



John Elias Baldacci  
Governor

## Maine Department of Health and Human Services

Maine Center for Disease Control and Prevention  
286 Water Street, 3<sup>rd</sup> Floor  
11 State House Station  
Augusta, ME 04333-0011

Brenda M. Harvey,  
Commissioner

Dora Anne Mills, MD, MPH  
Public Health Director  
Maine CDC Director

September 28, 2006

PSA, Inc.  
Attn.: Dick Bachelder  
71 orchard Street  
York, ME 03909

Subject: Product Registration, Geo-flow Fabric Wrapped Large Diameter Pipes

Dear Mr. Bachelder:

The Division of Environmental Health completed a review of a registration application for *Geo-flow* pipes several years ago. This information was submitted pursuant to Section 1802 of the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (Rules), for code registration, for use in Maine. The following is a verbatim copy of the body of my July 14, 1999 approval letter to Thomas Caouette, then of Waterfall Distributors and Geo-flow, Inc.

"Dear Mr. Caouette:

Thank you for your letter dated June 3, 1998 regarding Geo-flow Leachfield System, and the accompanying sample. The sample is of a revised reinforced filter fabric used with Geo-flow gravel-less trenches. The revised fabric contains a larger reinforcing plastic mesh, resulting in less fabric being obstructed by the mesh.

Under provisions of Section 1802 of the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (copy enclosed), any manufacturer or distributor submitting a new product for code registration needs to demonstrate that:

1. The product is designed to protect public health, prevent the creation of any nuisance, and prevent environmental pollution to the same extent as comparable products presently authorized by Department for use in this code, and
2. The product is based on sound engineering principles and can be expected to provide the same level of protection to public health and the environment as offered by the authorized products presently authorized by the Department for use in this code.

Such demonstration may be achieved by submitting a letter to the Division of Health Engineering from: a) a certifying organization, such as the International Association of Plumbing and Mechanical Officials (IAPMO), Building Officials and Code Administrators (BOCA), or other suitable organization stating their approval of the product, or b) the American Society for Testing and Materials (ASTM) indicating the requested product (used as indicated in the request) meets the ASTM standard as specifically listed in the appropriate section of any nationally recognized plumbing code, such as BOCA, IAPMO (same as International Plumbing Code), or equal.

The Division had previously determined that Geo-flow Leachfield System is acceptable for use in the State of Maine, provided that it is installed and maintained in conformance with the manufacturer's directions. Since this proposal is a modification of an existing design, the Division is satisfied that the criteria for registration are met.

Because installation and owner maintenance has a significant effect on the working order of onsite sewage disposal systems, including their components, the Division makes no representation or guarantee as to the efficiency and/or operation of Geo-flow Leachfield System. Further, registration of this product for use in the State of Maine does not represent Division preference or recommendation for this product over similar products.

If you have any questions please feel free to contact me at (207) 287-5695."

*Our vision is Maine people enjoying safe, healthy and productive lives.*

Because installation and owner maintenance has a significant effect on the working order of onsite sewage disposal systems, including their components, the Division makes no representation or guarantee as to the efficiency and/or operation of *Geo-flow* pipes. Further, registration of this product for use in the State of Maine does not represent Division preference or recommendation for this product over similar products.

If you have any questions please feel free to contact me at (207) 287-5695.

Sincerely,



James A. Jacobsen, Environmental Specialist IV  
Wastewater and Plumbing Control Program  
Division of Health Engineering  
e-mail: james.jacobsen@state.me.us

/jaj

xc: ADS Product File



STATE OF MAINE  
DEPARTMENT OF HUMAN SERVICES  
DIVISION OF HEALTH ENGINEERING  
10 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0010

ANGUS S. KING, JR.  
GOVERNOR

KEVIN W. CONCANNON  
COMMISSIONER

May 31, 2000

Geo Flow Leaching System, Inc.  
Attn.: Thomas P. Caouette  
171 Grove Street  
Lewiston, Maine 04240

Subject: Meeting of May 31, 2000

Dear Mr. Caouette:

Thank you for meeting with me this afternoon. Also present were David Presby, of Presby Environmental Inc. (PEI) and Kathy Emmi, of Maine Septic and Culvert.

We met to discuss a letter dated April 12, 2000 from your company, to which a letter dated August 2, 1999 by this office was attached. Ref.: letter dated May 12, 2000 by James A. Jacobsen.

As we discussed, my letter to Mr. Presby was part of an ongoing process between he and I to work out details and format for a handbook and installation manual. This process was successfully concluded, but there was no mention of this in your letter. Due to the manner of presentation in your letter, the reader could easily conclude that this office had problems with approving PEI's product.

I stated that my concern in this issue is that the Division's position was not accurately represented by your mailing. The Division can not, and does not, endorse any one product over any other product. Yet, your mailing suggests the contrary, and not to PEI's favor.

Based on your statements, it is my understanding that you sent your mailing for the following reasons:

1. You were aware of areas where designs for GeoFlow products were being installed with EnviroSeptic products instead, contrary to the HHE-200 Forms;
2. You wished to make the Local Plumbing Inspectors (LPI's) of certain areas aware of the Division's position regarding installations which diverge from designs;
3. You chose to make your mailing because you did not get satisfaction from my predecessors with respect to your past complaints; and
4. You were advised by a lawyer that your mailing, including the Division's letter, was legal.

In response to your concerns last year, the Division issued a notice advising LPI's and Site Evaluators (SE's) that systems must be installed as designed. The Division's position is that if a design states that a particular proprietary device must be used, then the specified product shall be used unless the design is amended by the SE. In other words, if a design requires Product A, Product B may not be substituted until the HHE-200 Form is revised by the SE. Conversely, if a design requires only a general type of product, for example "plastic chambers", then any such device meeting the specifications may be used.

I do not debate that the mailing was legal. Clearly, it was. My concern is that it was arguably unethical, to which you agreed. Whatever your motivations, if you were concerned that there were instances of inappropriate installations being approved by LPI's, you should have come to me with those concerns so that this office could address them. Rest assured, we shall now.



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It is my sincere hope that we have cleared the air on this issue, and that it will not occur again. As I stated, I am absolutely willing to assist anyone with anything that I can. All they have to do is simply ask first.

If you have any questions please feel free to contact me at (207) 287-5695.

Sincerely,

A handwritten signature in cursive script that reads "James A. Jacobsen". The signature is written in black ink and is positioned above the typed name and title.

James A. Jacobsen, Manager  
Wastewater and Plumbing Control Program  
Division of Health Engineering  
e-mail: james.jacobsen@state.me.us

/ja]

xc: File  
David Presby, PEI  
Kathy Emmi, MS&C  
W. Clough Toppan, Director  
Recipients of 4/12/00 Letter



STATE OF MAINE  
DEPARTMENT OF HUMAN SERVICES  
DIVISION OF HEALTH ENGINEERING  
10 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0010

ANGUS S. KING, JR.  
GOVERNOR

KEVIN W. CONCANNON  
COMMISSIONER

May 12, 2000

Geo Flow leaching System, Inc.  
Attn.: Thomas P. Caouette  
171 Grove Street  
Lewiston, Maine 04240

Subject: Letter of April 12, 2000

Dear Mr. Caouette:

This office is in receipt of a copy of your letter of April 12, 2000 and an attached copy of my letter to David Presby dated August 2, 1999. I will tell you right up front that I am not the *least* bit pleased about your letter, and the way you used my letter. My letter to Mr. Presby was part of an ongoing process between he and I to work out details and format for a handbook and installation manual. It was certainly not intended to be used as public forum.

Clearly, any document produced by this office is a matter of public record, and as such any person or party is entitled to a copy. However, it is *equally* clear to the reader of your letter, that your attachment of a copy of my letter ostensibly supports your product at the expense of your competitors'. What you conveniently omitted from your letter is the fact that mine was but one of a series between Presby Environmental, Inc. and I (PEI), which successfully negotiated a mutually acceptable handbook and literature packet. The casual reader, having no knowledge of the other correspondence, *particularly* Mr. Presby's responses, would reasonably assume that there were conflicts between PEI and this office. In short, because you chose to distribute one letter *out of context* with your letter, you have cast PEI in a bad light.

This office has no jurisdiction over business practices. However, we do have a vested interest to ensure that our positions on various issues are not distorted, whether by intent or not, by outside parties. As Kenneth Meyer expressed in two letters to you in July of 1997, approvals from this office may be reproduced only in their entirety; a process you clearly did not follow in this instance. I have scheduled a meeting to discuss this issue, at the Division's Augusta office, at 2:00 p.m. May 31, 2000. Please advise me if you can not accommodate that time and date. By copy of this letter I also invite PEI to attend.

If you have any questions please feel free to contact me at (207) 287-5695.

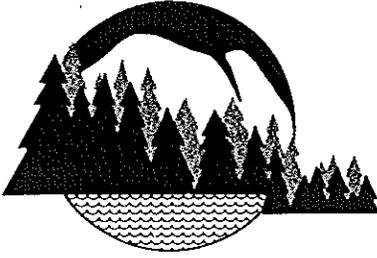
Sincerely,

James A. Jacobsen, Manager  
Wastewater and Plumbing Control Program  
Division of Health Engineering  
e-mail: james.jacobsen@state.me.us

/jaj  
xc: File  
David Presby, PEI  
W. Clough Toppan, Director



PRINTED ON RECYCLED PAPER



**TOWN OF BRIDGTON**  
ONE CHASE COMMON  
BRIDGTON, MAINE 04009-1264

Municipal  
Office  
(207) 647-8786

May 9, 2000



Thomas P. Caouette  
Normand Clavet  
171 Grove Street  
Lewiston, ME 04240

Dear Sirs:

I recently received a letter from your office dated April 12, 2000 with an attachment over the signature of James Jacobson.

At first blush it appeared to be a positive advisement for the industry but upon further review it is a callous and poorly veiled attempt to disclose to LPI's and others what may have been correspondence privileged between Jim and Dave Presby.

Your reference to plumbing inspections using Geo-Flow Leaching System design criteria but substituting other pipe is as blasphemous to LPIs as the use of the DHE letter to satisfy your warped sense of humor. I know of no LPIs who initiate any changes to design or material.

I, in no way endorse Dave Presby's product but I do feel you have done our industry a terrible disservice by utilizing such methods to malign a competitors product. Critical review is a function of DHE and I feel all in that department do a good job.

Save the underhanded marketing methods for your political aspirations.

Sincerely,

W.H. "Bill" Foye  
Code Enforcement Officer  
LPI #111

WHF:gmf

cc: Jim Jacobson  
Clough Toppan

**FILE COPY**

# GEO-FLOW LEACHING SYSTEM, INC.

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Thomas P. Caouette  
Normand Clavet  
171 Grove Street  
Lewiston, ME 04240  
Phone: (207) 786-0264 or (207) 783-0224

April 12, 2000

To Whom It May Concern:

As you know, Geo-Flow has had an outstanding record for the past 11 years in the State of Maine. Recently, however, it has come to our attention that over the past several years, plumbing inspectors in certain areas of the state have been using Geo-Flow Leaching System design criteria but substituting other pipe.

Please note that no product can be substituted for Geo-Flow pipe without changes to the HHE-200 form. To use any other product, that form must be revised by a site evaluator. Enclosed for your information is a copy of a letter from the Division of Health Engineering stating clearly, in the middle of the first page, that a site evaluator must approve of all such substitutions and that such approved substitutions must be reflected in a revised HHE-200 form.

Please feel free to contact me at any time with any questions about Geo-Flow products.

Sincerely,

Thomas P. Caouette

TC/ec

If you wish to maintain a valid registration for the Simple Septic product, you shall take the following steps:

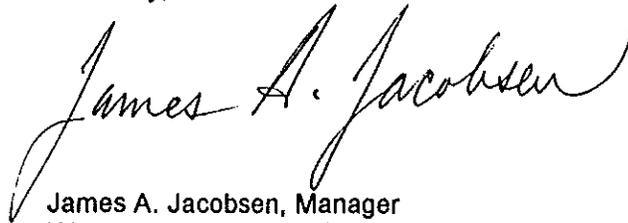
1. **Immediately** issue a written notice to all known distributors of the Simple Septic product which clarifies that this product has received **provisional registration**, and which retracts the statement that the Simple Septic product may be used in place of other proprietary devices. A copy of this notice accompanied by a signed statement that copies have been sent to the distributors shall be sent to this office;
2. Submit a handbook to this office for review, postmarked no later than August 16, 1999;
3. Submit evidence to this office that the pipe currently used in the construction of the Simple Septic product meets relevant provisions of National Sanitation Foundation Standard 14 for Plastic Piping Components, or functional equivalent; or empirical data which demonstrate that the pipe in current use is as strong as the sample you gave this office; and
4. Submit written assurance to this office that the pipes used in your company's products will be deburred when the outlet portals are cut in the pipes; or empirical data which demonstrate that the burrs do not adversely affect the operation of the products.

Failure to comply with these requirements will result in the Division's retraction of product registration for the Simple Septic product.

In June of 1998 you made similar exaggerated claims in your television advertisement for the Presby Maze. (Reference: letter dated June 22, 1998.) There is an apparent trend here which must cease. You need to realize that this office takes a dim view of inaccurate representations of the Division's actions, including the product registration process, whether by error or design.

If you have any questions please feel free to contact me at (207) 287-5695.

Sincerely,



James A. Jacobsen, Manager  
Wastewater and Plumbing Control Program  
Division of Health Engineering  
e-mail: [james.jacobsen@state.me.us](mailto:james.jacobsen@state.me.us)

xc: File  
W. Clough Toppan, Director, DHE  
Office of the Attorney General, Consumer Protection Division  
Mark Cenci, Pres., M.A.S.E.



STATE OF MAINE  
 DEPARTMENT OF HUMAN SERVICES  
 DIVISION OF HEALTH ENGINEERING  
 10 STATE HOUSE STATION  
 AUGUSTA, MAINE

ANGUS S. KING, JR.  
 GOVERNOR

04333-0010  
 July 14, 1997

KEVIN W. CONCANNON  
 COMMISSIONER

*Leaching Chambers  
 GEO-flow*

Mr. Thomas Caouette  
 Mr. Normand Clavet  
 GEO-flow, Inc.  
 171 Grove Street  
 Lewiston, Maine 04240

Subject: Revised Approval Letter, GEO-flow Pipe - Leaching Chamber

Gentlemen:

This letter grants permission for the use in Maine of the GEO-flow Leaching System, manufactured by GEO-flow, Inc. of Lewiston Maine. The leaching system consists of a 10" ID HDPE corrugated pipe manufactured by Hancor with 1/2" perforations, an inner wrapping GEO-flow's HDPE drainage grid and an outer wrapping of non-woven, polypropylene geo-textile.

Each lineal foot of GEO-flow Pipe is considered to be the equivalent of 5 square feet of stone bed when installed in accordance with the Maine Subsurface Wastewater Disposal Rules (Maine Rules) and the manufacturer's Design and Installation Handbook (GEO-flow Handbook). The minimum spacing of adjacent rows of GEO-flow Pipe is 2.5 feet center to center, except if the GEO-flow Handbook requires a greater spacing. However, the spacing may be reduced to 1.5 feet (center to center) for GEO-flow pipes on 5 and 6 soils when the slope is 5% or less, and 2.0 feet (center to center) on 4 soils when the slope is 5% or less. For all First Time Systems, the Site Evaluator must demonstrate that the system could be installed in compliance with the Rules using the 2.5 feet center to center spacing. The bottom of the pipe, measured at the outside of the wrapping, shall be considered as the bottom of the system for purposes of vertical separation.

This letter allows the use of a fill material specified in the GEO-flow Handbook which may not conform to the Maine Rules. This alternative fill material is allowed only in conjunction with this product. The suitability of the alternative fill for this purpose is the liability of the manufacturer.

A permit for the installation of an GEO-flow Leaching System must be obtained from the Licensed Plumbing Inspector before beginning construction.

Approvals by this office:

1. Are not recommendations for a product and must not be construed as such. This office does not represent any product as being better than, equal to, or inferior to any similar product.
2. Are based upon a desk review of a product, without field or lab testing by this office.
3. May be revised, based upon information received regarding the performance of the product, changes in the product or changes in the regulations.
4. May be reproduced only in their entirety.

*Please Note: This letter supersedes all earlier approval letters for the 'Enviro-Septic Pipe.*

Sincerely,

Kenneth L. Meyer - Manager  
 Wastewater & Plumbing Control Program

cc: Clough Toppan, P.E. ✓





STATE OF MAINE  
DEPARTMENT OF HUMAN SERVICES  
DIVISION OF HEALTH ENGINEERING  
10 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333-0010

ANGUS S. KING, JR.  
GOVERNOR

KEVIN W. CONCANNON  
COMMISSIONER

July 20, 1998

Geo-flow, Inc.  
Attn.: Thomas P. Caouette  
171 Grove Street  
Lewiston, Maine 04240

Subject: Product Registration, Geo-flow Leachfield System

Dear Mr. Caouette:

Thank you for your letter dated June 3, 1998 regarding Geo-flow Leachfield System, and the accompanying sample. The sample is of a revised reinforced filter fabric used with Geo-flow gravel-less trenches. The revised fabric contains a larger reinforcing plastic mesh, resulting in less fabric being obstructed by the mesh.

Under provisions of Section 1802 of the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (copy enclosed), any manufacturer or distributor submitting a new product for code registration needs to demonstrate that:

1. The product is designed to protect public health, prevent the creation of any nuisance, and prevent environmental pollution to the same extent as comparable products presently authorized by Department for use in this code, and
2. The product is based on sound engineering principles and can be expected to provide the same level of protection to public health and the environment as offered by the authorized products presently authorized by the Department for use in this code.

Such demonstration may be achieved by submitting a letter to the Division of Health Engineering from: a) a certifying organization, such as the International Association of Plumbing and Mechanical Officials (IAPMO), Building Officials and Code Administrators (BOCA), or other suitable organization stating their approval of the product, or b) the American Society for Testing and Materials (ASTM) indicating the requested product (used as indicated in the request) meets the ASTM standard as specifically listed in the appropriate section of any nationally recognized plumbing code, such as BOCA, IAPMO (same as International Plumbing Code), or equal.



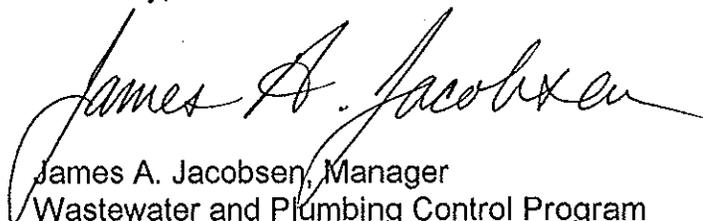
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The Division had previously determined that Geo-flow Leachfield System is acceptable for use in the State of Maine, provided that it is installed and maintained in conformance with the manufacturer's directions. Since this proposal is a modification of an existing design, the Division is satisfied that the criteria for registration are met.

Because installation and owner maintenance has a significant effect on the working order of onsite sewage disposal systems, including their components, the Division makes no representation or guarantee as to the efficiency and/or operation of Geo-flow Leachfield System. Further, registration of this product for use in the State of Maine does not represent Division preference or recommendation for this product over similar products.

If you have any questions please feel free to contact me at (207) 287-5695.

Sincerely,

A handwritten signature in cursive script that reads "James A. Jacobsen". The signature is written in black ink and is positioned above the typed name and title.

James A. Jacobsen, Manager  
Wastewater and Plumbing Control Program  
Division of Health Engineering  
e-mail: james.jacobsen@state.me.us

xc: File



STATE OF MAINE  
 DEPARTMENT OF HUMAN SERVICES  
 DIVISION OF HEALTH ENGINEERING  
 10 STATE HOUSE STATION  
 AUGUSTA, MAINE

ANGUS S. KING, JR.  
 GOVERNOR

04333-0010  
 July 14, 1997

KEVIN W. CONCANNON  
 COMMISSIONER

Mr. Thomas Caouette  
 Mr. Normand Clavet  
 GEO-flow, Inc.  
 171 Grove Street  
 Lewiston, Maine 04240

Subject: Revised Approval Letter, GEO-flow Pipe - Leaching Chamber

Gentlemen:

This letter grants permission for the use in Maine of the **GEO-flow Leaching System**, manufactured by **GEO-flow, Inc.** of Lewiston Maine. The leaching system consists of a 10" ID HDPE corrugated pipe manufactured by Hancor with 1/2" perforations, an inner wrapping GEO-flow's HDPE drainage grid and an outer wrapping of non-woven, polypropylene geo-textile.

Each lineal foot of **GEO-flow Pipe** is considered to be the equivalent of 5 square feet of stone bed when installed in accordance with the **Maine Subsurface Wastewater Disposal Rules (Maine Rules)** and the manufacturer's **Design and Installation Handbook (GEO-flow Handbook)**. The minimum spacing of adjacent rows of **GEO-flow Pipe** is 2.5 feet center to center, except if the **GEO-flow Handbook** requires a greater spacing. However, the spacing may be reduced to 1.5 feet (center to center) for **GEO-flow pipes** on 5 and 6 soils when the slope is 5% or less, and 2.0 feet (center to center) on 4 soils when the slope is 5% or less. For all First Time Systems, the Site Evaluator must demonstrate that the system could be installed in compliance with the Rules using the 2.5 feet center to center spacing. The bottom of the pipe, measured at the outside of the wrapping, shall be considered as the bottom of the system for purposes of vertical separation.

This letter allows the use of a fill material specified in the **GEO-flow Handbook** which may not conform to the **Maine Rules**. This alternative fill material is allowed only in conjunction with this product. The suitability of the alternative fill for this purpose is the liability of the manufacturer.

A permit for the installation of an **GEO-flow Leaching System** must be obtained from the Licensed Plumbing Inspector before beginning construction.

Approvals by this office:

1. Are not recommendations for a product and must not be construed as such. This office does not represent any product as being better than, equal to, or inferior to any similar product.
2. Are based upon a desk review of a product, without field or lab testing by this office.
3. May be revised, based upon information received regarding the performance of the product, changes in the product or changes in the regulations.
4. May be reproduced only in their entirety.

*Please Note: This letter supersedes all earlier approval letters for the Enviro-Septic Pipe.*

Sincerely,

Kenneth L. Meyer - Manager  
 Wastewater & Plumbing Control Program

cc: Clough Toppan, P.E.

**FILE COPY**





John R. McKernan, Jr.  
Governor

Jane Sheehan  
Commissioner

STATE OF MAINE  
DEPARTMENT OF HUMAN SERVICES  
AUGUSTA, MAINE

April 15, 1993

Mr. Henry Caouette,  
GEO-FLOW WATERFALL, Inc.  
P.O. Box 175  
Mechanic Falls, Maine 04256

SUBJECT: Product Approval, Leaching Chambers - Geo-Flow

Mr. Caouette,

Enclosed herewith you probably have already found the most recent approval letter for Geo-Flow. There is very little change from the earlier letter, specifically going to 3.5 feet center to center from 45 inches.

1. Sizing Criteria - We have not been shown any data regarding the performance of the product under measured conditions. Specifically, there have been no cases brought forward for review where the system has been subjected to a measured flow for any extensive period (say 2 years).

The New Hampshire comments are interesting but somewhat misleading. As I understand N.H.'s rules if a non-residential system requires 1000 SF of stone bed, the contractor must use 333 LF of Geo-Flow while in Maine 200 LF of Geo-Flow would be acceptable.

In residential applications N.H. allows a 40% reduction for some proprietary leaching devices. Therefore a 1000 SF stone bed could be replaced by 200 LF of Geo-Flow, exactly what Maine would require (333 LF less 40% = 200 LF).

We agree with N. H. for residential structures (although we use different numbers to get there) and we are less conservative for non-residential structures. There is nothing to suggest that we are out of line.

2. Spacing - When reviewing spacing, I look primarily at the resultant loading of a site. Spacing which is too close may allow a system to exceed the sites capability to remove the water without breakout or mounding.

Geo-Flow at 2.5 SF/LF on 3.5 foot centers has the same loading rate as Bio-Diffusors and/or Infiltrators with their required three foot separation.

Mr. Henry Caouette  
April 15, 1993  
Page 2

Geo-Flow (and the other products) have a potential site loading which is 100% to 123% greater than a stone bed, and around 50% greater (6 soils) to 13% smaller (9 soils) than a peat filter.

Given the relative site loadings for the different disposal methods, there is no compelling reason to further revise this value.

Again, the use of N.H.'s numbers is misleading. On a non-residential system, the effective spacing is 4.1 to 5.8 feet center to center versus 3.5 feet in Maine when the overall size of the system is considered.

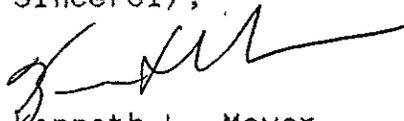
A secondary consideration is the ability to maintain undisturbed soil between the rows. With an effective diameter of 12 inches plus 6 inches of sand on each side, the Geo-Flow needs an excavation which is at least 24 inches wide. Spacing at 2.5 feet (30 inches) center to center would make it difficult to keep any undisturbed soil between the rows.

Spacing at 3.5 feet while not guaranteeing the undisturbed soil, makes it more likely.

While I certainly appreciate your sincere efforts in this matter, I believe that rating for Geo-Flow is reasonable and equitable.

As always, we remain open to further information.

Sincerely,



Kenneth L. Meyer  
Wastewater & Plumbing Control  
Division of Health Engineering

cc: Don Hoxie, Director, Division of Health Engineering  
Eugene Moreau, Director, Community Health Program  
Jay Hardcastle, State Site Evaluator  
Kerwin Keller, State Plumbing Inspector

John R. McKernan, Jr.  
Governor



Rollin Ives  
Commissioner

STATE OF MAINE  
DEPARTMENT OF HUMAN SERVICES  
AUGUSTA, MAINE 04333

June 8, 1989

Henry Caoutte  
Waterfall Distributors  
PO Box 175  
Mechanic Falls, ME 04256

Subject: Approval of Geoflow Gravel-less Leach Bed Tubing

Dear Mr. Caoutte:

The intent of this letter is clarify the confusions created by our approval letter dated September 9, 1988.

This office approves Geoflow's 8 and 10 inch Gravel-less Leach Bed Tubing to be used without stones to dispose of septic tank effluent into the soil.

Our approval is based on Geoflow's use of a mesh backed fabric called "Tenax TN" and assumes a 10% shadowing factor and a 80% circumference factor. An attached sizing table was developed using these assumptions and 10-144A CMA 241, Table 12-3 for chamber bottom areas.

This approval of the 8 and 10 inch Geoflow Systems is subject to the conditions on the attached sheet.

This approval should not be construed to be an endorsement of your product.

Very truly yours

A handwritten signature in cursive script that reads "Wallace W. Hinckley".

Wallace W. Hinckley  
Manager, Plumbing Control Program



John R. McKernan, Jr.  
Governor

Rollin Ives  
Commissioner

STATE OF MAINE  
DEPARTMENT OF HUMAN SERVICES  
AUGUSTA, MAINE 04333  
September 9, 1988

Mr. Henry Caouette  
Waterfall Distributors  
PO Box 175  
Mechanic Falls ME 04256

SUBJECT: Use of Geoflow Leaching Pipe Systems 8" and 10" diameter in the State of Maine

Dear Mr. Caouette:

This is to acknowledge receipt and review of information relative to the subject project; 8 inch and 10 inch diameter corrugated, perforated pipe enclosed in a mesh backed filter fabric called Tenax TN. This pipe is used without crushed stone to dispose of septic tank effluent in the soil.

After review of the information submitted, and in acknowledgement of acceptance by the State of Illinois, we hereby approve the use of both 8 inch and 10 inch pipe subject to the following:

1. For both 8 and 10 inch pipe, the application rate shall be determined from table 12-3 of the Subsurface Wastewater Disposal Rules.
2. For the 8 inch pipe the required length shall be determined by dividing the application rate by 2.0 (2.0 ft/linear ft).
3. For the 10 inch pipe the required length shall be determined by dividing the application rate by 2.5 (2.5 ft/linear ft).
4. No crushed stone shall be required in the trench.
5. Serial distribution may be utilized as specified in Section 10.E.
6. In all other aspects, each installation shall comply with the Subsurface Wastewater Disposal Rules.

Yours very truly,

A handwritten signature in cursive script, appearing to read 'Russell G. Martin'.

Russell G. Martin, P.E.

Manager  
Wastewater & Plumbing Control  
Division of Health Engineering

RGM/lid

\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*

Dear \*\*\*\*\*:

The GEO FLOW subsurface sewage disposal system is designed for low cost installation and efficient function while overcoming many of the problems which have been experienced with other types of systems in recent years. We feel that once you have reviewed the simplicity of the GEO FLOW system; you will readily understand its advantages in typical applications requiring subsurface sewage disposal within the State of Maine.

As you are aware, a typical subsurface disposal system consists of a number of integrated components which provide specific function within the system. Each of these components must be designed and installed in accordance to the requirements of the State of Maine Plumbing Code. For the most part, the treatment tank and drain lines which are part of the subsurface disposal system will not vary significantly in design from application to application. However, the design and construction of the leaching area does provide choices to the site evaluator and owner. The Maine Plumbing Code will allow different types of leaching systems. The GEO FLOW leaching system consists of a composite structure which includes perforated ----- pipe which is covered with ----- . The GEO FLOW leaching system is available in 8" and 10" internal diameter sizes. Sketches are attached which show details of the primary components, as well as their typical installation.

The design concept for the GEO FLOW system is based on considerable experience in other states across the country. The Health Engineering Division of the Maine Department of Human Services has reviewed the GEO FLOW concept and has approved its use within the State of Maine. A copy of their approval letter has been attached.

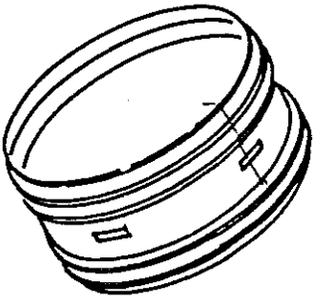
As you can see, the sewage application rate for the GEO FLOW system is based on Table 12-3 of the State of Maine Plumbing Code. An application rate of 2.0 square feet per linear foot will apply for the 8" GEO FLOW pipe; while an application rate of 2.5 square feet per linear foot may be utilized for the 10" I.D. pipe. An example design has also been attached for review which shows how the GEO FLOW concept might be applied for a typical residential application.

Should there be any further questions on the GEO FLOW system, please don't hesitate to give us a call.

