



ACLARUSTM
OZONE

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Sandbanks Provincial Park

DRINKING & GROUNDWATER CASE STUDY



REGIONAL PARK SANDBANKS PROV. PARK

PRISTINE NATURAL SETTING

Internationally famous for its breathtaking sand dunes along the shores of Lake Ontario, Sandbanks Provincial Park is home to some of the world's best white sand beaches and swimming. It has also been a popular filming location for many feature films including Resident Evil: AfterLife, Fly Away Home, Touching Wild Horses and Border Line.

The park is located in scenic Prince Edward County, Ontario, and is an extremely popular destination for car and RV campers as well as day guests. It's one of the busiest parks in the province, playing host to more than 750,000 visitors every summer.

The park's campground provides such amenities as drinking water taps, comfort stations with flush toilets and showers, and laundry facilities.

As part of the Ontario Parks system, Sandbanks places a high priority on environmentally friendly solutions for its operational needs that include the provision of safe, clean drinking water for its guests.



Image:
Sandbanks Provincial Park is a destination for nature lovers and economic activities alike.



PARKS

The natural setting of parks require the highest level of environmentally sensitive water treatment solutions.

Client Needs

- ≡ Chemical-free and environmentally friendly water treatment options.
- ≡ Superior Disinfection and sanitizing capabilities.
- ≡ Safe treatment of large volumes of water.
- ≡ Easy installation and maintenance.
- ≡ Compliant with safety and health regulations.

Fast Facts

CLIENT

Ontario Parks

LOCATION

Sandbanks Provincial Park, ON, Canada

DATE

Spring 2017

CONTAMINANTS

Bacteria, Virus, Cyst, Organics, Metals and other common contaminants found in ground water

FLOW RATE

30 GPM peak (with 30GPM backup system)

SPECIFYING ENGINEER

Ontario Parks

GENERAL CONTRACTOR

Peak Construction Group Ltd.

PROTECTING PUBLIC HEALTH AND THE ENVIRONMENT.

By using Ozone, Ontario Parks no longer required the use of chlorination to treat their water.

Sandbanks relies on shallow well groundwater as the source for its drinking water. However, surface water can penetrate this groundwater, increasing the amount of organic material and potential bacteria in the groundwater while also affecting its colour.

The park was using chlorine as a primary treatment solution, but the chemical was reacting with the groundwater and created concern about the potential levels of a harmful by-product called THM (Tri-Halo-Methanes), a carcinogen. It is produced from the chlorination process and with varying levels of organics and other contaminants, there was constant flux in the amount of chlorine to use leading to more cumbersome treatment.

Sandbanks needed an environmentally friendly solution that could be the primary treatment for its water to reduce or prevent these harmful by-products and to use chlorine after ozone and filtration at a low level for residual protection through the pipes until used. The system also had to have the ability to treat large quantities of water and be easy to use and maintain.



Image:
Ontario Parks protect delicate ecosystems and environments. Sandbanks Provincial Park is world renowned for its marine setting.

THE ACLARUS SOLUTION

Aclarus had begun working with Ontario Parks in 2014 on other projects. In 2016 Ontario Parks released a public tender for a 30GPM ozone system with redundancy and filtration for this Sandbanks project that included the system as well as installation and other mechanical and electrical requirements. The tender specifically called for an NSF-61 compliant ozone system and we designed the system to meet their specifications and needs. Bidding companies received our design and quote for the ozone systems and start-up only and Peak Construction Group in Brighton Ontario was awarded the job.

The Aclarus solution included an ozone system generator and in-line monitoring for automatic use and control. The injection system also had contact tanks with mixing pumps, ozone off-gas destruct and ambient ozone alarm.

With ozone as the primary treatment, the use of chlorine could be decreased, which lowered the risk of harmful by-products forming and much more consistent, lowered use of chlorine and chemicals.

The system worked steadily and increased and decreased treatment automatically based on flow and water quality.

Technical Specifications


- ≡ 60 gpm, 60gr/hr ozone generation
- ≡ Automatic backwash Nextsand sediment and activated charcoal filters
- ≡ \$0.03 per m3 operational cost

Following treatment, the water is filtered through sediment and carbon filtration; before discharge through the park for use, chlorine is added at a much lower level in line with provincial guidelines of 0.25mg/L. This improved the overall water quality, lowered potential by-products, lowered chlorine use and costs with an easier to use system.

Bruce Voskamp, Partner, Peak Construction Group Ltd., was the Project Manager on the installation of the Aclarus ozone system. The delivery timelines on this project were extremely tight. Bruce was very impressed with how quickly and efficiently the Aclarus team were able to design, engineer and install the new ozone system.


THE BENEFITS

The Aclarus system resulted in a superior water treatment solution with a number of benefits:




SAFE, CHEMICAL FREE, ENVIRONMENTALLY FRIENDLY

The campground water is chemical-free and safe for drinking by guests with a much lower potential for harmful by-products.




COST-EFFECTIVE

There is no need to purchase/store expensive chemicals. At about 5 cents per 1000 litres of water treated, it is significantly less than other treatments.




ANY WATER SOURCE

Ozone as a primary treatment is ideal as it is not dependent on water conditions to work effectively



NO DISRUPTION TO THE PARK

The water is treated with ozone as it flows for use in the campground operations without constant mixing and testing of chemicals.



EASY INSTALLATION AND MAINTENANCE

The system is was easily retro-fitted and installed into the existing building to help keep infrastructure costs low; easy to use, takes up little room, and is modular for easy expansion or service.



Aclarus delivered exactly what we asked for. They were easy to work with and responded to all requests in a very timely and friendly manner. I can't think of anything that could be improved upon during this process. The project outcome and follow-up were excellent!

- Bruce Voskamp, Partner, Peak Construction Group Ltd.





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GET IN TOUCH



Adam Doran
VP Marketing

1 (888) 905-8801
(705) 991-2179
adoran@aclarus.ca
www.AclarusOzone.com

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