Summer Camp Experience

The Minnesota onsite association installs technology to bring wastewater treatment at a Girl Scout camp into the 21st century

By Sara Christopherson

After several weeks of preparation by James Brothers Construction, six advanced treatment systems were installed on June 22 and 23 at the Singing Hills Girl Scout Camp near Elysian, Minn., during the Minnesota Onsite Wastewater Association (MOWA) 2007 summer seminar.

The event was an opportunity for onsite professionals to get hands-on training and experience installing new technologies while helping a worthy organization. Donations of septic tanks, pretreatment units and drainfield media, plus many hours of labor from designers, installers, manufactures and electricians, amounted to more than $100,000 of value to the camp.

Singing Hills Girl Scout Camp is located in the last remnants of the Old Grove Forest, dating back to the pre-European invasion. The camp is nestled on Fish Lake, one of the cleanest, deepest lakes in Minnesota. It occupies half the shoreline.

Understandably, the Scouts are protective of the lake's beauty. The camp consists of 160 acres with three shelters, program center, dining hall, shower house, campsites and cathedral. The wastewater treatment systems dated back to the 1960s and were not providing adequate treatment.

The camp had pit toilets, with the pit bottoms at the same level as seasonal high water. This allowed pathogens, nitrogen and phosphorus to enter groundwater, which ultimately discharges into the lake or recharges the water supply used for camp and neighborhood drinking water wells.

The existing systems for the dining hall, programming center and shower house allowed untreated sewage to surface, increasing the likelihood of human and wildlife contact with sewage, and raising the threat of disease transmission.

The new systems provide a long-term treatment solution. They provide enhanced pathogen and nitrogen removal, and all have three feet of soil separation to the seasonally saturated soil, assuring that phosphorus is removed before the water reaches the lake.

Because camp facilities are scattered on the grounds, because the dining hall produces high-strength waste, and because the camp receives limited winter usage, the volunteer team decided that several treatment systems would be better than one centralized system. The final design for the camp included:

- An NCS Nibbler ATU for the dining hall, discharging to trenches with chambers from Infiltrator Systems Inc. and EZflow media.
- An Orenco AdvanTex system for the program center, discharging to an at-grade system with Infiltrator chambers and EZflow media
- A FAST system from Bio-Microbics Inc. for the shower house, discharging to a drip distribution system from American Manufacturing Company Inc.
- A Cromaglass ATU for the bathroom, discharging to rock trenches
- Remediator/Pirana ATU for the bathroom, discharging to rock trenches
- A Bord na Mona peat biofilter system for the bathroom.

The University of Minnesota Onsite Sewage Treatment Program staff will manage the systems for the first two years. The plan is to sample the systems twice per year and to use the site for training of onsite system inspectors and service providers.

After the first two years, James Brothers Construction will manage the systems as part of an ongoing agreement with the camp. MOWA may also use the camp as a future summer seminar training site for service providers. For information about MOWA conferences and workshops, visit www.mowa-mn.com. For information about training from the University of Minnesota, visit http://septic.umn.edu. ■

Onsite professionals got hands-on training in advanced treatment systems at the Minnesota Onsite Wastewater Association summer seminar. They installed several systems to serve a lakeside Girl Scout camp.

In Appreciation

Numerous companies and organizations donated material, equipment and labor to the Singing Hills Girls Scout Camp project. They are:

- Advanced Onsite Solutions
- American Manufacturing Company Inc.
- Bio-Microbics Inc.
- Bord na Mona
- Belle Plaine Block & Tile
- Brown-Wilbert Inc., Lakeville
- Crest Precast Concrete
- Cromaglass Corp.
- Custom Precast
- Halling Engineering
- Hydromatic
- Infiltrator Systems Inc.
- James Brothers Construction
- MOWA Summer Seminar Attendees
- NCS Nibbler
- Norwesco
- Orenco Systems Inc.
- Petersen Supply
- Pipeline Supply
- Pirana/Remediator
- RepRite Burk
- RDO Equipment, Mankato
- SJE-Rhombus Controls
- St. Joseph Equipment
- United Rental
- University of Minnesota, Onsite Sewage Treatment Program
- Volkman Electric Inc.
- Waste Treatment Systems
- Wieser Concrete
- Wieser Precast Steps
- Willmer Precast
- Ziegler Cat

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