INFILTRATOR®
water technologies

Selection and Installation Manual for Quick4 Chambers in Nova Scotia, Canada



Nova Scotia

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The purpose of this product information sheet is to provide specific design and installation information pertinent for the use of Infiltrator Quick4 chambers in Nova Scotia, Canada.

For more detailed design information, please contact Infiltrator Water Technologies at 1-800-221-4436

Nova Scotia

System Selection Personnel Qualifications

Per Appendix L of the Technical Guidelines, selection of an on-site sewage disposal system that includes substitution of chambers for rock and pipe may be performed by either a level 1 qualified person (QP1) or level 2 qualified person (QP2). The size and layout of a system selected by a QP2 must conform to the standard configurations provided for selection in this manual. If modifications to the standard system configurations presented herein are required for any system type, then design by a QP1 is required.

Quick4 Chambers

The Quick4 Standard and Quick4 Equalizer 36 chambers can be installed in any of the system types allowed in the Technical Guidelines, including contour trenches, mounds, area beds, multiple trenches, and sloping sand filters. They can be used in either gravity or pressure distribution configurations. No wastewater distribution pipe is required within the chamber for gravity systems. Pressure distribution pipe is discussed beginning on page 22. There are a variety of system inletting options to choose from, with and without a distribution box.



Quick4 Standard Chamber (Type A)



Quick4 Equalizer 36 Chamber (Type B)

Quick4 Standard Chamber - Type A nominal chamber specifications

Size	864 mm x 1346 mm x 305 mm 34”W x 53”L x 12”H
Storage Capacity	165 L 45 US gal
Invert Elevation	203 mm 8”

Quick4 Equalizer 36 Chamber - Type B nominal chamber specifications

Size	559 mm x 1346 mm x 305 mm 22”W x 53”L x 12”H
Storage Capacity	121 L 32 US gal
Invert Elevation	152 mm 6”

APPROVAL LETTER

NOVA SCOTIA

Environment
Environmental Monitoring & Compliance

Suite 224, Sunnyside Mall
1595 Bedford Highway
Bedford NS B4A 3Y4

Tel: (902) 424-7773
Fax: (902) 424-0597

Dave Lentz, P.E.
Senior Engineer
Infiltrator Systems Inc.
6 Business Park Road
P.O. Box 768
Old Saybrook, CT
06475

April 1, 2009

Dear Mr Lentz:

Re: *Selection and Installation Manual for Quick 4 Chambers in Nova Scotia*

The revised *Selection and Installation Manual for Quick 4 Chambers in Nova Scotia* received on April 1, 2009 is approved.

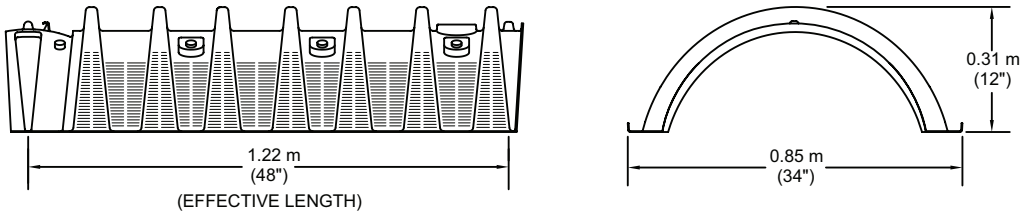
If you have any further questions please contact me at 902-424-3011.

Sincerely

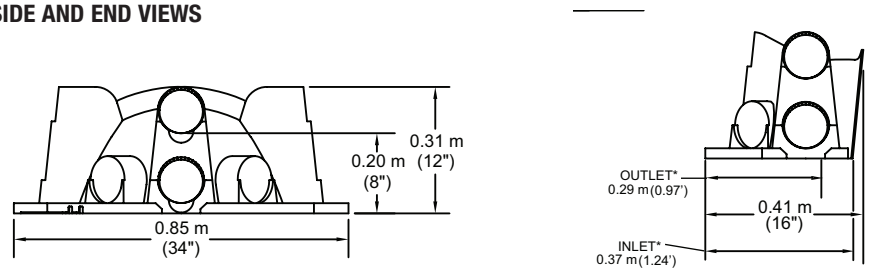
Adrian Fuller
District Manager
Nova Scotia Environment

Quick4 Standard Chamber - Type A (not to scale)

SIDE AND END VIEWS



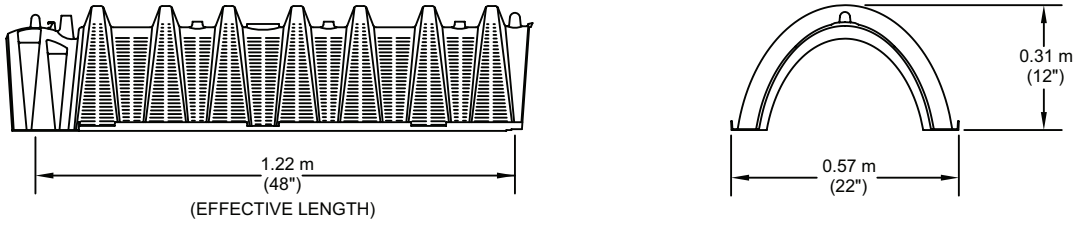
MULTIPORT ENDCAP SIDE AND END VIEWS



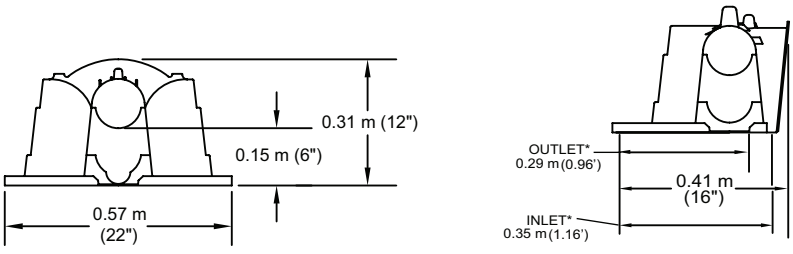
FRONT VIEW SIZE VIEW *Installed lengths.

Quick4 Equalizer 36 Chamber - Type B (not to scale)

SIDE AND END VIEWS



MULTIPORT ENDCAP SIDE AND END VIEWS



FRONT VIEW SIZE VIEW *Installed lengths.

System Selection Procedure Summary

The procedures for system selection with plastic leaching chamber substitution are generally the same as the selection procedures shown in applicable Sections 4.5 through 4.9 of the Nova Scotia On-Site Sewage Disposals Systems Technical Guidelines (Technical Guidelines). The procedures for system selection with chamber substitution are provided in the sections that follow. These procedures reference either the Technical Guidelines or chamber-specific tables and figures presented in this document, as applicable. The objective in providing the procedures for chamber substitution is to utilize information presented in the Technical Guidelines to the maximum extent possible, with chamber-specific information provided in this document.

Use of Table 4.12 (B)

Table 4.12 (B) below applies to the selection of C1, C2, and C3 contour trenches, as well as mound systems. Procedures for the selection of these four system types are provided in the pages that follow. Table 4.12 (B) is presented here for reference in selecting a contour trench or mound system. Illustrations showing chambers in contour trench and mound systems are presented following the selection procedures for each system type.

Table 4.12 (B) Determination of Chamber Size and Disposal Trench Width for Substitution of Graveless Chambers for Stone and Pipe in C1, C2, C3 and Mound Systems

Length of Trench (m)	Flow (liters per day)								
	1000			1350 (C3/Mound Only)			1500		
	Chamber Width in M	Trench Width in M	Graveless Chamber[2]	Chamber Width in M	Trench Width in M	Graveless Chamber[2]	Chamber Width in M	Trench Width in M	Graveless Chamber[2]
25	0.85	1.2	1 row Type A	N/A	N/A	N/A	1.14	1.8	2 rows Type B
26	0.85	1.2	1 row Type A	N/A	N/A	N/A	1.14	1.7	2 rows Type B
27	0.85	1.1	1 row Type A	N/A	N/A	N/A	1.14	1.7	2 rows Type B
28	0.85	1.1	1 row Type A	N/A	N/A	N/A	1.14	1.6	2 rows Type B
29	0.85	1.0	1 row Type A	N/A	N/A	N/A	1.14	1.6	2 rows Type B
30, 31	0.85	1.0	1 row Type A	N/A	N/A	N/A	1.14	1.5	2 rows Type B
32, 33, 34	0.57	0.9	1 row Type B	0.85	1.2	1 row Type A	1.14	1.4	2 rows Type B
35, 36	0.57	0.9	1 row Type B	N/A	N/A	N/A	1.14	1.3	2 rows Type B
37, 38, 39	0.57	0.8	1 row Type B	N/A	N/A	N/A	0.85	1.2	1 row Type A
40	0.57	0.8	1 row Type B	N/A	N/A	N/A	0.85	1.1	1 row Type A
41, 42, 43	0.57	0.7	1 row Type B	N/A	N/A	N/A	0.85	1.1	1 row Type A
44, 45, 46	0.57	0.7	1 row Type B	N/A	N/A	N/A	0.85	1.0	1 row Type A
47	0.57	0.6	1 row Type B	N/A	N/A	N/A	0.85	1.0	1 row Type A
48 - 52	0.57	0.6	1 row Type B	N/A	N/A	N/A	0.57	0.9	1 row Type B
53 - 60	0.57	0.6	1 row Type B	N/A	N/A	N/A	0.57	0.9	1 row Type B

C1 CONTOUR TRENCH SYSTEMS

Selection of a C1 Contour Trench

1) Determine the average daily flow, surface slope, type(s) and depth(s) of permeable soil, total depth of soil “D” as specified in the Technical Guidelines.

