

# Xinjiang Yili Xintian Coal Chemical Industry Wastewater ZLD Project

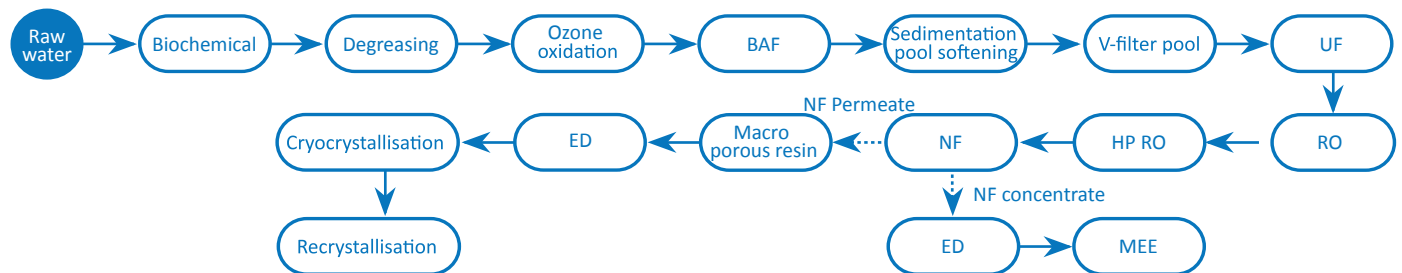
## Project Introduction

Xinjiang Yili Xintian Coal Chemical Wastewater ZLD Project originally used UF+RO and ED process, which resulted in low recovery rate and frequent fouling of the membrane system. With only 55% membrane recovery in Spiral Wound RO and chemical cleaning every 2 hours, the Spiral Wound NF need to be completely replaced in only 4 months, while the ED system is inoperable due to severe fouling and scaling. After technology comparison, the owner finally chose NEWA's containerized DTRO membrane system to replace the original ED process section. In the actual operation of the project, DTRO membrane module with its unique structural design to extend the cleaning cycle to 20~30 days / time, the recovery rate increased to 75%, effectively guaranteeing the stable operation of the entire project.

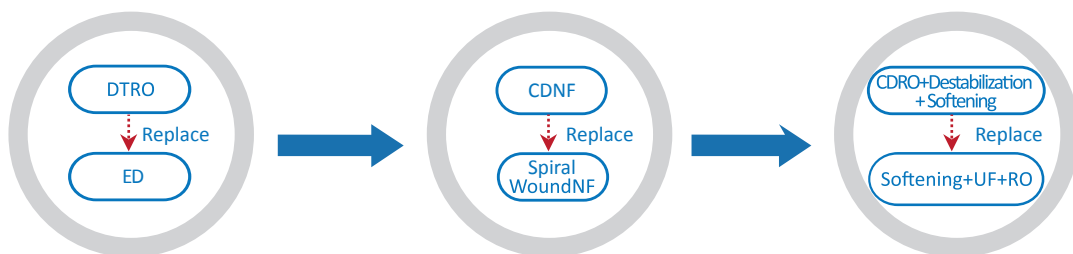


**Inlet:** CODCr < 2000mg/L, TDS ≈ 28000mg/L **Permeate:** CODCr ≤ 70mg/L, TDS ≤ 800mg/L  
**Capacity:** 1000m³/d (Phase I) 1000m³/d (Phase II)

