

**Acton Board of Health
Agenda
December 15, 2008
Acton Memorial Library**

7:30

Nursing Service

8:00

Variance

26 Duggan Road

8:15

Beaver Permit. Town of Concord

8:30

93 Great Road-Sieve Analysis

8:45

Board Reorganization

Minutes

November 17, 2008

INTEROFFICE MEMORANDUM

TO: ACTON BOARD OF HEALTH
FROM: MERRILY EVDOKIMOFF
SUBJECT: FY 09-10 BUDGET
DATE: 12/10/2008

A careful review of our FY 09 Revenues has placed Acton Public Health Nursing Service in a potential negative cash basis. Current revenues have been adequate due to vigorous inflow of Aged Accounts Receivable this past year. However, going forward, we find the need to carefully monitor expenses as we anticipate a significant drop in revenues. Working with the Sr. Management Team for the Town of Acton, Doug Halley and I have developed a plan for FY09 and FY10 to more closely match expenses to anticipated revenue. In addition, staff and management are developing a rigorous marketing plan to increase revenue. The specifics of the plan will be completed by Monday, December 15 and reviewed with the Board of Health at that time.



INTRADEPARTMENTAL COMMUNICATION

Acton Board of Health - Telephone (978) 264-9634

TO: Board of Health
FROM: Justin T. Snair
RE: Variance Request
26 Duggan Rd.

DATE: December 9, 2008

The Health Department is in receipt of a request for variances to Title 5, Article 11 and 16 to allow for the repair of an On-Site Sewage Disposal System serving the 440 gpd dwelling, at 26 Duggan Rd.

Title 5 Variances Requested:

Request:

Use of Cultec Contactor Field Drain C-4 in accordance with Modified Certification for General Use issued by MA DEP dated July 19 2007

Local approval pursuant with 310 CMR 15.287 (7) - General Conditions for Use of Alternative Systems

Article 16

16-6.2.7- Sewage disposal system shall be a min. of 100' from flood plain and/or wetlands
Provided: 81'

Article 11

11.9.1- Leaching facility less than Acton Min. of 800 sqft
Proposed Size: 643 sqft - 19.6% reduction
Title 5 requires 594 sqft

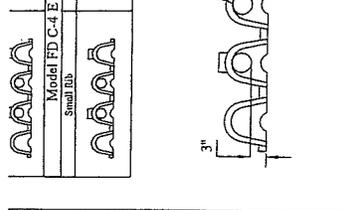
Findings:

The Health Department has reviewed the submitted plan and finds the following:

1. System sizing and placement limited due to site size and location of BVW. . Proposed system is placed with maximum feasible compliance.
2. Proposed septic tank utilizes an DEP approved effluent filter.
3. Proposed system utilizes a 1500 gal. two compartment tank, providing 500 gal settling area after the septic tank.

Therefore the Health Department recommends approval with the following conditions:

- 1) The system shall, at all times, be maintained in compliance with the most recent Modified Certification for General Use issued by the MADEP for the Cultec C4 Chamber Panels.
- 2) The septic tank shall be pumped once every two years.
- 3) The effluent filter shall be cleaned in accordance with the most recent MA DEP Approval.
- 4) The system shall be constructed in accordance with the above listed conditions and in accordance with the plan stamped by Brent Reagor, dated 12/2/08



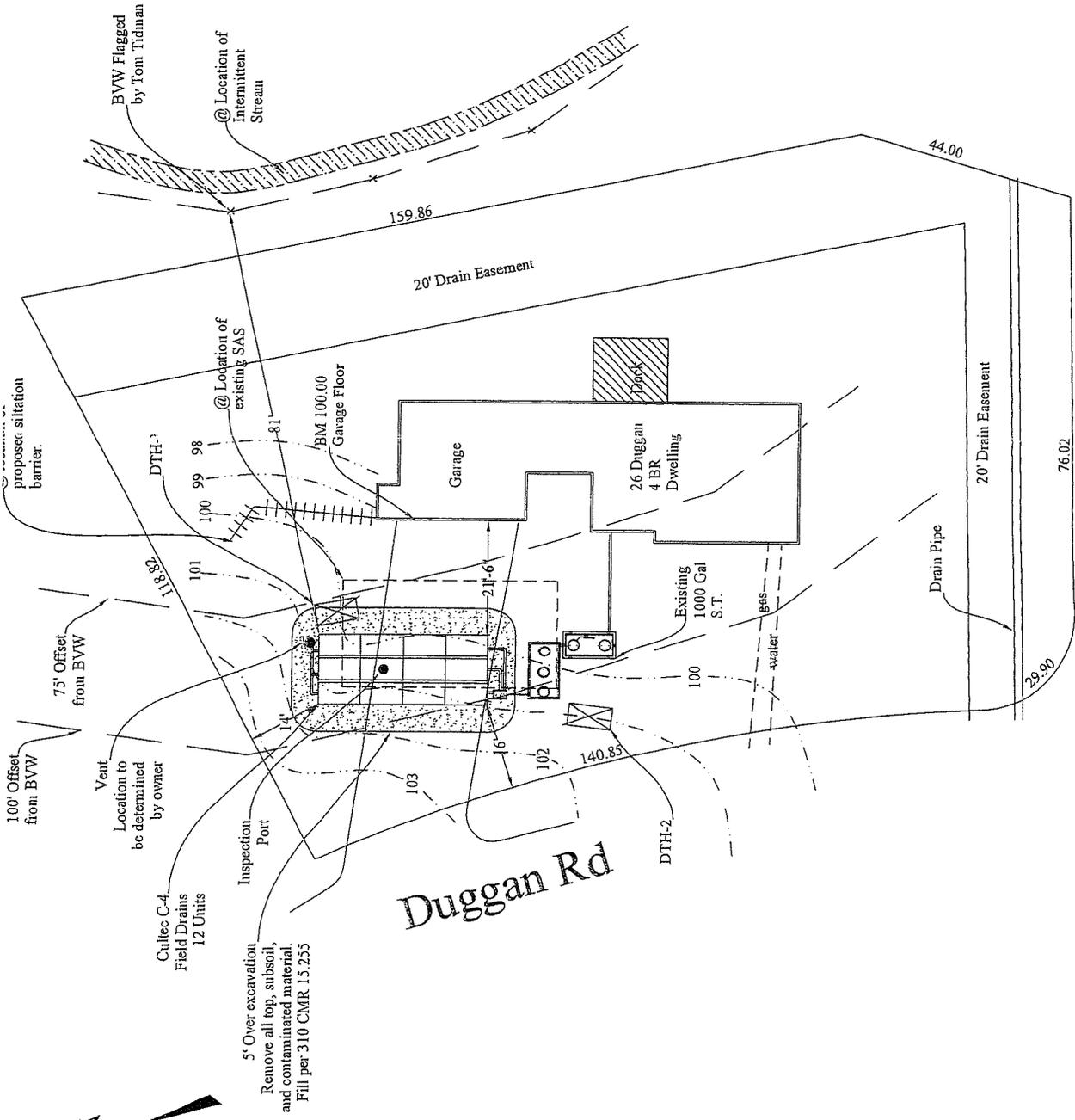
Pump Chamber Specific

1. Type: Meyers Sewage Series SRM-4; Submersible Sewage approved equal - >1.5" Solids Handling Capacity - Min Caprac 9' head.
2. The pump chamber shall be a 1500 gallon tank, 2 compartments provided by SHEA Concrete or approved equal.
3. The pump shall be provided with liquid float control switch water alarm control as illustrated in detail.
4. The control panel shall be equipped with an audible alarm basement in a readily accessible location. Alarm circuit shall be from pump circuit.
5. All wiring shall conform to local and state wiring codes and installed by a licensed electrician.
6. Pump must be installed in accordance with manufacturers' requirements. All joints and fitting to be glued. Float switch levels shown in detail.

