

CLASS 4 SEWAGE SYSTEM BUILDING PERMIT PROCESS

STEP 1: Fill out an application

Design Calculations

- Calculate the Total Daily Design Sewage Flow, or “Q”, expressed in Litres.
- Calculate the minimum size of the Septic Tank required, expressed in Litres. If pumping raw sewage or effluent is required, indicate the size of the pump chamber.
- Choose type of bed for Effluent Distribution, Absorption Trenches **OR** Filter Bed, and calculate pipe length/contact area required, expressed in linear metres or square metres.

Algoma Public Health only issues permits for sewage systems of less than 10 000 Litres of daily design sewage flow (Q); if your system design is larger than 10 000 Litres contact the Ministry of Environment.

Site Plan/Design Drawings

Draw a site plan to scale with key measurements, include:

- Property boundaries including lot lines, easements, right-of-ways, access routes, adjacent roads and water bodies (including streams, ponds and lakes), etc.
- Existing and proposed site installations including buildings, septic installations, sheds, wells, power lines, site services (above and below ground), driveways, fences, etc.
- Drainage characteristics of the site, including slopes, ditches, swales, bedrock outcrops, etc. Include specific identification of areas susceptible to flooding.
- Mandatory measurements to be included:
 - o Set-backs from the proposed septic system to existing/proposed structures/features (see attached chart).
 - o Dimensions of the proposed leaching bed, including contact area (mantle) if required.

Provide Section and Detail drawings for key features:

- Cross sections will illustrate all the materials that make up the septic system, leaching bed, filter medium and contact area (mantle). Show proposed grade of the septic system, including original grade and final grade.
- Cross sections shall include the depth of the excavation, rock or water table, and soil type (native and imported), depth of materials to be used, and components including pump chamber, septic tank, and distribution piping.
- Adequate information on a top elevation showing tank location, pump chamber (if required), bed size showing the number of runs and spacing of piping and location of distribution box.

While the “*Design Layout On-Site Sewage Systems and Building Permits*” form provides areas for these drawings, space is limited. Consider submitting additional pages with more detailed drawings to be able to provide all the required information. The drawings must clearly indicate the above information or your application may be returned to you for clarification and/or revision.

STEP 2: Submit the Application

Submit completed application package with payment of the appropriate fee (see attached fee schedule). Be sure to include the accurate property information, including Roll Number, Lot/Concession Numbers, property owner information, etc.

Once a complete application has been received with all required fees paid in full, an inspector will be in contact with the owner or authorized agent within 10 business days to arrange a date/time for an "Initial Site Inspection".

Any incomplete applications received will be returned to the applicant for completion and delay the turnaround time for application processing.

STEP 3: Initial Site Inspection/Issuance of Building Permit

At the Initial Site Inspection, dig an inspection pit 1 to 2 metres deep where you plan to put your absorption trenches/field bed. Make sure you know where lot lines are located. Up-to-date surveys, or reliable survey stakes are preferred.

The inspector will visit your site to discuss your application and let you know if any further information or requirements are necessary. If the site conditions, application and proposed installation meet the minimum requirements of the Ontario Building Code (OBC), you will receive a Building Permit.

If further information is required, or changes to the plan must be made to meet OBC requirements, you must re-submit these items before a permit can be issued. You MAY NOT begin construction until a Building Permit has been issued.

STEP 4: Install the System

Install your septic system as per the application. If you run into unexpected issues during construction that require you to change your plans, you **must** notify your inspector immediately. You may be required to re-submit portions of your application to reflect required changes.

STEP 5: Substantial Components Inspection

Once the system is installed but before you cover it over, call your inspector for a "Substantial Components Inspection". The inspector will arrange to visit the site within 5 business days and check that the system meets OBC requirements. If the installation meets the minimum requirements you will receive notification allowing you to cover and begin using the system, along with any final requirements to complete the installation.

If there is a problem identified with the installation of the system you will be required at this point to fix/change design features. You MAY NOT cover or begin use of the system or affected components until the inspector indicates you may do so. Another inspection may be required before you will be allowed to cover.

