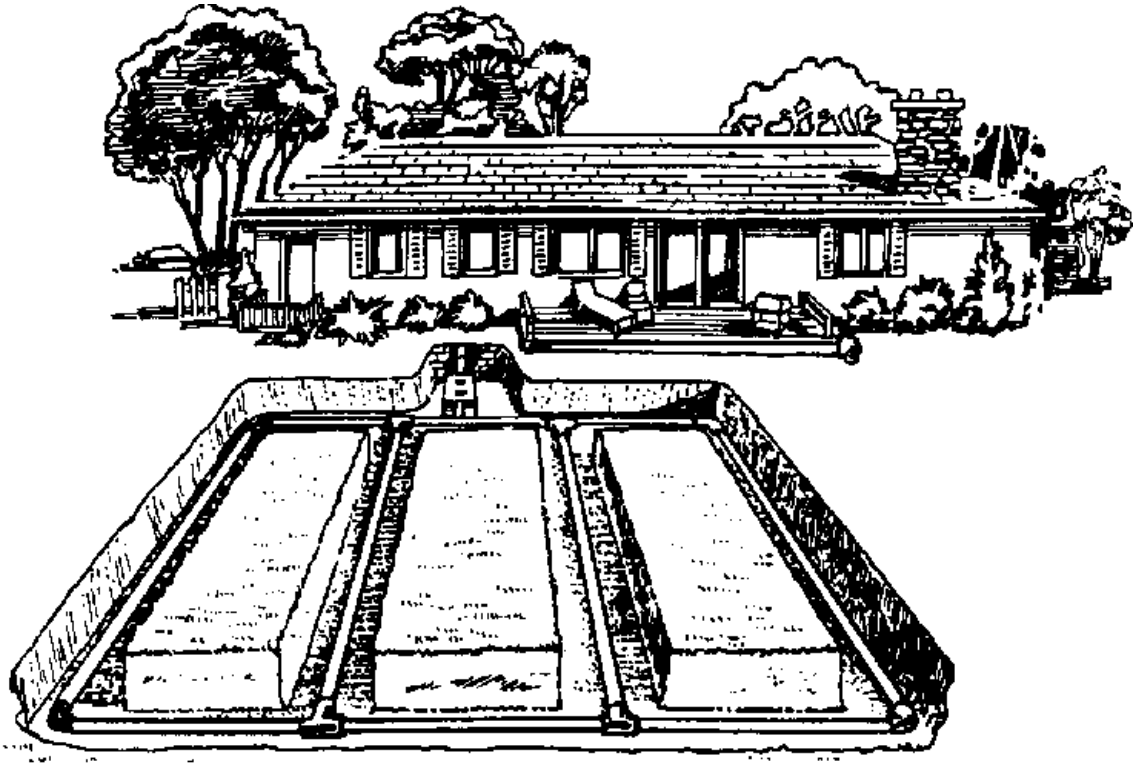
Town of Saugeen Shores
Protective Services – Building Department
600 Tomlinson Drive, P.O. Box 820
Port Elgin ON N0H 2C0
Telephone: (519) 832-2008 Fax: (519) 832-2140
Toll Free: 1-866-832-2008 www.saugeenshores.ca

GUIDELINES FOR SUBMISSION OF AN APPLICATION FOR A SEWAGE SYSTEM PERMIT



NOTE: This guideline is intended as an aid to the applicant. The applicant, designer and installer of the system retain full responsibility for knowing the requirements of the Ontario Building Code and ensuring that the sewage system is installed in accordance with regulatory requirements.