Variances Required

Local Variances Required

- A variance from Acton BoH regulation 16-6.2.7 is to be less than 100' from the BVW in an Aquifer Protection offset is proposed.
- A variance from Acton BoH regulation 11-8.1 is to be less than 800 sqft. A 643 sqft Culltec chamber is proposed.





INTERDEPARTMENTAL COMMUNICATION

Acton Board of Health - Telephone 978-264-9634 - Fax 978-264-9630

December 9, 2008

TO: Board of Health

FROM: Doug Halley, Health Director 

SUBJECT: Emergency Permit – Beaver Trapping

The MADEP has determined that a threat to the Town of Concord's surface water supply at Nagog Pond exists due to the activities of Beavers. Based on that determination the Concord Water & Sewer Division has requested a Beaver Trapping permit due to flooding from Beaver activities on Stow Street.

Based on this information the Health Department recommends that the Board of Health approve a 10-day emergency permit, beginning on November 16th, giving the Concord Water & Sewer Division and its agent the right to use restricted traps and breach the dams or dikes subject to the conditions of the Conservation Commission.

In addition the department would recommend that the Board approve that the applicant, should the 10-day emergency permit not solve the beaver problem, apply for a 30-day extension with the DFW.



COMMONWEALTH OF MASSACHUSETTS
 EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
 DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
 NORTHEAST REGIONAL OFFICE

205B Lowell Street, Wilmington, MA 01887 • (978) 694-3200

DEVAL L. PATRICK
 Governor

TIMOTHY P. MURRAY
 Lieutenant Governor

IAN A. BOWLES
 Secretary

LAURIE BURT
 Commissioner

December 4, 2008

Matthew Mostoller
 Concord Water & Sewer Division
 135 Keyes Road
 Concord, MA 01742

RE: City/Town: Concord
 PWS Name: Concord Water & Sewer Division
 PWS-ID No.: 3067000
 Program: Source Protection
 Action: Evaluation of Threat to Public Water
 Supply Due to Beaver

Dear Mr. Mostoller:

Please find attached the following information:

An evaluation of the threat to Nagog Pond, a surface water public water supply, due to the presence of beaver.

Please note that the signature on this cover letter indicates formal issuance of the attached document. If you have any questions regarding this letter, please contact James Persky at (978) 694-3227.

Sincerely,

James H. Persky
 Environmental Analyst
 Drinking Water Program

Sincerely,

Thomas Mahin
 Drinking Water Section Chief
 Northeast Regional Office

TM/jp

cc: DWP/Boston Office (no attachment)
 Kathy Romero, MassDEP, Drinking Water, Boston
 Michael Abell, MassDEP, Wetlands, Wilmington
 Brent Reagor, Concord Board of Health, 141 Keyes Road, Concord, MA 01742
 Thomas Tidman, Acton Conservation Commission, 472 Main Street, Acton, MA 01720
 Erik Amati, DFG Division of Fisheries & Wildlife, Northeast District, 68 Harris Street, Acton, MA 01720
 Michael Celona, DPH Environmental Toxicology Program, 250 Washington Street, 7th Floor, Boston, MA 02108

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ACTON BOARD OF HEALTH

File Name: Y:\DWP Archive\NERO\Concord-3067000-Source Protection-2008-12-04

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD# 1-866-539-7622 or 1-617-574-6868.

<http://www.mass.gov/dep> • Fax (978) 694-3499

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The Massachusetts Department of Environmental Protection (MassDEP) Northeast Regional Office is in receipt of your request for "Determination of Threat to Public Water Supplies Due to Beaver and Muskrat". In your request, you state that beaver activity is causing a threat to the Town of Concord's surface water public water supply, Nagog Pond. Nagog Pond is a terminal reservoir.

An inspection of this area was conducted on December 3, 2008 by James Persky of the MassDEP Drinking Water Program and Michael Abell of the MassDEP Wetlands Program in order to determine if the beaver activity posed a "threat to a public water supply" in accordance with the provisions of M.G.L. Chapter 139, section 80A. They observed the stumps of recently gnawed saplings at several locations near the gatehouse. Mr. Abell identified two underwater clusters of sticks along the edge of the pond, which are used by beavers in winter as a food supply. One of these was at a spot on the bank that beavers had used as a lodge in 2004. MassDEP did not observe any evidence of dam-building activity.

In accordance with its authority under 321 CMR 2.08(9), MassDEP herein determines that the beaver activity in Nagog Pond poses an immediate threat to your public water supply and public health, and MassDEP concurs with your application to eliminate the threat. MassDEP supports your proposed method for the elimination of this threat to the Concord public water supply. Removal of beaver must be done in accordance with the Massachusetts Department of Fish and Game, Division of Fisheries and Wildlife, regulations and policies, in addition to pursuing the appropriate measures with the local Board of Health, and with the Conservation Commission. Any proposals for the removal or breaching of dams, or other actions that will lower water levels must receive the approval of the local conservation commission.

Concord must notify this office in writing by **February 1, 2009** as to the actions taken in response to this threat and whether the threat was successfully eliminated.



CONCORD PUBLIC WORKS

Water/Sewer Division

135 Keyes Road
Concord, Massachusetts, 01742

TEL: 978-318- 3250 FAX: 978-318- 3204

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DEC 10 2008

ACTON BOARD OF HEALTH

December 9, 2008

Acton Board of Health
472 Main Street
Acton, MA 01720

Dear Members;

This letter serves as a petition for the issuance of an emergency beaver trapping permit to Concord Public Works for a beaver population identified on Nagog Pond in Acton. In accordance with Massachusetts General Law c.131, s.80A, an immediate threat to human health exists due to Nagog Pond being an active public water supply source for the Town of Concord.

