



NEWSLETTER

Special points of interest:

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- Waterloo Biofilter
- OOWA Central Ontario Regional Meeting



Gunnell Engineering Ltd.

SepticDesign.ca

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Winter is here!

Over the past few months, there have been numerous discussions about the new Code. Now that the new year is here, the new Code is in effect. Our last spring newsletter introduced some of the many amendments to Part 8. The major changes include the new leaching bed designs, Type A and Type B. There are also several minor, but significant, changes that we all need to be familiarized with.

Last fall, the first OOWA Central Ontario Regional meeting was held at the municipal office in Innisfil. The re-inspection program was the focus of the one day meeting. Representatives from various municipalities shared

their experiences with the program implementation. We were pleased to have James Ross, Policy Co-ordinator from the MMAH, give a brief overview of the program.

At the 2013 CampEx show, the MOE gave a presentation on the sewage flow rates guidelines for Park Model Units. The MOE would consider a lesser design sewage flows if adequate data was available. The article below discusses what would be considered "adequate" data, and how the campground owners responded.

We come across many challenging properties with limited area for a septic system. Read Lynn's article on how an innovative solution was

achieved to allow a frustrated property owner obtain a building permit. This edition also features the Waterloo Biofilter® treatment system and meet long-time septic installer Burns Brothers Excavating.

We hope the New Year is full of joy, peace and prosperity for you and your family.

Elizabeth Lew

Editor



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On November 18, 2013 at the Camping in Ontario annual CampEx show, the Ministry of the Environment (MOE) presented to a packed room of Ontario Private Campground Owners their expectations on sewage design flow rates for seasonal trailer parks with Park Model Units (PMU's).

The sewage design flow rate of 800 L / day, assigned to PMU's by the MOE, has been a "hot" topic of discussion over the last year. MOE reaffirmed the potential environmental impacts associated with under estimating sewage treatment capacities and that there is insufficient information to amend the guidelines at this time. MOE will only give consideration to changing these guidelines if **ADEQUATE** sewage flow data is presented.

Four specifications to collecting **ADEQUATE** sewage flow data were presented:

1. Type of Data: Daily volumes of sewage discharged to each independent subsurface sewage disposal field, either through direct or indirect (e.g., water use) measurements.

2. Sufficient Data: Three years of daily flow data with supporting info (number & type of trailers, occupancy) from a number of trailer parks consisting primarily of PMUs.

3. Representative Data: Data from as many trailer parks as possible to increase the probability of sufficient & reliable data to represent the expected flows.

4. Reliable Data: Accurate flow measuring methods for the collection and recording of representative daily flow

data (electronic or Doppler flow meters, calibrated dosing pump with operating time, water use metering with supporting information).

Flow data monitoring must be overseen by a **Qualified Person** (a Professional Engineer, a Professional Geoscientist or a certified engineering technologist (CET), all licensed in the Province of Ontario) throughout the collection period to be considered reliable.

The general consensus of the attending Campground Owners was to assist and provide **ADEQUATE** sewage flow data to the MOE in order to have the sewage design flow rate of 800 L/ day reduced to a more realistic and accurate value.

The MOE presentation can be found on Gunnell Engineering's website www.septicdesign.ca/news.html.

Latest News: MOE Sewage Designs and Park Model Units

NEWSLETTER

Innovative On-site Sewage Treatment Solution - Lynn McIlwaine, CET

A registered building lot located on Georgian Bay had been purchased with the intent to construct a single family residence. The property is serviced with municipal water; however sanitary sewers were not available. Due to many physical constraints with the property, i.e. a seasonal watercourse that traverses the property and lack of sufficient developable land area a typical Class IV sewage disposal system could not be constructed and meet Ontario Building Code (OBC) setbacks.



Gunnell Engineering Ltd. was retained to evaluate the options for servicing the property. A tertiary treatment option with direct discharge to either the on-site watercourse or Georgian Bay was considered. However, due to the potential impacts associated with a point source discharge, a land-based solution for effluent discharge was the preferable option. A Tertiary Treatment Sewage System with discharge to a constructed naturalized landscape drainage feature was chosen.

