

January 22, 2026

BioMicrobics MicroFAST® Septic System Information Night

15 homes were represented at our Keanland Park HOA information session with RJ Trends and BioMicrobics. The HOA Board wants to thank Joe Rebori, Assistant VP for BioMicrobics, Brandon Thompson, owner of Bay Shore Construction and RJ Trends as well as Ethan Hollander, Manager of RJ Trends, for taking time to talk with our community.

BioMicrobics is the manufacturer of our F.A.S.T. system (Fixed Agitated Sludge Treatment) which is an ATU (Aerobic Treatment unit).

Bay Shore and RJ Trends are the companies that install and maintain these units in Thurston County for BioMicrobics. While it can be your choice to use any company to assist you in maintenance, the HOA Board recommends RJ Trends as they are the only company in Thurston County that is trained and authorized by BioMicrobics to work on this unique system.

Background & System Selection

Why This Specific System?

- The county required nitrogen reduction units for this development
- The developer, county, and designer Jim Hunter determined these specific BioMicrobics FAST systems were required
- This is a proprietary system with specific maintenance requirements
- The county will not entertain alternatives at this point
- RJ Trends is the only authorized BioMicrobics representative for this area in Thurston County

System Design Basis

- Each home has an individualized system
- System sizing is based on the number of bedrooms in your home
- Systems are designed for specific loading levels

System Overview

Basic Components Each system consists of:

1. **First Compartment (Trash Tank):** Standard septic tank function - collects large solids and scum that floats to the top
2. **Second Compartment (Treatment Chamber):** Contains the BioMicrobics MicroFAST unit for aerobic treatment

3. **Pump Tank:** Holds treated water before dosing to drain field
4. **Blower:** Continuously runs to provide oxygen to the treatment chamber
5. **Control Panel:** Manages system operation and alarms

The MicroFAST Unit

- Black box with blue corrugated plastic media (honeycomb structure)
- Acts as a surface for beneficial bacteria to grow (biofilm)
- Designed to be permanent - should never need replacement unless physically damaged
- Only wearable parts are electromechanical: blower, circuit boards, pump

How the System Works

Treatment Process

1. Wastewater enters the first compartment where heavy solids settle and scum floats
2. Liquid passes to the second compartment containing the MicroFAST unit
3. The blower pushes air through an "airlift" device that:
 - Adds oxygen to the water
 - Creates a splashing motion
 - Distributes and mixes water throughout the media
4. Bacteria growing on the media break down organic waste and nitrogen
5. Treated water flows by gravity to the pump tank
6. Pump doses treated water to the drain field periodically based on system design for each individual home (typically every 4 hours with 1-2 minutes run time per cycle)

Nitrogen Removal - The Two-Step Process

- **Step 1 (Aerobic):** Organic nitrogen breaks down to ammonia, then ammonia oxidizes to nitrate (requires oxygen)
- **Step 2 (Anoxic):** In low-oxygen zones, bacteria use the oxygen from nitrate, converting nitrogen to gas that escapes through the vent
- Both oxygen-rich and oxygen-poor zones are required, which is why this system is certified for nitrogen removal

Why Nitrogen Removal Matters

- High nitrate in drinking water causes health issues (blue baby syndrome)
- Maximum safe level: 10 mg/L in drinking water
- County requires treatment to 20-25 mg/L, assuming further dilution and plant uptake
- Excess nitrogen causes ecological problems: algae blooms, shellfish contamination especially near sensitive wetland areas

Power Outages

- Water quality starts to decrease within one day without power
- System can handle short outages (a few days) without major harm
- Contact service provider if blower is out - they can typically respond within a few days
- For extended absences (month+), you can shut off power since no water is going to drain field

What You Should Hear & See

Normal Sounds

- Air pump (blower) running continuously
- Pump dosing approximately every 4 hours - sounds like a brief "beep" or boat horn (1-2 minutes)

Alarm

- Very high-pitched, loud sound (like a car alarm)
- You and your neighbors will hear it
- Indicates system issue or component failure
- RJ Trends is a great first call if alarm sounds.

