JOSAB
ECOLOGICAL WATER SOLUTIONS

October 2015
SAFAB

Advantages

JOSAB ECOLOGICAL AQUALITE™ SYSTEM

LOW COST HIGH FLOW WATER TREATMENT SOLUTIONS

- Low environmental impact
- Ecological – No chemicals
- Low energy consumption – Less than 1 Watt per liter potable water
- User friendly
- Operational within hours
- Less consumables
- Reduced water consumption
- Significant water clarity
- Improved T10-value – More efficient UV sterilization

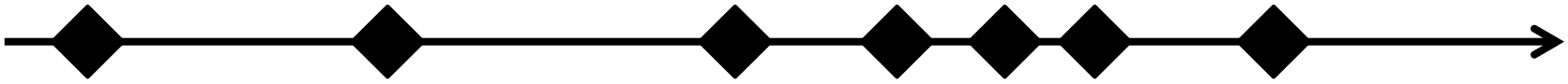
Our history

History

1983: *Mr Sparrman discovered the superb adsorption characteristics of the zeolite. He studied various zeolites and found one of particular interest, clinoptilolites, since it possessed unique adsorption and ion-exchange capabilities.*

2005: *International Red Cross (IFRC) tested and selected Josab's system to become one of four systems used in rescue operations*

2008: *Listed on NGM Nordic MTF. The stock trade was later moved to Aktie Torget in 2013*



1983 **1990** **1999** **2005** **2007** **2008** **2013**

1990: *Mr Sparrman built the first mobile water treatment plant mounted into a 20" container.*

1999: *Josab International AB was founded to develop and manufacture mobile water treatment plants*

2007: *Josab International acquired the Ratka-mine in Mád, Hungary to secure the availability of Aqualite™*

2013: *New management and strategy with primary focus on Asia and volume solutions*