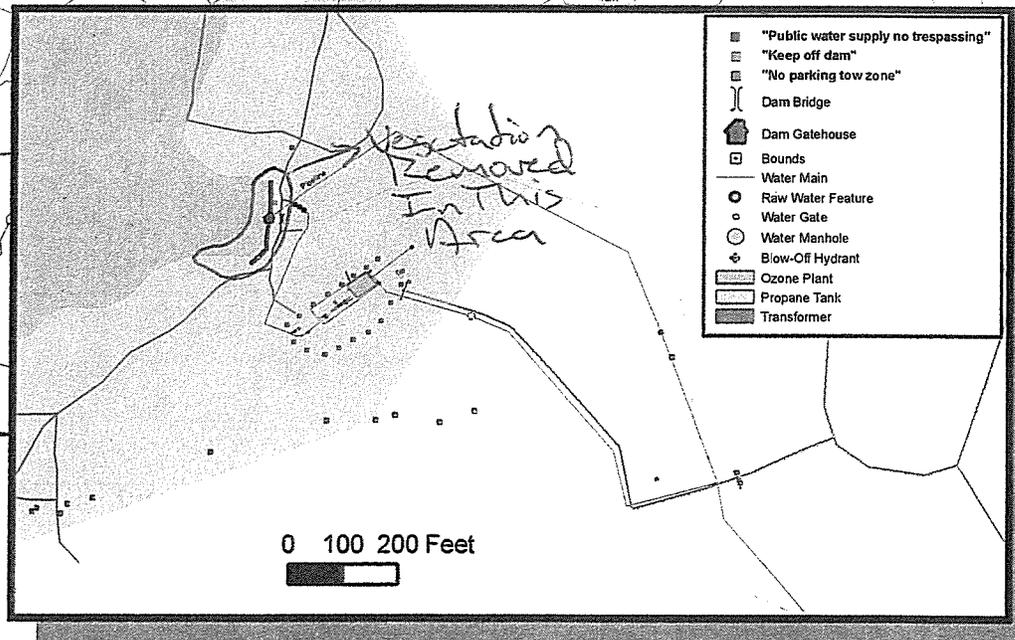
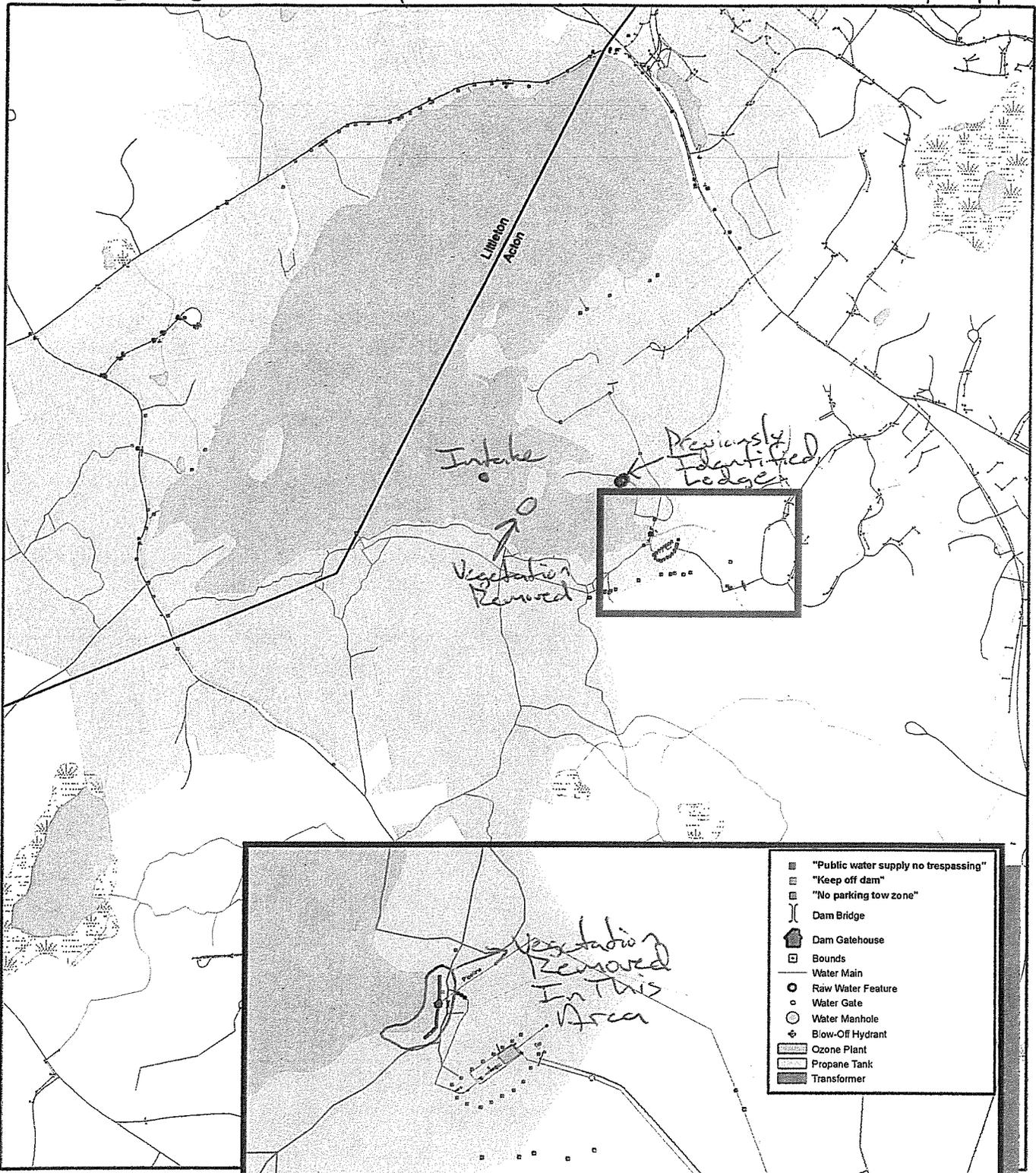
Please see the enclosed correspondence dated December 4, 2008 from the Massachusetts Department of Environmental Protection, Drinking Water Program, regarding the determination of threat. A map depicting the known locations of beaver activity is included for your review. Please contact me at 978-318-3254 with any questions or requests for information.

Sincerely,

Matthew L. Mostoller
Environmental & Regulatory Coordinator

Enclosures

November 2008, Determination of Threat Application



- FireDeptConnection
- Nagog Gates
- Nagog Bound
- ▬ Nagog Boat Ramp
- ▲ Acton Outfall
- Acton Catchbasin
- Acton Pipe
- ⊕ Nagog Drain Manhole
- ▭ Nagog CatchBasin
- △ Nagog Outfall
- Nagog Trails

0 100 200 Feet

Nagog Water Infrastructure

0 0.1 0.2 Miles





INTRADEPARTMENTAL COMMUNICATION

Acton Board of Health - Telephone (978) 264-9634

TO: Board of Health
FROM: Justin T. Snair
RE: Alternative Percolation Testing Approval
DATE: December 9, 2008

The Health Department is in receipt of a request for approval of alternative percolation test (sieve analysis) conducted at 93 Great Rd. on Oct. 21 2008.

Request:

Approval of sieve analysis conducted at 93 Great Rd. in accordance with 15.404 (i), which states that:

“a sieve analysis may be performed in accordance with Department guidance if a percolation test in accordance with 310 CMR 15.104 and 15.105 can not be performed as determined by the local Approving Authority. “

Findings:

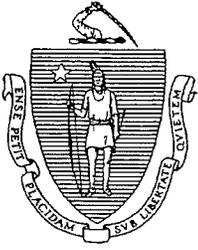
Saturated conditions prevented a successful percolation test from being conducted on site.

The following effluent loading rates have been determined:

Test Pit 2 C2 Horizon: Class III, 0.15 gpd/sf

Test Pit 4 C2 Horizon: Class II, 0.33 gpd/sf

The Health Department finds the submitted results in accordance with MA DEP Policy #: BRP/DWM/PeP-P00-4 (superseding P00-1) and recommend approval.