System Loading & Usage

Underloading Issues (Few people in large house)

- Less water and waste than system designed for
- Can create imbalance of nitrogen to carbon (sugars)
- Nitrogen-processing bacteria need carbon-based "food" to function
- May not achieve optimal nitrogen removal

Overloading Issues (Too many people in small house)

- Bacteria prioritize breaking down sugars first (easier food source)
- If overloaded with organics, they don't finish and can't process nitrogen
- System won't complete the nitrogen removal steps
- Think of it like eating your entree first, then the side dish you don't like as much

Special Situations That Can Overload

- Home brewing
- Home baking business (excess sugar, flour)
- Dumping large quantities of organic material (2 gallons of spoiled milk weekly)
- These create sudden high organic loads the bacteria can't handle

Vacation & Extended Absences

Two Week Vacation

- System is tested and certified for 2 weeks without feeding
- Safe to leave for this duration
- System will recover quickly when you return

Longer Absences (Month or More)

- Acceptable to shut off power - no water going to drain field means no treatment concern
- Bacteria will need to repopulate when you return
- In a new system, bacteria populate within 2 weeks
- Recovery after vacation is typically faster

What NOT to Put in Your System

Absolutely Avoid

- **Chlorine bleach:** Kills bacteria
- **Liquid fabric softener:** Contains quaternary ammonium, highly toxic to nitrogen-reducing bacteria
- **Antibacterial cleaners:** Kill beneficial bacteria
- **Wipes** (even "septic-safe" ones): Don't break down despite marketing claims
- **Drain cleaners with lye:** Harmful to bacteria
- **Eggshells, coffee grounds:** Don't break down easily
- **Grease, oil:** Clogs system
- **Large amounts of any single substance:** Creates imbalance

Use in Moderation

- **OxiClean/non-chlorine bleach:** Safer than chlorine bleach, but still use sparingly
- **Household cleaners:** Small amounts okay, avoid high concentrations
- **Regular cleaning:** If you can scrub a duck with it, you can use it in moderation
- **Washing machine cleaners:** Use in moderation (every other month is fine)

Garbage Disposals - Complicated Answer

- Thurston County strongly discourages them
- **If used properly** (scraping plates, only small food bits): Probably won't damage system
- **If used improperly** (large amounts of food waste): Will overload system and fill tank faster
- Increases solids in tank, requiring more frequent pumping
- Creates extra demand on bacteria
- Best recommendation: Don't use, or use very sparingly

Enzyme Drain Cleaners & Additives

- **Not necessary** - bacteria grow naturally from wastewater
- **Can be harmful:** Dissolve solids in tank, sending them to drain field where they can cause biomass buildup
- Biomass forms on exterior of drain field pipes, very difficult to fix

Toilet Paper

- No specific brand recommendations

Maintenance & Pumping

Annual Inspection Includes

- Sludge and scum measurements in both compartments
- Visual check of all components
- Every third year: Nitrogen sampling (TKN and nitrate/nitrite tests) for 1/3 of homes

When Pumping Is Needed

RJ Trends does not do pumping. Their recommendation for a qualified pumper of BioMicrobics systems is House Brothers - [Septic Pumping and Repair | House Brothers Construction](#)

If you choose to use another pumper, please request they contact RJ Trends for information and training on our systems. [SERVICES | RJ Trends](#)

Primary Compartment:

- Pump when sludge/scum reaches about 1/3 of tank volume
- Specific measurement thresholds (different from standard septic)
- When solids approach the opening to treatment chamber

Treatment Chamber:

- Based on distance between bottom of FAST module and tank bottom
- Don't want sludge pulled up into media (causes clogging)
- Threshold is typically around **18 inches** (NOT 21-24 inches like standard septic)
- **This is critical information uncertified pumpers often don't know**

Pump Tank:

- Should pump when sediment reaches 2-4 inches (depends on pad height)
- This is a safeguard against solids reaching drain field

What Proper Pumping Includes

1. Pump both compartments (primary and treatment)
2. Get pump hose all the way to bottom of treatment tank (not just surface water)
3. Rinse/spray off FAST media unit
4. Pump out pump tank if needed
5. Multiple access points may need to be used for thorough pumping

Pump & Blower Lifespan

- Typical pump lifespan: 15 years
- Typical blower lifespan: 7-10 years
- Can fail in as little as 3 years
- Depends on manufacturer quality and electrical conditions
- Voltage fluctuations can fry pumps prematurely

Timer Issues

- Original timers hard to find, no longer manufactured
- New style available but more complicated to use
- Fail due to power surges, condensation
- Should have gasket to prevent moisture
- Need to be reset/adjusted as pump performance decreases over time

Nitrogen Sampling & Compliance

Sampling Schedule

- 1/3 of homes sampled each year (rotates, so each home tested every 3 years)
- Two tests performed: TKN (Total Kjeldahl Nitrogen) and N+N (nitrate + nitrite)
- Combined results = Total Nitrogen reading

Understanding Results

- Sampling is a **one-time snapshot**, not representative of average performance
- Results can vary significantly from day to day
- Different results from same system on different days
- County receives all results and sends compliance letters