2) Find the value for “L” (trench length in meters), “D” (minimum required total soil depth), and “C” (depth of cut at the toe of the contour trench) using Table 4.4A, Table 4.4B, Table 4.5A, or Table 4.5B in Appendix J of the Technical Guidelines.

3) Once it has been determined that a C1 trench of a particular length can be used, refer to Determination of Chamber Size and Disposal Trench Width for Substitution of Graveless Chambers for Stone and Pipe in C1, C2, C3 and Mound Systems, Table 4.12 (B), to find the appropriate width of trench and type of chamber.

4) The cross section dimensions of the system are shown on page 7.

5) For submitting an on-site sewage disposal system application:

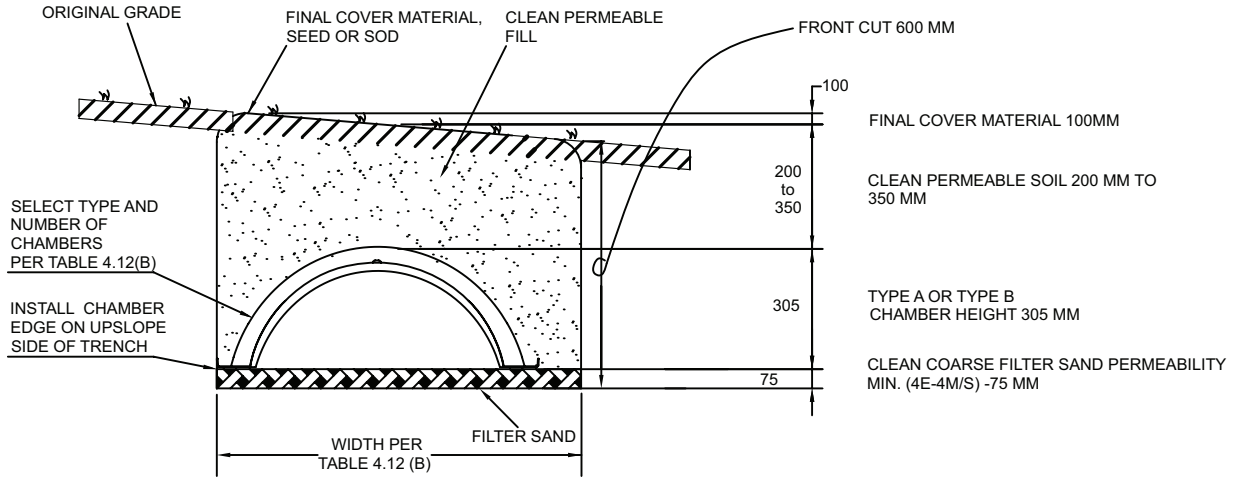
   a) Complete the applicable version of Schedule C in Appendix H of the Technical Guidelines.

   b) Complete Schedule C – Chamber Substitution Addendum, presented on page 16 of this document.

C1 CONTOUR TRENCH SYSTEMS

C1 Typical Contour System Cross Sections

TYPICAL C1 TRENCH (not to scale)
All dimensions in millimeters (MM)

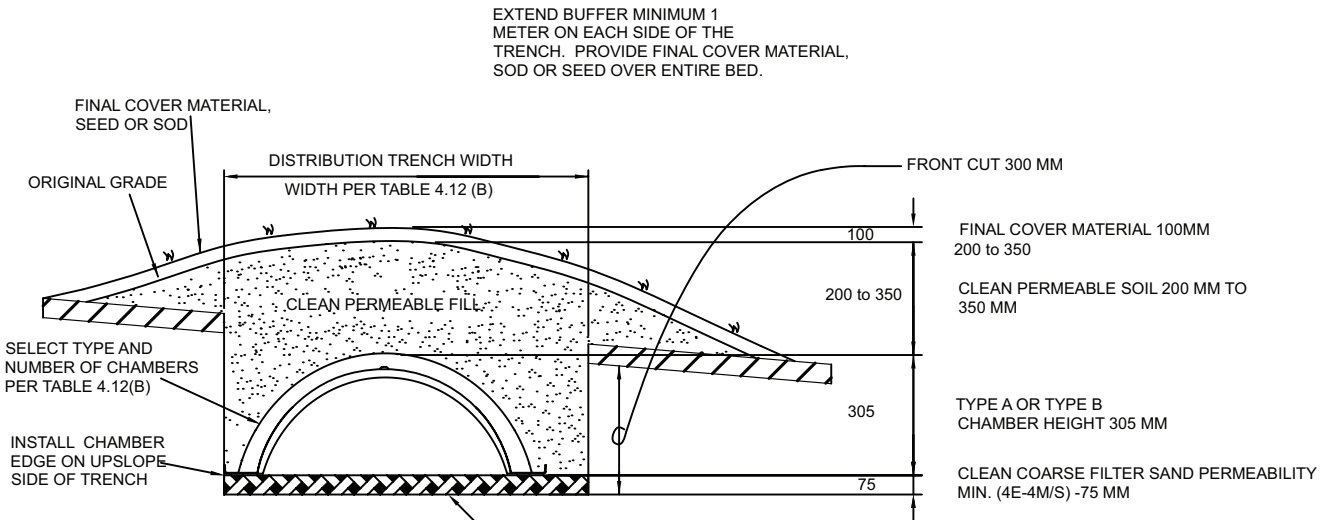


NOTES:

1. Minimum 1 meter separation from bedrock, water or too permeable soil.

2. The connected length of each individual chamber segment is 1.22 m (4 ft). The combined length of chamber segments is based on the selected system type and configuration.

TYPICAL C1 RAISED TRENCH (not to scale)
Extend buffer minimum 1 meter on each side of the trench.
Provide final cover material, sod or seed over entire bed.



NOTES:

1. Minimum 1 meter separation from bedrock, water or too permeable soil.

2. The connected length of each individual chamber segment is 1.22 m (4 ft). The combined length of chamber segments is based on the selected system type and configuration.

C2 CONTOUR TRENCH SYSTEMS

Selection of a C2 Contour Trench

1) Determine the average daily flow, surface slope, type(s) and depth(s) of permeable soil, total depth of soil “D” as specified in the Technical Guidelines.

2) Find the values shown for “L” (trench length in meters) and “D” (minimum required total soil depth) using Table 4.6A or Table 4.6B in Appendix J of the Technical Guidelines and determine whether a standard C2 or raised C2 trench will be used. When a raised C2 is being considered, refer to Table 4.7A, Table 4.7B, Table 4.7C, Table 4.7D, Table 4.8A, or Table 4.8B in Appendix J of the Technical Guidelines.

3) Once it has been determined that a standard C2 or raised C2 of a particular length can be used, refer to Determination of Chamber Size and Disposal Trench Width for Substitution of graveless Chambers for Stone and Pipe in C1, C2, C3 and Mound Systems, Table 4.12(B), to find the appropriate width of trench and type of chamber.

4) The cross section dimensions of the system are shown on page 9.

5) For submitting an on-site sewage disposal system application:

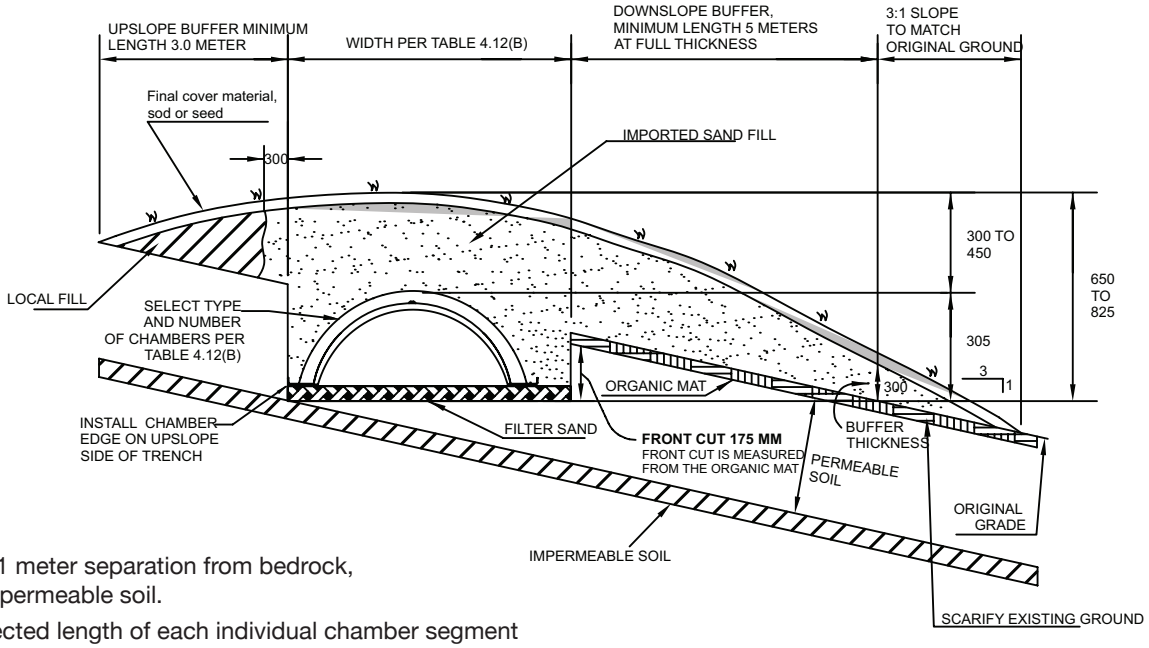
   a) Complete the applicable version of Schedule C in Appendix H of the Technical Guidelines.

   b) Complete Schedule C – Chamber Substitution Addendum, presented on page 16 of this document.