STEP 6: Complete the System

Complete the installation according to your application, including final grading and seeding/sodding. You will be provided with a Final Notice of Completion form that must be completed and returned to your inspector once the system is completed.

STEP 7: Ongoing Maintenance

Continue ongoing maintenance of your system to ensure it continues to function properly for years to come. Avoid putting chemicals, oils or fats, or unnecessary solid materials into the system. Do not drive vehicles, plant large shrubs or trees, or build anything on top of your tank or leaching bed. Have your septic tank pumped and inspected every 3 to 5 years. Refer to resources from Algoma Public Health for more information on maintaining your system.

If you require more information about sewage system design, please visit our website at www.algomapublichealth.com. If you still have difficulty with the process you may wish to contact a sewage system installer who is qualified to design your system. Qualified designers and installers in the Algoma area are listed on our website.

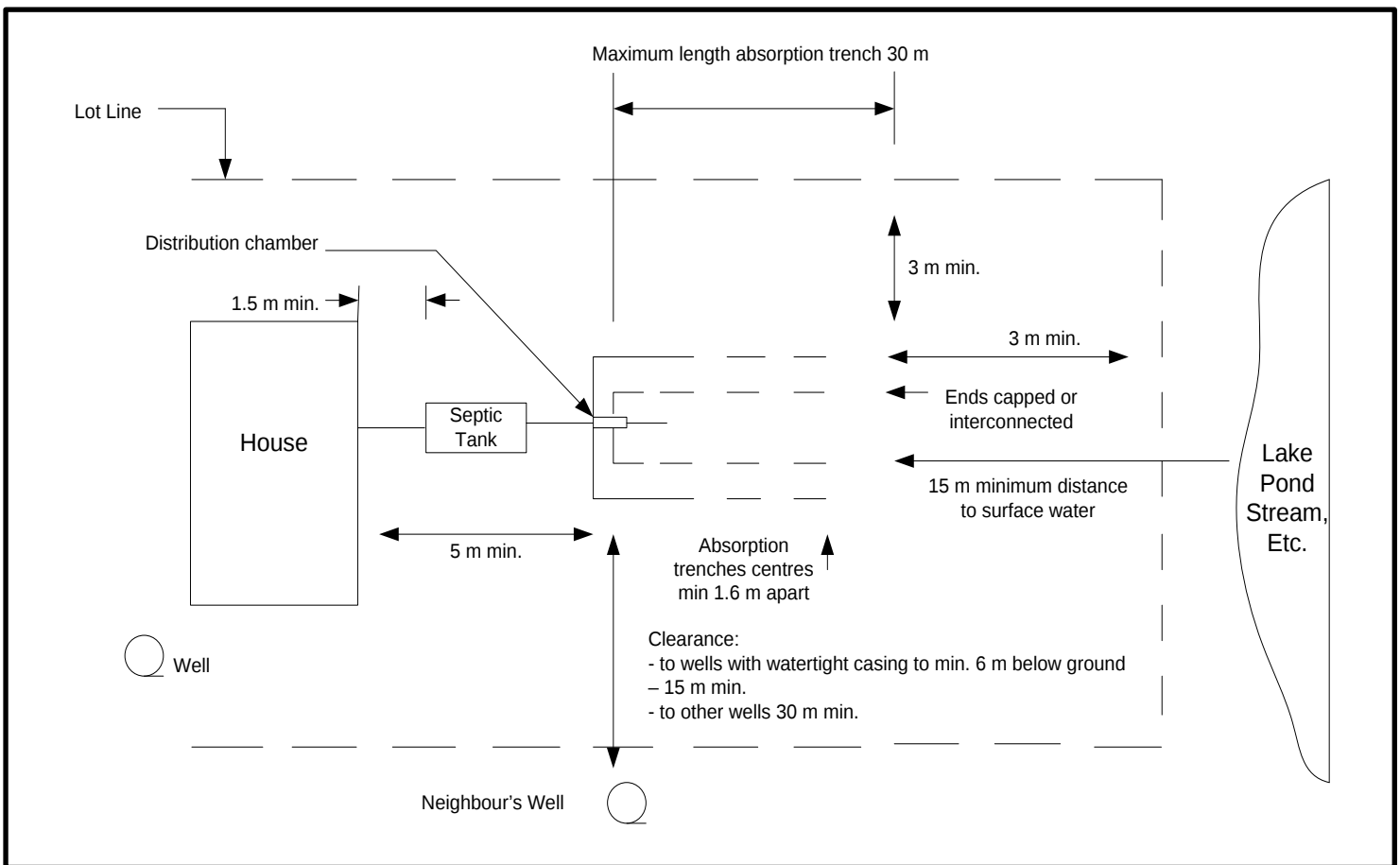
Please note that these forms are not intended to be a comprehensive interpretation of the OBC design standards, but simply an aid for common installations. If you have any further questions about design or construction it is recommended you contact a licensed Designer or Installer.

