

## Case Study: Dr Pepper Snapple Group Ottumwa, Iowa

# Biochemical oxygen demand reduction for the beverage industry



The city of Ottumwa and DPS agreed to partner together to help one another achieve their respective goals. The city agreed to a long-term commitment on wastewater surcharge rates and in return, DPS agreed to install and operate a wastewater pretreatment facility to reduce the biochemical oxygen demand (BOD) loading discharged to the municipal facility.

As a leading producer of flavored beverages, DPS's specialty is in the manufacturing, bottling, and distribution of beverages; it is not in the operation of a nuanced wastewater treatment facility. DPS needed a robust and flexible solution that could be operated with minimal operator oversight and handle the fluctuating loads associated with a non-traditional production schedule. DPS expressed concerns about keeping the biology alive during significant influent spikes associated with clean-in-process (CIP).

Cambrian's **BioViper™** also satisfied questions related to sludge handling, membrane fouling and mixed liquor suspended solids (MLSS) management associated with MBR systems. Cambrian was chosen, in part, because the combination of the patented "Dry Cycle" along with the resilient, naturally growing biology was proven to work without disruption to normal beverage production.

**DPS partnered with Cambrian to install a three reactor BioViper fixed film, fixed media biological treatment system designed to treat 165,000 gallons per day with an average loading of 6,790 lbs. of BOD.** Cambrian's design included an equalization tank and pH controls. The BioViper met all four of the major factors DPS was considering when looking for a wastewater treatment solution: (1) ability to digest

### Challenge

*The capability and capacity of the Water Pollution Control Facility in Ottumwa, Iowa was being challenged by a growing demand for wastewater treatment. At the same time, a large industrial customer of the Ottumwa Water Pollution Control Facility, Dr Pepper Snapple Group (DPS), was looking to reduce their operating costs and decrease their overall environmental footprint.*



Figure 1. The BioViper Solution at Dr Pepper



Reduced the BOD load discharge by DPS to the city of Ottumwa by up to 91%



165,000 gallons treated per day with average loading of 6,790 lbs of BOD



Able to digest fluctuating loads of BOD and handle varying flow rates

fluctuating loads of BOD, (2) ability to handle varying flow rates, (3) ease of operation, and (4) low total cost of ownership. The very low energy requirements of the Cambrian system, as compared to a traditional MBR was also a consideration in the decision.

## Results

The installation and operation of the Cambrian BioViper™ has been a success for both DPS and the city of Ottumwa. **Since beginning operation in February of 2016, the BioViper has reduced the BOD discharge by DPS to the city of Ottumwa by up to 91%**, helping DPS to significantly reduce their operating costs while also lowering their environmental footprint. Thanks to the reduction in BOD being received from DPS, the city's wastewater treatment facilities have realized the equivalent of an increase in capacity of 7,000 residential homes. The Cambrian BioViper allowed both the Dr Pepper Snapple Group and the city of Ottumwa to achieve their wastewater treatment goals.