Focus

Explore & Develop the Solution

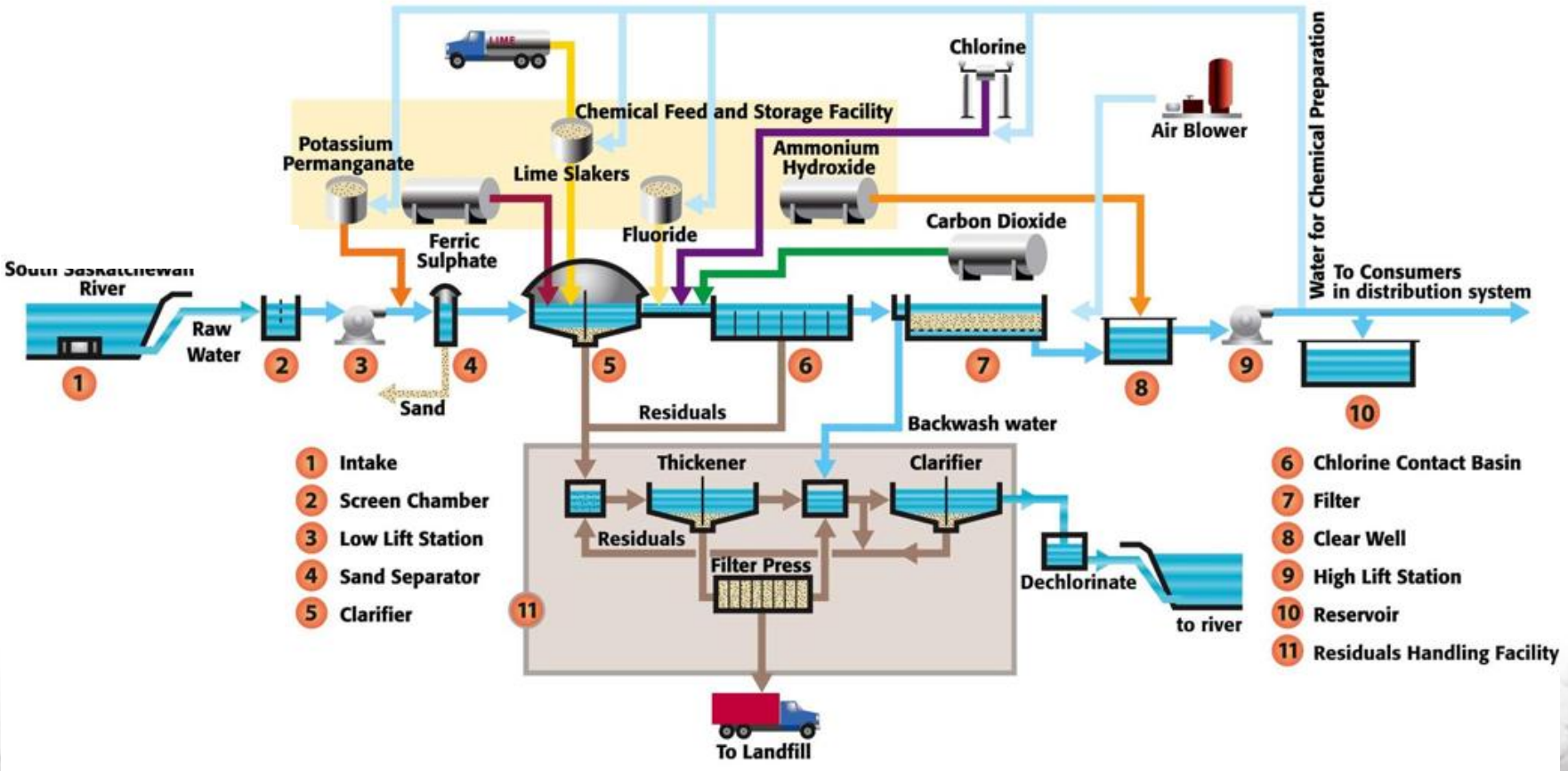
Industrialization

Sales Focus

Rescue and aid solutions

Volume market solutions

Traditional Technologies – Not used by JOSAB



Our technology – JOSAB's patent

Untreated water

1.5 – 3.5 bar

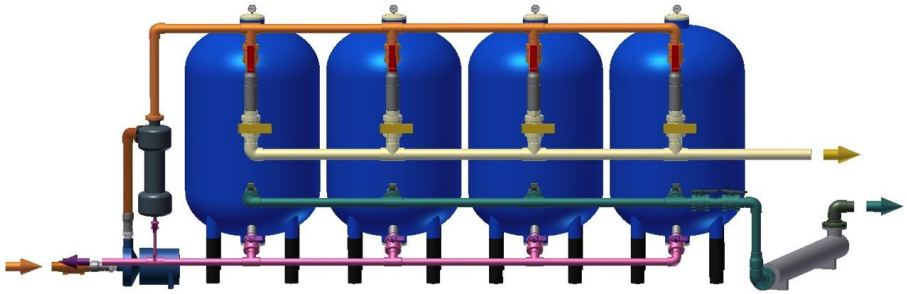
Aqualite™

UV FILTER

Eliminates the last of::
Cryptosporidium,
E.coli,
Guardi Lambla,
Pathogens,
Parasites and
Bacteria

Treated water

Greatly reduces::
Heavy metals, Hydrosulfide,
Particles, Ammonium,
Algae,
Fungus,
Cryptosporidium,
Pathogens,
Parasites, etc.



Aqualite™

Mechanical filtration of particles larger than 1 micron such as bacteria, parasites and pathogens

Reduction of heavy metals through Ion-exchange

Adsorption of contaminations in solutions such as ammonia, nitrogen, oil derivatives

Our secret **Aqualite™**

Reduction by ion-exchange,
NH4>K>Fe, Mn>Cs>Zn>Ba, Sr, Pb, Ca>Cu, Ag, Hg, Co>Al>Mg, Li>Ni>.

Video

JOSAB's offer

Aqualite™
The core of our patented ecological water treatment solution
Sold separately to other applications

Container & Modular Water Treatment Units
Standardized container based units with a capacity between 100 and 3000 m^3/day
Modular units for emergency/rescue situations

Technology & Customized Plants
Licenses to use our patented technology in own design
Customized design, assembled and operated by JOSAB

Product range – Containerized units

SC100:

- Capacity of 100-170 m^3/day*
- 4 filter tanks/20 ft HQ container
- kWh/m^3 H_2O: 0,41-0,69

SC500:

- Capacity of 400-650 m^3/day*
- 4 filter tanks/20 ft HQ container
- kWh/m^3 H_2O: 0,46-0,75

SC900:

- Capacity of 600-1000 m^3/day*
- 4 filter tanks/20 ft HQ container
- kWh/m^3 H_2O: 0,29-0,49

SC1800:

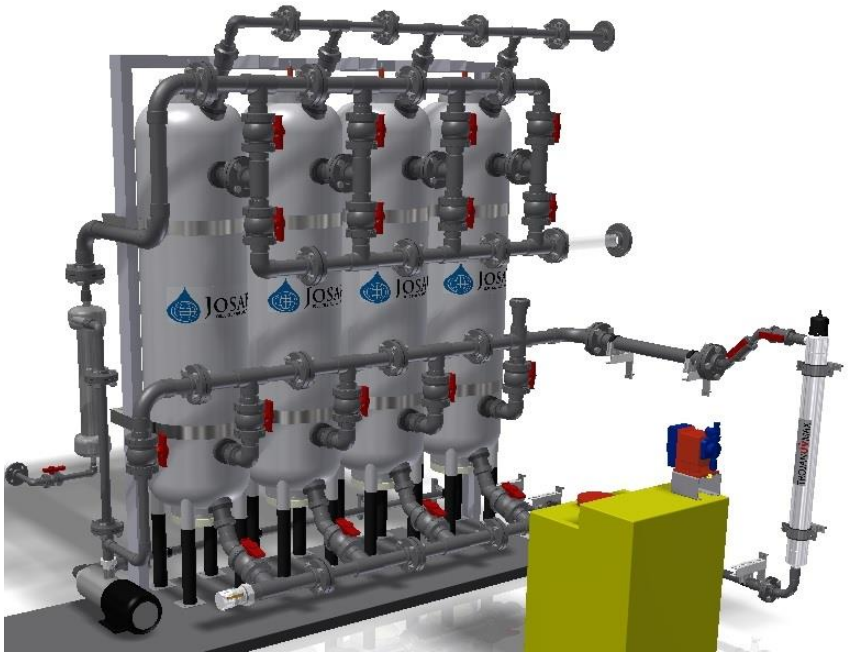
- Capacity of 1200-2000 m^3/day*
- 8 tanks/40 ft HQ container
- kWh/m^3 H_2O: 0,29-0,47

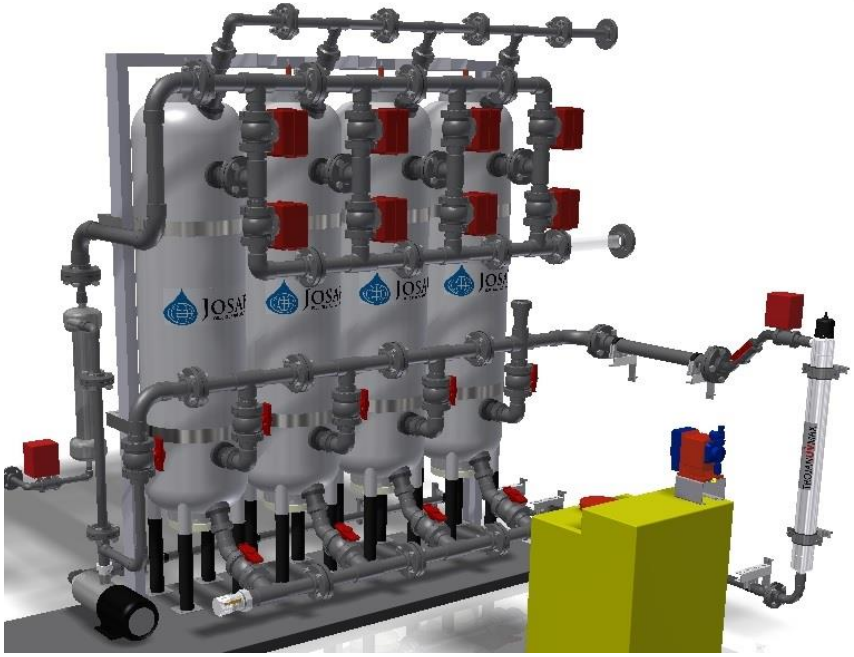
SC2700:

- Capacity of 1800-3000 m^3/day*
- 12 tanks/45 ft HQ container
- kWh/m^3 H_2O: 0,28-0,47

* With 23 hours of operation

Manual or Electronic





Manually operated:

- Manual valves
- Manual control unit

Electronically operated:

- Electronic valves
- Touchscreen control unit
- Possible to connect to internet for external operation

Monitoring and Add-ons

Monitoring:

- Visual
- Touch control
- Logbook
- Safety alarm (high/low pressure)

Pre or after treatment:

- Flocculation
- Bag filtration
- pH adjustment
- Activated carbon filtration
- Chlorine dosing (Standard)
- …

Product range – Pallet & Emergency units

P100:

- Capacity of 78-130 m^3/day*
- 4 filter tanks on 4 euro pallets
- kWh/m^3 H_2O: 0,46-0,76

P25:

- Capacity of 20-33 m^3/day*
- 1 filter tank on 2 euro pallets
- kWh/m^3 H_2O: 0,58-0,96

Portable Basic:**

- Capacity of 14-24 m^3/day*
- 1 filter tank on a handcart
- kWh/m^3 H_2O: 0,88-1,37

Portable Pro:***

- Capacity of 10-15 m^3/day*
- 1 tank on steel frame w/ wheels
- kWh/m^3 H_2O: 0,96-1,44

* With 23 hours of operation
** High flow rate/WHO quality not guaranteed
*** Low filter bed, but UV and Chlorine incl.

Summary – Standard Product Range

Model	Container size in feet*	Production m^3/day**	Power kWh***	kWh/m^3 safe potable water
SC2700	45	1800 - 3000	36	0,28 - 0,47
SC1800	40	1200 - 2000	24	0,29 - 0,47
SC900	20	600 - 1000	13	0,29 - 0,49
SC500	20	400 - 650	12	0,46 - 0,75
SC100	20	100 - 170	3,5	0,41 - 0,69
P100	Pallets	78 - 130	2,5	0,46 - 0,76
P25	Pallets	20 - 33	0,8	0,58 - 0,96
Portable Basic	Wheels	14 - 24	0,8	0,88 - 1,37
Portable Pro	Wheels	10 - 15	0,6	0,96 - 1,44

- ISO class sea high cube container. Size based on standard installation. Additional add-ons can give a larger or separate container.

**Based on 23 hours production per day and 1 hour per day backwashing.

***standard for a manual unit

Our historical partners

- Swedish Civil Contingencies Agency
- United Nations Global Market (UNGM)
- Red Cross
- Red Cresent Societies (FRC)
- National Agencies in Ghana & Nigeria
- The National Institute of Hygiene in Poland
- Denmark (Roskilde)
- Sweden (Helsingborg)

MSB Swedish Civil Contingencies Agency

RödaKorset

International Federation of Red Cross and Red Crescent Societies

PUBLICAE • AUGENDAE • SANITATI • PZH Founded in 1918

New Strategy – From low volume rescue/aid to high volume commercial water treatment

The new management of JOSAB is executing on a new strategy:

Market focus	• Primary focus on growth in Africa and Asia • Fully owned and operational subsidiaries in China, India and Hungary • Co-operation with strong and local representatives where no subsidiary
Industrialization	• Standardization of product portfolio • Setup of production to assemble modular water treatment plants in Asia • Customization and engineering for large plants • Capacity investment in the Ratka mine, Hungary
Partnership for growth	• Ongoing discussions with strong partners for joint marketing and sales activities on key markets. • Partnership with local subcontractors

Other applications than drinking water

- Offshore systems
- Maritime systems
- Ground sanitation
- Irrigation systems
- Waste water purification
- Fish and prawn farming
- Swimming pools
- Green houses
- Process water
- …

Service Concept

- **Philosophy:**
  - Control, maintenance and service with agreed intervals
  - Regular contact to safeguard personal relationship and proper operation
- **Warranty:**
  - 1 year for products used in JOSAB's units given that all steps of the General Service Agreement and maintenance are followed
- **Service agreement:**
  - Offered for a period of 2 up to 12 years
  - Performed by JOSAB, JOSAB's subsidiaries or representatives
  - A basic service agreement will be compulsory in order to receive a warranty regarding any of JOSAB's units, components and accessories

Service Concept… cont'd

- **Certified JOSAB Technicians:**
  - Will perform service of the units according to guidelines by JOSAB
  - JOSAB Technicians will be trained on a regular basis
- **Annual Fee:**
  - Customers will be charged based on an annual fee plus cost for spare parts, repair works et.al.
- **Examples of annual service:**
  - Control that the logbook is accurate and up to date
  - Inspection of unit (Aqualite, bolts, gaskets, connections, functionality…)
  - Change of used parts (UV, wear parts, filters…)
  - Regeneration (The process itself and handling of the waste from the process)
  - …

Discussion

- Complete Water analysis needed! Seasonal changes?
- What parameters are important and what target values?
- Requested output per day?
- Continuous output?
- Infrastructure of system? (Water supply, electricity, other functions/equipment…)
- Timing? (Start of project, water supply…)
- Service and maintenance

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Any questions?

Next step?

Thank You for Your attention!