A septic tank, pump tank and a White-water Sewage Tertiary treatment unit along with UV disinfection and phosphorus reduction equipment, were all installed inside a 36,000 litre precast concrete tank, outfitted with a liquid sensor. This tank would prevent any contamination of the on-site watercourse if the sewage treatment system tanks were to leak, and thus reduce any environmental health concerns. In addition, OBC setbacks were reduced

to the property lines and residence, with the double tank containment. Treated effluent would be discharged to a constructed naturalized landscape drainage feature providing soil and plant-based treatment, which allows for dissipation, absorption and retention of the treated effluent, prior to eventual seepage into Georgian Bay.

An Environmental Compliance Approval was issued by the Ministry of the Environment for the construction of the above described system allowing the property to be developed.

Innovative solutions for the treatment of on-site sewage are available. Contact Gunnell Engineering for assistance in finding an innovative solution to your challenging sewage treatment needs.

Profile - Contractor / Installer – Burns Brothers Excavating Ltd.

Burns Brothers Excavating Ltd. is a private company that specializes in septic system construction in the Town of Stouffville and surrounding areas. Located in Stouffville, Burns Brothers Excavating was established in 1991. Lorne is a second generation certified licensed septic installer. Lorne's professional team install just

about everything from Norweco, Ecoflo, Enviro-Septic® and Waterloo Biofilter® treatment systems, as well as conventional septic systems.

Lorne and his wife Ann like to relax and unwind from their busy schedule by enjoying some fresh air at their trailer by the lake.

He can be reached at (800) 363-2189, or email burnsbros@rogers.com



Burns Bros. Vintage Equipment

Profile - Staff Member - Tom Keane

Tom started with Gunnell Engineering in the summer 2010 as a co-op student. In 2011, we were pleased to add Tom to our team as a full-time staff member. Tom's area of expertise includes sewage system design, site & grading plans and structural design. Tom is also a regular contributor to

our newsletter, and has written articles on the Ontario Building Code and septic system investigations.

Tom graduated from Georgian College, Barrie, from the Architectural Technology program. Tom has proven to be invaluable to the company and is

a major player in our team of professionals at Gunnell Engineering Ltd.

Tom can be reached at ext 232 or email tom@gunnellengineering.com.



Tom Keane
Architectural
Technologist

Lorne and Ann Burns

Profile - Waterloo Biofilter®

The Waterloo Biofilter® is an on-site (decentralized) wastewater treatment system for residential, commercial, and small municipal applications. Difficult sites with small lots, bedrock, high water table, clay or poor soils, and environmentally sensitive areas are especially suitable for the Waterloo Biofilter® technology due to its consistently high cold-weather treatment levels, high nitrogen removal, and small footprint.

More than 15 independent agencies have tested Waterloo Biofilter® systems at over 25 sites. More than 5,000 systems, both small and large scale, have been installed across Canada and several other countries, where



Cedar Shed

they consistently produce tertiary quality effluent (CBOD₅ < 10 mg/ L, TSS < 10 mg/L) even after 15 years of continuous use. Contaminant removal rates in the Waterloo Biofilter® consistently exceed 95% BOD, 95% TSS, 30-65% TN, 99% fecal coliforms and 99% of viruses even in cold Canadian climates.

The key to the Waterloo Biofilter® system is its patented, high efficiency and absorbent filter medium. Wastewater is distributed evenly over the surface of the filter medium where it is absorbed and held 'up in the air'. As the wastewater slowly percolates down, naturally

occurring microbes degrade the solids and organic matter, attenuate coliform bacteria, and nitrify ammonium, producing a clear and odourless effluent.

Waterloo Biofilter® also provides solutions for re-use, including effluent re-use and rainwater harvesting products. Waterloo can provide design assistance and all necessary products for rainwater harvesting projects.

Innovative solutions and treatment options include below ground biofilter tanks, above ground sheds, flat bed biofilters and commercial shipping container biofilters. The Waterloo Biofilter® treatment system can be used in conjunction with Part 8 septic fields or their Area Bed System (BMEC Auth #99-08-236).

Waterloo Biofilter® can be reached through their website at www.waterloo-biofilter.com



Flat Bed Biofilter



Biofilter Containers

OOWA - Central Ontario Regional Meeting

Eric Gunnell recently assisted with Dave Dobinson and Jerry Bruce to organize the OOWA - Central Ontario Regional Meeting, held on Sept 24/13, at the Innisfil Municipal Office. The primary focus of the meeting was MMAH septic re-inspection program, which to date largely affects the municipalities bordering Lake Simcoe.