Rev. January 2019

GUIDELINES FOR SUBMISSION OF AN APPLICATION FOR A SEWAGE SYSTEM PERMIT

This guide will help the applicant complete the ***Application for a Sewage System Permit***. Information has been provided to assist *the applicant* with the evaluation of the site and soils, and with the design of the sewage system. *The environment inspector does not design a sewage system.*

It is the responsibility of the owner or the authorized agent to submit a complete application that includes the designed system exactly as the system is to be installed. Recent changes in legislation now require that all work on a sewage system be completed in accordance with the proposed sewage system as submitted in the application. Any deviation from the approved permit requires the resubmission of a revised plan and approval of the Town of Saugeen Shores. *An additional fee may be required for the review of a revision.*

No work shall commence on a sewage system until a Sewage System Permit has been issued. The appropriate fee, (see schedule on page 3) must accompany the application. All cheques are to be addressed to the Town of Saugeen Shores.

Note: **If this guideline or any part thereof contradicts the Building Code Act or the Ontario Building Code, the provincial legislation applies and must be adhered to.**

Town of Saugeen Shores Sewage System Fee Schedule

SEWAGE SYSTEM PERMIT FEES	
Class 2, 3, 4 or 5 new/replacement system	$613.19
Class 4 or 5 tank replacement only	$319.92
Class 4 leaching bed repair	$319.92
Demolition/Decommissioning Permit	$143.97
Revision or Renewal of Permit	$90.43
Transfer of Permit	$85.32

Notes and Definitions

Refunds

- Once a building permit has been issued, before the first inspection has been completed, 50% of the building permit fee is to be retained to a minimum of $141.15
- An additional $130.69 shall be retained if a site visit was completed

INSTRUCTIONS FOR COMPLETING THE APPLICATION

SECTION A PERSONAL INFORMATION

Owner
Fully complete all information pertaining to the owner or the application will be rejected.

Installer
Persons engaged in the business of constructing on site, installing or repairing sewage systems must hold a valid licence. Should an owner not hire a contractor for the installation, indicate in this section that the installation will be carried out by the owner.

Agent
Any duly authorized representative for the owner.

Designer
A person responsible for the design of the system.

SECTION B PROPERTY INFORMATION

Municipality & Former Municipal Name
If the municipality has been amalgamated, state the new municipal name plus the former name of the municipality. The latter is required because the lot and concession reference the former municipality.

Lot Area
State the area in square metres. For a larger parcel of land, use acres or hectares.

Civic Address Number
Municipal or fire number - This is usually a small green numbered sign, which has been posted at the front of your property.

SECTION C SITE & DESIGN INFORMATION

Class
Insert the appropriate Class of sewage system. For the purpose of the fee schedule the Class of Systems are as follows:

Class 2 - is a system that receives only greywater
Class 4 - is a leaching bed system
Class 5 - is a holding tank system

Sewage System to serve
Describe the intended use of the structure, i.e., single family dwelling, restaurant, motel, etc. For commercial uses and large systems additional information will be required. Full knowledge of Part 8 of the Ontario Building Code is essential for all systems.

State Number Of:
This section refers to the building or structure that will be served by the proposed sewage system.

Total Number of fixture units
Complete the following chart to determine the total number of fixture units.
Include all fixture units in basement and accessory buildings.

Fixture	# of Fixture Types	Fixture Units	Total Fixture Units by Type
i.e. Water Closet - flush toilet with tank	*3*	*4*	*12*
Bathtub (with or without shower)		1½	
Bidet		1	
Dishwasher domestic		1½	
Garbage grinder-commercial type		3	
Shower drain from 1 head		1½	
Sink domestic and other small		1½	
Urinal – wall washout		1½	
Water Closet – (a) with flush tank (b) with direct flush		 4 6	
Laundry Tubs/Wash Machine		1 ½	
Other:			
Total # of Fixture Units			

If plumbing fixtures in your building are not listed above, please include the item on application under "Other" and refer to the Ontario Building Code, Part 7 for a complete description regarding fixture rating. Include all units when stating the total number of fixtures units.

Total Finished Floor Area
State total proposed finished floor area of all building levels in square metres.

Existing/proposed water supply

The water supply for the proposed residence or other development.

The Test Hole

A test hole provides a method by which you can observe the subsoil profile and groundwater conditions below grade at the proposed location of the leaching bed. The test hole should be dug at the proposed location of the leaching bed. A test hole should be a minimum of 1 metre wide and 1.5 metres deep.

