

TROJAN UV™ CASE STUDIES

Municipal Drinking Water



Trojan UV Solutions: Disinfecting with UV in Drinking Water

Surface Water Disinfection, Cudahy Water Utility, Wisconsin

In 1993, a *Cryptosporidium* outbreak struck the city of Milwaukee, resulting in more than 400,000 illnesses and the deaths of 100 people. Since the outbreak, increased attention has been given to issues of water quality and protection from *Cryptosporidium*. The city of Cudahy, just south of Milwaukee, was heavily influenced by these issues when deciding on a water treatment approach. Cudahy's source water enters from one of two surface water intakes located in southwestern Lake Michigan. Treatment includes chemical flocculation to remove larger contaminants through physical sedimentation; filtration to remove smaller contaminants; and chlorination to inactivate microbial contaminants.

Cudahy's source water is susceptible to contamination and significantly impacted by local factors, such as agricultural and urban runoff.

Smaller cities face the challenge of balancing costs with the need to provide a safer drinking water supply. The Cudahy Water Utility Commission looked at treatments such as microfiltration, ozone disinfection and UV disinfection and assessed each

for cost and performance. The low operational and installation costs of UV disinfection proved the most cost-effective solution while providing a proven barrier against *Cryptosporidium*.

"We've never had a problem, but we're close enough to Milwaukee to feel the effects of all those people being sick," said Frank Miller, superintendent at the Cudahy Water Utility. "We know there are things in the lake now that regular treatment plants might not be able to handle. This was a viable way to add another treatment process to make the water safer."

THE TROJAN SOLUTION

After determining UV was the best solution for cost and performance, Cudahy sought the best UV solution for their needs. Restrictive space and the need to avoid costly construction of new buildings were important factors. The TrojanUVSwift™ 12, with its compact footprint, established track record and validated performance, proved to be the best fit for Cudahy.

Cudahy's system serves the city's population of 18,600 residents and is capable of treating up to six million gallons of water per day. The current average treatment is just under three MGD.

SYSTEM DESIGN PARAMETERS

- **AVERAGE FLOW CAPACITY:** 3 million gallons per day (473 m³/hr)
- **PEAK FLOW CAPACITY:** 6 million gallons per day (946 m³/hr)
- **DISINFECTION METHOD:** UV

TROJAN TESTIMONIAL

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Frank Miller
Superintendent, Cudahy Water Utility