MINIMUM SETBACK DISTANCES

	Minimum Horizontal Distance in Metres from:				
	Structure	Well with a water tight casing to at least 6 m (Drilled Well)	Any other well	Any of: a lake, stream, pond, reservoir, river or spring not used as a potable water source	Property line
Treatment Units (Including Septic Tanks)	1.5	15	15	15	3
Distribution Piping	5	15	30	15	3

***Please check with the municipality governing the location you are installing the system to see if there are increased clearance distances in place – if so, the greater distance must be followed.**

TYPICAL CLASS 4 LAYOUT WITH CLEARANCE DISTANCES



Application for a Permit to Construct or Demolish

This form is authorized under subsection 8(1.1) of the *Building Code Act, 1992*

For use by Principal Authority				
Application number:		Permit number (if different):		
Date received:		Roll number:		
Application submitted to: _____ (Name of municipality, upper-tier municipality, board of health or conservation authority)				
A. Project information				
Building number, street name			Unit number	Lot/con.
Municipality	Postal code	Plan number/other description		
Project value est. \$		Area of work (m ²)		
B. Purpose of application				
New construction	Addition to an existing building	Alteration/repair	Demolition	Conditional Permit
Proposed use of building		Current use of building		
Description of proposed work				
C. Applicant				
Applicant is: Owner or Authorized agent of owner				
Last name		First name	Corporation or partnership	
Street address			Unit number	Lot/con.
Municipality	Postal code	Province	E-mail	
Telephone number	Fax	Cell number		
D. Owner (if different from applicant)				
Last name		First name	Corporation or partnership	
Street address			Unit number	Lot/con.
Municipality	Postal code	Province	E-mail	
Telephone number	Fax	Cell number		

E. Builder (optional)				
Last name		First name	Corporation or partnership (if applicable)	
Street address			Unit number	Lot/con.
Municipality	Postal code	Province	E-mail	
Telephone number	Fax		Cell number	
F. Tarion Warranty Corporation (Ontario New Home Warranty Program)				
i. Is proposed construction for a new home as defined in the <i>Ontario New Home Warranties Plan Act</i> ? If no, go to section G.			Yes	No
ii. Is registration required under the <i>Ontario New Home Warranties Plan Act</i> ?			Yes	No
iii. If yes to (ii) provide registration number(s): _____				
G. Required Schedules				
i) Attach Schedule 1 for each individual who reviews and takes responsibility for design activities.				
ii) Attach Schedule 2 where application is to construct on-site, install or repair a sewage system.				
H. Completeness and compliance with applicable law				
i) This application meets all the requirements of clauses 1.3.1.3 (5) (a) to (d) of Division C of the Building Code (the application is made in the correct form and by the owner or authorized agent, all applicable fields have been completed on the application and required schedules, and all required schedules are submitted). Payment has been made of all fees that are required, under the applicable by-law, resolution or regulation made under clause 7(1)(c) of the <i>Building Code Act, 1992</i> , to be paid when the application is made.			Yes	No
ii) This application is accompanied by the plans and specifications prescribed by the applicable by-law, resolution or regulation made under clause 7(1)(b) of the <i>Building Code Act, 1992</i> .			Yes	No
iii) This application is accompanied by the information and documents prescribed by the applicable by-law, resolution or regulation made under clause 7(1)(b) of the <i>Building Code Act, 1992</i> which enable the chief building official to determine whether the proposed building, construction or demolition will contravene any applicable law.			Yes	No
iv) The proposed building, construction or demolition will not contravene any applicable law.			Yes	No
I. Declaration of applicant				
I _____ declare that: (print name) - The information contained in this application, attached schedules, attached plans and specifications, and other attached documentation is true to the best of my knowledge. - If the owner is a corporation or partnership, I have the authority to bind the corporation or partnership. _____ Date Signature of applicant				

