180 m³/h Containerized SWRO: Layout Options

Illustrative comparison of two engineering arrangements

REFERENCE CONFIGURATIONS

Design item	Reference A: compact trains	Reference B: ERD + integrated CIP
Total nominal product water	180 m³/h	180 m³/h
Container arrangement	6 × 40 ft HQ	12 × 40 ft HQ
Reference output per container	30 m³/h (2 × 15 m³/h modules)	15 m³/h (1 × 15 m³/h module)
Energy recovery	Not included in this reference layout	Energy recovery included in this reference layout
Membrane cleaning	CIP connections; external cleaning provision	Built-in CIP arrangement in this reference layout

WHY COMPARE THE ARRANGEMENTS?

Both examples target the same nominal product-water capacity. Reference B allocates container space to energy recovery and integrated cleaning in the supplied concept. The final number of containers is a design choice and can vary with equipment selection, layout, maintenance access and site constraints.

Energy recovery can reduce high-pressure pumping energy, but actual consumption and savings depend on feed salinity and temperature, recovery, pump and device efficiency, operating conditions and the plant boundary used for measurement.

Engineering notes. Confirm raw-water quality, pretreatment, utilities, membrane cleaning, concentrate handling, footprint, environmental requirements and final water quality before fixing the process or layout.

Basis: These are concept-level alternatives only. They do not represent a completed installation, a universal container-count rule, a quotation or a guaranteed energy figure.