

WATER DESALINATION REPORT

The international weekly for desalination and advanced water treatment since 1965

Excerpted from Volume 62, Number 35

5 October 2026

Company News

BORN AGAIN MEMBRANES

Membrane replacement is an inevitable part of RO plant operation and maintenance. Ageing, compaction, irreversible fouling, and loss of permeability and salt rejection take a toll on membrane performance, until they reach the point that they must be replaced. Most SWRO membranes last three to five years, although with good pretreatment, diligent operation, and planning, some plant operations can coax seven or more years of life from theirs.

When they do finally reach the end-of-life, most membranes are replaced, before ending up in a landfill, or, in some cases, disassembled, sorted, shredded, and recycled. A Ras Al Khaimah, UAE-based company is now offering an alternative for used membrane elements.

Founded in 2023, SecondLife RO (2ndLifeRO) regenerates seawater RO elements to extend their lifespan for use in non-potable industrial or agricultural applications.

According to Lorenzo Salin, 2ndLifeRO's co-founder and commercial director, "We purchase spent SWRO membranes from a plant for a nominal fee and regenerate them with a process we developed in our custom-built '2ndLifeRevive Regeneration Plant'. Depending on their condition, some membranes may be able to be returned to SWRO service, while others may be certified for use in NF or BWRO applications. The condition and quality of the elements received determines the type of treatment used in their regeneration, and the final product that can be achieved. The higher value is in the rejection, so we try to preserve as much rejection as possible."

After regeneration, each membrane undergoes a six-point performance check and is graded to ISO 20466:2024 before it is offered for sale with a 3-year, pro-rated warranty.

Salin explained that the regeneration process was developed in conjunction with third-party labs and 2ndLifeRO's own proprietary IP. Its automated cleaning lines use chemical treatments tailored to each batch of membranes being cleaned, with quality control points and live data logging at

every step of the process. The elements are then evaluated using a high- and-low pressure RO test skid and graded according to the following table:

Grade	Minimum rejection	Minimum flow	ISO 20466
Super High Rejection	> 99.3%	> 20 m ³ /d (5,284 gpd)	A5
High Rejection	> 98.5%	> 30 m ³ /d (7,926 gpd)	B5
High Flow	> 96.0%	> 38 m ³ /d (10,040 gpd)	C4

After final testing, the elements are palletized and shipped either in dry condition, or as wet and preserved elements.

The company stresses sustainability, noting that up to 80% of its process water is recovered and reused, and elements that cannot be rehabilitated are converted to refuse-derived fuel for heavy industry. None go to landfills.

Salin told *WDR*, "In addition to saving 30 to 50% on the cost of each element, every element we regenerate keeps 15kg [33 lbs] of plastic out of the ground, and 1 tonne of CO₂e from the atmosphere. Our regenerated membranes have been used in municipal wastewater and reuse plants, and petrochemical, mining, agricultural, leachate, livestock, and other BWRO applications. Besides working directly with the desal plants, we work with distributors, resellers, and agents, and we're planning to establish additional facilities in regions with high concentrations of SWRO plants."



2ndLife RO's test bay



Bagged, boxed & palletized elements