These inspection programs are intended to help protect Ontario's drinking water and the natural environment, and support the implementation of the Clean Water Act, 2006, and the Lake Simcoe Protection Plan. Initial inspections must be completed by Jan 1/16 for all existing septic systems with 100m of the Lake Simcoe Shoreline. Lynn Dollin

gave a presentation on Source Water Protection. James Ross, of the MMAH, provided an overview of the requirements for the new OBC re-inspection program. A number of municipalities provided overviews of their re-inspection programs, including Jack Tosta of Bradford West Gwillimbury, Karl Kiproff of the Durham Health Unit / Brock Township, Bobbi Lovering of Oro – Medonte, Rod Larmer of the Town of Georgina, Nick Ippolito of Springwater and Ed Yohanna of the Town of Innisfil. Alternatives for implementation of the re-inspection program, included utilizing in-house resources, hiring temporary staff, hiring an engineering firm, and accepting 3rd

party inspection certificates. Each municipality has established an inspection cost to be charged to the property owner. All municipalities recognized that a lot of work remains to meet the initial timeframes established by the MMAH.

Rick Esselment gave a spirited presentation on his thoughts for the 'field' requirements of a septic re-inspection program. Eric Gunnell concluded with an informative talk on the upcoming septic OBC building code changes, which become effective in the new year. A copy of Eric's presentation is available at www.septicdesign.ca/news.html.



OOWA Central Ontario Regional Meeting



Gunnell Engineering Ltd. SepticDesign.ca

1110 Stellar Drive
Unit 106
Newmarket, Ontario L3Y 7B7

Phone: 905-868-9400
Fax: 905-853-5734
E-mail: info@gunnellengineering.com
Editor: liz@septicdesign.ca

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Industry News

Enviro-Septic Systems

Make-Way Environmental Technologies is pleased to announce the renewal of their BMEC Authorization for the Enviro-Septic System.

The new BMEC Authorization # 13-03-365 is now to be assigned to all new permit applications.



15th Annual

Ontario Onsite Wastewater Association
Conference and Trade Show

March 23 to 25, 2014

Sheraton on the Falls, Niagara Falls, Ontario

www.oowa.org



New Building Code in Effect

The new Building Code 2012 will come into force on January 1, 2014. The Code includes new and updated standards, allows for the use of new products and builds on the health and safety and environmental protection requirements. For the on-site sewage system industry, new requirements including referencing CAN-BNQ 3680-600 standards, new types of dispersal beds and changes / updates to technical,

maintenance and monitoring requirements.

Certification for treatment technologies based on the CAN BNQ standards comes into force in 2016. Manufacturers will have until then to ensure the testing requirements are met.

For more information, go to www.ontario.ca/Buildingcode or refer to Eric's OBC Code presen-

tation at www.septicdesign.ca/news.html.



Ministry of Municipal
Affairs and Housing

Who we are...Gunnell Engineering Ltd

Please contact our friendly and knowledgeable staff for any questions or comments:

Eric Gunnell, P.Eng
eric@septicdesign.ca

Elizabeth Lew, B.Sc.
liz@septicdesign.ca

Brock Cross
brock@gunnellengineering.com

Imad Aouli
imad@gunnellengineering.com

Lynn McIlwaine, CET
lynn@gunnellengineering.com

John Robinson
john@gunnellengineering.com

Tom Keane
tom@gunnellengineering.com

Teika Zilans, B.Sc.
teika@gunnellengineering.com

Dinah Huizinga
dinah@gunnellengineering.com

Darren Dunphy
darren@gunnellengineering.com

Tim Gallagher
tim@gunnellengineering.com

Laura Gunnell
laura@gunnellengineering.com

Upcoming Events:

National Home Show
March 14-23, 2014
Direct Energy Centre, Toronto

OOWA Annual Conference
March 23-25, 2014
Sheraton on the Falls,
Niagara Falls

Cottage Life Show
March 28-30, 2014
International Centre, Miss.

WEAO Annual Conference
April 6-8, 2014
London Convention Centre

