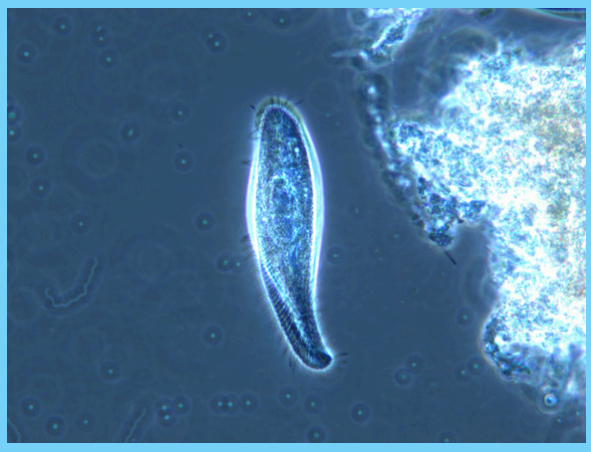
WASTEWATER BUG SPOTLIGHT
PARAMECIA

Paramecia are single-celled organisms found in both wastewater and surface water environments. They play an unexpected yet valuable role in wastewater treatment. These ciliate protozoa use tiny hair-like structures called cilia to move and sweep food into their mouth - consuming bacteria, algae, and decaying organic matter. In wastewater treatment plants, paramecia thrive in the biological treatment phase, where they help break down contaminants by feeding on microorganisms present in the water. Paramecia are easily identifiable at El Estero Water Resource Center by the distinctive curved groove that runs the length of their body.

With their ability to process large quantities of bacteria, paramecia contribute to reducing the overall microbial population, which enhances water quality. Their feeding habits also help balance the microbial ecosystem in the treatment process, supporting the breakdown of organic matter and improving the efficiency of other biological processes.

Paramecia are considered bio-indicators, as their presence and health reflect the overall conditions in the treatment system. Their sensitivity to environmental changes can help laboratory and operations staff monitor and optimize treatment operations. By incorporating paramecia and similar microorganisms, treatment plants like El Estero can adopt more sustainable practices, reducing the reliance on harsh chemicals while improving water quality naturally.



Paramecia found under the microscope at the City's El Estero Water Resource Center, magnified x1000

El Estero
WATER RESOURCE CENTER

For more information on wastewater treatment visit SantaBarbaraCA.gov/ElEstero