Personal information contained in this form and schedules is collected under the authority of subsection 8(1.1) of the *Building Code Act, 1992*, and will be used in the administration and enforcement of the *Building Code Act, 1992*. Questions about the collection of personal information may be addressed to: a) the Chief Building Official of the municipality or upper-tier municipality to which this application is being made, or, b) the inspector having the powers and duties of a chief building official in relation to sewage systems or plumbing for an upper-tier municipality, board of health or conservation authority to whom this application is made, or, c) Director, Building and Development Branch, Ministry of Municipal Affairs and Housing 777 Bay St., 2nd Floor. Toronto, M5G 2E5 (416) 585-6666.

Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project Information			
Building number, street name		Unit no.	Lot/con.
Municipality	Postal code	Plan number/ other description	
B. Individual who reviews and takes responsibility for design activities			
Name		Firm	
Street address		Unit no.	Lot/con.
Municipality	Postal code	Province	E-mail
Telephone number	Fax number	Cell number	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]			
House	HVAC – House	Building Structural	
Small Buildings	Building Services	Plumbing – House	
Large Buildings	Detection, Lighting and Power	Plumbing – All Buildings	
Complex Buildings	Fire Protection	On-site Sewage Systems	
Description of designer's work			
D. Declaration of Designer			
I _____ declare that (choose one as appropriate): (print name) I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4. of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____ I review and take responsibility for the design and am qualified in the appropriate category as an “other designer” under subsection 3.2.5. of Division C, of the Building Code. Individual BCIN: _____ Basis for exemption from registration: _____ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____ I certify that: 1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm. _____ Date _____ Signature of Designer			

NOTE:

1. For the purposes of this form, “individual” means the “person” referred to in Clause 3.2.4.7(1) (c). of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
2. Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of practice, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

Schedule 2: Sewage System Installer Information

A. Project Information			
Building number, street name		Unit number	Lot/con.
Municipality	Postal code	Plan number/ other description	
B. Sewage system installer			
Is the installer of the sewage system engaged in the business of constructing on-site, installing, repairing, servicing, cleaning or emptying sewage systems, in accordance with Building Code Article 3.3.1.1, Division C?			
Yes (Continue to Section C)		No (Continue to Section E)	
		Installer unknown at time of application (Continue to Section E)	
C. Registered installer information (where answer to B is "Yes")			
Name		BCIN	
Street address		Unit number	Lot/con.
Municipality	Postal code	Province	E-mail
Telephone number	Fax	Cell number	
D. Qualified supervisor information (where answer to section B is "Yes")			
Name of qualified supervisor(s)		Building Code Identification Number (BCIN)	
E. Declaration of Applicant:			
I _____ declare that: (print name) I am the applicant for the permit to construct the sewage system. If the installer is unknown at time of application, I shall submit a new Schedule 2 prior to construction when the installer is known; <u>OR</u> I am the holder of the permit to construct the sewage system, and am submitting a new Schedule 2, now that the installer is known. I certify that: 1. The information contained in this schedule is true to the best of my knowledge. 2. If the owner is a corporation or partnership, I have the authority to bind the corporation or partnership. _____ Date _____ Signature of applicant			

