

Abbreviations

AFM	atomic-force microscopy
ANOVA	analysis of the variance
AOC	assimilable organic carbon
AS	antiscalant
ATP	adenosine triphosphate
BCA	bicinchoninic acid method
BEOP	biofilm enhanced osmotic pressure
BOD5	biological oxygen demand
BSA	bovine serum albumin
BV/h	bed volumes per hour
BW	brackish water
BW	backwash
CA	cellulose acetate
CAPEX	capital expenses
CDC	Centers for Disease Control and Prevention
CDOC	hydrophilic dissolved organic carbon
CF	cartridge filter
CH	carbohydrates
CIP	cleaning in place
CLSM	confocal laser scanning microscopy
COD	chemical oxygen demand
CTC	5-cyano-2,3-ditolyl tetrazolium chloride
cTEP	colloidal transparent exopolymer particles
CV	biofilm surface coverage
DBNPA	2,2-dibromo-3-nitrilopropionamide
DOC	dissolved organic carbon
dP	pressure drop
EPS	extracellular polymeric substances
F	flux
GFD	US gallons/(square feet · day)
GPD	US gallons/day
GPH	US gallons/hour
GPM	US gallons/minute
GFRP	glass fiber-reinforced-polymer
GWTC	Global Water Technology Center
HOC	hydrophobic dissolved organic carbon
L	liters
LC-OCD-OND	liquid chromatography – organic carbon detection – organic nitrogen detection
LDP	low pressure drop
LMH	liters / (square meter · hour)
LMW	low molecular weight
LOI	loss on ignition
LOQ	limit of quantification
MBR	membrane bioreactor
MF	microfiltration
mil	0.001 inch
MRI	magnetic resonance imaging

N	nitrogen
NF	nanofiltration
NOM	natural organic matter
OCT	optical coherence tomography
OPEX	operating expenses
P	pressure
P	phosphorous
Π	osmotic pressure
PN	proteins
ppb	$\mu\text{g/L}$
ppm	mg/L
Psi	pounds-force/inch ²
PV	pressure vessel
R	recovery
Q	flow
r^2	coefficient of determination
RO	reverse osmosis
SEWA	Sharjah Electricity and Water Authority
SMBS	sodium metabisulfite
SP	salt passage
SR	salt rejection
STD	standard
T	temperature
TCF	temperature correction factor
TEP	transparent exopolymer particles
TFC	thin-film composite
TDS	total dissolved solids
TIN	total inorganic nitrogen
TN	total nitrogen
TOC	total organic carbon
TON	total organic nitrogen
TSS	total suspended solids
UF	ultrafiltration
WW	wastewater
WWTP	wastewater treatment plant