

EVAPORATION TECHNOLOGY IN WASTE DISPOSAL SITE



eco
TECHNO
VACUUM EVAPORATION SYSTEMS

CUSTOMER



Castelfranco di Sotto (PI), Italy

Years of activity	25
Industry	Waste
Production process	Waste disposal site
Wastewater	Oil emulsions and salty wastewater

CHALLENGE

Customer's needs

- Reduce the RO concentrate
- Searching for a technology able to treat several complicated liquids that conventional technologies (ch-ph, biological systems, filtrations) cannot treat

Goals to achieve

Having a flexible solution that allows to process as many CER codes as possible

SOLUTION SUPPLIED

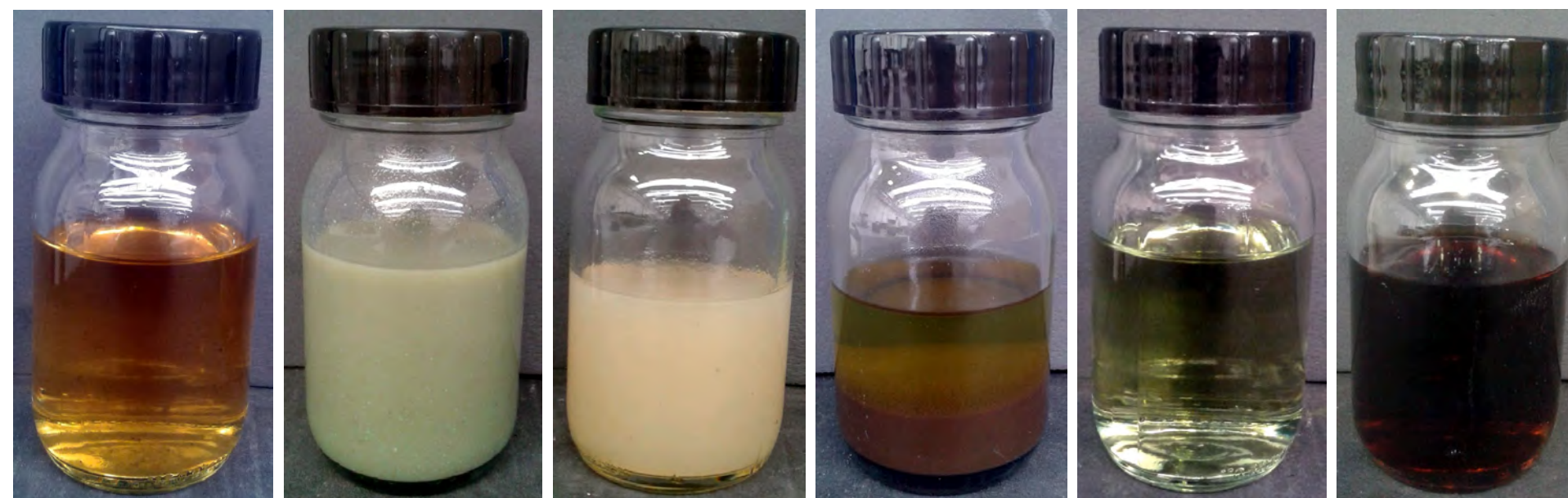
DESCRIPTION OF THE SUPPLIED SOLUTION

ECO 100.000 DPM-3 SE is a forced circulation triple effect evaporator with external shell and tube heat exchangers. It works with thermal energy, so hot water (or steam) and cold water. With a triple effect the energy consumption is reduced enormously, so OPEX are really low. This technology is highly suitable for the treatment of large quantities of wastewater, even with complicated characteristics such as those of the world of waste disposal

% DISTILLATE (YIELD) 65-90%

CONCENTRATION FACTOR 3-10

ANALYSIS



DIFFERENT INLETS

PARAMETERS	UNIT	WASTEWATER INLET	DISTILLATE	CONCENTRATE
pH		5,8-9,5	6,5-10,5	/
TS 105° C	%	2-20	/	30-60
Conductibility	μS/cm	20.000-250.000	< 5.000	/
COD	ppm	1.000-50.000	< 1000	/
Cl-	ppm	3.000-45.000	< 25	/

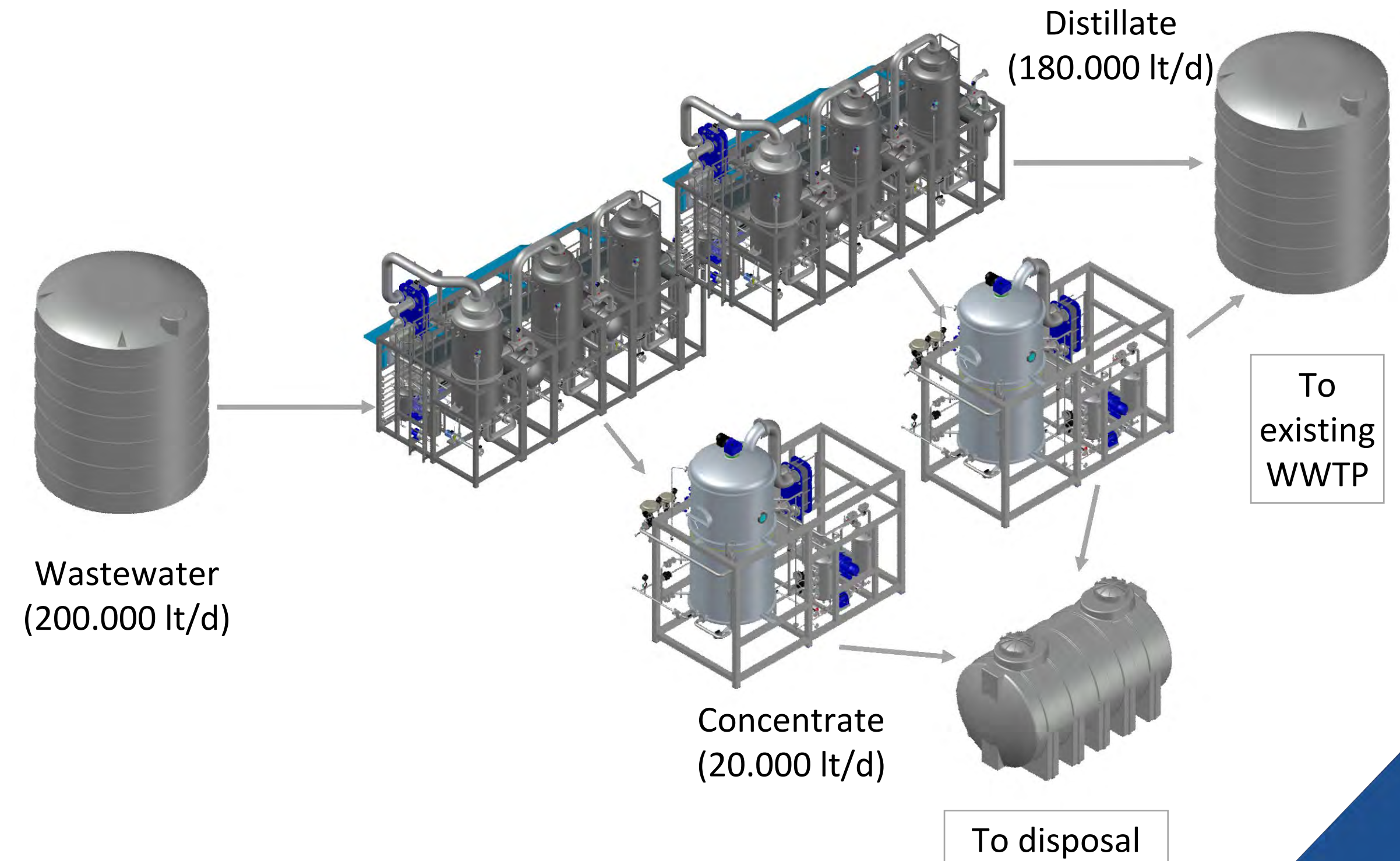
CONCLUSIONS

Thanks to our evaporator, the customer reached his goal to reduce the volumes of wastewater coming from RO.

After that, the client was able to start withdrawing new CER codes associated to other typologies of waste that traditional plant was unable to treat. It was therefore decided to purchase a second evaporator, identical to the first one, with the particular aim of treating high salinity water.

Finally, following a detailed economical analysis, the customer decided also to install two thermally feeded scraped evaporators to further treat the concentrates of the first two stages, and thus bring them to a palable solid.

MASS BALANCE





First expansion from one to two triple effect evaporators (on the left) and subsequent addition of a second stage with a scraper (on the right) to obtain a solid concentrate



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