

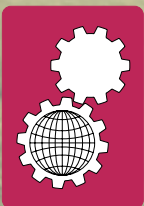
Caustic Water Recovery System



RECYCLE



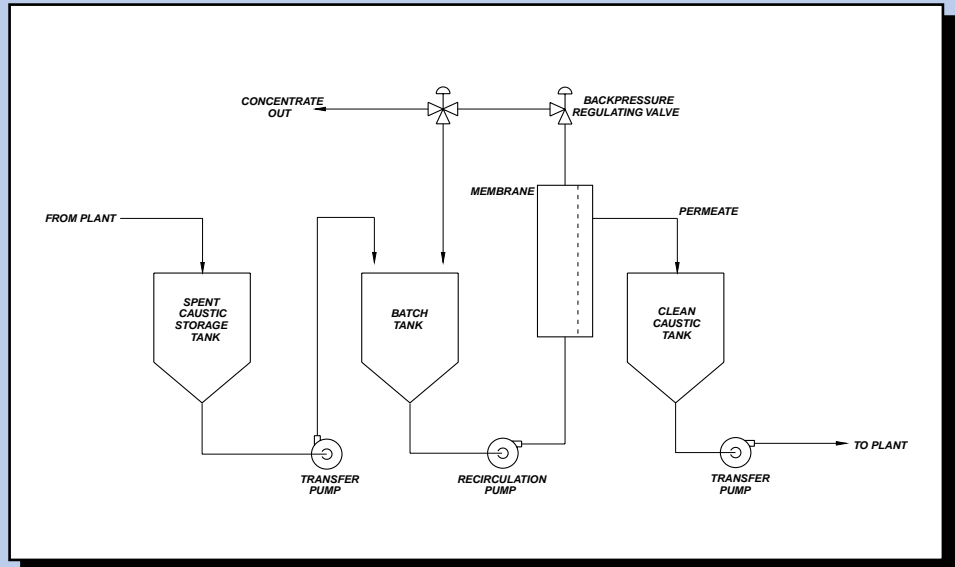
- System recovers up to 90% of caustic solution.
- Reclaimed caustic is regenerated for reuse in plant CIP systems.
- In many cases the concentrated solids (fat & protein) may be used as an animal feed supplement.
- Achieve real savings by reducing chemical usage, lowering BOD and sewer charges, recycling heat energy, and reducing water consumption.
- ROI is less than one year.



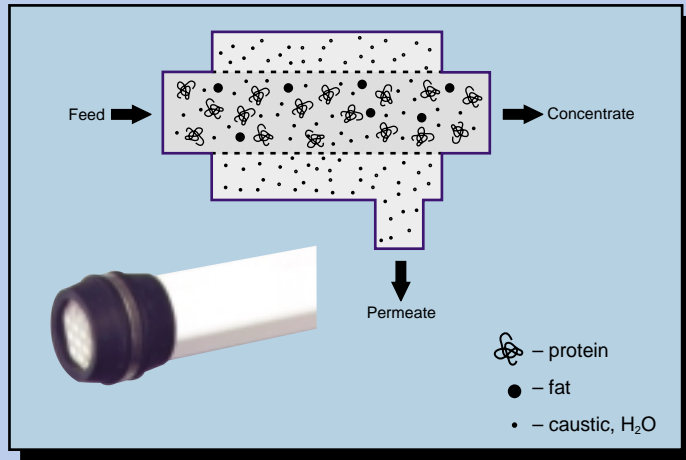
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THE SYSTEM

CIP wash water from the plant is collected in a storage tank and intermittently transferred to a batch circulation tank. The caustic solution is recirculated through a membrane module and returned to the batch tank. The clean caustic solution is discharged from the membrane module to the CIP system or stored in an intermediate tank for future use. The by-product of this process is a concentrated solution of protein and fat that may be utilized as an animal feed ingredient.



HOW IT WORKS

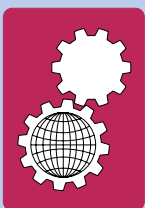


The membrane is a ceramic material that is permeable to low molecular weight molecules such as water, salt, caustic and acid. Protein, fat and complex carbohydrates cannot pass through the membrane and are therefore retained as a concentrated solution. Ceramic membranes are capable of operating under extremely high pH and temperature conditions and have a life expectancy of up to 10 years.

THE RESULTS*

Sample	Feed	Concentrate	Permeate
NaOH	4.0%	4.0%	4.0%
Total Solids	5.7%	11.2%	4.1%
Fat	0.5%	3.5%	0.01%
Protein	1.1%	2.7%	0.05%
Volume	100%	10-20%	80-90%

* Results can vary slightly depending upon type of operation.



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