The test hole is also required by the inspector to verify soil conditions on site and must be open and available when the inspector visits the site. Ensure the test hole is protected for safety reasons.

Describe existing soil type in sewage system area

Describe the soil profile from the surface of the ground to a depth of 1.5 metres. For example, a profile might state: 20 cm of sandy topsoil, 60 cm granular sand, 30 cm silty sand, clay at 1.5 metres.

Percolation rate of Native Soil

Percolation time "T" means the average time in minutes that is required for water to drop one centimeter during a percolation test on site or as determined by a soil evaluation or analysis.

Describe Soil Mantle

The soil mantle is a layer of soil at the surface .25 metres or more in depth extending outward at least 15 metres from the sewage system in the direction of flow. If a suitable soil mantle does not exist on site material must be imported to create the mantle.

It is the responsibility of the designer of the sewage system to state the percolation rate.
Indicate on your application whether the "T" time was estimated (using the table below) or determined by an on site percolation test or by a lab analysis.

Approximate Relationship of Soil Types to Permeability and Percolation Times

Soil Type (unified soil classification)		Coefficient of Permeability (k-cm/sec)	Percolation Time- T mins/cm	Comment
Coarse Grained (*More than 50% larger than #200*)				
G.W.	Well graded gravels, gravel-sand mixtures, little or fines	10^{-1}	<1	• very permeable unacceptable
G.W.	Poorly graded gravels, gravel-sand mixtures, little or no fines	10^{-1}	<1	• very permeable
G.M.	Clayey gravels, gravel-sand-clay mixtures	10^{-2} -10^{-4}	4 – 12	• permeable to medium permeable depending on amount of silt
G.C.	Clayey gravels, gravel-sand-clay mixtures	10^{-4} - 10^{-6}	12 – 50	• Important to estimate amount of silt and clay
S.W.	Well graded sands, gravelly sands little or no fines	10^{-1} - 10^{-4}	2 – 12	• Medium permeability
S. P.	Poorly graded sands gravelly sand, little or no fines	10^{-1} - 10^{-3}	1– 8	• Medium permeability
S.M.	Silty sands, sand-silt mixtures	10^{-3} - 10^{-5}	8 – 20	• Medium to low permeability
S.C.	Clayey sands, sand-clay mixtures	10^{-4} - 10^{-6}	12 – 50	• Medium to low permeability (depends on amount of clay)

Soil Type (unified soil classification)		Coefficient of Permeability (k-cm/sec)	Percolation Time- T mins/cm	Comment
Fine-Grained (More than 50% passing #200)				
M.L.	Inorganic silts and very find sands, rock flour, silty or clayey fine sands, clayey silts with slight plasticity	10-5-10-6	20-50	• Medium to low permeability
C.L.	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	10-6 and less	over 50	• unacceptable
O.L.	Organic silts, organic silty clays of low plasticity; liquid limit less than 50	10-5 and less	20-over 50	• Acceptable depends on clay content
M.H.	Inorganic silts, micareaous or diatomageious fine sandy or silty soils, elastic silts	10-6 and less	over 50	• unacceptable
C.H.	Inorganic clays of medium to high plasticity, organic silts	10-7 and less	over 50	• unacceptable
O.H.	Organic clays of medium to high plasticity-organic silt; liquid limit over 50	10-6 and less	over 50	• unacceptable

SECTION D PROPOSED DESIGN

There are 2 critical pieces of information that must be known in order to design a sewage system.

- the amount of sewage entering the system that will be generated from the building each day. This is known as the "estimated daily sewage flow" and is referred to as Q in the formulas you will encounter in the guideline and the regulation.
- the percolation rate as previously described. This number is referred to as T in the formulas.

Note: The inspector will not design a sewage system. The owner, agent, contractor, design consultant or engineer must propose the design.

Daily Sewage Flow

a) For residential occupancies, the total daily design sanitary sewage flow shall be determined using the volume (litres) in column 2 of the following table.

See Ontario Building Code Table 8.2.1.3.A for complete text

Residential Occupancy	Volume (Litres)
Apartments, Condominiums, Other Multi-family Dwellings – per person [1]	275
Boarding Houses	
a) Per person	
i) with meals and laundry facilities, or	200
ii) without meals or laundry facilities, and	150
b) Per non-resident staff per 8 hour shift	40
Boarding School – per person	300
Dwellings	
a) 1-bedroom dwelling	750
b) 2-bedroom dwelling	1100
c) 3-bedroom dwelling	1600
d) 4-bedroom dwelling	2000
e) 5-bedroom dwelling	2500
f) Additional flow for [2]	
i) each bedroom over 5	500
ii) A) each 10 m^2 (or part thereof) over 200 m^2 up to 400 m^2 [3]	100
B) each 10 m^2 up to 600 m^2 [3], and	75
C) each 10 m^2 (or part thereof) over 600 m^2 [3] or	50
iii) each fixture unit over 20 fixture units	50
Hotels and Motels (excluding bars and restaurants)	
a) Regular per room	250
b) Resort hotel, cottages, per person	500
c) Self service laundry, add per machine	2500
Work Camp/construction Camp, semi-permanent per worker	250

Notes for Table 8.2.1.3.A.

1. The occupant load shall be calculated using subsection 3.1.16
2. Where multiple calculations of sewage volume is permitted the calculation resulting the highest flow shall be used in determining the design daily sanitary sewage flow.
3. Total finished area, excluding the area of the finished basement.

b) For all other occupancies, the total design sanitary sewage flow shall be at least the value as stated in column 2 from Table 8.2.1.3.B of the Ontario Building Code.

Size of Tank
The minimum capacity of a septic tank shall not be less than twice the design daily sewage flow for residential occupancy or three times the design daily sewage flow for all other occupancies but in no case shall the tank be less than 3600 litres.

Septic Tank Size Calculation:

Estimated Daily Sewage Flow (residential) x 2 = _____litres

Estimated Daily Sewage Flow (non-residential) x 3 = _____litres

a) A holding tank shall have a working capacity of not less than 9000 litres.

A holding tank used in residential dwellings shall have a minimum 7 day holding capacity based on the total daily design sanitary sewage flow.

Alternate Treatment Unit
State the type of treatment unit proposed and its design capacity if the treatment unit is anything other than a septic tank or a holding tank.

The treatment unit must meet the effluent quality shown in the following table found in the Building Code.

See Ontario Building Code Table 8.6.2.2.A for complete text

Parameter	Secondary Effluent[1]	Tertiary Effluent[1]
BOD_5	30	15
$CBOD_5$	30	10
Suspended Solids	30	10

Note for Table 8.6.2.2.A.

1. Maximum concentration based on 30 day averages in milligrams per litre (mg/L)

Length of Distribution Pipe (for leaching beds constructed of absorption trenches)

Determine the size of the leaching bed required using the formula

$$L = \frac{QT}{200}$$

If the treatment unit produces secondary effluent, the following formula may be used.

$$L = \frac{QT}{300}$$

Where the leaching bed is constructed as a shallow buried trench with soils with a percolation rate of 50 minutes or less, the following formula applies.

$$L = \frac{QT}{75}$$

With soils with a percolation rate greater than 50 minutes, the following formula applies.

$$L = \frac{QT}{40}$$

where, L = the total length of distribution pipe in metres

Q = the estimated total daily sewage flow

T = the percolation rate of the native soil

The minimum total length of distribution piping in absorption trench must be 40 metres or more. Not less than 30 metres when constructed as a shallow buried trench.

Depth of Imported Fill

A leaching bed comprised of absorption trenches may be constructed in leaching bed fill provided that the soil under the bed has a percolation rate <l5 min/cm or is imported and extends

(a) to a depth of at least 250 mm over the area covered by the leaching bed fill, and ,
(b) for at least l5 metres beyond the outer distribution pipes in any direction in which the effluent entering the soil will move horizontally.

The area described above shall be designed for a daily loading rate of not more than that set out in Table 8.7.4.1.A.

To calculate the length of pipe in a raised bed, use the formula below:

$$L = \frac{QT}{200}$$

where,

L = length of distribution pipes in metres
Q = estimated daily sewage flow in litres/day
T = percolation rate of the imported material

Note: All absorption trenches, in native or imported soil must have a separation distance of 900 mm from the bottom of the trench to the high ground watertable, bedrock or soil with a T >50 min/cm.

Imported Mantle

If suitable, unsaturated soil to a depth of 250 mm and extending 15 metres in any direction of flow does not exist on site, a mantle must be imported to meet these requirements.

Pump Required

If the total length of distribution pipe exceeds 150 metres an effluent pump must dose the bed. The pump shall be designed to discharge a dose of at least 75% of the internal volume of the distribution pipe within a time period not exceeding fifteen minutes.

To determine the amount of effluent to the pumped per cycle use the following:

- 3 inch diameter pipe V = 3.3 x L
- 4 inch diameter pipe V= 5.9 x L

where,

L = total length of distribution pipe in the leaching bed

V = the effluent volume pumped per cycle in litres

Leaching bed fill area

Total area (including downgrade mantle) to be filled to a minimum of 250mm is determined by dividing the daily sewage flow by the appropriate loading rate for the soil percolation time.

Table 8.7.4.1.A. (Ontario Building Code)

Percolation Time (T) of Soil (min./cm)	Loading Rates L/m^2day
1<T<20	10
20<T<35	8
34<T<50	6
T>50	4
Column 1	Column 2

Filter medium surface (for filter beds only)

The surface of the filter medium must not be less than 10m^2.

For total design sewage flows not exceeding 3,000 L, the loading on the surface of the filter medium must not exceed 75 L/m^2 per day.

For total design sewage flows exceeding 3,000 L, the loading on the surface of the filter medium must not exceed 50 L/m^2 per day and the leaching bed must have more than one filter bed, each a similar size and adjacent to each other with at least 5m separation.

Where a treatment unit designed to produce effluent not exceeding the maximum concentrations stipulated in Column 2 of Table 8.6.2.2.A is used in conjunction with a filter bed, the effective area shall be such that the loading on the surface of the filter medium does not exceed 100 L/m^2 per day.

Note: The area under the filter bed and the area of the mantle must be designed for a daily loading rate of not more than that set out in table 8.7.4.1.A (See page 10).

Filter medium base (for filter beds only)

The base of the filter medium shall extend to a thickness of at least 250 mm over an area meeting the requirements of the following:

$$A = \frac{QT}{850}$$

where,

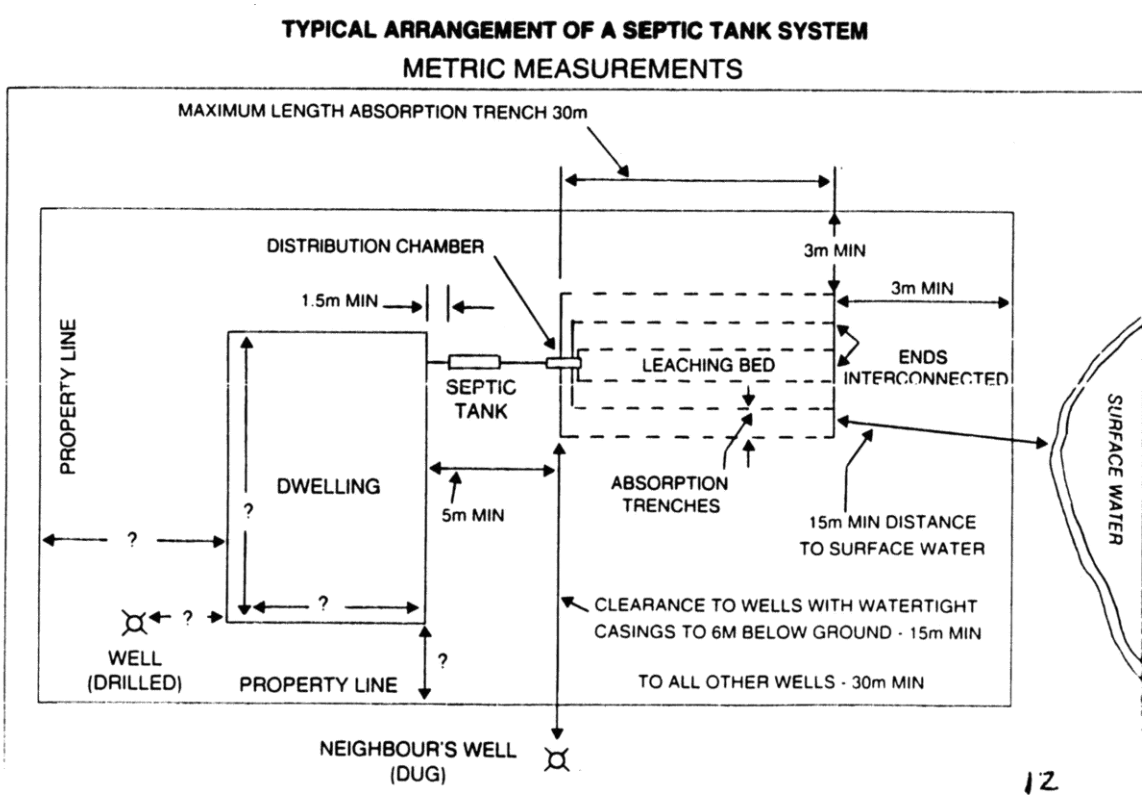
A = the area of contact in square meters between the base of the filter medium and the underlying soil

Q = the total daily design sanitary sewage flow in litres

T = the percolation time of the underlying soil

SECTION E SITE PLAN REQUIREMENTS

As part of your application you are required to provide a site plan which must be accurate, scaled or proportioned drawings in plan and cross section. These diagrams must be completed in detail and be presented as part of your application.



No sewage system shall have horizontal clearance distances of less than those indicated in the tables below.

Minimum Clearance Distance From Distribution Pipes

Items	Minimum Clearance
Structure	5 m
Well with a watertight casing to a depth of 6 m	15 m
Any other well	30 m
Lake	15 m
Pond	15 m
Reservoir	15 m
River	15 m
A spring not used as a source of potable water	15 m
Stream	15 m
Property line	3 m

Minimum Clearance Distance For Treatment Units (including septic tanks)

Items	Minimum Clearance
Structure	1.5 m
Well	15 m
Lake	15 m
Pond	15 m
Reservoir	15 m
River	15 m
Spring	15 m
Stream	15 m
Property line	3 m

Minimum Clearance Distance For Holding Tanks

Items	Minimum Clearance
Structure	1.5 m
Well with a watertight case to a depth of at least 6 m	15 m
Any other well	15 m
A spring	15 m
Property Line	3 m

Minimum Clearance Distance for Class 1,2,3 systems

	Minimum horizontal distance in metres from a well with watertight casing to a depth of at least 6 m	Minimum horizontal distance in metres from a spring used as a source of potable water or well other than a well with a watertight casing to a depth of at least 6 metres	Minimum horizontal distance in metres from a lake, river, pond, stream, reservoir, or a spring not used as a source of potable water	Minimum horizontal distance in metres from a property line
Earth Pit Privy	15	30	15	3
Privy Vault Pail Privy	10	15	10	3
Greywater System	10	15	15	3
Cesspool	30	60	15	3

Once you have reviewed this guideline and completed pages one and two, your application is ready for submission to the Health Unit. ***INCOMPLETE APPLICATIONS WILL BE RETURNED TO THE APPLICANT.***

Notice Requirements for Inspections:

The installed system must be inspected and approved prior to backfilling.