ROLL NUMBER:				OWNER:			
PROPERTY ADDRESS:				DESIGNER:		EF/WBF#:	
LEGAL DESCRIPTION:				INSTALLER:		BCIN:	
FROM YOUR WORKSHEET STATE NO. OF FIXTURE UNITS		NO. OF BEDROOMS OR OCCUPANCY		SIZE OF FINISHED FLOOR AREA		TOTAL DAILY DESIGN SEWAGE FLOW IN LITRES	
						PROPOSED WATER SUPPLY	
						MUNICIPAL q PRIVATE q	
CLASS 1,2,3 SEWAGE SYSTEM PROPOSAL DETAILS						DUG/BORED WELL	
DIMENSIONS OF SYSTEM						WELL DEPTH /	
CLASS 4,5 SEWAGE SYSTEM PROPOSAL DETAILS						SURFACE WATER SUPPLY	
WORKING CAPACITY OF SEPTIC OR HOLDING TANK		SIZE OF PUMP CHAMBER		LINEAL METRES OF LEACHING PIPE		FILTER BED SIZE	
						CONTACT AREA SIZE	
LITRES				SQUARE METRES		SQUARE METRES	
						DEPTH OF FILL	
						PERCOLATION TIME OF SOIL	
						NATIVE IMPORTED	
						T =	
Directions to Lot - Hwy No., Secondary Roads, Signs to Follow, etc.							

THE SITE PLAN SHALL SHOW
The location of existing buildings, proposed buildings, water supply, existing sewage systems, property lines, surface water (lake, river, etc.), and any neighbours wells, etc.

A full-page sheet of white graph paper with a light gray grid. The grid consists of small squares, approximately 1 cm by 1 cm each. There are 20 columns and 20 rows of squares, creating a total area of 400 small squares. The grid lines are thin and evenly spaced.

SIDE PROFILE

Indicate foundation depth in relation to all components of the sewage system, including clearances to the groundwater table, bedrock, or soil with a percolation rate greater than 50 min/cm. If additional fill is required, please indicate the height above existing grade.

[illegible]

INSPECTION				SUB-SURFACE CONDITIONS OBSERVED			
DATE _____ TIME _____ AM / PM REPRESENTING OWNER / INSTALLER				ROCK & GWT	M	FT	SOIL TYPE
					0.3	1	
					0.6	2	
					0.9	3	
					1.2	4	
					1.5	5	

CLASS 4 SYSTEM DESIGN CALCULATIONS
"Classic" Absorption Trench or Filter Bed

To be submitted with application package

DAILY SEWAGE FLOW CALCULATION

Based on Hydraulic Loads for Number of Bedrooms **and** the greater of Fixtures **or** Floor Area.

FIXTURES			
Plumbing Fixture Description	Total # of Fixtures in Final Project Design	Unit	Total # of Fixture Units
Bathroom Group (includes toilet, sink and bathtub and/or shower)		x 6 =	
Toilet (alone)		x 4 =	
Washbasin		x 1.5 =	
Bathtub or Shower		x 1.5 =	
Kitchen Sink		x 1.5 =	
Bar Sink		x 1.5 =	
Dishwasher		x 1.5 =	
Washing Machine		x 1.5 =	
Bidet		x 1 =	
Laundry Tub		x 1.5 =	
Other			
Add units in last column			↓
Total Fixture Units =			

FLOOR AREA	
Proposed	m ²
Existing	m ²
Total Finished Footprint:	m ²

*To convert ft² to m²
multiply ft² by 0.093*

Residential Occupancy	Final Project Design	(Q) in L	Total
1 Bedroom		750	
2 Bedrooms		1100	
3 Bedrooms		1600	
4 Bedrooms		2000	
5 Bedrooms		2500	
PLUS Additional Flow For:			
Each Bedroom over 5		500	
OR *			
Floor Space for each 10m ² over 200 m ² up to 400 m ²		100	
Floor Space for each 10m ² over 400 m ² up to 600 m ²		75	
Floor Space for each 10m ² over 600 m ²		50	
OR *			
Each fixture unit over 20 fixture units		50	
Add units in last column *			↓
Total Daily Design Flow (Q) =			

***NOTE:** Where you need to do multiple calculations, signified by the "OR" in the table, do the calculation for daily sewage flow based on bedrooms first, then use the largest additional flow calculation added to the bedroom calculation to determine the Total Daily Sewage Flow (Q)

TOTAL DAILY DESIGN SEWAGE FLOW (Q) = _____ Litres

SEPTIC TANK SIZE CALCULATION

To calculate the minimum capacity of your septic tank, use one of the following formulas.
Minimum tank size is 3600 Litres.