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

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Lieutenant Governor

BOB DURAND
Secretary

LAUREN A. LISS
Commissioner

TITLE 5 ALTERNATIVE TO PERCOLATION TESTING POLICY FOR SYSTEM UPGRADES

Effective Date: September 8, 2000 Policy #: BRP/DWM/PeP-P00-4

Program Applicability: BRP/DWM/Watershed Permitting/Title 5 Program

Supersedes Policy #: BRP/DWM/PeP-P00-1, dated January 7, 2000

Regulation Reference: 310 CMR 15.104

Approved by: Arleen O'Donnell (signed)

Purpose: This document contains the Title 5 Program's policy for reviewing applications for variances from the percolation testing requirements of Title 5 for the upgrade of on-site sewage treatment and disposal systems.

Applicability: This policy applies to applications for variances from the Title 5 requirements to conduct percolation testing for proposed system upgrades only. The alternative to percolation testing set forth in this policy may be used, under a variance from Title 5, when percolation testing is not possible due to high groundwater and the applicant seeks to proceed with a system upgrade, rather than wait for groundwater to recede to perform percolation tests.

The alternative outlined in this policy may be used only for the repair or upgrade of an existing system when no increase in design flow is proposed. Under the Title 5 variance provisions, 310 CMR 15.410 through 310 CMR 15.412, approval for a variance from the requirement for percolation tests must be obtained first from the Board of Health, when the Board of Health is the local approving authority, and then from the Department.

Title 5, 310 CMR 15.104, requires percolation testing as part of the site evaluation for a new system or a system upgrade. An applicant for a system to serve a new facility or for an increase in design flow (i.e. "new construction" as defined in Title 5), in many cases, can wait and schedule percolation testing during periods of low groundwater, or conduct dewatered

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DEP on the World Wide Web: <http://www.magnet.state.ma.us/dep>

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percolation testing. Additionally, the variance standards for new construction are more stringent than those for system upgrades. Accordingly, the alternative described in this policy does not apply to cases of new construction, including increases in design flow.

Title 5 requires percolation testing to be performed in the most restrictive soil layer of the naturally occurring pervious material beneath a proposed soil absorption system (SAS). The Department recognizes that at certain times, however, high groundwater conditions preclude performance of standard percolation tests. During such times, the applicant may choose to perform dewatered percolation testing. Provided that an immediate upgrade is not being required by the local approving authority or DEP, or the upgrade timelines in 310 CMR 15.305, if applicable, would not be violated, the applicant also may wait until groundwater has receded and standard percolation testing can be performed. Alternatively, in accordance with this policy, the applicant may apply for a variance from the requirements for percolation testing.

Dewatered percolation testing involves lowering the groundwater table to a point where testing can be performed in accordance with Title 5. Since dewatered percolation testing frequently is difficult and, in many cases, infeasible, attempting dewatered percolation testing is not a prerequisite for obtaining a variance under this policy.

Impervious & extremely low permeability soils

In cases of impervious soils or soils with extremely low permeability, the alternatives set forth in this policy are **not** appropriate as such soils simply cannot support an on-site system. Where the Soil Evaluator, the local approving authority, or DEP determines that the soils are impervious or of extremely low permeability, for example, due to the presence of ledge, greater than 40% clay, or highly compacted till, and there is no feasible alternative (e.g. a shared system), then a tight tank to eliminate a failed system, approved under 310 CMR 15.260, would be the only option.

Requirements for obtaining a variance from the percolation testing provisions

When an applicant proposes to upgrade a system, percolation testing cannot be performed due to high groundwater and the soils are neither impervious nor of extremely low permeability, the Department may approve a variance from the Title 5 percolation testing requirements. In addition to complying with the other requirements of Title 5, the variance application to the local approving authority and to the Department (DEP permit application BRPWP59b) must contain the following:

1. documentation of a demonstration that percolation testing cannot be performed;
2. the Soil Evaluator's determination, along with the written concurrence of the local approving authority, of whether the soils are uncompacted or compacted;
3. results of performance of a Particle Size Analysis by a soils laboratory;
4. the Soil Evaluator's determination of the soil type, which must be based on the Particle Size Analysis and the USDA Soil Textural Triangle in Title 5; and
5. the Soil Evaluator's determination of the soil class under 310 CMR 15.243, which must be based on the soil type; and
6. plans for a system upgrade designed in accordance with the criteria in this policy for the soil type, class and determination of soil compaction.

1) Demonstration that percolation testing cannot be performed

Percolation testing must be attempted in the presence of the local approving authority, or its authorized representative, and determined not to be possible due to high groundwater.

2) Determination of compacted vs. uncompacted soils

Without the benefit of percolation testing, more reliance is placed on the determination of soil compaction. Since compacted soils can be extremely firm in place, but friable when removed for a sample, the Soil Evaluator must make an in-situ determination of the soil structure and consistence. The Soil Evaluator, **with the written concurrence of the local approving authority**, must determine whether the soils in the area of the proposed SAS are compacted or uncompacted. The Soil Evaluator must use the techniques described in Appendix 1.

For uncompacted soils, the Soil Evaluator can use the results of the particle size analysis to determine the soil type and class, and, subsequently, the effluent loading rate. In compacted soils, such as dense, compact till, the compacted nature of the material results in a significant decrease in the amount of pore space necessary for groundwater flow and particle size analysis results alone are inadequate for determining an effluent loading rate.

3) Particle Size Analysis

In the presence of the local approving authority or its authorized representative, the Soil Evaluator must obtain a soil sample from the most restrictive layer of the four feet of naturally occurring pervious material for the particle size analysis. Although for purposes of obtaining an effluent loading rate, the particle size analysis is considerably more useful in the case of uncompacted soils, the analysis still is useful to characterize compacted soils, particularly where the soils have a high percentage of clay.

The particle size analysis, performed by a qualified soils laboratory, must be used to determine the percentages of sand, silt and clay in the soil sample. The analysis must be performed for both compacted and uncompacted soils. The particle size analysis must be performed in accordance with Appendix 2.

4) Determination of soil type

Once the relative percentages of sand, silt and clay have been determined through particle size analysis, the Soil Evaluator must use the USDA Soil Textural Triangle in 310 CMR 15.243(2) to determine the soil type.

5) Determination of soil class

Based on the soil type, the Soil Evaluator must classify the soil into one of the four soil textural classes described in 310 CMR 15.243 (1).

