



Your Global Water Solutions
Partner
in the
Mining Industry

>

WATER TECHNOLOGIES

About Veolia Activity and Key Figures for 2014

VEOLIA DESIGNS AND DEPLOYS CIRCULAR ECONOMY SOLUTIONS FOR **WATER**, **WASTE** AND **ENERGY** MANAGEMENT TO IMPROVE EFFICIENCY FOR CITIES, INDUSTRY AND CITIZENS.



€23,880
million revenue

179,000
employees
on 5 continents

6.8 M
tons equiv. CO₂
avoided and

15.3 M
tons equiv. CO₂
reduced

39.3 M
MWh of renewable or
alternative energy
consumed

34%
of the company's total
consumption

Veolia Water Technologies

Veolia Water Technologies provides the complete range of services required to **design, build, maintain** and **upgrade water** and **wastewater** treatment facilities and systems for **industrial** clients and **public authorities**.

2014 Key Figures of Veolia Water Technologies

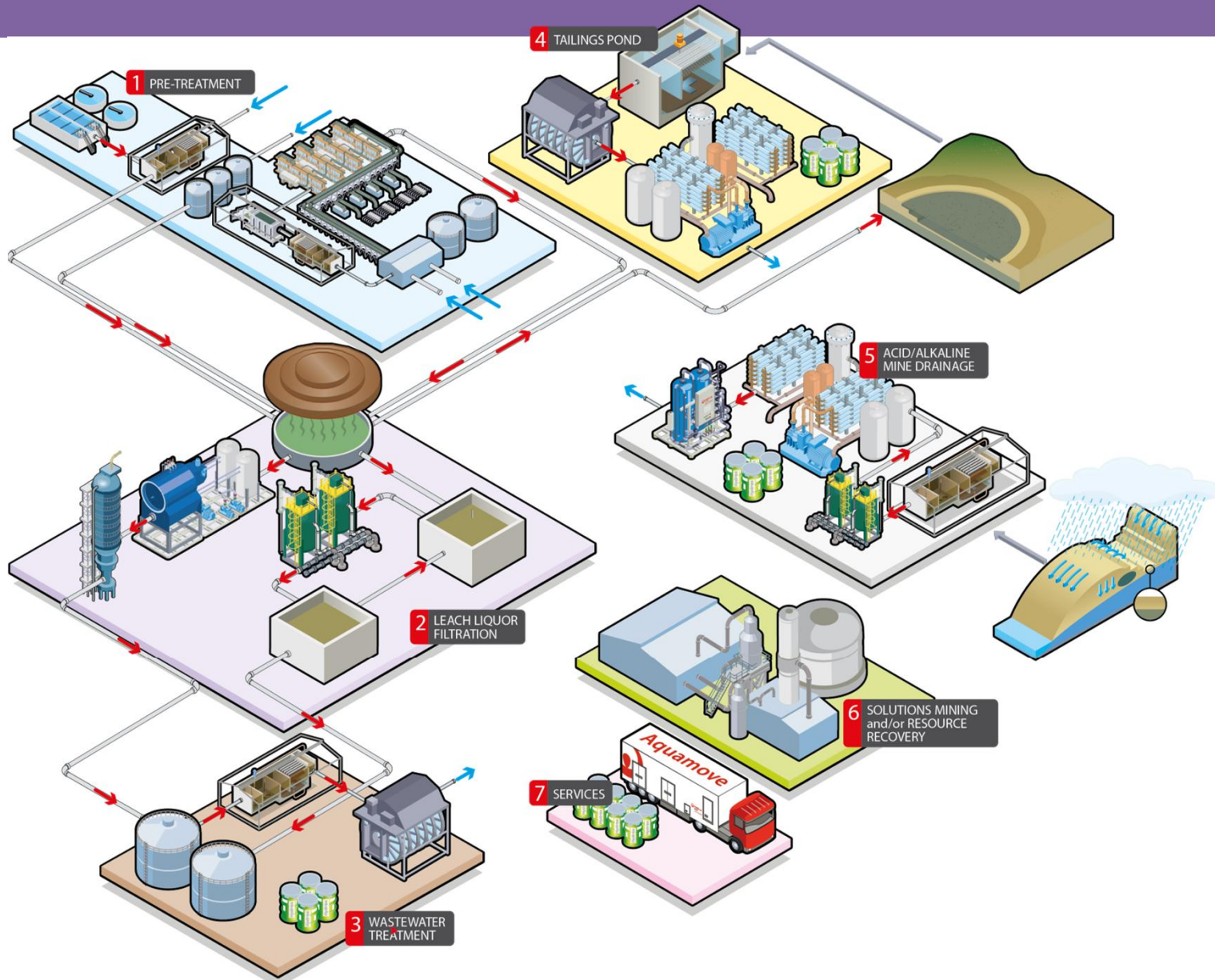


Veolia Water Technologies Finland

- Aquaflow Ltd.
- Turnover 2014, € 11.4 million
- 40 Employees
- Market responsibilities:
 - *Pulp & Paper industry → Global*
 - *Veolia Water Technologies → Finland, Estonia, Latvia & Lithuania*
- Offices:



Mining Industry Needs & Technomap



Key Sub-Markets

Gold



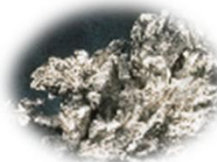
Zinc



Potash



Silver



Iron



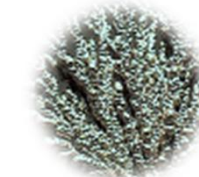
Uranium



Copper



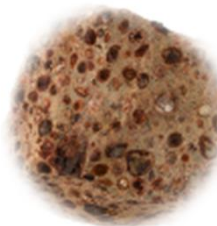
Nickel



Coal



Bauxite



Phosphate

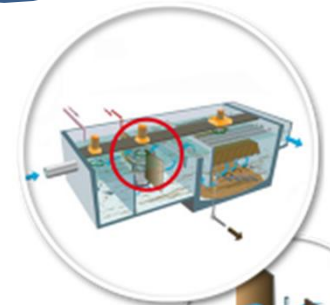


Rare earth



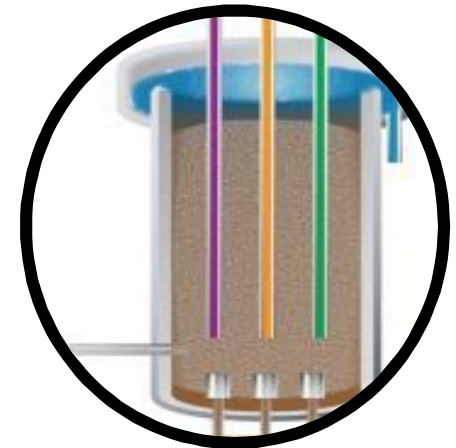
Innovative Technologies for the Mining Industry

- **ACTIFLO® Clarification**
 - *Mine water treatment*
 - *High Turbidity water treatment for process use*
 - *Compact, ballasted sand, high rate wastewater clarification process*
- **Turbomix™ (patented technology)**
 - *Improve process kinetics and efficiency*
 - *Improve crystal formation*
 - *Ensure optimum utilization of all chemicals*
 - *Ensure a smaller flocculation tank footprint*
(**ACTIFLO® Turbo** - Flocculation improved by Turbomix™)
- **AnoxKaldnes™ MBBR**
 - *Moving Bed Biofilm Reactor*
 - *Treatment of high ammonia, cyanide, and nitrate mine water*
 - *Suitable for high BOD / COD waste water*
 - *Nitrification / De-nitrification & biological cyanide removal*



Innovative Technologies for the Mining Industry

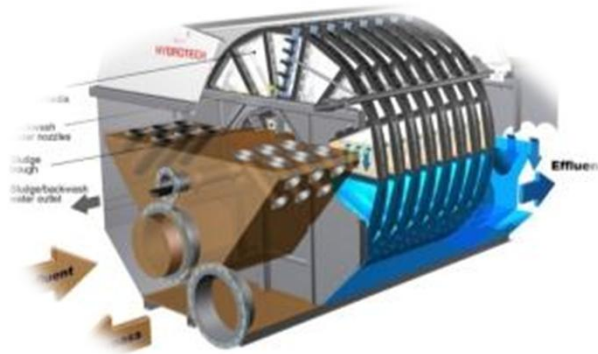
- **MetClean™** (patented technology)
 - *Adsorption of heavy metals to an active surface of FeOOH or MnO_2*
 - *The active surface is continuously renewed*
 - *Fluidized bed technology, no back wash and no stop, operating 24/7*
 - *A coarse – fine sandy granulate as residual. Inert or non hazardous classification of the residual according to EU standards*
 - *Patented technology in EU, US and AU*



Other Proven Technologies for the Mining Industry

● Hydrotech® Discfilters

- Produces Effluent with low turbidity and low suspended solids



● Auto-Jet® & Filtra-Matic™

- Premium self-cleaning pressure leaf filters
- Gold/Silver Cyanide Leach Filtration (Merrill-Crowe solution)



● Ion Exchange

- Production of ultra pure water for process requirements
- Removal of particular ions, heavy metals or recovery of valuable ions



● HPD Evaporation & Crystallization

- Solutions Mining
- Zero Liquid Discharge (ZLD)



Innovative Service for the Mining Industry

- o **Mobile Water Treatment Services**

- o *Mobile services for emergency rental, planned temporary hire, long-term contract*
- o *Large fleet of mobile units using proven technologies: clarification, softening, filtration, reverse osmosis, ion exchange deionization*
- o *Fast delivery*



- o **Mobile Water Treatment units in Finland**

- o *Actiflo 100 m³/h*
- o *RO 25 m³/h*



Focus on Water Reuse



Cutting Edge Technologies to Optimize Water Re-Use:

- *Thallium Removal*
- *Selenium Removal*
- *Cyanide Removal*
- *LoSO₄ - Sulfate Reduction by Ettringite Precipitation*