

**Template for I/A Tech Comparison****Fuji Clean USA**

Final 11/11/21

SFR - Single Family Residence (330 permitted gpd, 165 gpd flow for cost effectiveness calculations)

Influent - Assume septic tank discharges at 65 mg/L TN and drainfield takes out another 25%, so 50 mg/L TN is reasonable baseline for comparisons.

**Basics**

Manufacturer / Parent Company Fuji Clean USA, LLC / Fuji Clean Co. Ltd.  
Model / Technology Name Fuji Clean CEN Model Series

**Background**

Patent Year N/A  
Years in production 16 (for the CE and CEN models)

**Approach**

Category (Media filter, ATU, Membrane, sequencing batch, drainfield, etc.) Integrated Fixed-Film Activated Sludge (IFAS)

**Positioning**

Ideal applications Residential or Commercial Applications  
Capacity Range 500-to-1,900 gpd for individual CEN models (4,500-gpd model under development)  
500-to-6,000 gpd for individual CE models  
Clustered tanks hydraulic capacity: up to 100,000 gpd

**Performance**

TN concentration output range category (<5 / <10 / <15 / <19 mg/L) <10 mg/L (CEN Series)  
<19 mg/L (CE Series, based on Florida field data)  
TP concentration output range category (<0.5/<1.0 mg/L) Fuji Clean's model CRXII includes an integrated-nitrogen reduction and phosphorus-reduction module capable of producing effluent P ≤1 mg/L. U.S. testing is currently underway for this model in the U.S.  
kg N removed/year beyond Ref'd 50 mg/L

**Approvals**

Residential Permits AL, AZ, AR, CA, CO, CT, DE, FL, GA, HI, IL, IN, IA, ME, MD, MA, MI, MN, MO, NV, NH, NJ, NM, NY (incl. Suffolk Cty.), NC, OH, PA, RI, TN, TX (incl. Austin), VT, VA, WA, WV, WI, WY  
MA Provisional, Remedial  
General/ Provisional (<50)/Pilot (<10)  
RI Class 2, Category 1  
Other States 3,000 - 4,000 and growing  
Commercial Permits ≈100 - 150 and growing

**Testing**

Internal performance testing data - how many years / data points / sampling frequency?  
Internal performance testing data - Range, mean, median BOD/TSS/TN values  
3rd party testing data - how many years / data points / sampling frequency? VA and MD Joint Test--3Yrs--Quarterly--105 Data Points  
Suffolk County, NY  
VA and MD Mean results: CBOD5: 1.59 mg/L. TSS: 1.22 mg/L. TN: 13.4 mg/L  
3rd party testing data - Range, mean, median BOD/TSS/TN/TP values Suffolk County, New York: 20 sites, tested quarterly, 2+ years: Mean TN (as of 10/15/21: 10.7 mg/L)  
3rd party testing source/organization (s) 3-Engineering, LLC

**Cost**

NEW SFR Construction \$10,000-to-\$35,000 for residential construction depending on hydraulic flow and drainfield requirements.  
(design+permit+equipment supply+install)  
Monthly operating costs (electricity etc.) \$4 to \$5 depending on unit size and power cost  
Yearly O&M requirements six-month inspection  
Yearly O&M costs (without sampling) \$200-\$400, depending on jurisdiction  
Yearly O&M costs (with sampling) \$400-to-600 depending on jurisdiction and sampling requirements.  
Expected system lifespan (range) Indefinite, assumes maintenance  
Total Cost of system over 20 years (design + install + operation + maintenance + repairs)  
Beyond 20 years

**Cost Effectiveness**

Cost per kg N removed beyond ref'd 50mg/L - 20 year  
Beyond 20 years

**Retrofits**

Ability to use tech in retrofit applications  
Expected capital cost of a retrofit for SFR

**Phosphorus Removal**

Commentary Current participation in 319 Grant Program administered by MASSTC

**Pitch**

Unique aspects/advantages Smart, reliable system.  
Backed by largest onsite system manufacturer in world with robust R&D, engineering and technical solutions teams.  
**Designers/Regulators:** Excellent treatment performance  
**Contractors:** Tiny footprint, one-tank:one-airline simplicity  
**Homeowners:** Low profile, quiet, efficient blower  
**O&M Providers:** Easy and clean maintenance protocol

**Clusters**

Cluster potential?  
Range (gal/day) up to 100,000 gpd

**Contact Point**

Local Representatives MA & RI Brunswick Maine, main office: 207-407-2927  
Integrated Septic Solutions: 401-318-4300