High Strength Wastewater Treatment Guidelines
Food Service Facilities

General System Design: High strength bar and kitchen wastewater should be separated from bathrooms and floor drains of domestic wastewater if possible with the high strength wastewater (kitchen) flowing through a grease interceptor sized for one to two days flow capacity. It is much more economical to separate out as much Fats, Oils, and Greases (FOG) as possible with a grease interceptor than by adding additional treatment capacity. The high strength wastewater from the grease interceptor and domestic wastewater may be combined in a trash tank sized for 16 to 24 hours flow before flowing into one or more HighStrengthFAST^{R} units for treatment to desired levels. High strength waste with a BOD_5 over 220 mg/L requires you to size the treatment system for pounds of BOD_5 removal desired, not gallons per day.

Bio-Microbics FAST^{R} Unit Sizing: Non-domestic wastewater treatment units are sized based on pounds of BOD_5 removal desired. You may size the FAST^{R} unit using the below guidelines if the FOG is less than 30 mg/L and TSS less than 100% of the actual BOD_5 mg/L.

Typically a FAST^{R} unit will remove pounds of BOD_5 equal to 17% to 22% of the gallons per day rating for the unit. A MicroFAST^{R} 3.0 will, therefore, generally remove between 5.1 and 6 pounds of BOD_5. Call any time for help in specifying the correct treatment train for a specific project. *Pounds of BOD_5 = mg/L BOD_5 X GPD X 8.34 / 1,000,000.* Determine the mg/L BOD_5 by taking several samples of effluent to a wastewater treatment facility or a testing lab. The sample must be kept cool and tested within 24 hours.

Many factors can influence the treatment level including temperature, some medications, high grease load, and strong cleaning chemicals. Let us know the effluent test results and if there will be any unusual wastewater factors so we can help you select the product that will best produce the desired effluent.

Surface Discharge, Dispersal Field Downsizing, and Separation Credit: The effluent from a FAST^{R} unit may require polishing by a MicroFAST^{R} unit, UV Disinfector or an ABC Precipitation Clarifier system to meet the most extreme BOD_5, nitrate, phosphate, and fecal limits.

Surge Tank: When the waste flow varies significantly from day to day, it is sometimes cost effective to reduce the peak flow by adding a surge/dose tank ahead of the treatment unit to equalize the flow rate. This may allow you to reduce the dispersal field and treatment unit size. The surge tank would fill during heavy flow times and empty during low flow periods.

Timers: The FAST^{R} units now come with a timer to reduce electrical cost should the treatment levels allow. Treatment levels may be managed by setting the blower for a *maximum off* time of 30 minutes and a *minimum on* time of 30 minutes. Nitrogen reduction will be reduced considerably while the blower is off.

Recirculation: It is generally a good idea to bury a pipe for recycling the outflow of the dispersal field pump tank back into the settling tank (similar to a recirculating sand filter) for better denitrification and treatment if ever required. It is typical to recirculate three or four times the quantity flowing to the field.

Management, Training, and Support: Semi-annual inspections by a credentialed POWTS Maintainer for the first two years and annual inspections thereafter are required for NSF, state, and warranty validations. We are sending you our standard POWTS Service Agreement for signing by the system owner along with an optional Equipment Extended Warranty Agreement. If you do not wish to perform the inspections, list Petersen as the service provider. In any case, we need copies of inspection reports to keep the NSF and warranty certification up to date. Petersen provides on-site installation and maintenance training as needed. Please call to discuss any questions relating to specific installations.