



THE
**Water
Research**
FOUNDATION

Project 5087: Implementation of Innovative Biological Nutrient Removal Processes through Improvement of Control Systems & Online Analytical Measurement Reliability & Accuracy

Acronyms & Abbreviations

2024



Acronyms & Abbreviations

ADF	Average daily flow
AO	Anaerobic-oxic
A2O	Anaerobic-anoxic-oxic
ABAC	Ammonia-based aeration control
AvN™	Ammonia vs. NOx
BNR	Biological nutrient removal
BOD	Biochemical oxygen demand
CaRRBs	Centrate and RAS reaeration basins
CMMS	Computerized maintenance management system
COD	Chemical oxygen demand
DO	Dissolved oxygen
EBMUD	East Bay Municipal Utility District
EBPR	Enhanced biological phosphorus removal
FST	Final setting tank
HPO	High purity oxygen
HR	Hour
IMLR	Internal mixed liquor recycle
ISE	Ion selective electrode
LB	Pound
lbs/d	Pounds per day
MBBR	Moving bed biofilm reactor
mgd	Million gallons per day
mg/L	Milligrams per liter
MLE	Modified Ludzak-Ettinger
MLSS	Mixed liquor suspended solids
MOV	Most open valve
NA	Not Available
NaOH	Sodium Hydroxide
NH3	Ammonia
NH4	Ammonium
NO2	Nitrite
NO3	Nitrate
NOx	Nitrate and Nitrite
NSEC	North Secondary
O&M	Operations and maintenance
OP	Orthophosphate
ORP	Oxidation-reduction potential
pH	Acidity or alkalinity
PID	Proportional-integral-derivative
PO ₄	Phosphate
RAS	Return activated sludge
S2EBPR	Sidestream enhanced biological phosphorus removal

SAR	Sidestream anaerobic reactor
SBR	Sequencing batch reactor
SCADA	Supervisory control and data acquisition
sCOD	Soluble chemical oxygen demand
SDEV	Standard Deviation
SRT	Solids retention time
SSEC	South Secondary
SVI	Sludge volume index
TIN	Total inorganic nitrogen
TN	Total nitrogen
TOC	Total organic carbon
TP	Total phosphorus
TSS	Total suspended solids
UBCW	Upper Blackstone Clean Water
ULR	Ultra-low range
UV	Ultraviolet
VFA	Volatile fatty acid
WAS	Waste activated sludge
WEFTEC	Water Environment Federation Technical Exhibition and Conference
WRRF	Water resource recovery facility
WWTF	Wastewater treatment facility
YR	Year