6) Design Criteria – uncompacted vs. compacted soils

a) For **uncompacted Class I and uncompacted Class II soils**, the results of the particle size analysis, the soil type and the soil classification must be used to determine the effluent loading rate based on the effluent loading rate table, below. The system upgrade must be designed with that effluent loading rate and the requirements of Title 5.

b) For **compacted soils and all Class III and all Class IV soils** the design criteria, set forth below, must be used to design the system upgrade. Where the soils are compacted or Class III or Class IV soils, extremely low permeability could limit the soils' ability to adequately accept a subsurface discharge. These systems, therefore, must have a conservative design, intended both to allow an on-site discharge and prevent breakout. In addition to meeting Title 5 requirements, the design criteria for a system upgrade in compacted soils and in Class III and Class IV soils are as follows:

1. in accordance with the Effluent Loading Rate table, below, the effluent loading rate is limited to 0.15 gallons per day (gpd) per square foot (sf);
2. pressure distribution is required;
3. a four foot vertical separation to high groundwater elevation, or a five separation in soils greater than 85% sand. Where the required separation to the high groundwater elevation will not be met, an Innovative/Alternative (I/A) treatment technology approved by DEP for Remedial Use is required and the local approving authority and DEP may approve a reduction down to a minimum of a two foot separation to high groundwater elevation, or a three foot separation in soils that are greater than 85% sand;
4. where feasible, four feet of naturally occurring pervious material. Where there are not four feet of naturally occurring pervious material, the applicant must satisfy the requirements of 310 CMR 15.415 for the siting of a system upgrade with less than four feet of naturally occurring pervious material and an I/A treatment technology approved by DEP for Remedial Use is required. In such cases, the local approving authority and DEP may approve a reduction to a minimum of two feet of naturally occurring pervious material;
5. where feasible, a fully sized SAS. Where a fully sized SAS is not feasible, then an I/A treatment technology approved by DEP for Remedial Use is required and the local approving authority and DEP may approve a reduction of up to 50% in the required SAS size;
6. a modified septic tank is required where there will be a reduction in the required four or five foot separation to high groundwater elevation, or a reduction in the required four feet of naturally occurring pervious material, or a reduction in the required SAS size. The modified septic tank shall have a valve located in the septic tank discharge pipe so that in the event of breakout or other hydraulic failure, the discharge pipe valve could be closed and sealed and the discharge pipe beyond the valve removed, converting the septic tank to a tight tank. If converted to a tight tank, the volume of the septic tank, together with that of the pump chamber, may be used to meet the requirements for tight tank size in 310 CMR 15.260(2)(a);
7. a variance condition that prohibits any increase in design flow and requires a notice, recorded with the deed, that both prohibits any increase in design flow and references DEP's approval letter of the variance.

Under a variance from the requirement for percolation testing issued under this policy, the local approving authority and the Department may approve an I/A system with one reduction criterion (# 3, #4 **or** #5, as described above), but **not** more than one. For such systems, no variance for the one reduction would be required beyond the variance from the requirement for percolation testing. A system upgrade requiring more than one reduction would require local approving authority and then DEP approval under BRPWP64c - approval of an alternative system for remedial use. Such applications to DEP should be submitted to the appropriate DEP regional office.

A system designed for compacted soils or Class III or Class IV soils, without the benefit of percolation testing, is a high risk option; it does not guarantee that sewage breakout or backup will not occur. Accordingly, any variance approval letter issued under this policy for such a system must provide that should the system fail, the system owner shall immediately notify the Board of Health and the Department, in writing, and then proceed with an appropriate upgrade. Additionally, variance approval letters for systems designed under this policy with an I/A treatment technology and a reduction in the required separation to high groundwater, the depth of naturally occurring pervious material or the SAS size, should contain a condition requiring the system owner to: a) by 45 days of a system failure, submit to the Department a complete application, including the local approving authority approval, for tight tank approval; b) by 14 days of issuance of the Department's tight tank approval, apply for a Disposal System Construction Permit from the local approving authority; and c) by 14 days of issuance of the permit, complete conversion of the system to or installation of the tight tank. Following any system failure, the Department and the local approving authority may require such interim measures as they deem appropriate.

Effluent Loading Rates for systems designed with a variance approved under this policy

Soil Type	Uncompacted Class I and Class II Soils ¹	All compacted soils and all Class III and all Class IV Soils ²
Class I	> 85% sand 0.74 gpd/sf 70 – 85% sand 0.66 gpd/sf	0.15 gpd/sf
Class II	0.33 gpd/sf	

- 1 The system must be designed based on the applicable effluent loading rate in this table and the requirements of Title 5.
- 2 The system must be designed based on a 0.15 gpd/sf loading rate, the design criteria on page 4 of this policy, and the requirements of Title 5.

Variance application process

Where the Board of Health is the local approving authority for the system upgrade, and a variance from the percolation testing requirements of the Code is sought, the variance first must be granted by the Board of Health and then approved by the Department. The variance applicant must satisfy the variance criteria in 310 CMR 15.410(1). DEP's approval of such variances will be predicated on the applicant following the requirements of this policy.

The DEP variance application package BRPWP 59b must be used and is available at the Department's Regional Offices, Boston service center, and the DEP web page, www.state.ma.us/dep. Such applications should be submitted to the appropriate DEP regional office. **The Department's Regional Offices and the Title 5 program in Boston may grant approval for a variance from the percolation testing requirements of Title 5 due to high groundwater, for a system upgrade, only in accordance with this policy.**

APPENDIX 1

On-site investigation techniques to determine if soils are compacted (compact till):

- Note the ease or difficulty of excavation by the backhoe (does the excavator experience difficulty digging, does the bucket chatter across the surface of the material making shallow cuts with each pass – these soils may be compacted).
- Pick at the side of a test hole with a knife or hand tool to feel for the ease or difficulty of penetration (difficulty would suggest compacted material).
- Note the presence of angular shaped rock fragments (suggests compacted till).
- Note the speed at which groundwater weeps into the pit (groundwater weeping slowly into the pit would suggest dense, compacted material).
- Note the consistency of undisturbed soil clod (squeeze the clod of soil between your thumb and index finger; initially compact till will resist crushing and then with increased pressure will rupture suddenly). The consistency of soil in compacted material will be firm, whereas in uncompacted material, the consistency will be loose or friable.
- Note the soil saturation (compacted soils will appear moist, not saturated, due to the lack of pore space).

Adapted from the DEP approved Title 5 Soil Evaluator Course Materials

APPENDIX 2

The standard method for Particle Size Analysis is the method of Gee and Bauder (1986) in **Methods of Soil Analysis, Part 1. Physical and Mineralogical Methods, 2nd Edition**, published by the American Society of Agronomy-Soil Science Society of America. This method, or another method acceptable to the Department, must be used by the soils laboratory. The soils laboratory must:

- determine the relative percentages of sand, silt and clay from the soil sample that passes through a #10 sieve, (which removes aggregate from the sample),
- use a #270 sieve to separate the sand fraction from the remaining combined silt and clay fraction,

- establish the relative percentages of silt and clay in the sample by either pipet or hydrometer method.

STAMSKI AND McNARY, INC.

80 Harris Street
Acton, Massachusetts 01720
(978) 263-8585
FAX (978) 263-9883

WILLIAM F. McNARY, P.L.S.
JOSEPH MARCH, P.E., P.L.S.

December 4, 2008

Town of Acton
Board of Health
472 Main Street
Acton, MA

Re: Alternative Percolation Test
93 Great Road

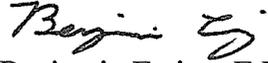
Members of the Board,

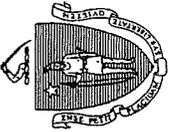
On October 21, 2008, soil testing was conducted at 93 Great Road to evaluate the potential for an on-site sewage disposal system. The testing was witnessed by Board of Health agent Justin Snair. Due to saturated conditions we were unable to conduct a percolation test. Soil samples were taken from the two separate test location following Title 5 Alternative to Percolation Testing Guidance for System upgrades. The samples were tested by GeoTesting express of Boxborough and the results are attached. In accordance with DEP Policy #BRP/DWM/PeP-P00-1, we hereby request that you allow for the use of Effluent Loading Rate of 0.15 gdp/sf Class III soil for sample 1, taken from the C2 horizon of test pit 2. We also request that you allow for Effluent Loading Rate of 0.33 gpd/sf Class II soil for sample 2, taken from C2 horizon of test pit 4.

