EVAPORATION TECHNOLOGY IN SALT CRYSTALLIZATION

eco TECHNO
VACUUM EVAPORATION SYSTEMS

CUSTOMER

Pisticci (MT), Italy

Years of activity	30
Industry	Waste
Production process	Waste disposal plant
Wastewater	Salty wastewater

CHALLENGE

Customer’s needs

Find a technology to treat a stream with high concentration of NaCl and separate the solid salt from water.

Goals to achieve

Obtain a crystalline salt with a low residual humidity (< 10%).

SOLUTION SUPPLIED

DESCRIPTION OF THE SUPPLIED SOLUTION	ECO 60.000 DPM2 SE is a 60.000 lt/day double effect evaporator with forced circulation and external shell and tube heat exchangers. It works with thermal energy. The forced circulation allows to treat salty wastewater in which the solubility limit is exceeded. High final salt concentrations are achievable. Finally, a Pusher centrifuge brings the evaporator concentrate to a solid salt with a residual humidity of less than 2%: the mother liquor is recirculated back to the evaporator
NaCl INLET	26,5 %
NaCl OUTLET	> 38 % (over solubility limit)
NaCl AFTER CENTRIFUGE	> 98 %

ANALYSIS

INLET

DISTILLATE

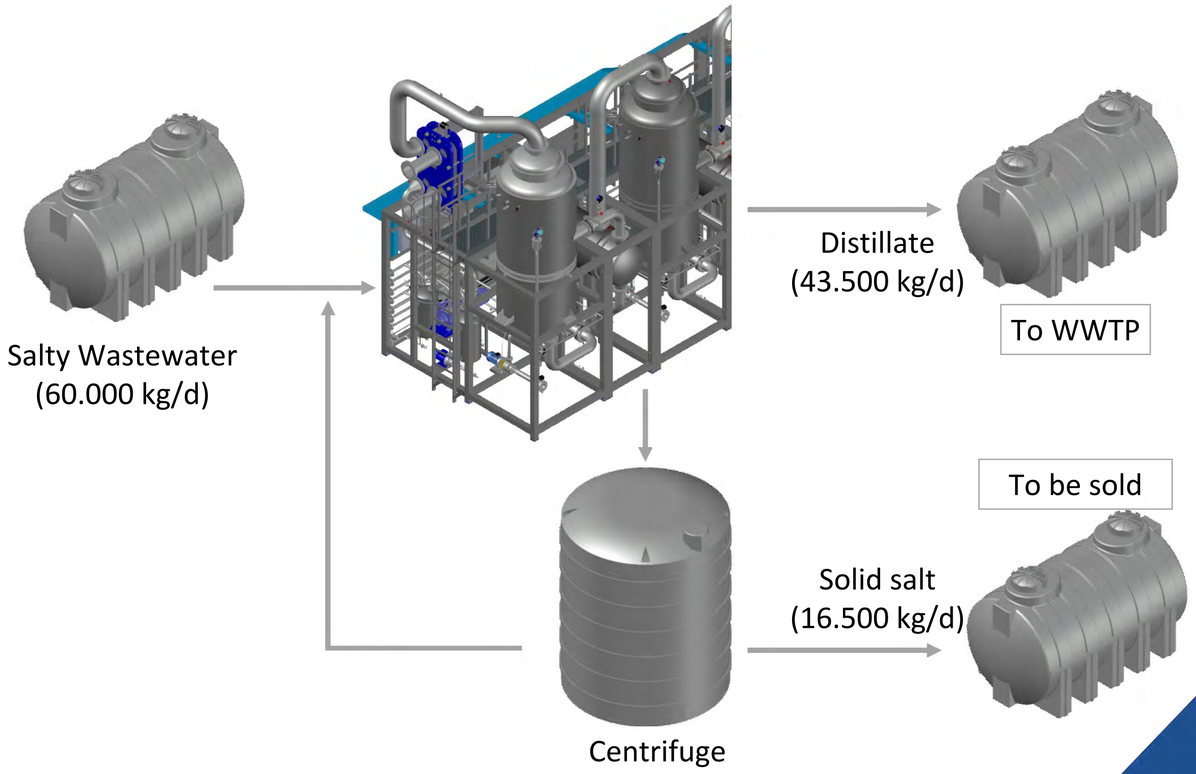
CONCENTRATE

PARAMETERS	UNIT	WASTEWATER INLET	DISTILLATE	CONCENTRATE
pH		6,8	6,8	/
TS 105° C	%	27	/	> 38
Conductibility	µS/cm	200.000	< 2.000	/
COD	mg/l	72.000	< 1.500	/
Cl^-	mg/l	160.000	< 25	/

CONCLUSIONS

The customer, thanks to our solution, has fully achieved his goal. The high purity salt obtained is sold externally, while the distillate is sent to the existing WWTP.

MASS BALANCE



The installed plant during regular daily functioning

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