## Original process route (conventional process)



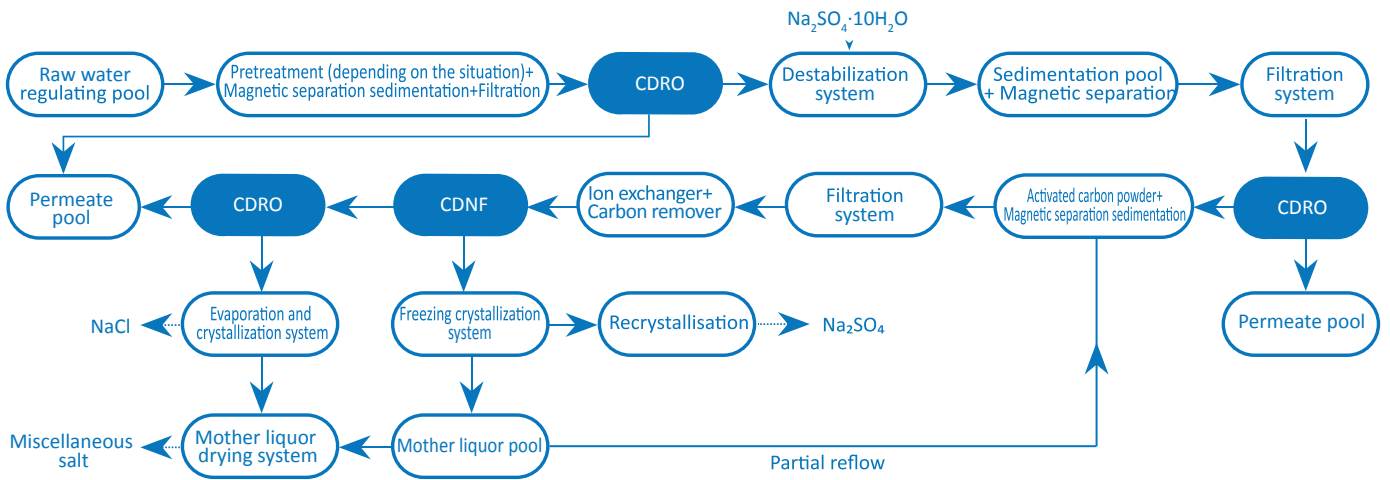
## NEWA innovative process



## Project Highlights

- extend the cleaning cycle to 20~30 days / time, the recovery rate increased to 75%. Getting an otherwise fouled resin + ED running again.
- The DTRO membrane module avoids the problem of frequent fouling and scaling with its unique design and reduces more than 70% of softening chemicals to crystalline softening (subtractive method).
- Resistant to high pressure, membrane can be replaced individually, easy to clean and maintain, service life of the membrane module is more than 3 years.

## NEWA coal chemical wastewater ZLD process route and advantages



### Low cost, less evaporation

The coupling system of "Sedimentation pool + Magnetic separation" and "Flat membrane + Destabilizer" reduces the softening cost. Less evaporation, less evaporation mother liquor.

### Simplified pre-treatment and stable operation

CDRO replaces the UF+RO process, shorter process flow, simplified pre-treatment, improve the salinity of the concentrate and reduce operating cost.

### High efficiency and easy installation

Fast delivery, short production cycle and easy installation.

### High production and good quality of sodium sulfate

The COD of this evaporation process has little impact on the quality of sodium sulfate, with high sodium sulfate production and low miscellaneous salt rate.

## NEWA process and conventional process comparison

Item	NEWA process	Conventional process	Results
Membrane system	CDRO	UF+RO	Increase 10% recovery rate; Low chemical cleaning frequency; Long service life
Process	Short process flow, simple pre-treatment	Long process flow, complex pre-treatment	Low CapEx, Simple operation management
Hardness removal	Destabilizer + Sedimentation pool	Conventional sedimentation pool	Good softening effect; reduce dosing cost and amount of evaporation; can achieve by-product resourcefulness
Evaporation	Freezing crystallization + evaporation crystallization + mother liquor treatment	Evaporation crystallization	High quality of salt production, less miscellaneous salt, less mother liquor

## Partial cases

Project	Location	Type	Capacity
Yuheng industrial park wastewater treatment project	Shaanxi	Coal chemical waste water	2000m <sup>3</sup> /d ( Phase I ) 4000m <sup>3</sup> /d ( Phase II )
Xinjiang yili xintian coal chemical wastewater ZLD project	Xinjiang	Coal chemical waste water	1000m <sup>3</sup> /d ( Phase I ) 1000m <sup>3</sup> /d ( Phase II )
Yancoal yulin energy chemical methanol wastewater treatment project operation	Shaanxi	Coal chemical waste water	10000m <sup>3</sup> /d
Sanchangliang industrial park, dalat banner	Inner Mongolia	Partial coal chemical wastewater	2000m <sup>3</sup> /d
Tokoto high calcium sulphate type wastewater MLD project	Inner Mongolia	Partial coal chemical wastewater	3000m <sup>3</sup> /d

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