Residential:	(Q)	X 2 =	Litres
Other Occupancies:	(Q)	X 3 =	Litres

PROPERTY SOIL PROFILE AND PERCOLATION RATE (T) DESCRIPTION

Please refer to the APH website pages titled **Property Soil Profile & Percolation Rate** to find how to determine the percolation rate of the soil on your site. Percolation rate (T) is measured as minutes per centimetre, and measures the rate at which water drains into the soil. Please indicate the (T) of your site, and/or imported fill below.

Soil Type	Coarse Gravel, no fines	Gravel, some small rocks	Gravel-sand mix, some fines	Sand, fairly uniform, some fines	Sandy-loam mix	Silty-loam, almost clay	Clay. Smears well, rolls into ribbons
Percolation Rate (T)	0 to 1	1 to 5	5 to 10	10 to 15	15 to 25	25 to 50	>50

ON-SITE PROFILE

Soil Depth (metres)	Soil Type (See Above)	Percolation Rate (T)	Depth of Rock/Impervious Soil/Groundwater Table
0.2			
0.4			
0.6			
0.8			
1.0			
1.2			
1.4			
1.6			

Topsoil to be removed: Depth _____m
Usable Existing Soil: Depth _____m
Excavation of Existing Soil: Depth _____m
Imported Fill: Depth _____m
Percolation Rate (T): _____min/cm

LEACHING BED CALCULATIONS

Choose **EITHER** Absorption Trenches **OR** Filter Bed

ABSORPTION TRENCHES

$$\text{Length of Distribution Pipe} = \frac{(\text{Q}) \times (\text{T})}{200} = \text{_____ metres}$$

Note:

- Absorption Trenches shall not be installed in soils with (T) less than 1 or greater than 50.
- The *total* length of Distribution Pipe shall not be less than 40 metres.
- The pipes shall be laid in multiple runs, each the same length not exceeding 30 metres.
- If native soils have a (T) of greater than 15, any imported soils must have a (T) **not less** than 75% of the native soils **unless** the native soil (T) is used in the above calculation **or** the system is fully raised with imported soil used for the contact area (mantle).

OR

FILTER BED

BASE OF FILTER MEDIUM

Shall extend to a thickness of 250mm over the following area:

$$\text{Base Filter Area} = \frac{(\text{Q}) \times (\text{T})}{850} = \text{_____ m}^2$$

but shall not be smaller than the **Surface Loading Area**.

Note:

- (T) is the lesser of 50 or the (T) of underlying native soil.
- Soil in the Filter Bed Area must be engineered filter sand meeting the requirements of Section 8.7.5.2 of Part 8 of the Building Code.

SURFACE LOADING AREA

If (Q) is 3000 L or less:	(Q) _____	÷ 75 =	_____ m ²
If (Q) is more than 3000 L:	(Q) _____	÷ 50 =	_____ m ²

Note:

- The effective area of the Surface Loading Area in each filter bed shall be at least 10 m² and not more than 50 m².
- If more than 1 Filter Bed is required, they shall each be separated by at least 5 m between the distribution pipes of each bed.
- The lines of distribution pipe shall be evenly spaced over the Surface Loading Area.

CONTACT AREA CALCULATION (Mantle)

The Mantle must be at least 250 mm deep and extend a minimum of 15 metres beyond the outer Distribution Pipes in any direction in which the effluent will move horizontally (i.e. drain away from Distribution Pipes).

Choose (T) range from the provided chart. Divide (Q) by Loading Rate (LR) for the minimum Contact Area.

Percolation Time (T) of Native Soil	Loading Rate (LR)
$1 < T \leq 20$	10
$20 < T \leq 35$	8
$35 < T \leq 50$	6
$T > 50$	4

Contact Area	(Q) _____ ÷ (LR) _____ =	m ²
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To convert to square feet multiply m² by 10.76

If you do not have a minimum of 250 mm of useable soil on the property (unsaturated soil with a (T) between 1 and 50) that extends 15 m beyond the end of the Distribution Pipe in any direction in which the effluent will move horizontally you will need to import a Contact Area (Mantle) that meets these requirements.

PUMP CHAMBER SIZE CALCULATION (if required)

If you must pump effluent uphill or over a long distance, there is no minimum size required, however, consider the volume of effluent that may back into the system should the pump fail and size the chamber accordingly.

If the length of Distribution Pipe to be used is 150 metres or more, the minimum size of the pump chamber shall be no less than 75% of the total volume of the Distribution Pipe. This is the minimum volume your pump must deliver within 15 minutes each time it cycles.

Distribution Pipe Diameter	Calculate based on design pipe length:	Minimum Volume of Pump Chamber:
3"	3.4 x _____ m of distribution pipe =	Litres
4"	6.0 x _____ m of distribution pipe =	Litres

TRANSFER THE ABOVE CALCULATIONS TO THE APPROPRIATE PLACES ON THE "DESIGN LAYOUT ON-SITE SEWAGE SYSTEMS AND BUILDING PERMITS" FORM

YOU MUST STILL SUBMIT THESE PAGES WITH YOUR APPLICATION

**ALGOMA PUBLIC HEALTH
SEWAGE SYSTEM PERMIT FEE STRUCTURE**

As amended on March 14, 2023

Septic System	2017	2018	2019	2020
Class 2 - Greywater System (leaching pit)	\$250	\$250	\$275	\$300
Class 3 - Cesspool System	\$250	\$250	\$275	\$300
Class 4 – Leaching Bed System (septic tank and leaching bed)	\$750	\$850	\$900	\$950
Class 4 - Tank Replacement	\$300	\$325	\$350	\$375
Class 4 - Leaching Bed Replacement/Alteration	\$500	\$550	\$600	\$650
Class 5 - Holding Tank System	\$500	\$800	\$850	\$900
Sewage System Demolition/Decommissioning	\$100	\$125	\$150	\$150
Transfer of Permit	\$50	\$75	\$100	\$100
Revision to Permit (no inspection required)	\$100	\$100	\$125	\$150
Revision to Permit (inspection required)	\$250	\$300	\$325	\$350
File Searches Request* (for property owner)				
Less than 5 business days notice	\$150	\$175	\$200	\$200
Greater than 5 business days notice	\$75	\$100	\$125	\$125

* **File Searches completed by Lawyers / Real Estate Agents only if they are agents for the current property owner**

Performance Level Review / Building Permit Application Review (existing development requiring APH review)	\$100.00
Performance Level Review (file review, site inspection and report)	\$200.00
Pre-development Audit (new construction - report of limitations of the site)	\$100.00
Consent to Sever / Minor Variance / Zoning per application (see below for explanation)	\$500 minimum Additional \$250/lot over 2 lots
Applications for Subdivision	\$1000 minimum Additional \$50/lot over 10 lots
Extra-ordinary fees such as travel expenses or peer review of technical documentation	Full cost recovery

Exemptions for Severance Applications:

Unless exempted below, each application for consent, severance, minor variance, zoning amendment, will be as listed in the above fee schedule.

Lot fees are exempt under the following conditions:

1. The property is served by a sewage works designed for a daily sewage flow in excess of 10,000 litres per day, which has been, or requires approval by the Ministry of Environment, Conservation and Parks (MECP) under the Ontario Water Resources Act.
2. Any lot municipally serviced (sewer and water), with a letter stating services are available from the municipality.
3. Any parcel which comprises, or will comprise, part of a public highway.
4. Any lot or property transfer which is for the purposes of an easement, unless the easement is for the purpose of permitting the installation of a sewage system, <10,000 litres per day.
5. An application for a re-zoning or minor variance on a parcel for which a consent to sever fee had been collected during the same construction year.