

CASE STUDY

BIG COTTONWOOD WTP

Salt Lake City Public Utilities - Award Winning Big Cottonwood WTP, Experiences Microclor® On-Site Hypochlorite System Reliability and Safety for Over Six Years



OVERVIEW

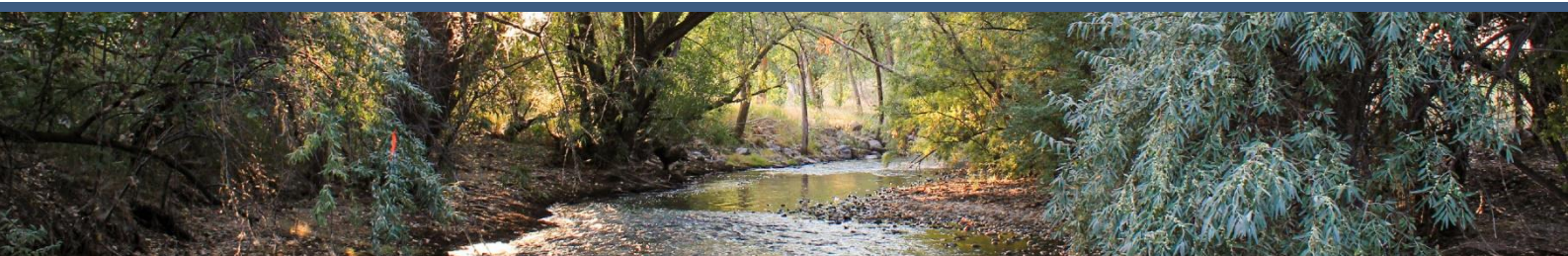
Located at the mouth of the Big Cottonwood Canyon, the Big Cottonwood WTP is one of three water treatment facilities providing treated water to Salt Lake City (SLC), Utah. The utility distributes water through about 1,300 miles of transmission and distribution pipe to over 90,500 connections. Recently, the Big Cottonwood WTP was recognized for delivering 16 years of high-quality water and received the Directors Award from the EPA & AWWA Partnership for Safe Water.

The original treatment plant was constructed in 1957. In the 1980's, the plant was renovated to treat 42 MGD (roughly 40 percent of the water treatment capacity for SLC) and a gas chlorine system was installed for disinfection.

With Big Cottonwood WTP contributing to 40% of SLC's water treatment, they supply this water to nearly 380,000 people

SITUATION

Due to increased concerns and risks associated with the use and handling of chlorine gas, the plant implemented a bulk hypochlorite system in 2003 to alleviate these concerns. The bulk hypochlorite at 12.5% concentration helped address some of the safety concerns but not all of them. After seven years of utilizing bulk hypochlorite, the Big Cottonwood WTP embarked on an evaluation of on-site hypochlorite generation. The improvements in operator and community safety (liquid containment of 0.8% sodium hypochlorite leak is far easier to manage than either a chlorine gas leak or a concentrated hypochlorite spill), and the cost savings related to the risk management plan and emergency scrubber maintenance made sense. Additionally, the on-site generated hypochlorite was simply cheaper than the delivered bulk bleach.



APPROACH

The plant staff evaluated all four on-site hypochlorite generation systems and selected 2X 600 pound per day (1,200 pounds of chlorine equivalent) Microclor® on-site hypochlorite systems (OSHG). The Microclor® system is the only OSHG system that uses a modular multi-cell system in a vertical configuration that vents the by-product hydrogen passively with no chance of pressurization. These design features among others helped the Microclor® OSHG system score highly in both reliability and safety. As Bill Meyer, Water Treatment Manager put it, "We selected Microclor® OSHG for many reasons."

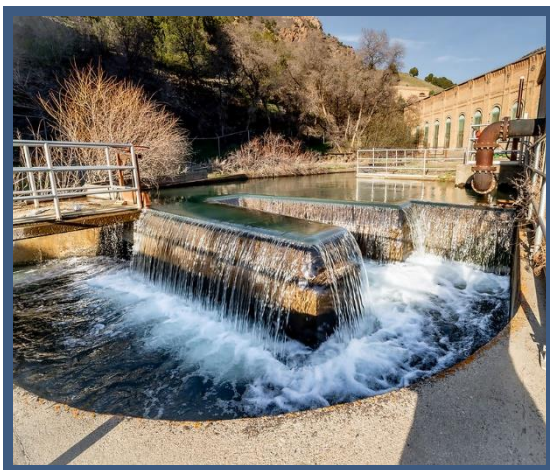


View of the 2x Microclor units installed onsite at Big Cottonwood WTP

"We evaluated all of the manufactures of OSHG and decided on the Microclor® OSHG system for many reasons including safety, reliability and simplicity."
- Bill Meyer, Water Treatment Manager

CONCLUSION

After over six years of operation, the Microclor® OSHG system has proven itself in terms of reliability and safety. The clear, vertically oriented cells and the system's open architecture allows for easy inspection and simplifies any minor maintenance such as cell cleaning. Furthermore, operators appreciate the fact that no special hazardous materials training or equipment is required (other than safety glasses and gloves) to work around the Microclor® system.



RESULTS

- The investment in Microclor® OSHG allowed the WTP to generate its own disinfectant onsite at a much safer concentration of 0.8%, which is 20% below the hazardous material threshold.
- This choice also allowed the WTP's operating staff to more safely operate their system with higher reliability as well.
- The new smaller, vertically-oriented cells can be fully cleaned and drained in-place, resulting in a smaller installation footprint and only a fraction of the operator's time needed for maintenance cleanings.
- OSHG allowed Big Cottonwood to meet its sodium hypochlorite needs for slightly over one-third the cost of trucked-in bleach while employing a much safer technology for operators and residents.
- The introduction of the Microclor® also provided the WTP staff with more peace of mind considering that there are no special hazardous materials training or equipment required to operate the system.

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