C2 CONTOUR TRENCH SYSTEMS

C2 Typical Contour System Cross Sections

TYPICAL C2 TRENCH (not to scale)
All dimensions in millimeters (MM)



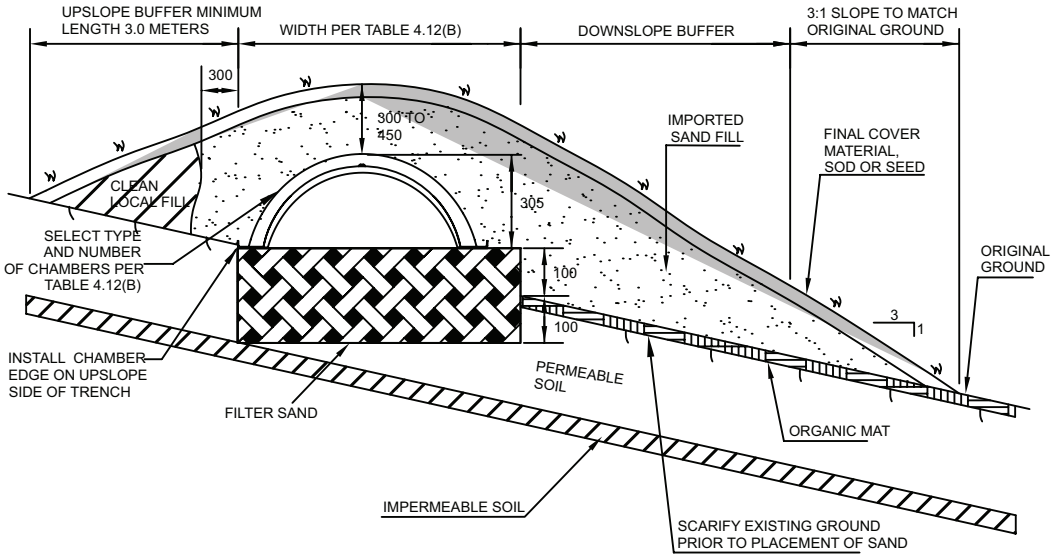
NOTES:

1. Minimum 1 meter separation from bedrock, water or too permeable soil.

2. The connected length of each individual chamber segment is 1.22 m (4 ft). The combined length of chamber segments is based on the selected system type and configuration.

TYPICAL C2 RAISED TRENCH (not to scale)
Cross section dimensions are the same as above unless otherwise stated.

CROSS-SECTION DIMENSIONS ARE THE SAME AS ABOVE UNLESS OTHERWISE STATED.



NOTES:

1. Minimum 1 meter separation from bedrock, water or too permeable soil.

2. The connected length of each individual chamber segment is 1.22 m (4 ft). The combined length of chamber segments is based on the selected system type and configuration.

C3 CONTOUR TRENCH SYSTEMS

Selection of a C3 Contour Trench

1) Determine the average daily flow and surface slope as specified in the Technical Guidelines.

2) Select the length of the C3 trench from Table 4.9 in Appendix J of the Technical Guidelines.

3) Refer to Determination of Chamber Size and Disposal Trench Width for Substitution of graveless Chambers for Stone and Pipe in C1, C2, C3 and Mound Systems, Table 4.12(B), to find the appropriate width of trench and type of chamber.

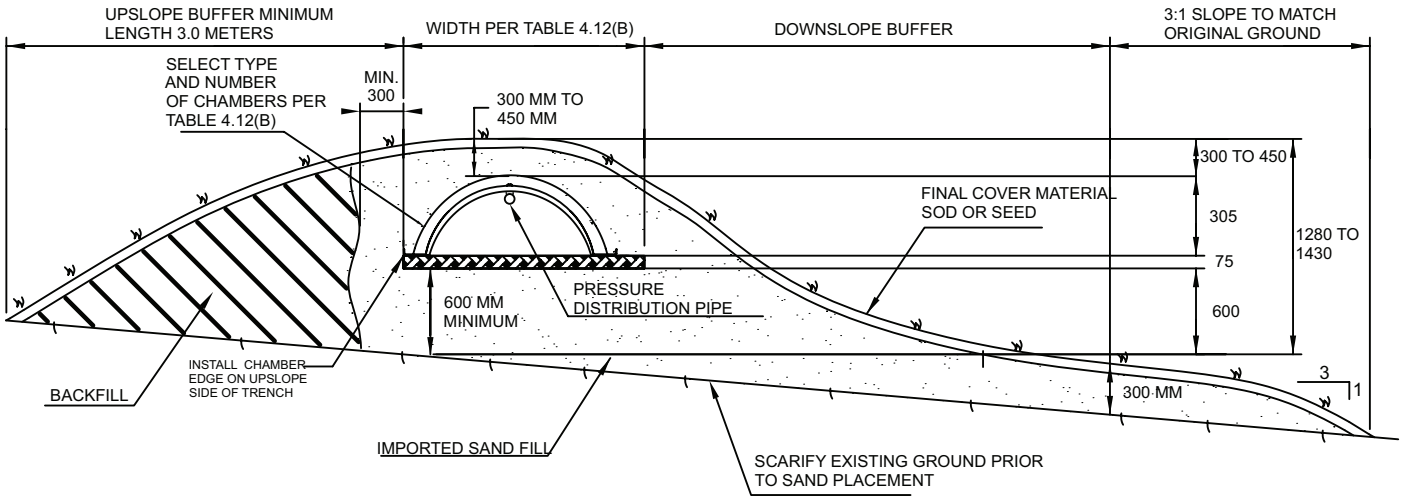
4) The cross section dimensions of the system are shown below.

5) For submitting an on-site sewage disposal system application:

   a) Complete the applicable version of Schedule C in Appendix H of the Technical Guidelines.

   b) Complete Schedule C – Chamber Substitution Addendum, presented on page 16 of this document.

TYPICAL C3 SYSTEM CROSS SECTION
(not to scale)



NOTES:

1. Minimum 1 meter separation from bedrock, water or too permeable soil.

2. The connected length of each individual chamber segment is 1.22 m (4 ft). The combined length of chamber segments is based on the selected system type and configuration.

MOUND SYSTEMS

Selection of a Mound System

1) Determine the average daily flow, and confirm that the ground surface slope is less than 3%.

2) Select the length of the mound from Table 4.9 in Appendix J of the Technical Guidelines, based on the average daily flow rate.

3) Once the length of the mound has been determined, refer to Determination of Chamber Size and Disposal Trench Width for Substitution of graveless Chambers for Stone and Pipe in C1, C2, C3 and Mound Systems, Table 4.12(B), to find the appropriate width of trench and type of chamber.

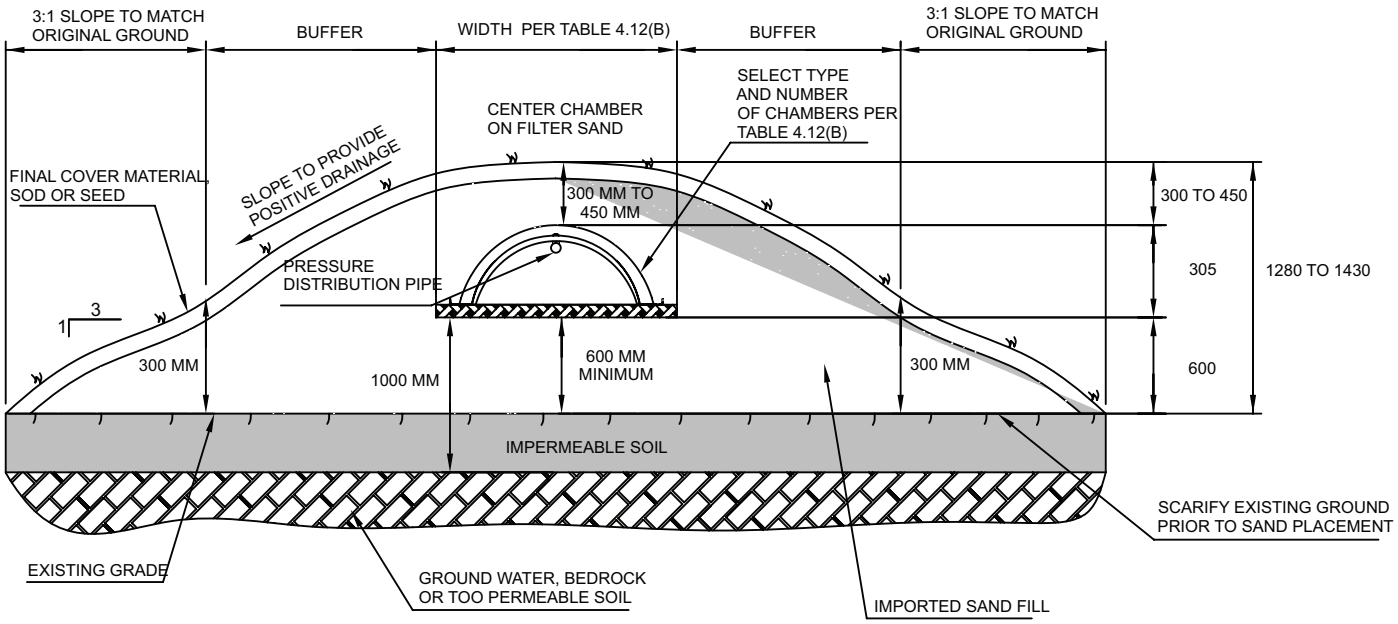
4) The cross section dimensions of the system are shown below.