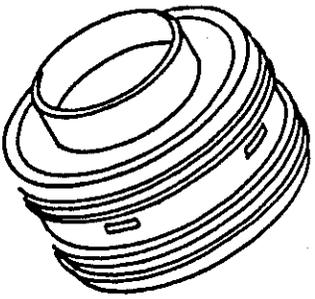
Patent Pending

Sincerely yours,

Henry Caouette

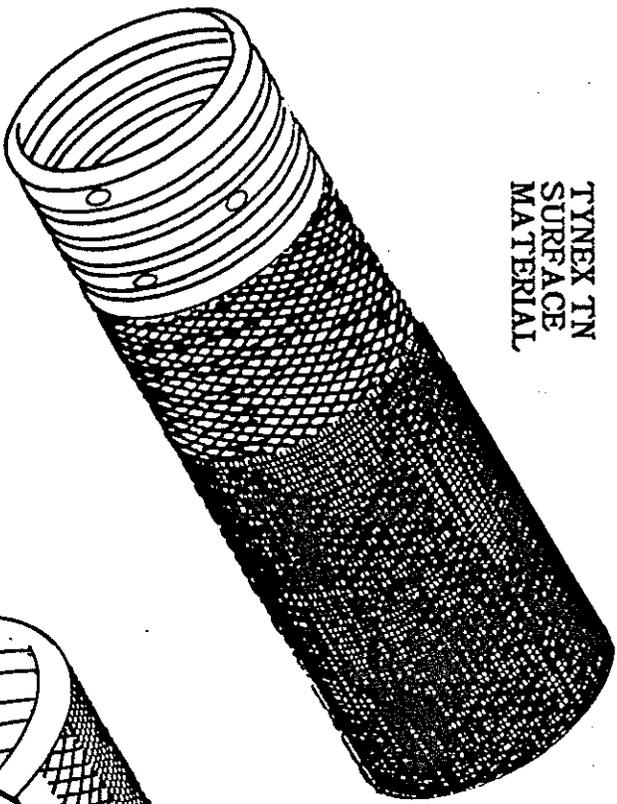


GEO FLOW  
PIPE CONNECTOR

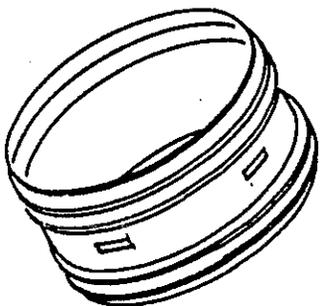


INLET  
CONNECTOR

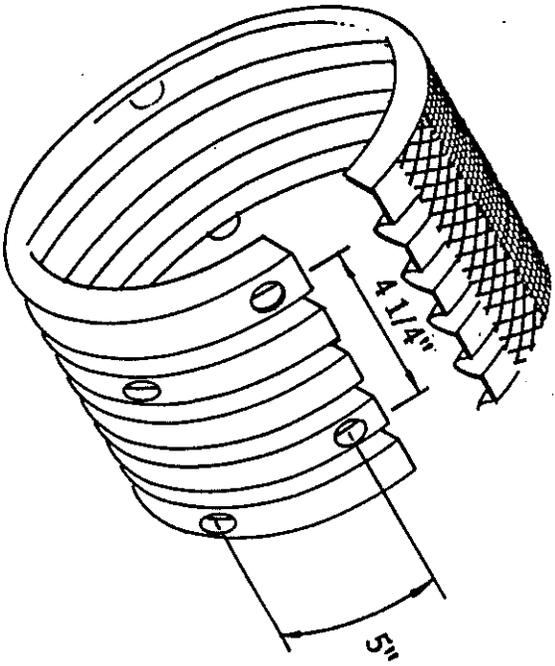
TYNEX™  
SURFACE  
MATERIAL



PERFORATED  
DISTRIBUTION PIPE



END CAP

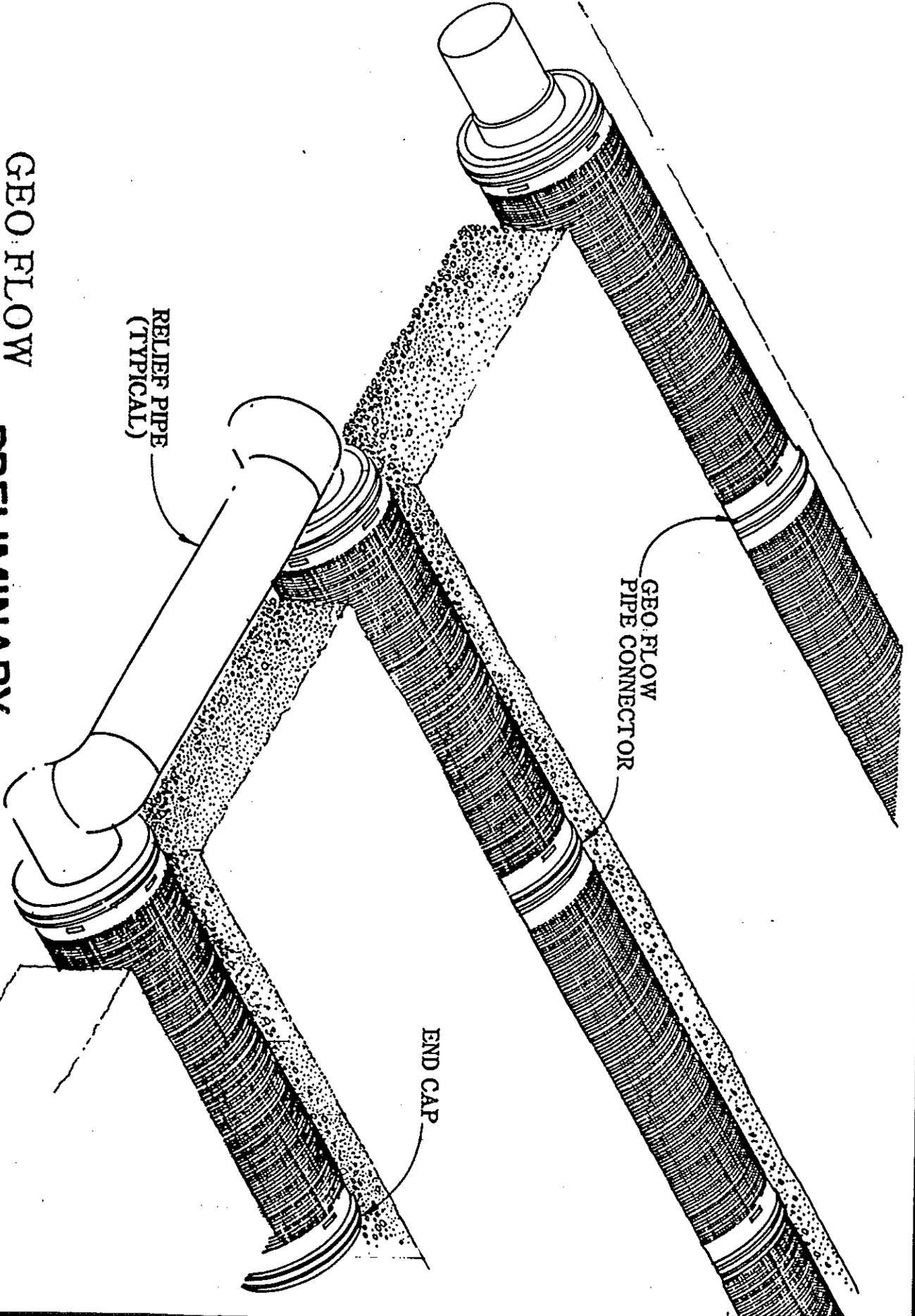


GEO FLOW

# PRELIMINARY

Patent Pending

GEO FLOW  
PRELIMINARY



Patent Pending

SAMPLE CALCULATIONS FOR 10 INCH DIA. "GEO FLOW" LEACHING PIPE

DESIGN CRITERIA

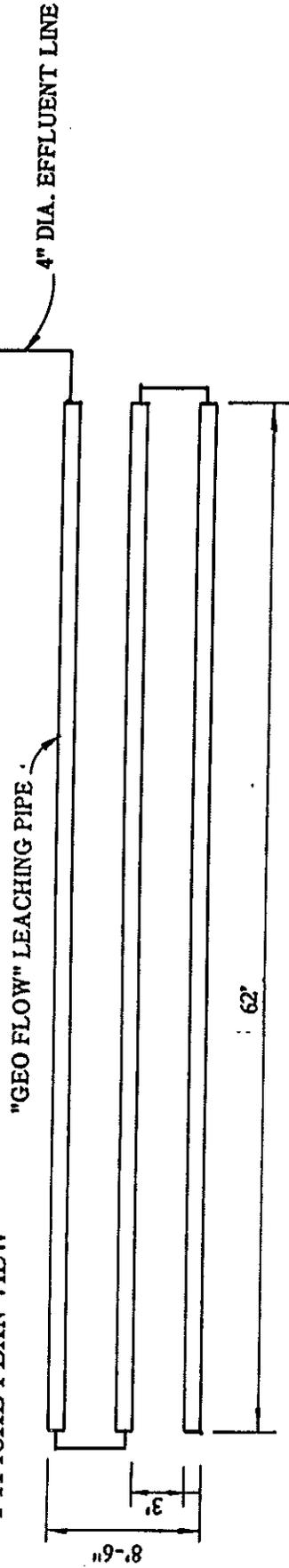
FLOW<sup>1</sup> 3 BEDROOM SINGLE-FAMILY DWELLING (270 GPD MIN. DESIGN

SOIL PROFILE - TYPE 3C (FOR SAMPLE CALCULATIONS)  
DISPOSAL AREA RATING FOR TYPE 3C - MEDIUM LARGE  
MULTIPLYING FACTOR FROM TABLE 12-3 (1.7)  
10 INCH "GEO FLOW" RATE (25) SQ. FT./LINEAR FT.

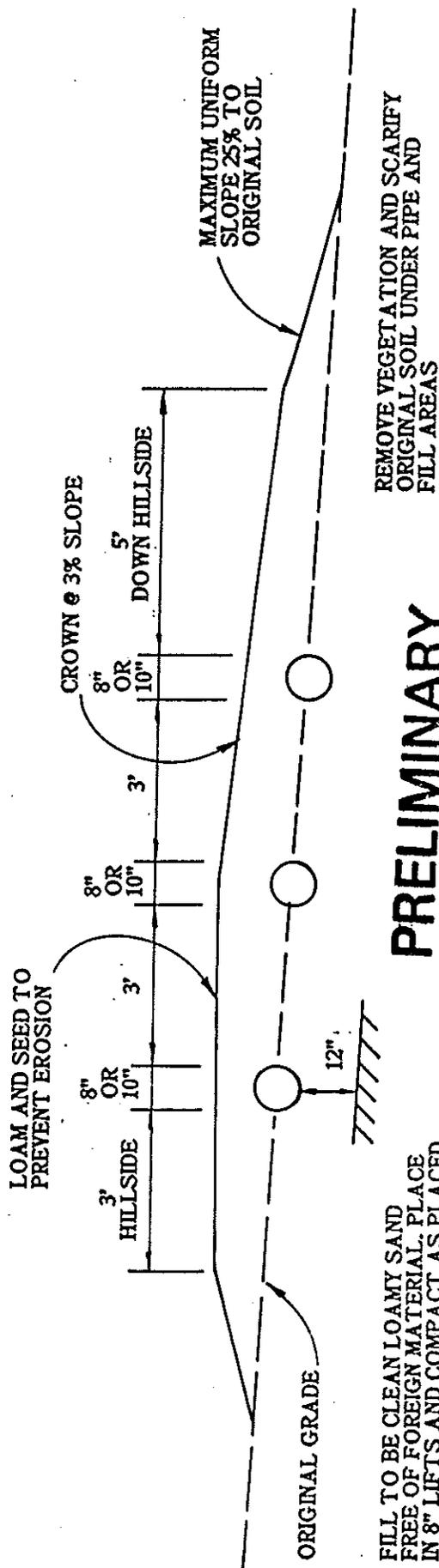
270<sup>1</sup> x 1.7<sup>2</sup> = 133 LINEAR FEET OF TRENCH REQUIRED

2.5'

TYPICAL PLAN VIEW



TYPICAL CROSS SECTION VIEW WITH LIMITING FACTOR @ 18"



**PRELIMINARY**

FILL TO BE CLEAN LOAMY SAND FREE OF FOREIGN MATERIAL. PLACE IN 8" LIFTS AND COMPACT AS PLACED

REMOVE VEGETATION AND SCARIFY ORIGINAL SOIL UNDER PIPE AND FILL AREAS

Patent Pending



John R. McKernan, Jr.  
Governor

Rollin Ives  
Commissioner

STATE OF MAINE  
DEPARTMENT OF HUMAN SERVICES  
AUGUSTA, MAINE 04333

November 26, 1991

Mr. Henry Caouette  
Waterfall Distributors, Inc.  
P.O. Box 175  
Mechanic Falls, Maine 04256

RE: H2O Loading - GEO-FLOW Leaching systems

Mr. Caouette,

Under review is the request that the 10" GEO-FLOW pipe be approved for installations under driveways or parking areas as required under section 12.C(3). of the code.

The information presented indicates that the pipe may be used under H2O loadings under the following conditions:

1. There shall be a minimum of 12" of fill over the pipe (15" is recommended when possible).
2. The fill shall not exceed 36" over the pipe.
3. The fill shall be sandy loam, free of foreign materials.
4. The fill shall be placed in 8" (or less) lifts.
5. The installation shall comply with any other requirements of the code.

The use of the 10" GEO-FLOW system under H2O loadings is approved.

Mr. Henry Caouette  
November 26, 1991  
Page 2

This is an approval for use of the GEO-FLOW system in H2O loading. It is not a recommendation for such use nor does it compare its suitability versus any similar leaching systems.

This letter may be reproduced in its entirety.

Sincerely,



Kenneth L. Meyer  
Wastewater & Plumbing Control  
Division of Health Engineering

cc: D. Hoxie  
W. Hinckley  
J. Hardcastle  
K. Keller  
R. Smith

John R. McKernan, Jr.  
Governor



Rollin Ives  
Commissioner

STATE OF MAINE  
DEPARTMENT OF HUMAN SERVICES  
AUGUSTA, MAINE 04333

USE OF  
GEOFLOW'S GRAVEL-LESS LEACH BED TUBING  
June 8, 1989

The use of Geoflow Systems is subject to the following conditions:

1. The required linear feet of 8 and 10 inch Geoflow tubing shall determined using the multiplying factors in the following table.

Multiplying Factor for Determining Linear Feet of Geoflow Tubing

Disposal Area Rating 10-144A CMR 241, Table 6-1	Linear Feet vs Geoflow Diameter		
	8"	10"	TRENCH
Small <sup>a</sup>	0.35 x DF <sup>b</sup>	0.28 x DF	- 0.4
Medium	0.65 x DF	0.52 x DF	0.9
Medium Large	0.85 x DF	0.68 x DF	- 1.1
Large	1.00 x DF	0.80 x DF	1.4
Extra Large	1.25 x DF	1.00 x DF	- 1.7

a Conservative design flows (DF) in 10-144A CMR 241, table 7-1 shall be used for small size rated Gloflow systems serving single family dwellings.

b DF is design flow in gallons per day as required by the 10-144A CMR 241.

2. Geoflow tubing is limited to trench style configuration.
3. No stone is required in Geoflow trench style systems.
4. Parallel Geoflow trenches shall be installed at a minimum of 45 inches center-to-center.
5. Serial distribution may be utilized as specified in 10-144A CMR 241, section 10.E.
6. The Geoflow tubing shall be installed level and bedded and covered per manufacturers recommendations.
7. In all other aspects each Geoflow installation shall comply with 10-144A CMR 241 (Subsurface Wastewater Disposal Rules).

John R. McKernan, Jr.  
Governor



STATE OF MAINE  
DEPARTMENT OF HUMAN SERVICES  
AUGUSTA, MAINE

Rollin Ives  
Commissioner

ADDRESS REPLY TO

August 17, 1988

Mr. Henry Caouette  
Waterfall Distributors  
P.O. Box 175  
Mechanic Falls ME 04256

SUBJECT: Use of Springfield Plastics Gravel-Less Leaching Systems 8" and 10" diameter in the State of Maine

Dear Mr. Caouette:

This is to acknowledge receipt and review of information relative to the subject project; 8 inch and 10 inch diameter corrugated, perforated pipe enclosed in a mesh backed filter fabric called Tenax TN. This pipe is used without crushed stone to dispose of septic tank effluent in the soil.

After review of the information submitted, and in acknowledgement of acceptance by the State of Illinois, we hereby approve the use of both 8 inch and 10 inch pipe subject to the following:

1. For both 8 and 10 inch pipe, the application rate shall be determined from table 12-3 of the Subsurface Wastewater Disposal Rules.
2. For the 8 inch pipe the required length shall be determined by dividing the application rate by 2.0 (2.0 ft /linear ft).
3. For the 10 inch pipe the required length shall be determined by dividing the application rate by 2.5 (2.5 ft /linear ft).
4. No crushed stone shall be required in the trench.
5. Serial distribution may be utilized as specified in Section 10.E.
6. In all other aspects, each installation shall comply with the Subsurface Wastewater Disposal Rules.

Yours very truly,

A handwritten signature in black ink, appearing to read 'Russell G. Martin'.

Russell G. Martin, P.E.  
Manager

Wastewater & Plumbing Control  
Division of Health Engineering

RGM/lđ



John R. McKernan, Jr.  
Governor

Rollin Ives  
Commissioner

STATE OF MAINE  
DEPARTMENT OF HUMAN SERVICES  
AUGUSTA, MAINE 04333  
July 23, 1987

Mr. Henry Caouette  
Waterfall Distributors  
P. O. Box 175  
Mechanic Falls, ME 04256

SUBJECT: Use of Springfield Plastics Gravel-Less Leaching Systems 8" and 10" diameter in the State of Maine

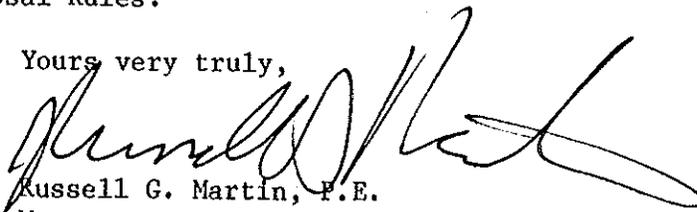
Dear Mr. Caouette:

This is to acknowledge receipt and review of information relative to the subject project; 8 inch and 10 inch diameter corrugated, perforated pipe enclosed in a filter fabric envelope. This pipe is used without crushed stone to dispose of septic tank effluent in the soil.