If You Exceed Limits

- **Standard county protocol:** Pump tank and resample
- **However:** High nitrogen may be due to wastewater chemistry, not mechanical problems
- Pumping may not solve underlying issue
- If exceeding total nitrogen limits and system has recently been pumped reach out to RJ Trends who can help diagnose this issue with BioMicrobics

Troubleshooting High Nitrogen

1. Rule out mechanical problems first
2. Consider wastewater chemistry and balance
3. Review what's going into system (see "What NOT to Put" section)
4. May need additional testing (inlet and outlet, more parameters) - this costs more

Working with Service Providers

RJ Trends - Authorized Service Provider

- **Only company authorized by BioMicrobics for this area**
- **Does not provide pumping services**
- Can train and certify other providers
- **Can walk pumpers through proper procedures if they call**
- Response time typically within 24 hours
- Owner Brandon is third generation, 36 years in business, Washington 40 under 40

Choosing a Pumping Company

Critical Requirement: Must understand FAST systems or be willing to coordinate with RJ Trends

Recommended Provider: As mentioned above, RJ Trends recommends House Brothers.

Red Flags

- Says system doesn't need pumping when RJ Trends says it does (may not know 18" vs 24" standard)
- Only pumps surface water in treatment chamber (should pump from bottom)
- Pumps only one compartment
- Not willing to call RJ Trends with questions
- Uses generic septic standards instead of FAST-specific requirements

Before Hiring a Pumper

1. Ask if they're certified to work on BioMicrobics FAST systems
2. Request they call RJ Trends to confirm proper procedures
3. Check Thurston County list of certified providers
4. Watch to ensure they pump from bottom of treatment chamber, not just surface
5. Verify they pump both compartments
6. Ask if they'll rinse the FAST media

What Can Go Wrong with Wrong Pumper

- Incomplete pumping (missing compartments or not reaching bottom)

- Damage to FAST unit from improper handling
- False information about whether pumping is needed
- Service call charges even when job isn't completed
- System continues to fail inspections

Common Challenges & Solutions

Challenge: Conflicting Information from Pumpers

- **Why it happens:** Standard septic thresholds (21-24") don't apply to FAST systems (18")
- **Solution:** Ensure pumper contacts RJ Trends or is certified on FAST systems
- **Verify:** Check Thurston County certification list

Challenge: Recently pumped but still failing nitrogen test

- **Why it happens:** Nitrogen issues may be chemistry/usage-related, not mechanical
- **Solution:** Review what's going into system, consider usage patterns, consult with RJ Trends for specific troubleshooting
- **Understand:** Sampling is a snapshot; one-time results don't show averages

Challenge: Frequent pumping seems excessive/expensive

- **Why it happens:** May have garbage disposal, heavy usage, or improper substances going in
- **Solution:** Review owner's manual, adjust household habits, ensure proper loading
- **Consider:** Cost of preventive maintenance vs. drain field failure

Important Resources

Owner's Manual

- Available online (check HOA website - [Keanland Park HOA](#))
- Contains detailed do's and don'ts
- Critical reference for proper system care
- Request from RJ Trends if you can't find it

Key Contacts

- **RJ Trends:** Main service provider, 24-hour response goal
- **Thurston County:** Receives all reports, sends compliance letters

What to Keep on Hand

- System inspection reports
- Pumping records and dates

- Nitrogen test results
- Contact information for certified pumpers
- Location of circuit breakers for septic system

Best Practices Summary

Daily Operation

- Keep blower running continuously
- Use water normally based on bedroom count
- Avoid putting harmful substances down drains
- Listen for alarm sounds

What to Monitor

- Blower running (should hear it)
- Pump dosing every 4 hours (brief sound)
- No alarm going off

Calling for Service

- Alarm sounding
- Blower not running
- Unusual odors or wet areas near drain field
- Questions about what can go in system
- Before hiring a pumper for first time

Long-term Care

- Keep risers sealed to prevent root intrusion
- Don't plant trees/shrubs near system
- Protect tank from heavy equipment
- Follow owner's manual guidelines

Key Takeaways

1. **This is a living system** - bacteria do the work, so protect them from harsh chemicals
2. **Nitrogen removal is complex** - requires both oxygen-rich and oxygen-poor zones
3. **Not all pumpers understand FAST systems** - 18" threshold vs. 24" is critical difference
4. **Sampling is a snapshot** - one test doesn't show your average performance
5. **Prevention is cheaper than repair** - drain field failure is extremely expensive
6. **When in doubt, call RJ Trends** - they're the authorized experts for your system
7. **Read your owner's manual** - it contains specific guidance for your system
8. **Moderation is key** - small amounts of most things are okay, large amounts cause problems