5) For submitting an on-site sewage disposal system application:

   a) Complete the applicable version of Schedule C in Appendix H of the Technical Guidelines.

   b) Complete Schedule C – Chamber Substitution Addendum, presented on page 16 of this document.

TYPICAL MOUND SYSTEM CROSS SECTION
(not to scale)



NOTES:

1. Minimum 1 meter separation from bedrock, water or too permeable soil.

2. The connected length of each individual chamber segment is 1.22 m (4 ft). The combined length of chamber segments is based on the selected system type and configuration.

AREA BED SYSTEMS

Selection and Layout of an Area Bed System

1) Determine the average daily flow, and confirm that the ground surface slope is less than 3%.

2) Determine soil type, depth of permeable soil, and total depth of soil to any restrictive layer.

3) From Table 4.11(A) in Appendix J of the Technical Guidelines determine if soil depths allow the selection of an area bed-type field and if so, determine the depth of trench allowed.

4) If conditions allow the selection of an area bed, select the length and width of the bed from Table 4.11(C) below.

5) For submitting an on-site sewage disposal system application:

a) Complete the applicable version of Schedule C in Appendix H of the Technical Guidelines.

b) Complete Schedule C – Chamber Substitution Addendum, presented on page 16 of this document.

Table 4.11(C) Chamber Area Bed

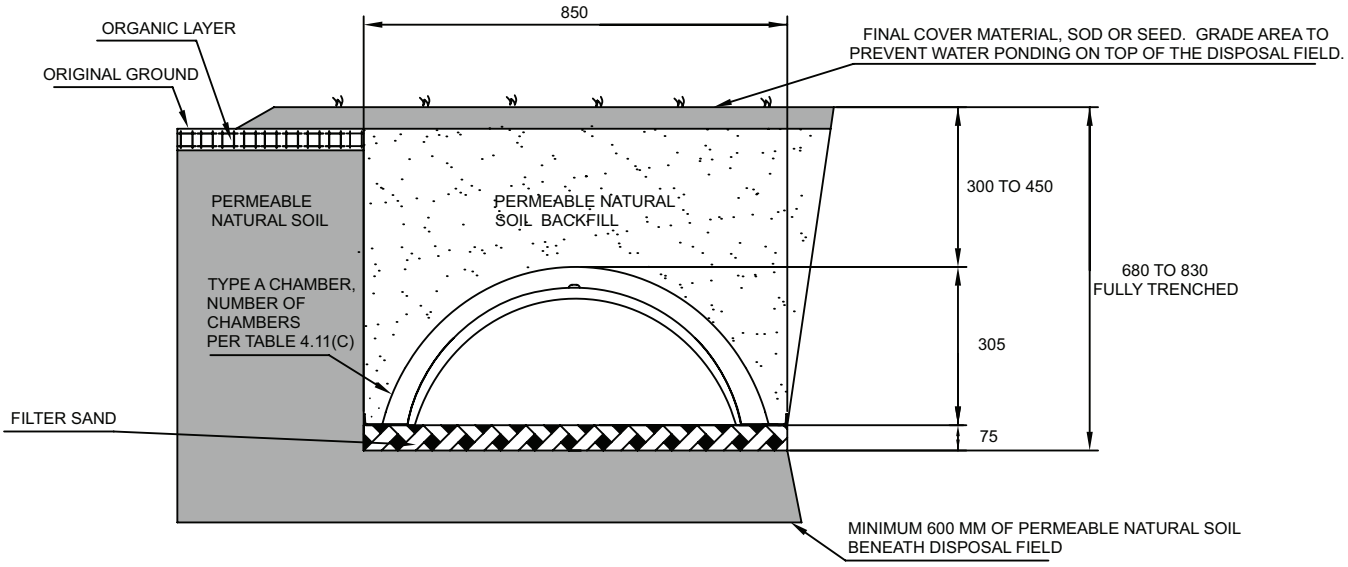
Soil Type	Flow - 1000 L/Day	Flow - 1500 L/Day
Medium to Course Sand or Fine Sandy Gravel	75 m^2 - Chamber Equivalent Area Bed 15 m across slope Type A chambers; 4 rows (3.4 m) 12 chambers per row (48 total)	110 m^2 - Chamber Equivalent Area Bed 22 m across slope Type A chambers; 4 rows (3.4 m) 18 chambers per row (72 total)
Silty Sand	100 m^2 - Chamber Equivalent Area Bed 20 m across slope Type A chambers; 4 rows (3.4 m) 16 chambers per row (64 total)	150 m^2 - Chamber Equivalent Area Bed 30 m across slope Type A chambers; 4 rows (3.4 m) 25 chambers per row (100 total)
Sandy Silt	125 m^2 - Chamber Equivalent Area Bed 25 m across slope Type A chambers; 4 rows (3.4 m) 20 chambers per row (80 total)	180 m^2 - Chamber Equivalent Area Bed 30 m across slope Type A chambers; 5 rows (4.25 m) 25 chambers per row (125 total)

NOTES:

1. Chambers to be installed for the full length “across slope”.
2. Chambers to be installed with a minimum 1 m center-to-center spacing.
3. Gravelless Chamber Type A: 0.85 m wide (34 inches) and 0.31 m high (12 inches).
4. Chamber quantities in table are based upon 1.22 m (4 ft) segment length.

AREA BED SYSTEMS

TYPICAL AREA BED SYSTEM CROSS SECTION
(not to scale)



NOTES:

1. Minimum 1 meter separation from bedrock, water or too permeable soil.

2. The connected length of each individual chamber segment is 1.22 m (4 ft). The combined length of chamber segments is based on the selected system type and configuration.

MULTIPLE TRENCH SYSTEMS

Selection and Layout of Multiple Trench Systems

1) Determine the average daily flow, and confirm that the ground surface slope is less than or equal to 3%.

2) Determine soil type, depth of permeable soil, and total soil depth to bedrock or water table.

3) From Table 4.10(A) in Appendix J of the Technical Guidelines, determine if soil depths allow the selection of a trench-type field and if so determine the depth of trench allowed.

4) If conditions allow the selection of a trench type system, select the length of trenches for the soil type from Table 4.10(C) below.

5) The cross section dimensions of the system are shown below.

6) For submitting an on-site sewage disposal system application:

   a) Complete the applicable version of Schedule C in Appendix H of the Technical Guidelines.

   b) Complete Schedule C – Chamber Substitution Addendum, presented on page 16 of this document.

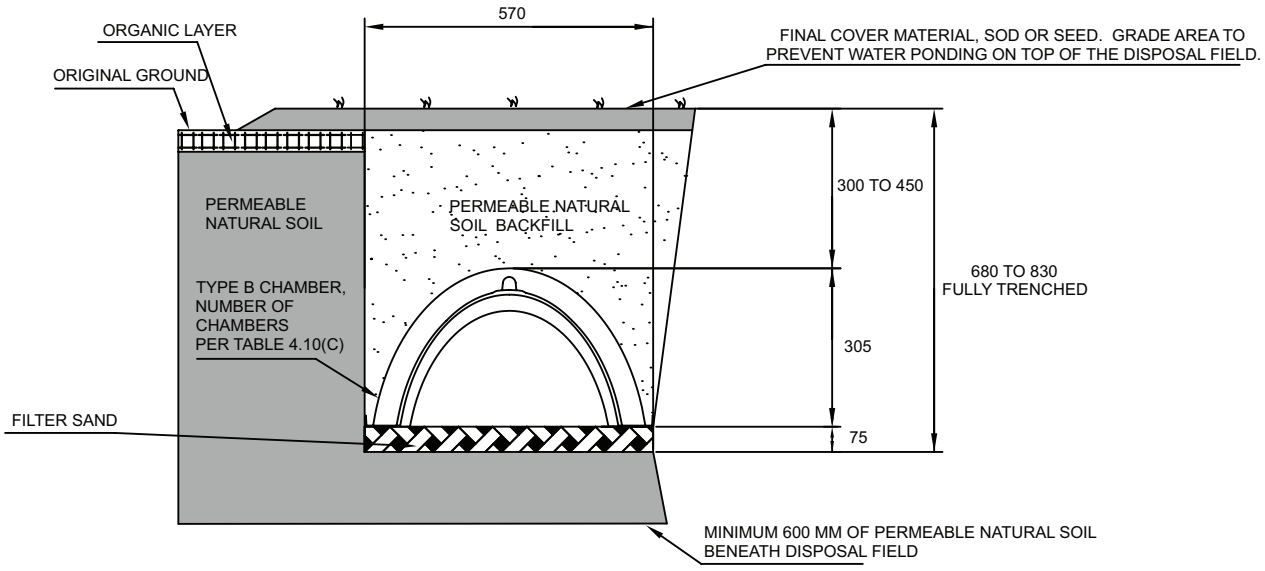
Table 4.10 (C) Chamber Multiple Trench
Minimum length of chamber required for different soil textures (use longer rows where possible).

Soil Type	Flow - 1000 L/Day	Flow - 1500 L/Day
Medium to Course Sand or Fine Sandy Gravel	Total length = 51 m 2 rows 27 m long or 4 rows 13 m long Type B chamber 42 chambers total	Total length = 78 m 4 rows 19.5 m long Type B chamber 64 chambers total
Silty Sand	Total length = 64 m 4 rows 16 m long Type B chamber 52 chambers total	Total length = 92 m 4 rows 23 m long Type B chamber 76 chambers total
Sandy Silt	Total length = 88 m 4 rows 22 m long Type B chamber 72 chambers total	Total length = 128 m 4 rows 32 m long Type B chamber 104 chambers total

NOTES:
1. Graveless chamber Type B: 0.57 m wide (22 inches) and 0.31 m high (12 inches).
2. Chamber quantities in table based upon 1.22 m (4 ft) segment length.
3. Installation of a wastewater distribution pipe is not required within the graveless chamber for gravity distribution applications.

MULTIPLE TRENCH SYSTEMS

TYPICAL AREA BED SYSTEM CROSS SECTION
(not to scale)



NOTES:

1. Minimum 1 meter separation from bedrock, water or too permeable soil.

2. The connected length of each individual chamber segment is 1.22 m (4 ft). The combined length of chamber segments is based on the selected system type and configuration.

SCHEDULE C ADDENDUM

Schedule C - Chamber Substitution Addendum Form

(To be submitted with completed Schedule C Form)

This Chamber Substitution Addendum Form is to be used by applicants submitting an on-site sewage disposal system application with chambers substituted for rock and pipe. This form provides chamber-specific information associated with the selected system.

USAGE INSTRUCTIONS:

1. From Appendix H of the Technical Guidelines, complete the applicable Schedule C submission form for the selected system type.

2. Complete this Schedule C – Chamber Substitution Addendum Form and attach it to the completed Appendix H form referenced in Step 1 above.

3. Where information related to rock and pipe is required on the Schedule C form (from the Technical Guidelines), that portion of the form can be left blank, with comparable information presented on this Schedule C – Chamber Substitution Addendum Form.

4. Submit both completed forms, along with any other documentation required for review and approval of the selected system.

Applicant: _____ **Location:** _____

Approval No.: _____ **Qualified Person:** _____

Check boxes to indicate applicable system types and provide information for selected system.

☐ **Contour Trench System**

- ☐ C1 Contour Trench
- ☐ C2 Contour Trench
- ☐ C3 Contour Trench

System length: _____ meters

Type of chamber (circle one): Type A Type B

Number of chambers placed side-by-side in trench (circle one): One Two

Total number of chambers: _____

☐ **Area Bed System**

System length across slope: _____ meters

Number of rows: _____

Type of chamber: Type A

Total number of chambers: _____

☐ **Mound System**

System length: _____ meters

Type of chamber (circle one): Type A Type B

Number of chambers placed side-by-side in trench (circle one): One Two

Total number of chambers: _____

☐ **Multiple Trench System**

Total length: _____ meters

Number of rows: _____

Row length: _____ meters

Type of chamber: Type B

NON-STANDARD EFFLUENT LOADING RATES

The following maximum recommended loading rates can be used by Qualified Person 1 in developing the design of a chamber system that must be sized outside of the established selection charts in this document and the Technical Guidelines. This may be necessary due to lot size, system configuration, or other factors. These are recommended values, and the level 1 qualified person may need to adjust the values to account for site-specific parameters, such as wastewater strength, soil type, or other factors.

Maximum Recommended Loading Rates for Various System Types

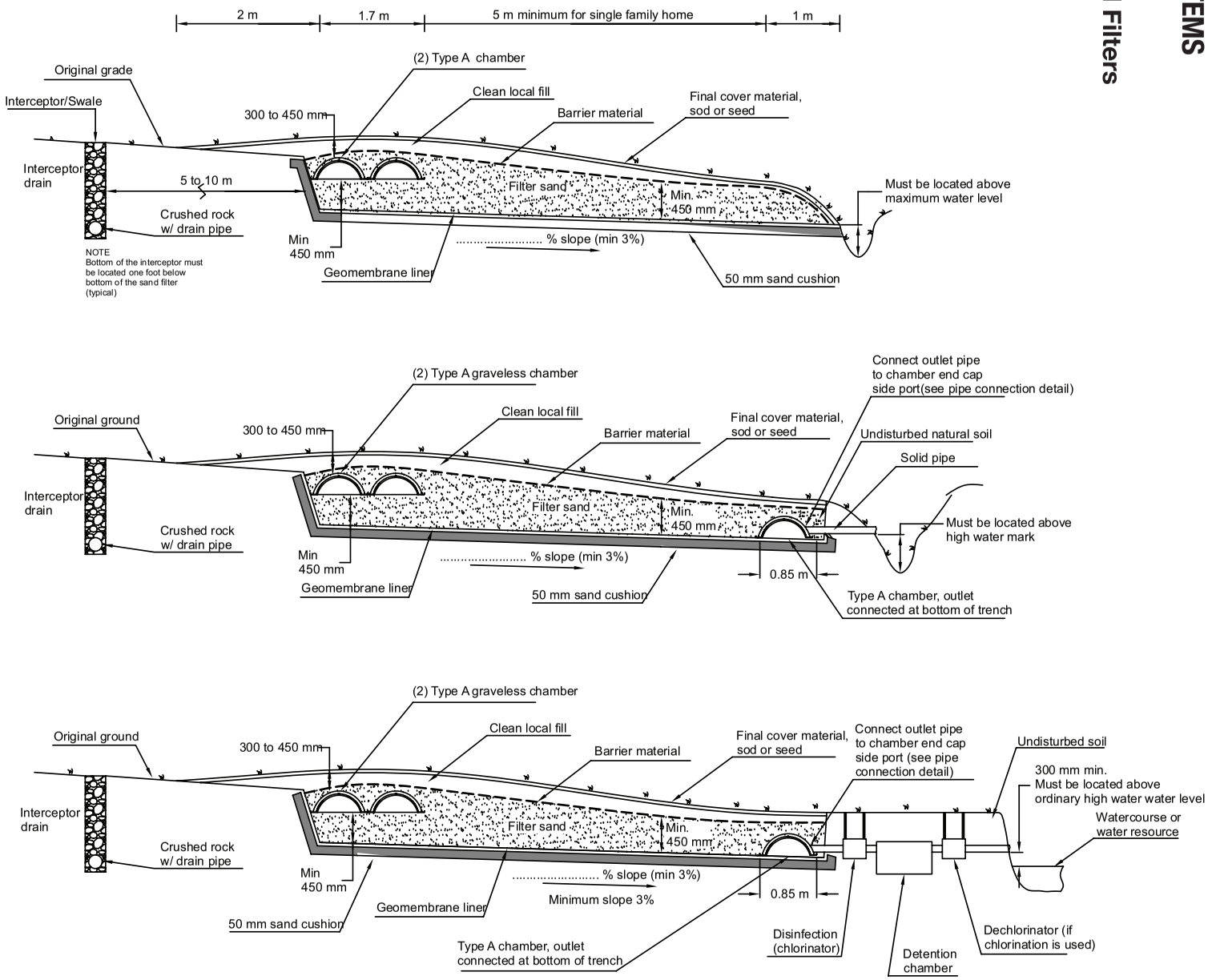
Residential Flows Only[1]

System Type/Permeable Soil Type	Recommended Loading Rate (L/day/m2)
C1, C2, C3 contour trench	33.0
Mound	33.0
Area Bed	
Fine sandy gravel / medium to coarse sand	19.6
Silty sand	15.4
Sandy silt	12.6
Multiple Trench	
Fine sandy gravel / medium to coarse sand	35.0
Silty sand	28.0
Sandy silt	21.0

NOTE:
For assistance with recommended loading rates in non-residential wastewater design applications, contact Infiltrator Water Technologies' Technical Services Department at 1-800-221-4436.

NOTE:

For the design of a sloping sand filter, the Technical Guidelines must be followed, except for construction of the wastewater distribution trench and outlet, as illustrated below.



Before You Begin

This section provides installation information for Quick4 chambers in trench systems. These systems may only be installed according to provincial requirements. If unsure of the installation requirements for a particular site, contact the permitting authority.

Like conventional systems, the soil and site conditions must be approved prior to installation. Conduct a thorough site evaluation to determine the proper sizing and siting of the system before installation.

Materials and Equipment Needed

- ☐ Quick4 chambers
- ☐ Multiport Endcaps
- ☐ PVC pipe and couplings
- ☐ Backhoe
- ☐ Laser, transit or level
- ☐ Shovel and rake
- ☐ Tape Measure
- ☐ Screwdriver or Knife
- ☐ Hole Saw*
- ☐ 50 mm Drywall Screws*
- ☐ Screw gun*
- ☐ Small valve-cover box*
- ☐ 100 mm cap for Inspection port
- ☐ Invert adapter

*Optional

These guidelines for construction machinery must be followed during installation.

- ☐ Avoid direct contact with chambers when using construction equipment. Chambers require a 0.31 m (12-inch) minimum of compacted cover to support a wheel load rating of 71.2 kN/axle (16,000 lbs/axle) or equivalent to an H-10 AASHTO load rating.
- ☐ Only drive across the trenches when necessary. Never drive down the length of the trenches.
- ☐ To avoid additional soil compaction, never drive heavy vehicles over the completed system.

