

Abbreviations

AC	activated carbon	GMF	granular media filtration
AOC	assimilable organic carbon	GPM	gallons per minute
APHA	American Public Health Association	GRP	glass-reinforced plastic
APF	average permeate flux	GSF	green sand filter
ASTM	American Society for Testing and Materials	HF	hollow fiber
ATD	anti-telescoping device	HFF	hollow-fine fiber
BOD	biochemical oxygen demand	HFM	hollow fiber membrane
BW	brackish water	HMI	human-machine interface
BWRO	brackish water reverse osmosis	HPP	high-pressure pump
C_c	solute conc. in concentrate water	ICP	inductively coupled plasma
C_f	solute conc. in feed water	ICP-MS	inductively coupled plasma mass spectrometry
C_p	solute conc. in permeate water	IP	interfacial polymerization
CA	cellulose acetate	IPc	ion product
CDI	capacitive deionization	IR	infrared
CF	concentration factor	ISD	internally staged design
CFE	cross-flow filtration	IX	ion exchange
CFU	colony-forming units	K_{sp}	solubility product
CFV	cross-flow velocity	LC-OCD	liquid chromatography with organic carbon detector
CIP	clean in place	LBL	layer-by-layer
COD	chemical oxygen demand	LSI	Langlier saturation index
CP	concentration polarization	L/m²/h	Liters per square meter per hour
CTA	cellulose triacetate	MF	microfiltration
DAF	dissolved air flotation	MFI	modified fouling index
DBPs	disinfection byproducts	MGD	million gallons per day
DF	disk filter	MIGD	million imperial gallons per day
DI	deionized water	MINLP	mixed-integer nonlinear programming
DO	dissolved oxygen	MOM	marine organic matter
DP	differential pressure	MSF	multistage flash
EC	electrocoagulation	MW	molecular weight
ED	electrodialysis	MWCNT	multi-walled carbon nanotubes
EDI	electro-deionization	NaCl	sodium chloride
EDTA	ethylenediaminetetraacetic acid	NDP	net driving pressure
EDX	energy dispersive X-ray	NF	nanofiltration
EDXRF	energy dispersive X-ray fluorescence	NOM	natural organic matter
EPS	extracellular polymeric substances	N_p	normalized productivity
ERD	energy recovery device	NPD	normalized pressure differential
FeRB	iron-reducing bacteria	NPF	normalized permeate flow
FO	forward osmosis	NSP	normalized salt passage
FR	fouling resistant	NSR	normalized salt rejection
FTIR	Fourier transform infrared	NTU	nephelometric turbidity units
GAB	general aerobic bacteria	ORP	oxidation-reduction potential
GAC	granular activated carbon	P_{osm}	osmotic pressure
GC-MS	gas chromatography/mass spectrometry	ΔP	pressure drop
GFD	gallons per square foot per day	PA	polyamide

PAN	polyacrylonitrile	SP	salt passage
PD	pressure differential	SPSP	split partial second-pass
PE	polyethylene	SRB	sulfate-reducing bacteria
PES	polyethersulfone	STC	salt transport coefficient
PLC	programmable logic controller	SWM	spiral wound membrane
ppm	parts per million	SWRO	seawater reverse osmosis
PRO	pressure retarded osmosis	S&DSI	Stiff & Davis stability index
PSD	particle-size distribution	3D–FEEM	three-dimensional–fluorescence excitation emission matrix
PSF	polysulfone	T_{CF}	temperature correction factor
PV	pressure vessel	TBC	total bacterial count
Q_c	concentrate flow	TDS	total dissolved solids
Q_f	feed flow	TFC	thin film composite
r	recovery	TMP	transmembrane pressure
R	rejection	TOC	total organic carbon
Re	Reynolds number	TSS	total suspended solids
R_s	staging ratio	UF	ultrafiltration
RED	reverse electrodialysis	UV	ultraviolet
RIO	remote input/output	VFD	variable frequency drive
RO	reverse osmosis	VOC	volatile organic chemical
RSM	response surface methodology	WWTP	wastewater treatment plant
Sc	Schmidt number	WTC	water transport coefficient
SCADA	supervisory control and data acquisition	WHO	World Health Organization
SDI	silt density index	XRD	X-ray diffraction
SEC	specific energy consumption		
SEM	scanning electron microscopy		
SEM–EDS	scanning electron microscopy–energy dispersive X-ray spectroscopy		