If you have any questions regarding this matter, please feel free to call.

Very truly yours,

Stamski and McNary, Inc.


Benjamin Ewing, E.I.T.



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

MassDEP has provided this form for use by on-site professionals and local Boards of Health. Other forms may be used, but the information must be substantially the same as provided here. Before using this form, check with your local Board of Health to determine the form they use.

A. Facility Information

Steinberg
 Owner Name
 93 Great Road
 Street Address
 Acton
 City
 MA
 State
 G-4 / 93
 Map/Lot #
 01720
 Zip Code

B. Site Information

1. (Check one) New Construction Upgrade Repair

2. Published Soil Survey Available? Yes No
 Chariton-Hollis-Rock Outcrop complex
 Soil Name
 If yes: Nesoil.com Year Published _____ Publication Scale _____ 103B Soil Map Unit

3. Surficial Geological Report Available? Yes No
 Till / Bedrock
 Geologic Material
 If yes: MassGIS Year Published _____ Publication Scale _____ Map Unit

4. Flood Rate Insurance Map
 Landform
 Above the 500-year flood boundary? Yes No
 Within the 500-year flood boundary? Yes No
 Within the 100-year flood boundary? Yes No
 Within a velocity zone? Yes No

5. Wetland Area: National Wetland Inventory Map
 DEP Wetlands
 Map Unit Name 1:12,000
 Map Unit Name
 Wetlands Conservancy Program Map
 Map Unit Name

6. CURRENT WATER RESOURCE CONDITIONS 9/08
 RANGE ABOVE NORMAL
 Name



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed disposal area)

Deep Observation Hole A: 10/21/08 8:30 Cloudy
Date Time Weather

1. Deep Observation Hole Logs

Deep Hole Number _____ Ground Elevation at Surface of Hole _____

Location (Identify on Plan) _____

2. Land Use: YARD 0-5%
(e.g. woodland, agricultural field, vacant lot, etc.) Surface Stones Slope (%)

GRASS GLACIAL TILL GLACIAL TILL
Vegetation Landform Position on landscape (attach sheet)

3. Distances from: Open Water Body _____ Drainage Way _____ Possible Wet Area 7100
feet feet feet
Property Line 710 Drinking Water Well _____ Other _____
feet feet feet

4. Parent Material: GLACIAL TILL Unsuitable Materials Present: Yes No

If Yes: Disturbed Soil Fill Material Impervious Layer(s) Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No

If Yes: Depth Weeping from Pit 52" Depth Standing Water in Hole 76"

Estimated Depth to High Groundwater: 36"
Inches elevation



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

Deep Observation Hole A: _____ Deep Hole Number: TP-1

Depth (in.)	Soil Horizon/Layer	Soil Matrix: Color-Moist (Munsell)	Redox/Morphic Features (mottles)			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-24"	FILL										
24-56"	C1	2.5Y4/4	36"	7.5YR4/7	5%	COARSE SAND	5%	5%	SG	LOOSE	
56"-126"	C2	2.5Y4/2				FINE LOAMY SAND	-	-	MASSIVE	FRAGILE	

Additional Notes _____



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed disposal area)

Deep Observation Hole A: 10/21/08 9:00 CLOUDY
Date Time Weather

1. Deep Observation Hole Logs

Deep Hole Number _____ Ground Elevation at Surface of Hole _____

Location (Identify on Plan) _____

2. Land Use: YARD Surface Stones _____ Slope (%) _____
(e.g. woodland, agricultural field, vacant lot, etc.)
GRASS Vegetation Landform Position on landscape (attach sheet)

3. Distances from: Open Water Body _____ Drainage Way _____ Possible Wet Area _____
feet feet feet
Property Line _____ Drinking Water Well _____ Other _____
feet feet feet

4. Parent Material: GLACIAL TILL Unsuitable Materials Present: Yes No

If Yes: Disturbed Soil Fill Material Impervious Layer(s) Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No

If Yes: Depth Weeping from Pit 64" Depth Standing Water in Hole 86"

Estimated Depth to High Groundwater: 36" _____
Inches elevation



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

Deep Observation Hole A: _____ Deep Hole Number: TP-2

Depth (In.)	Soil Horizon/Layer	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features (mottles)			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-24"	FILL		-	-	-						
24"-60"	C1	2.5Y 4/4	36"	7.5YR 4/4	5%	COARSE SAND	5%	5%	SG	LOOSE	
60"-120"	C2	2.5Y 4/2				FINE SAND	-	-	MASSIVE	FRIABLE	

Additional Notes SAMPLE # 1 TAKEN FOR ACT. PERC TEST.



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed disposal area)

Deep Observation Hole A: 10/21/08 10:30 CLOUDY
Date Time Weather

1. Deep Observation Hole Logs

Deep Hole Number _____ Ground Elevation at Surface of Hole _____

Location (Identify on Plan) _____

2. Land Use: YARD GRAES 2-8%
(e.g. woodland, agricultural field, vacant lot, etc.) Surface Stones Slope (%)

Vegetation Landform Position on landscape (attach sheet)

3. Distances from: Open Water Body _____ Drainage Way _____ Possible Wet Area _____
feet feet feet
Property Line _____ Drinking Water Well _____ Other _____
feet feet feet

4. Parent Material: GLACIAL TILL Unsuitable Materials Present: Yes No

If Yes: Disturbed Soil Fill Material Impervious Layer(s) Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No

If Yes: Depth Weeping from Pit 60" Depth Standing Water in Hole _____

Estimated Depth to High Groundwater: 48"
Inches elevation



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

Deep Observation Hole A: _____ Deep Hole Number: TR-3

Depth (In.)	Soil Horizon/Layer	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features (mottles)			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-48"	FILL										
48"-60"	A	10YR 3/2	48"	7.5YR 4/4	5%	SANDY LOAM	-	-	MASSIVE	FRAGILE	
60"-66"	B	10YR 4/3				SANDY LOAM	5%	-	MASSIVE	FRAGILE	
66"-82"	C ₁	2.5Y 4/2				SANDY LOAM	5%	10%	MASSIVE	FRAGILE	
82"-132"	C ₂	2.5Y 5/4				LOAMY SAND	5%	5%	MASSIVE	FRAGILE	

Additional Notes FILL MATERIAL SIMILAR TO C₁



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed disposal area)

Deep Observation Hole A: 10/21/08 11:30 CLOUDY
Date Time Weather

1. Deep Observation Hole Logs

Deep Hole Number _____ Ground Elevation at Surface of Hole _____

Location (Identify on Plan) _____

2. Land Use:

YARD
(e.g. woodland, agricultural field, vacant lot, etc.) Surface Stones _____ Slope (%) _____
GRASS
Vegetation Landform Position on landscape (attach sheet)