Excavating and Preparing the Site

NOTE: As is the case with conventional systems, do not install the systems in wet conditions or in overly moist soils, as this causes machinery to smear the soil.

1. Stake out the location of all trenches and lines. Set the elevations of the tank, pipe, and trench bottom.
2. Install sedimentation and erosion control measures. Temporary drainage swales/berms may be installed to protect the site during rainfall events.
3. Excavate and level .9 meter (3-ft) wide trenches with proper center-to-center separation. Verify that the trenches are level or have the prescribed slope.

NOTE: Over excavate the trench width in areas where you are planning to contour.

4. Rake the bottom and sides if smearing has occurred while excavating. Remove any large stones and other debris. Do not use the bucket teeth to rake the trench bottom.

NOTE: Raking to eliminate smearing is not necessary in sandy soils. In fine textured soils (silts and clays), avoid walking in the trench to prevent compaction and loss of soil structure.
5. Verify that each trench is level using a level, transit, or laser.

Preparing the Endcap

1. With a screwdriver or utility knife start the tear-out seal at the appropriate diameter for the inlet pipe. The seal allows for a tight fit for 0.07 m (3-inch), 0.10 m (4-inch) SDR35 and 0.10 m (4-inch) Schedule 40 pipe.
2. Pull the tab on the tear-out seal to create an opening on the endcap.
3. Snap off the molded splash plate located on the bottom front of the endcap.
4. Install splash plate into the appropriate slots below the inlet to prevent trench bottom erosion.
5. Insert the inlet pipe into the endcap at the beginning of the trench. Extend the pipe into the endcap roughly 100 m (4 inches). (Screws optional.)



1. Start tear-out seal.



2. Pull tab on tear-out seal.



4. Install splash plate.



5. Insert inlet pipe.

Installing the System

1. Check the header pipe to be sure it is level or has the prescribed slope.

2. Set the invert height at 0.15 m (6”), 0.23 m (9”) or 10” (0.25 m) as specified in the design from the bottom of the inlet.

3. Place the inlet end of the first chamber over the back edge of the endcap.

4. Lift and place the end of the next chamber onto the previous chamber by holding it at a 90-degree angle.
Line up the chamber end between the connector hook and locking pin at the top of the first chamber. Lower it to the ground to connect the chambers.



3. Place first chamber onto endcap.

NOTE: When the chamber end is placed between the connector hook and locking pin at a 90-degree angle, the pin will be visible from the back side of the chamber.



4. Connect the chambers.

NOTE: The connector hook serves as a guide to ensure proper connection and does not add structural integrity to the chamber joint. Broken hooks will not affect the structure or void the warranty.

5. Swivel the chamber on the pin to achieve the proper direction for the trench layout.

NOTE: The chamber allows up to a 15-degree swivel in either direction at each joint.

6. Where the system design requires straight runs, use the StraightLock™ Tabs to ensure straight connections. To activate the tabs, pop the tabs up with your thumb and lock into place.

7. Continue connecting the chambers until the trench is completed.



6. Activate StraightLock Tabs.

NOTE: As chambers are installed, verify they are level or have the prescribed slope.

8. The last chamber in the trench requires an endcap. Lift the endcap at a 45-degree angle and insert the connector hook through the opening on the top of the endcap. Applying firm pressure, lower the endcap to the ground to snap it into place. Do not remove the tear-out seal.



8. Attach endcap to chamber.

NOTE: Use straight lengths of pipe with the MultiPort Endcap at the trench ends to create fitting-free looped ends.

9. To ensure structural stability, fill the sidewall area by pulling soil from the sides of the trench with a shovel. Start at the joints where the chambers connect. Continue backfilling the entire sidewall area, making sure the fill covers the louvers.

10. Pack down the fill by walking along the edges of the trench and chambers. This is an important step in assuring structural support.

NOTE: In wet or clay soils, do not walk in the sidewalls.

11. Proceed to the next trench and begin with Step 1.

Installing Optional Inspection Ports

1. With a hole saw, drill the pre-marked area in the top of the chamber to create a 100 mm (4-inch) opening.
2. Set a cut piece of pipe of the appropriate length into the corresponding chamber's inspection port sleeve.

NOTE: The sleeve will accommodate a 100 mm (4-inch) SCH40 pipe.



1. Fasten the pipe.

3. Use two screws to fasten the pipe to the sleeve around the inspection port.
4. Attach a threaded cap or cleanout assembly onto the protruding pipe at the appropriate height.
5. A small valve cover box may be used if inspection port is below the desired grade.

Covering the System

Before backfilling, the system must be inspected by a health officer or other official as required by the Province of New Brunswick. Create an as-built drawing at this time for future records.

1. Backfill the trench by pushing fill material over the chambers with a backhoe. Keep a minimum of 300 mm (12 inches) of compacted cover over the chambers before driving over the system.

NOTE: Do not drive over system while backfilling in sand.

NOTE: For shallow cover applications, you must mound 300 mm (12 inches) of soil over the system before driving over it, and then grade it back to 6 inches upon completion.

2. It is best to mound several inches of soil over the finish grade to allow for settling. This also ensures that runoff water is diverted away from the system.
3. After the system is covered, the site should be seeded or sodded to prevent erosion.

NOTE: If the system is for new home construction, it is important to leave marking stakes along the boundary of the system. This will notify contractors of the site location so they will not cross it with equipment or vehicles.

PRESSURE DISTRIBUTION SYSTEMS

Pressure Distribution

Pressure distribution (PD) systems are commonly used in rapidly draining soil where vertical separation between the water table and/or restrictive layer is required. Schedule 40 polyvinyl chloride (PVC), with orifices at the 12 o'clock position, allows effluent to spray onto the inside surface of the chamber dome, providing more uniform distribution.

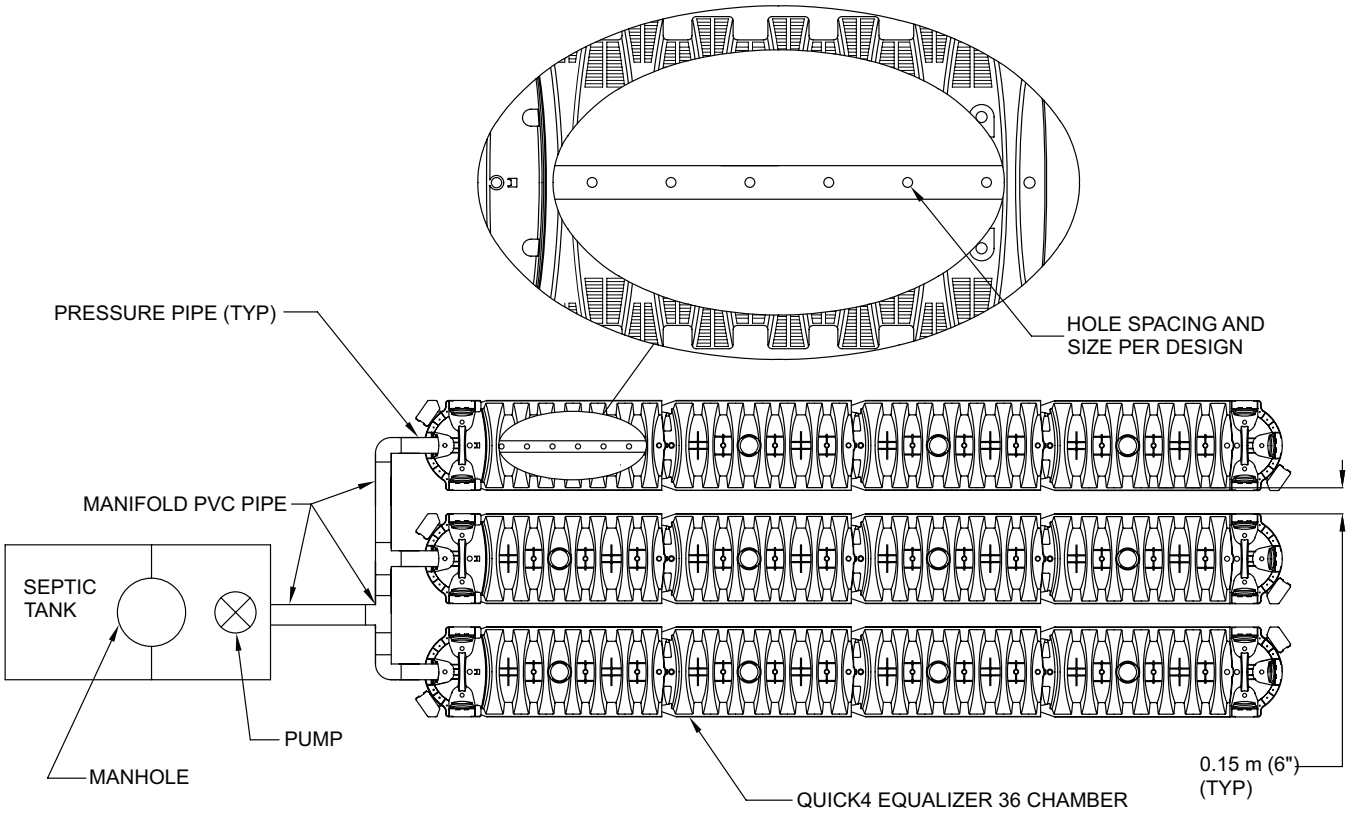
See page 24 for specific Pressure Distribution Installation Instructions. All Quick4 chambers may be used in pressure distribution systems.

When constructing a PD system:

- Pipe, pump and orifice sizing is determined through design specifications
- Laterals may be suspended using plastic pipe hangers, 300 mm (12-inch) plastic zip ties, or supported using pipe support units
- Drain orifices and shields at the 6 o'clock position are recommended in cold climates
- Accessible 90-degree sweep cleanout extensions are installed at the end of each lateral

TYPICAL PLAN VIEW
(not to scale)

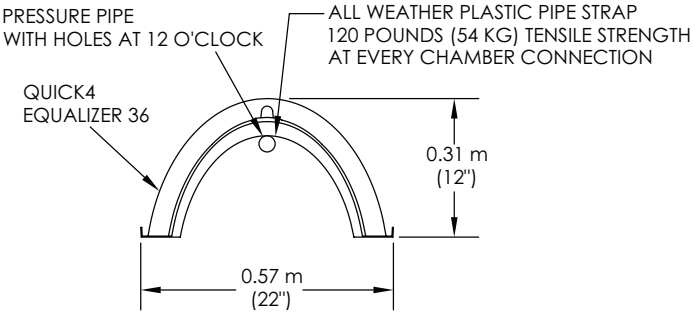
NOTE: The PVC pipe, orifice diameter holes and pump will be specified by the designer, which may vary from job to job.



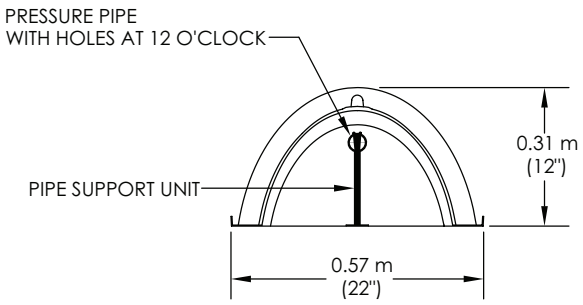
PRESSURE DISTRIBUTION SYSTEMS

Pressure Distribution

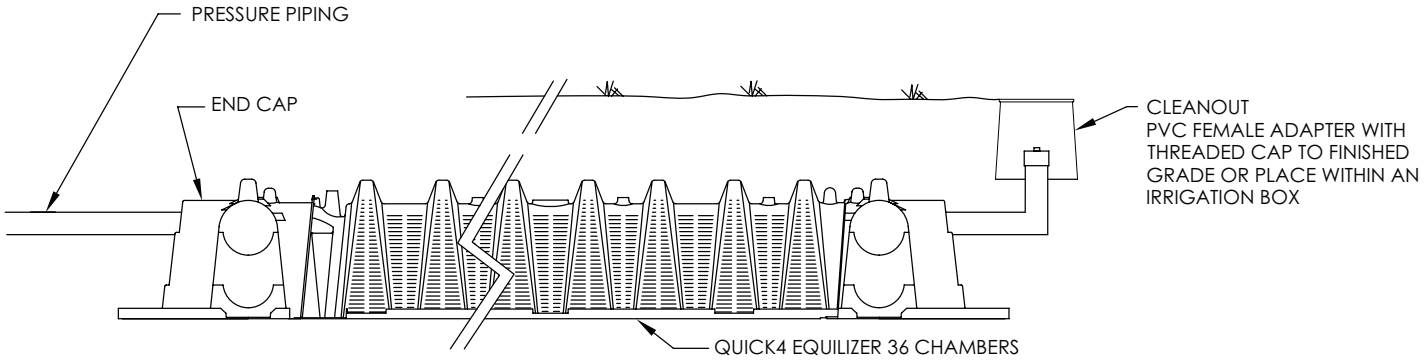
TYPICAL HANG PIPE END VIEW
(not to scale)



TYPICAL PIPE SUPPORT END VIEW
(not to scale)



TYPICAL CLEANOUT EXTENSION DETAIL SIDE VIEW
(not to scale)



Installation Instructions

Before You Begin

This section provides septic installation information for Quick4 chambers in pressure distribution systems. These systems can only be installed according to provincial requirements. Contact your permitting authority for specific requirements. Soil and site conditions must be approved prior to installation.

These guidelines for construction machinery must be followed during installation.

- ☐ Avoid direct contact with chambers when using construction equipment. Chambers require a 0.31 m (12-inch) minimum of compacted cover to support a wheel load rating of 71.2 kN/axle (16,000 lbs/axle) or equivalent to an H-10 AASHTO load rating.
- ☐ Only drive across the trenches when necessary. Never drive down the length of the trenches.
- ☐ To avoid additional soil compaction, never drive heavy vehicles over the completed system.

Installing Chambers and Endcaps



1. Drill hole in pipe.

1. To allow pressure laterals to drain after each dose, drill a hole in the bottom of the pipe at the end of the pressure line. Place the snap-off splash plate or a paving block at the bottom of the trench to protect the infiltrative surface from erosion.

2. With a hole saw, drill out the appropriate diameter hole to accommodate the pressure lateral pipe.

3. Insert the pressure lateral pipe into the endcap's drilled opening and slide it into the manifold pipe. Glue the pressure lateral pipe to the manifold pipe.

4. With the pressure lateral pipe through the endcap, place the inlet end of the first chamber over the back edge of the endcap.

NOTE: Regulators may require a wet-run pressure check be done prior to chamber installation when the pipe is laying on the ground. Check with your permitting authority for the proper procedure.



5. Secure pipe to chamber.

5. Secure the pressure lateral pipe to the top of the first chamber with a plastic pipe strap at the outlet end of the unit. Slide the strap up through a slot in the chamber top, down through the other slot, and cinch the two ends around the pipe.

NOTE: The Infiltrator Pipe Support Unit may also be used to hold and stabilize the pipe. See page 23 for detail.

6. Lift and place the next chamber onto the previous one at a 90-degree angle. Line up the chamber end between the connector hook and locking pin at the top of the first chamber. Lower it to the ground to engage the interlocks.

7. Secure the lateral pipe to the top of the next chamber once in place. Follow the same method in Step 5.

8. Continue interlocking chambers and securing the pipe until the trench is completed.



9. Remove tongue.

9. Before attaching the final endcap, remove the tongue of the connector hook on the last chamber with a pair of pliers.

10. Insert the pressure lateral pipe through the hole in the final endcap and slide the endcap towards the last chamber. Lift the endcap over the modified connector hook and push straight down to secure it to the chamber.



10. Lift endcap.

NOTE: If cleanout extensions are required, use a hole saw to cut a hole in the endcap at the proper elevation so that the lateral pipe can extend. For clean-out access, a 90-degree sweep elbow that extends to the soil's surface can be attached to the lateral pipe.

11. If installing multiple rows of chambers, follow Steps 1-9 to lay the next row of chambers parallel to the first. Keep a minimum separation distance between each row of chambers as required by the permitting authority.

Installation Instructions

Before You Begin

This section provides septic installation information for Quick4 chambers in pressurized sand mound systems. These systems can only be installed according to provincial requirements. Contact your permitting authority for specific requirements. Soil and site conditions must be approved prior to installation.

Preparing the Site

1. Review site plans to determine the height of the seasonal high water table or other limiting factors.

2. Calculate the number of sand lifts necessary. Lifts should measure 0.15 to 0.31 m (6 to 12 inches) in height.

3. Confirm that the sand used to build the mound meets plan specifications.

4. Install sedimentation and erosion control measures.

5. Cut trees flush to the ground (or remove if code allows), remove surface boulders that can be easily rolled off, and remove vegetation over 0.15 m (6 inches) long.

6. Rough or plow the area parallel with the contour of the land. Do this by using a multiple share plow, chisel plow or a similar implement attached to lightweight equipment. Avoid rotary tilling.

Placing the Specified Sand Fill

1. After placing imported sand fill on the site, use an excavator to evenly distribute over required area.



2. Stabilize the sand fill beneath the chamber alignment. This can be achieved by traversing the chamber footprint with the excavator tracks.

NOTE: Stabilization of each sand lift is critical to prevent settling of the material that supports the chambers. Do not operate construction equipment on the downslope side of the system before or during system construction.

3. Place consecutive lifts following Steps 1 and 2 until design elevation is achieved. Lifts should not exceed a 0.31 m (12-inch) height.

4. Place the layer of filter sand beneath the chamber installation point.

Covering the System

Before backfilling, the system must be inspected by the permitting authority as required by state and provincial codes. Create an as-built drawing at this time for future records.

1. Place a pile of berm material around the perimeter of the sand mound and directly against the row of chambers for stabilization.

2. Ladle soil onto the chamber row to the top sidewall louver to prevent chamber movement before final backfill. Firm the soil along the chamber by walking it in. This important step assures correct structural support of the system.

3. Push the berm material over the chamber row with a dozer or using a backhoe bucket. Keep a minimum 0.31 m (12 inches) of compacted cover over the system if tracked equipment is used on top of the system.

NOTE: NO wheeled machinery is allowed on chambers in mounds.

4. After the system is covered, the site should be seeded or sodded to prevent erosion.

NOTE: If the system is for new home construction, it is important to leave marking stakes along the boundary of the system. This will notify contractors of the site location so they will not cross it with equipment or vehicles.

NSEL APPROVAL # _____

Completion of work form for on-site sewage disposal system installers for chamber substitution systems only.

Name of Approval Holder: _____ Qualified Person: _____

Location of Property: _____ Lot Number: _____

Municipality: _____ PID: _____

YES	NO	N/A	
The following applies to a Septic Tank (s) or a Holding Tank (s)			
☐	☐	☐	The tank has been installed in accordance with manufacturer's recommended procedures
☐	☐	☐	The tank has been sized per the approval
The following items have been installed in accordance with the approval:			
☐	☐	☐	Chambers
☐	☐	☐	Endcaps attached at both ends of chamber run
☐	☐	☐	Splash plates installed at header end
☐	☐	☐	Pressure distribution pipe (if applicable)
☐	☐	☐	Imported sand fill
☐	☐	☐	Filter sand
☐	☐	☐	Interceptor/swale
☐	☐	☐	Pump chamber/siphon chamber
☐	☐	☐	Pump
☐	☐	☐	Alarm
☐	☐	☐	Final cover material
☐	☐	☐	Seed or sod, if no, installer to notify owner of requirement

I have installed this system in accordance with the Approval, the On-Site Sewage Disposal Systems Regulations, the On-Site Sewage Disposal Systems Technical Guidelines, and Infiltrator Water Technologies' Selection and Installation Manual for Quick4 Chambers in Nova Scotia.

Installer's Signature: _____ Print Name: _____

Qualification Number: _____ Date: _____

NSEL APPROVAL # _____

CERTIFICATE OF INSTALLATION FORM FOR CHAMBER SUBSTITUTION SYSTEMS ONLY

☐ INTERIM REPORT ☐ FINAL REPORT

APPROVAL HOLDER	SYSTEM INSTALLER	QUALIFIED PERSON
NAME:	NAME:	NAME:
ADDRESS:	ADDRESS:	ADDRESS:
POSTAL CODE:	POSTAL CODE:	POSTAL CODE:
PHONE NO:	PHONE NO:	PHONE NO:
LOT: LOCATION:	QUALIFICATION NO:	QUALIFICATION NO:

☐ **C-COMPLIANT** ☐ **N-NON COMPLIANT** ☐ **NA-NOT APPLICABLE** ☐ **NP-NOT IN PLACE**

TYPE OF CHAMBER SYSTEM:

☐ C1 ☐ C1 RAISED ☐ STANDARD C2 ☐ C3 ☐ SLOPING SAND FILTER

☐ MOUND ☐ AREA BED ☐ C2 RAISED ☐ MULTIPLE TRENCH

SKETCH OF DISPOSAL SYSTEM

(Please identify separation distances to wells, watercourses, and property boundaries. **The locations of the disposal field and septic tank must be shown in reference to two fixed points on the property.**)

CHAMBER SUBSTITUTION SYSTEM SPECIFICATIONS

System: Length _____ meters Width _____ meters

Total number of chambers _____

Number of chambers side-by-side in trench ☐ 1 ☐ 2

Number of rows in bed _____

Type of chambers (width: A=0.85 m; B=0.57 m)		☐ A	☐ B
Chambers installed	☐ C	☐ N	☐ NA
Endcaps installed	☐ C	☐ N	☐ NA
Splash plates installed	☐ C	☐ N	☐ NA
Level excavation	☐ C	☐ N	☐ NA
Interceptor ditch	☐ C	☐ N	☐ NA
Filter sand	☐ C	☐ N	☐ NA
Imported fill	☐ C	☐ N	☐ NA
Septic tank	☐ C	☐ N	☐ NA
Holding tank	☐ C	☐ N	☐ NA
Watertight	☐ C	☐ N	☐ NA
Pump chamber	☐ C	☐ N	☐ NA
Watertight	☐ C	☐ N	☐ NA
Siphon	☐ C	☐ N	☐ NA
Tested	☐ C	☐ N	☐ NA
Pump	☐ C	☐ N	☐ NA
Tested	☐ C	☐ N	☐ NA
Alarm present	☐ C	☐ N	☐ NA
Backfill	☐ C	☐ N	☐ NA
Final cover material	☐ C	☐ N	☐ NA
Seed/Sod	☐ C	☐ N	☐ NA

ACTUAL CLEARANCE DISTANCE (M = METERS)

From Nearest	To System	To Tanks	From Nearest	To System	To Tanks	From Nearest	To System	To Tanks
Lot Boundary	M	M	Cistern	M	M	Water Distribution	M	M
Downslope Boundary	M	M	Watercourse	M	M	Foundation Drain	M	M
Drilled Well	M	M	Wetland	M	M	Other	M	M
Dug Well	M	M	Intermittent Drain	M	M	Other	M	M

APPROVAL HOLDERS WATER SUPPLY:	☐ Drilled Well	☐ Existing	☐ Dug Well	☐ Cistern	☐ Municipal	☐ Surface Water	☐ Proposed	☐ Other _____
						COMPLETION OF WORK FORM ATTACHED:	☐ YES	☐ NO

INTERIM REPORT ONLY

Signature of Qualified Person: _____ Date of Inspection: _____

The system was installed between October 1 and April 1, as a result it is not possible to place the final cover material, and it would be impractical to sod or seed the field. All work with the exception of the final cover (backfill, final cover material, and seed/sod) has been completed in accordance with the On-Site Sewage Disposal Systems Regulations and complies with the approval issued. The disposal system has been protected from erosion. All damages will be repaired prior to placing the final cover material and sod or seeding. The work will be completed by June 20, 20_____, and the Final Certificate of Installation Form will be submitted.

Signature of Approval Holder: _____ Date: _____

Signature of Installer: _____ Date of Installation: _____

FINAL REPORT ONLY

Signature of QUalified Person: _____ Date of Inspection: _____

Signature of Installer: _____ Date of Installation: _____

Nova Scotia Environment will only collect, use, and disclose personal information in keeping with the privacy provisions of the Nova Scotia Freedom of Information & Protection of Privacy Act (FOIPOP). Revision: March 2009.

WARRANTY

Infiltrator Water Technologies, Standard Limited Warranty for Septic Products

(a) The structural integrity of each chamber and endcap manufactured by Infiltrator (collectively referred to as "Units"), when installed and operated in a leachfield of an onsite septic system in accordance with Infiltrator's installation instructions, is warranted to the original purchaser ("Holder") against defective materials and workmanship for one year from the date upon which a septic permit is issued for the septic system containing the Units; provided, however, that if a septic permit is not required for the septic system by applicable law, the one (1) year warranty period will begin upon the date that installation of the septic system commences. In order to exercise its warranty rights, Holder must notify Infiltrator in writing at its corporate headquarters in Old Saybrook, Connecticut within fifteen (15) days of the alleged defect. Infiltrator will supply replacement Units for those Units determined by Infiltrator to be defective and covered by this Limited Warranty. Infiltrator's liability specifically excludes the cost of removal and/or installation of the Units.

(b) THE LIMITED WARRANTY AND REMEDIES IN SUBPARAGRAPH (a) ARE EXCLUSIVE. THERE ARE NO OTHER WARRANTIES WITH RESPECT TO THE UNITS, INCLUDING NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

(c) The Limited Warranty does not extend to incidental, consequential, special or indirect damages. Infiltrator shall not be liable for penalties or liquidated damages, including loss of production and profits, labor and materials, overhead costs, or other losses or expenses incurred by the Holder or any third party. Specifically excluded from Limited Warranty coverage are damage to the Units due to ordinary wear and tear, alteration, accident, misuse, abuse or neglect of the Units; the Units being subjected to vehicle traffic or other conditions which are not permitted by the installation instructions; failure to maintain the minimum ground covers set forth in the installation instructions; the placement of improper materials into the system containing the Units; failure of the Units or the septic system due to improper siting, improper sizing, excessive water usage, improper grease disposal, or improper operation; or any other event not caused by Infiltrator. This Limited Warranty shall be void if the Holder fails to comply with all of the terms set forth in this Limited Warranty.

Further, in no event shall Infiltrator be responsible for any loss or damage to the Holder, the Units, or any third party resulting from installation or shipment, or from any product liability claims of Holder or any third party. For this Limited Warranty to apply, the Units must be installed in accordance with all site conditions required by state and local codes; all other applicable laws; and Infiltrator's installation instructions.

(d) No representative of Infiltrator has the authority to change this Limited Warranty in any manner whatsoever, or to extend this Limited Warranty. No warranty applies to any party other than the original Holder.

The above represents the standard Limited Warranty offered by Infiltrator. A limited number of states and counties have different warranty requirements. Any purchaser of Units should contact Infiltrator's corporate headquarters in Old Saybrook, Connecticut, prior to such purchase, to obtain a copy of the applicable warranty, and should carefully read that warranty prior to the purchase of Units.

Infiltrator Water Technologies recommends the use of septic tank filters and laundry filters with all onsite septic systems.

INFILTRATOR®
water technologies

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1-800-221-4436
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U.S. Patents: 4,759,661; 5,017,041; 5,156,488; 5,336,017; 5,401,116; 5,401,459; 5,511,903; 5,716,163; 5,588,778; 5,839,844 Canadian Patents: 1,329,959; 2,004,564 Other patents pending. Infiltrator, Equalizer, Quick4, and SideWinder are registered trademarks of Infiltrator Water Technologies. Infiltrator is a registered trademark in France. Infiltrator Water Technologies is a registered trademark in Mexico. Contour, MicroLeaching, PolyTuff, ChamberSpacer, MultiPort, PosiLock, QuickCut, QuickPlay, SnapLock and StraightLock are trademarks of Infiltrator Water Technologies.
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Contact Infiltrator Water Technologies' Technical Services Department for assistance at 1-800-221-4436