After review of the information submitted, and in acknowledgement of acceptance by the State of Illinois, we hereby approve the use of both 8 inch and 10 inch pipe subject to the following:

1. For the 10 inch pipe, the trench length shall be determined from table 12-1 of the Subsurface Wastewater Disposal Rules.
2. For the 8 inch pipe, the trench lengths from table 12-1 shall be increased by 40 percent.
3. No crushed stone shall be required in the trench.
4. In all other aspects, each installation shall comply with the Subsurface Wastewater Disposal Rules.

Yours very truly,

  
Russell G. Martin, P.E.  
Manager  
Wastewater & Plumbing Control  
Division of Health Engineering

RGM/smh

Don  
Sandy Truck file



John R. McKernan, Jr.  
Governor

Rollin Ives  
Commissioner

STATE OF MAINE  
DEPARTMENT OF HUMAN SERVICES  
AUGUSTA, MAINE 04333

March 16, 1992

Mr. Henry Caouette  
Waterfall Distributors  
P.O. Box 175  
Mechanic Falls, Maine 04256

RE: Revision of Product Rating - GEOFLOW

Mr. Caouette,

Recently I was requested to review the ratings of a line of leaching chambers which utilize a geo-textile cover. Specifically, the designer requested that I use the same review process which was applied to the SB2 and Geoflow products.

In conducting the review I tabulated the current ratings (Table below) and researched the documentation used to justify the ratings of the various products.

Basically there were two paths of review:

1. Plastic and concrete chambers where the unmasked sidewall area below the invert is added to the bottom area to determine the effective area when installed in trenchlike configuration.
2. Corrugated pipe where the Advanced Gravelless system (predecessor to SB2) was recognized as being equivalent to a stone filled trench.

When the Geoflow system incorporated meshed backed fabric to reduce the shadowing of the corrugations on the fabric it was granted a rating which assumed an 80% increase in efficiency over the SB2 product without the mesh backing.

1. There is nothing in the files to indicate that the Geoflow system is 80% more effective than the similar SB2 product or 43% more effective than a two foot wide stone filled trench.
2. As you are aware, we have received two letters expressing concerns about the potential for an aging bio-matt to bridge the opening in your mesh. This bridging has been observed in liquid leveling weirs in distribution boxes. It is very likely that such bridging may occur in your product and when it does it will greatly reduce the long term acceptance rate of your leaching devices.

Mr. Henry Caouette  
March 16, 1992  
Page 2

3. Another vendor with chamber device utilizing fabric should show that the bio-matt build up his fabric has resulted in a long term acceptance rate of 0.4 gpd per square foot. If your fabric performs in a similar manner than all the GeoFlow systems based on the Codes small, medium, medium large and large size rating may be greatly under sized.
4. The only long term performance data of your product, was one system in each the bio-matt had not become establish, thus making it impossible to estimate a long term acceptance rate.

Given the lack of supporting analysis or data, it is the opinion of this office that the rating of 2.5 SF/LF for the 10" Geoflow is too high and must be adjusted.

Since there is no evidence or reason to presume that the Geoflow system will exceed the performance of a stone filed trench, the rating is changed to 1.5 SF/LF which, when used with Table 12-3, results in a required length closely equivalent to that required for trenches (Table 12-1).

A draft of the revised approval letter describing the change in rating is enclosed.

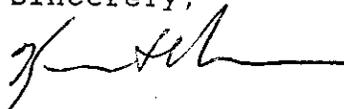
All existing designs which have not been constructed shall be revised by a Site Evaluator (the original one when possible) using the new rating.

Since systems have been designed using the earlier values, we will expedite notification for the reduction in rating to minimize the potential complications. Although our primary responsibility is to the public, we regret any difficulty or inconvenience this may cause you.

You may submit engineering analysis and/or field data for review and reconsideration of this decision. If the entire circumference is to be rated, there must be a satisfactory explanation of the processes involved.

Please contact me or Mr. Hoxie if you wish to discuss these letters.

Sincerely,



Kenneth L. Meyer  
Wastewater & Plumbing Control  
Division of Health Engineering

cc: D. Hoxie  
W. Hinckley

*in a trench configuration*

COMPARISON OF LEACHING DEVICES (LF/GPD)

(NOTE: This table is for illustrative purposes only and may not be used to design systems)

AREA RATING	SMALL	MEDIUM	MED/L	LARGE	XLARGE	
SB2 (10") (1.35 SF/LF)	0.52 <sup>1.96</sup>	0.96	1.26	1.48	1.85	.54
<sup>2' wide</sup> TRENCH (2' wide)	0.4 <sup>2.5</sup>	0.9	1.1	1.4	1.7	.59
<sup>3.0 SF/LF</sup> GEOFLOW (10") (Formerly rated at 2.5 SF/LF)	<del>0.28</del> <sup>3.57</sup>	<del>0.52</del>	<del>0.68</del>	<del>0.80</del>	<del>1.00</del>	1.0
GEOFLOW (10") (Revised rating 1.5 SF/LF)	0.47 <sup>2.13</sup>	0.87	<u>1.13</u>	<u>1.33</u>	<u>1.67</u>	.59
CONTACTOR C (2.75 SF/LF)	0.25 <sup>4</sup>	0.47	0.62	0.73	0.91	1.00
CONTACTOR (3.25 SF/LF)	0.22 <sup>1.55</sup>	0.40	0.52	0.62	0.77	1.30
STD. INFILT. (3.52 SF/LF)	0.20 <sup>5.00</sup>	0.37	0.48	0.57	0.71	1.41
INFILTRATOR (4.0 SF/LF)	0.17 <sup>5.88</sup>	0.33	0.43	0.50	0.63	1.59
TRIPDRAIN (6.33 SF/LF)	0.11 <sup>9.09</sup>	0.21	0.27	0.32	0.39	2.56
CHAMBERS (12-3)	0.7 <sup>1.43</sup>	1.3	1.7	2.0	2.5	4.0
	SF/GPD	SF/GPD	SF/GPD	SF/GPD	SF/GPD	

DRAFT

D R A F T

DRAFT

DRAFT

Date

Mr. Henry Caouette  
Waterfall Distributors  
P.O. Box 175  
Mechanic Falls, Maine 04256

DRAFT

RE: Approval of Geo-Flow Leaching Devices

Mr. Caouette,

Henceforth and commencing immediately, the 10" Geoflow pipe with Tenax mesh is rated at 1.5 SF/LF and the 8" diameter pipe with Tenax mesh is rated at 1.2 SF/LF. Systems shall be sized using Table 12-3.

The pipes shall be placed no closer than 4 feet center to center.

When installed, the top of the Geoflow pipe must be lower than the invert of the treatment tank outlet.

If the Geoflow pipe is used in serial distribution the connecting pipes and fittings must be configured to allow the uphill row to fill before flow is diverted to the next row (i.e., the invert of the connecting pipe must, at some point, be higher than the top of the uphill Geoflow pipe).

This letter is not an endorsement or recommendation for the use of the product. It may be reproduced but only in its entirety.

Sincerely,

DRAFT

Kenneth L. Meyer  
Wastewater & Plumbing Control  
Division of Health Engineering

cc: D. Hoxie  
W. Hinckley  
Plumbing Control Program  
Licensed Plumbing Inspectors  
Site Evaluators

DRAFT