3. Distances from: Open Water Body _____ Drainage Way _____ Possible Wet Area _____
feet feet feet
Property Line _____ Drinking Water Well _____ Other _____
feet feet feet

4. Parent Material: _____ Unsuitable Materials Present: Yes No

If Yes: Disturbed Soil Fill Material Impervious Layer(s) Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No

If Yes: Depth Weeping from Pit 56" Depth Standing Water in Hole _____

Estimated Depth to High Groundwater: 44"
Inches elevation



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

Deep Observation Hole A: _____ Deep Hole Number: TP-4

Depth (In.)	Soil Horizon/ Layer	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features (mottles)			Soil Texture (USDA)	Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
			Depth	Color	Percent		Gravel	Cobbles & Stones			
0-36"	FILL										
36" 54"	E ₁	2.5Y 4/2	44"	7.5YR 4/4	5%	SANDY LOAM	5%	5%	MASSIVE	FRAGILE	
54" 120"	C ₂	2.5Y 5/4				LOAMY SAND	5%	2%	MASSIVE	FRAGILE	

Additional Notes SAMPLE #2 TAKEN FOR ALT. PERL. TEST FROM C₂ LAYER

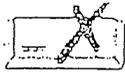
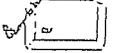


Percolation Test

Form 12

Percolation test results must be submitted with the Soil Suitability Assessment for On-site Sewage Disposal. DEP has provided this form for use by local Boards of Health. Other forms may be used, but the information must be substantially the same as that provided here. Before using this form, check with the local Board of Health to determine the form they use.

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Site Information

Owner Name 93 GREAT RD

Street Address or Lot # ACTON

City/Town ACTON State MA Zip Code _____

Contact Person (if different from Owner) _____ Telephone Number _____

B. Test Results

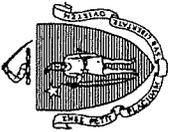
	Date	Time	Date	Time
Observation Hole #	<u>10/21/08</u>	<u>12:00</u>		
Depth of Perc	<u>PT-A</u>			
Start Pre-Soak	<u>43"</u>			
End Pre-Soak	<u>12:15</u>			
Time at 12"	<u>UTS</u>			
Time at 9"				
Time at 6"				
Time (9"-6")				
Rate (Min./Inch)	<u>< 2 MPI</u>			

Test Passed: Test Failed: Test Passed: Test Failed:

Test Performed By: STAMSKI AND MENALY, INC. (BENJAMIN EWING)

Witnessed By: ACTON BOARD OF HEALTH (JUSTIN SNAIK)

Comments:
SAMPLE #1 (TP-2) TAKEN FOR ACT. PERC. TEST.
SAMPLE #2 (TP-4) TAKEN FOR ACT. PERC. TEST.



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Groundwater adjustment (USGS methodology)

A. _____ inches
 B. _____ inches

A. _____ inches
 B. _____ inches

A. See Attached _____ inches
 B. Soil Logs _____ inches

A. _____ inches
 B. _____ inches

2.

Index Well Number _____ Reading Date _____ Index Well Level _____

Adjustment Factor _____ Adjusted Groundwater Level _____

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

- a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?
 Yes No
- b. If yes, at what depth was it observed?
 Upper boundary: _____ Lower boundary: _____
 See Attached _____ inches Soil Logs _____ inches



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

F. Certification

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.

Signature of Soil Evaluator

Benjamin Ewing SE2985

Typed or Printed Name of Soil Evaluator / License #

Justin Snair

Name of Board of Health Witness

10/21/08

Date

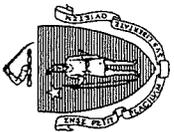
10/24/2005

Date of Soil Evaluator Exam

Acton

Board of Health

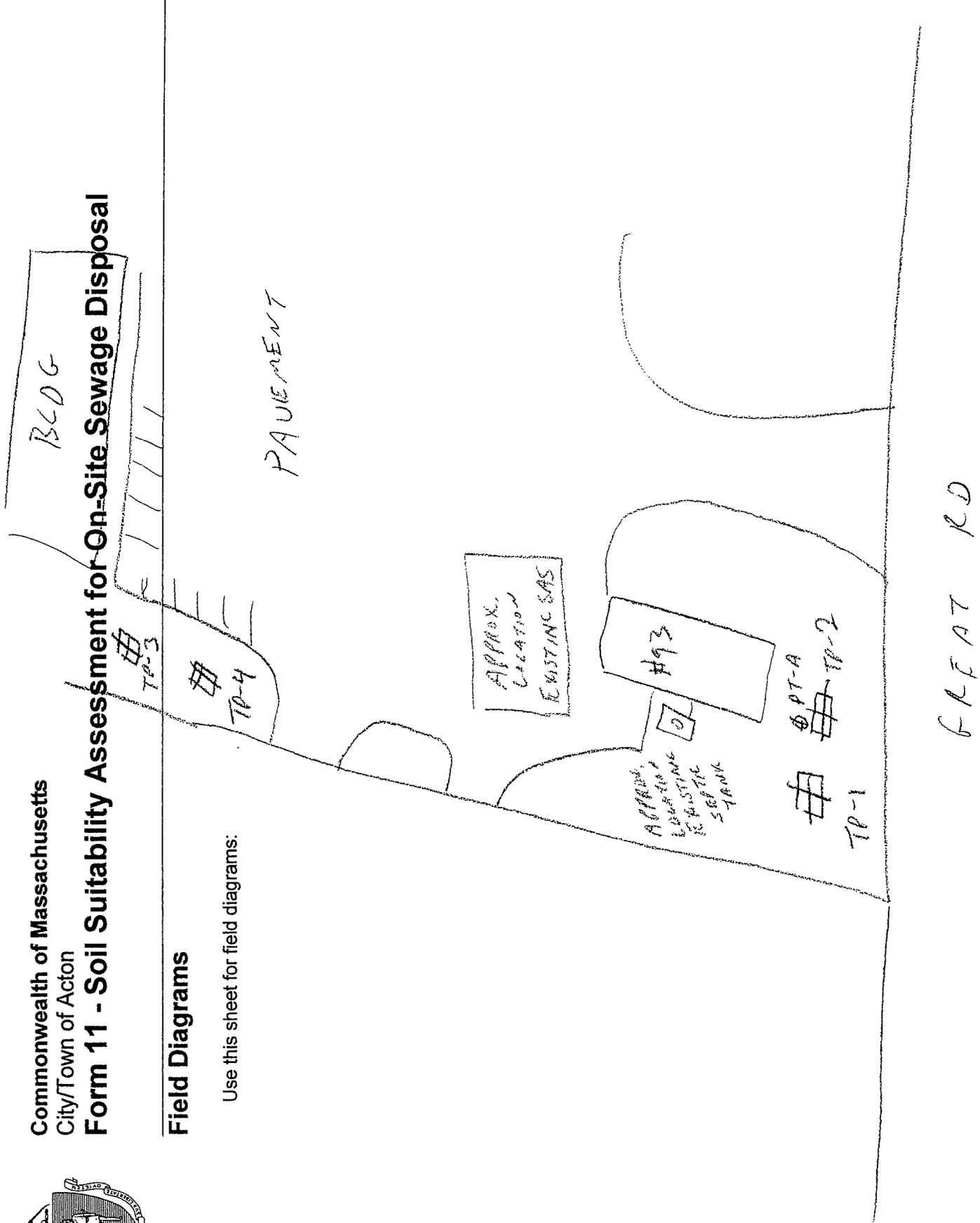
Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with Percolation Test Form 12.



