

Data

- Production
55 m³/day
- Year
2008

Parameters of the effluent to be treated

Parameters	UM	Value
Conductivity	mg/l	19,090
COD	mg/l	6,760
NH4	mg/l	1,700
Total Solids 105°C	%	1.2
BOD5	mg/l	1,000
Total Suspended Solids	mg/l	200

Parameters requested by the Italian current legislation (DLgs 152/06)

Parameters	UM	VWS Results	Law
COD	mg/l	4	100
NH4	mg/l	0,5	5
Chloride	mg/l	70	100
BOD5	mg/l	3	20



Evaled™ superconcentration unit AC RW 3000

Design & Build of a Landfill Leachate Treatment Plant

The Client

TSA is part of the Genesu Group (operating at an International level in many sectors) and is highly experienced in many aspects of environmental services. The company has delivered a numbers of solutions in Perugia over the last 20 years, including street cleaning, waste collection and transport, graveyard services, public gardens maintenance, building and management of waste disposal plants, ecological stations and phytodepuration plants. The landfill managed by TSA in Borgo Giglione (Perugia) covers a surface of 40,000 m² and receives about 113 tons/day of waste, producing 50 m³/day of leachate.

The Challenge

The client's main needs, which are typical of all companies operating in this sector, was reduction in the volume of leachate to be disposed of, whilst ensuring that any streams produced can be discharged from site in accordance with environmental obligation.

Our Solution

Thanks to its considerable experience and vast knowledge in this particular sector, VWS Italia was able to provide the client with a landfill leachate treatment plant with a capacity of 55,000 l/day, allowing a **reduction of 98%** of the total volume to be disposed of, with the consequent dramatic reduction of the relevant costs, at the same time fully complying with environmental legislation.



Evaled™ evaporator RV TC 60000

Solutions & Technologies

Pre-treatment:

- pH adjustment with hydrochloric acid: in this phase, the ammonium salification occurs owing to the reduction of scaling phenomena.
- Degassing: degassing of leachate to reduce formation of foam within the evaporator.

Evaporation/Concentration:

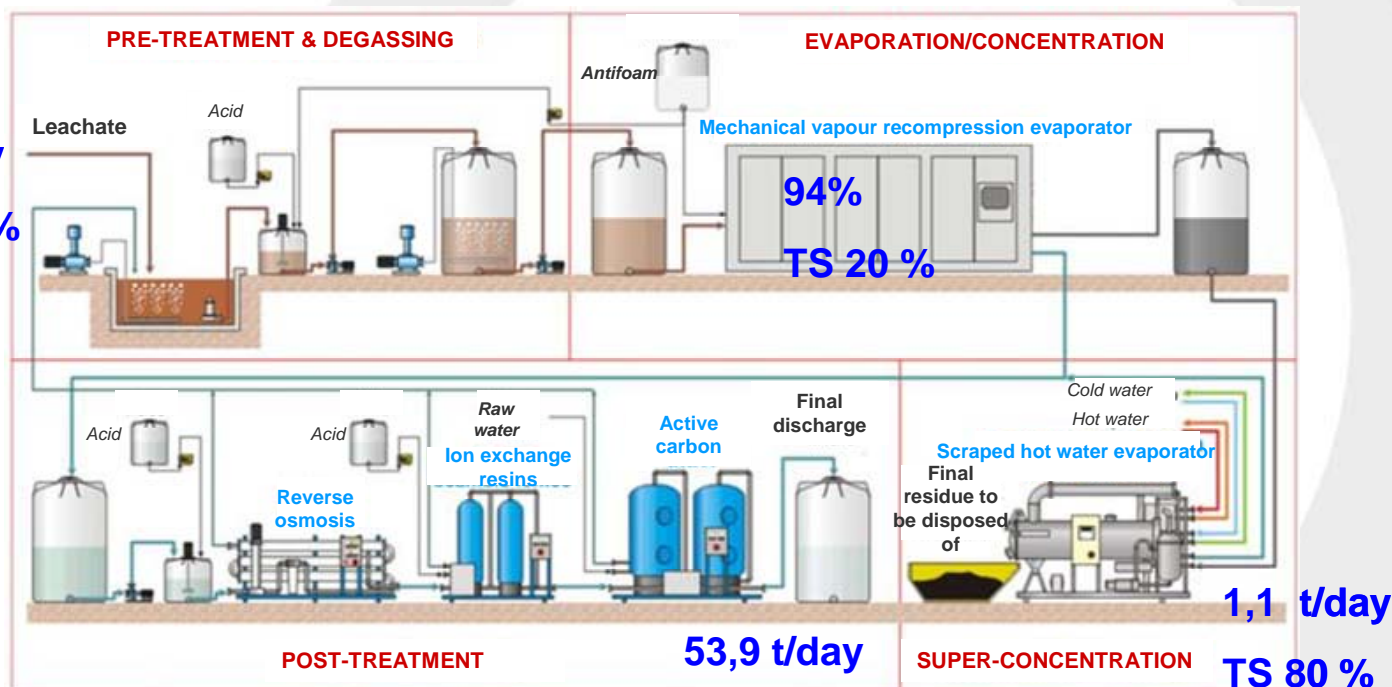
- Evaled™ RV TC 60000: First Phase Concentration - the pre-treated leachate flows into the vacuum heat pump evaporator, with mechanical vapour recompression and forced circulation, producing a concentrate and distillate.
- Evaled™ AC RW 3000: Second Phase Concentration - the concentrate from the first phase is further concentrated via a hot/cold water evaporator with natural circulation and heat exchanger with scraped heating surfaces. This second phase of concentration further reduces disposal costs. The obtained substance is a semi-solid residue disposable within the same landfill, fully complying with the current local environmental regulations.

Post-treatment:

- Reverse osmosis: the distillate coming from the first phase and second phase evaporators goes through a membrane polishing step, followed by treatment through an ion exchange unit and activated carbon to ensure discharge standards are met.

TSA - BORGIGLIONE MASS BALANCE

55 t/day
TS 1,5 %



Reduction of the total volume 98 %