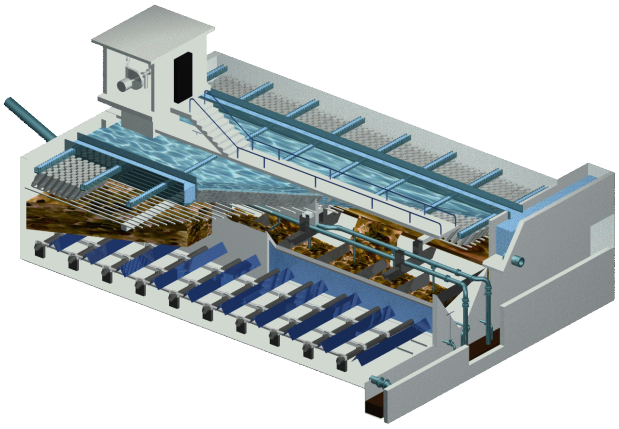
reduced energy consumption, low maintenance costs and optimal management of PAC

environment

- elimination of adsorbable micropollutants (pharmaceuticals, pesticides, PAHs, etc.)
- total suspended solids retention and removal of the organic matter
- elimination of other non-adsorbable compounds by the combined action with the coagulation

innovation

patented process for optimized management of Powdered Activated Carbon (PAC) for the treatment of micropollutants



key figure

> 80%

removal of adsorbable organic micropollutants by doses of 5 to 20 mg/l of PAC

5 mg/l of TSS to Pulsagreen outlet

5 Wh/m³ of electricity consumption

*__micropollutants:__ organic or inorganic substances that can induce adverse impacts to or via the environment at low concentrations (µg/l or ng/l)

SUEZ

Pulsagreen technology . . .

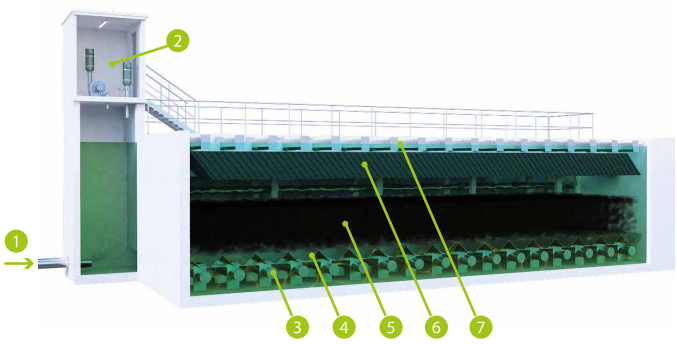
Targeted at the treatment of micropollutants in wastewater, Pulsagreen combines the efficiency of pulsed sludge blankets with the adsorption properties of PAC.

This compact unit efficiently removes micropollutants and retains suspended solids whilst reducing the quantity of organic matter in water. Pulsagreen is a treatment system composed of:

- a preconditioning step of water to be treated (injection of PAC, coagulant, flocculant) also receiving the recirculated PAC from the contact reactor,
- a low-energy pulsing system used for continuous and uniform diffusion of water to be treated,
- a slightly expanded PAC sludge blanket,
- a system dedicated to the collection and extraction of excess sludge,
- a treated water clarification and discharge system.

At work's inlet, coagulated PAC is continuously injected. Simultaneously part is taken and released to create pulsations and distribute the water evenly under the bed of sludge. This phenomenon is cyclic.

The water passes through the bed of sludge wherein the adsorption of the micropollutants, organic matter and the retention of suspended solids takes place. The treated water is clarified in the same reactor.



1. secondary effluent
2. pulsation system
3. diffusion ramp of the water to be treated
4. stilling baffle
5. sludge concentrator
6. lamellar modules
7. treated water collection troughs

. . . what it can do for you

proven technology, innovative process

- controlled hydraulics: maintains PAC bed and balances velocity within the system
- flexible function that accommodates typical wastewater variations in load and quality
- optimal use of powdered PAC is kept homogenous by cyclic pulsations
- an integrated clarification system and a discharge system of treated water

simplicity and economy

- PAC dosing adjusted to the quantity of present organic matter
- optimized management of new and used PAC
- low energy consumption (5 Wh/m³)
- ease of operation and maintenance
- no risk of abrasion or corrosion

SUEZ treatment infrastructure

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among our references

. . . in wastewater

Lausanne, Switzerland
flow rate: 8,640 m³/h

Colmar (68), France
pilote tests
flow rate: 26 m³/h

. . . in drinking water

Montours (35), France
flow rate: 3,000 m³/d

Vire (50), France
flow rate: 5,000 m³/d

Saumur (49), France
flow rate: 19,000 m³/d

Apremont (85), France
flow rate: 40,000 m³/d

Gorron (53), France
flow rate: 3,600 m³/d

Avranches Sud (50), France
flow rate: 8,000 m³/d

Bellac (87), France
flow rate: 20,000 m³/d

Rennes Villejean (35), France
flow rate: 80,000 m³/d

le Houlme (61), France
flow rate: 4,000 m³/d

Plouenan (29), France
flow rate: 12,000 m³/d

Côteaux du Touch (31), France
flow rate: 24,000 m³/d

Saint-Étienne (42), France
flow rate: 100,000 m³/d

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Conception & Realisation: O. Barbier (SUEZ) - Photos: SUEZ