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

Field Diagrams

Use this sheet for field diagrams:



GeoTesting
express

a subsidiary of Geocomp Corporation

P R E Q U I R E

OCT 30 2008

1145 Massachusetts Avenue
Boxborough, MA 01719
978 635 0424 Tel
978 635 0266 Fax

Transmittal

TO:

Mr. Benjamin Ewing

Stamski & McNary, Inc.

80 Harris Street

Acton, MA 01720

DATE: 10/29/08

GTX NO: 8607

RE: 1052 Project

COPIES	DATE	DESCRIPTION
	10/29/08	October 2008 Laboratory Test Report

REMARKS:

SIGNED:


Mark Dobday, P.G. - Laboratory Manager

CC:

APPROVED BY:


Gary Torosian - Director of Testing Services

GeoTesting express

a subsidiary of Geocomp Corporation

Boston
Atlanta
New York

www.geocomp.com/geotesting

October 29, 2008

Mr. Benjamin Ewing
Stamsky & McNary
80 Harris Street
Acton, MA 01720

Re: 1052 Project (GTX-8607)

Dear Mr. Ewing:

Enclosed are the test results you requested for the above referenced project. GeoTesting Express, Inc. (GTX) received two soil samples from you on October 21, 2008. These samples were labeled as follows:

Sample #1
Sample #2

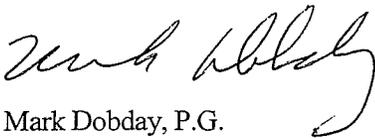
GTX performed the following tests on each of these samples:

Grain Size Analysis (ASTM D 422) with Hydrometer
USDA Textural Classification

A copy of your test request form is attached.

The results presented in this report apply only to the items tested. This report shall not be reproduced except in full, without written approval from GeoTesting Express. The remainder of these samples will be retained for a period of sixty (60) days and will then be discarded unless otherwise notified by you. Please call me if you have any questions or require additional information. Thank you for allowing GeoTesting Express the opportunity of providing you with testing services. We look forward to working with you again in the future.

Respectfully yours,



Mark Dobday, P.G.
Laboratory Manager

GeoTesting
express

a subsidiary of Geocomp Corporation

1145 Massachusetts Avenue

Boxborough, MA 01719

978 635 0424 Tel

978 635 0266 Fax

Geotechnical Test Report

October 29, 2008

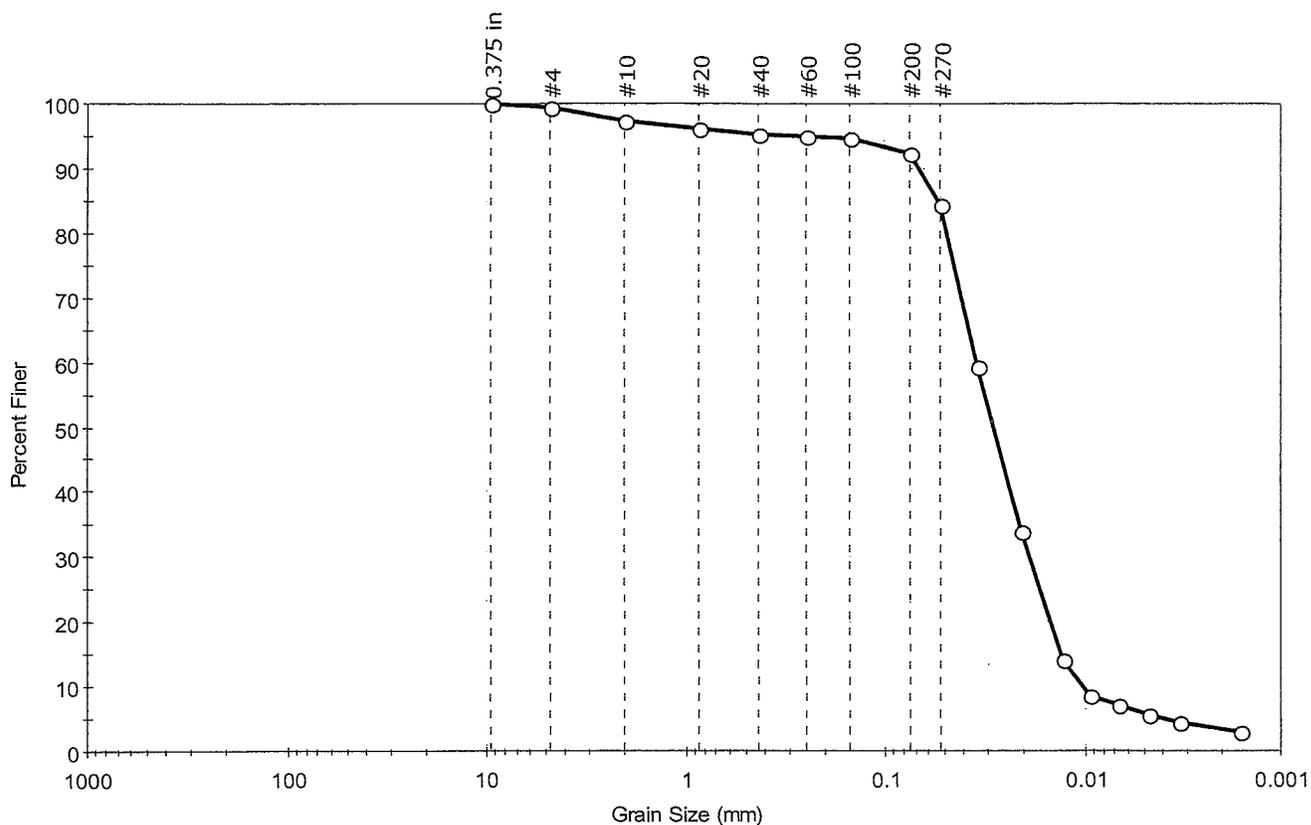
GTX-8607
1052
Project

Prepared for:

Stamsky & McNary, Inc

Client: Stamski & McNary, Inc.	Project: 1052	Location: ---	Project No: GTX-8607
Boring ID: ---	Sample Type: bucket	Tested By: ap	Checked By: jdt
Sample ID: Sample #1	Test Date: 10/23/08	Test Id: 140524	
Depth: ---	Test Comment: ---	Sample Description: Moist, light yellowish brown silt	Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.6	7.0	92.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	99		
#10	2.00	97		
#20	0.85	96		
#40	0.42	95		
#60	0.25	95		
#100	0.15	95		
#200	0.075	92		
#270	0.053	84		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.039	59		
---	0.0208	34		
---	0.0127	14		
---	0.0095	8		
---	0.0067	7		
---	0.0047	6		
---	0.0033	5		
---	0.0016	3		

Coefficients

D ₈₅ = 0.0547 mm	D ₃₀ = 0.0189 mm
D ₆₀ = 0.0343 mm	D ₁₅ = 0.0130 mm
D ₅₀ = 0.0283 mm	D ₁₀ = 0.0102 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD