



February 10, 2011

Mr. Thomas Mansfield, Zoning Administrator
Mr. Spencer Harris, Septic Consultant
Town of Charlotte
P.O. Box 119
Charlotte, VT 05445

RE: Trono Property – Water and Wastewater Permit Application for Proposed Three Lot Subdivision, 800 Bingham Brook Road, Charlotte, Vermont

Dear Tom and Spencer:

As you are aware, Mr. Peter Trono owns an undeveloped +/- 49.0 acre parcel located at the abovementioned address. Mr. Trono would like to subdivide the property into three separate lots with Lot 1 equaling +/- 45.0 acres, and Lots 2 and 3 equaling +/- 2.0 acres each. Although the minimum lot size for a "Rural District" parcel equals +/- 5.0 acres, our client has gained approval to proceed with the proposed subdivision as a Planned Residential Development (PRD). Therefore, in accordance with Chapter 8 of Land Use Regulations for the Town of Charlotte, a reduction in the minimum lot size is allowed. The proposed Lots 1, 2, and 3 will each be developed with a year-round four bedroom single family residence (SFR). The proposed SFR on Lot 1 will be served by an on-site drilled bedrock water supply well and an in-ground absorption trench-type wastewater disposal system. The SFRs on Lots 2 and 3 will be served by a shared drilled bedrock water supply well and a shared prescriptive mound-type wastewater disposal system. The shared well and disposal system serving Lots 2 and 3 are located on Lot 1. The existing site and soil conditions along with the proposed water supply and wastewater disposal systems for Lots 1, 2 and 3 are described below in greater detail.

On October 22, 2010 and January 18, 2011 I evaluated a total of twenty six (26) test pits on the subject property. As I understand it, Spencer was on-site and witnessed test pits in both disposal areas with David Ring Licensed Class B Designer in August 2010. The location of each test pit is shown on Plan Sheets 1, 2 and 3. A detailed description of each observed soil profile is included in Attachment A. In and around the proposed Lot 1 in-ground absorption trench, a typical soil profile is described as:

0-8"	Dark brown sandy loam, loose, strong granular structure, well drained.
8-40"	Orange-brown stony, loamy fine to medium sand, loose, strong granular structure, well drained.
40-60"	Brown to gray gravelly loamy fine sand, friable, strong fine blocky structure, well drained.
60-100"	Salt and pepper mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth.

Whereas a typical soil profile in and around the proposed Lot 2 and 3 shared prescriptive mound-type disposal area is described as:

0-6"	Dark brown sandy loam, loose, strong granular, well drained.
6-36"	Red-brown slightly gravelly sandy loam, loose to friable, strong blocky structure, well drained.
36-48"	Tan loamy fine to medium sand, loose, strong granular to fine blocky, well drained, no mottles, water or ledge to 48".
+48"	Ledge - Quartzite

With exception to test pit #209 (TP-209), evidence of seasonal high water table in the form of mottles was not observed in any test pit. The soil types and textures and the lack of mottling are favorable with the only limiting factor being depth to ledge. The depth to ledge in the vicinity of the proposed prescriptive mound-type disposal system is at least 36" below ground surface (BGS).

Two percolation tests, PT-1 and PT-2, were conducted on Lot 1 in Test Pits TP-204 and TP-201, respectively. The percolation tests were conducted at a depth of 18"-24" BGS. The slowest percolation rate equals 9.0 minutes/inch (min/in). Therefore, an application rate of 1.0 gpd/ft² was used for the basis of design for the proposed in-ground absorption trench disposal system. Similarly, two additional percolation tests (PT-1A and PT-2A) were conducted in the location of the proposed mound-type disposal system. At a depth of 18"-24" BGS, percolation rates of 9.5 min/in. and 10.0 min/in. were observed in TP – 109 and TP-208, respectively. Based upon the percolation rate data, an application rate of 1.0 gpd/ft² and a basal application rate of 0.74 gpd/ft² were used as the basis of design for the proposed prescriptive mound-type disposal system. The percolation test results are presented in Attachment A. Based on the results of the site and soil evaluation, a fully complying in-ground absorption trench-type disposal system for Lot 1 and a shared prescriptive mound-type disposal system for Lots 2 and 3 will adequately address existing site and soil conditions. The site location, existing and proposed property dimensions, test pit and percolation test locations, proposed and existing well locations, proposed disposal system layouts, and wastewater system design details are shown on Plan Sheets 1,2, 3, 4, and 5.

The proposed wastewater disposal system for Lot 1 will require wastewater to flow by gravity from the SFR to a proposed 1,000 gallon concrete septic tank (fit with an effluent filter and watertight access risers) and then gravity flow to a proposed three-hole distribution box. In order to ensure equalized distribution through the system, the proposed distribution box is located at the center of the proposed 4' x 92' absorption trench. The proposed 4' x 92' absorption trench requires a minimum of 18" of stone below the distribution pipe. As a result, the proposed absorption trench is subject to a 25% size reduction as stipulated in §1-907 (p) of the Vermont Wastewater System and Potable Water Supply Rules, effective September 29, 2007. Therefore, the typical application area for a four bedroom SFR which typically equals 490 ft² (using an application rate of 1.0 gpd/ft²) is reduced to 368 ft². The proposed absorption trench serving Lot 1 provides 368 ft² of infiltration area. The Lot 1 system layout and disposal system details are shown on Plan Sheets 2 and 4.

The proposed wastewater disposal system serving Lots 2 and 3 requires a shared mound-type wastewater disposal area. Each SFR will be served by a 1,000 precast septic tank fit with an effluent filter and watertight access risers. Wastewater generated by the Lot 2 residence will flow by gravity to a proposed 1,000 gallon precast pump station. The pump station will contain a submersible effluent pump capable of discharging effluent at 20 gallons per



Lincoln Applied Geology, Inc.
Environmental Consultants

minute (gpm) against 17.22' of total dynamic head (TDH). Effluent generated from Lot 2 will be pumped to a proposed shared 1,500 gallon precast pump station located on Lot 3. The proposed shared 1,500 gallon pump station will receive effluent from both residences (Lots 2 and 3) before discharging to the proposed 10' x 100' prescriptive mound. To provide equalized distribution through the 10' x 100' mound, the proposed 1,500 gallon pump station requires a submersible effluent pump capable of discharging effluent at 28.7 gpm against 28.7' TDH. The proposed mound system requires 1' of state approved mound sand in order to maintain a minimum of 48" of vertical separation from ledge. The proposed pressure distribution and mound dimension details, and an acceptable submersible effluent pump specification for the shared Lot 2 and 3 pump station is included in Attachment A. The proposed mound system provides 1,000 ft² of application area which satisfies the application area requirement of 980 ft². The basal application rate of 0.74 gpd/ft² requires 1,323 ft², the proposed mound exceeds this by providing a proposed basal area of 2,762 ft². The proposed disposal system layout and disposal system details for Lots 2 and 3 are shown on Plan Sheets 3 and 5.

A private drilled bedrock water supply well is proposed to serve the SFR on Lot 1. As Plan Sheet 2 indicates, the proposed well site is located east of the proposed house site. The proposed well site maintains all applicable isolation distances and the protective well shield does not encroach upon the proposed wastewater disposal system. It is important to note that no existing wastewater disposal systems are located within the delineated well isolation shield.

The proposed water supply system for Lot 1 will consist of a submersible pump set in the drilled well, a 1" diameter Class 160 polyethylene plastic pipe from the pump to the pitless adapter in the well casing and from the pitless adapter to the hydropneumatic pressure tank in the building. In the building, the water system will consist of a 1 ¼" brass check valve, hose bib, pressure gauge, pressure relief valve, brass ball valve, and copper distribution piping. The electrical wiring will extend from the pump to the pressure switch and the electric service panel in the building. The drilled well and water supply system details for Lot 1 are provided on Plan Sheet 6.

The use of an existing private drilled bedrock water supply well (Tag #43447) will be shared between the two residences on proposed Lots 2 and 3. Therefore, the existing well must meet performance testing and water quality testing requirements. On January 18, 2011 water quality samples were obtained from the drilled bedrock water supply well and delivered on ice to Endyne, Inc. for laboratory analysis for the following: total coliform, e. coli, arsenic, chloride, iron, manganese, nitrate, nitrite, odor, pH, sodium, and uranium. Review of the Laboratory Report, enclosed in Attachment B, indicates the well water is acceptable with the exception of 2 colonies of total coliform. The well is in the process of being disinfected and resampled for total coliform and e.coli. The results will be submitted upon receipt. On January 19, 2011 an instantaneous peak demand pump test was performed on the subject well. The results of the pump test are included in Attachment B along with Chart 1 which includes depth to water measurements plotted over elapsed time. In addition to well performance testing, we've also presented a shared water system analysis in Attachment B that documents that each residence will receive adequate water pressure (+ 50 psi).

The existing water supply system serving Lots 2 and 3 consist of the drilled bedrock water supply well, a Berkeley 4" variable speed pump, a brass check valve, a hose bib, a hydropneumatic surge tank, pressure gauge, pressure relief valve, brass ball valve, a Pentek



Lincoln Applied Geology, Inc.
Environmental Consultants

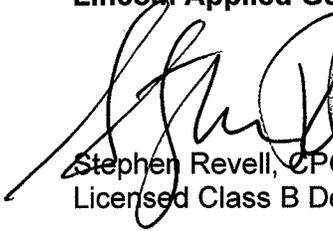
Intellidrive Variable Frequency Drive (VFD) automatic water pressure controller, and eventually, 1.25" Class 160 polyethylene water service lines and copper distribution piping after the proposed residences are constructed. The drilled well and water supply system details for Lots 2 and 3 are provided on Plan Sheet 7. You should note that standard residential hydropneumatic tanks are not required in each residence because of the variable speed pump that will be set to provide 70 psi at the well head. The pump is controlled by an in-line pressure transducer.

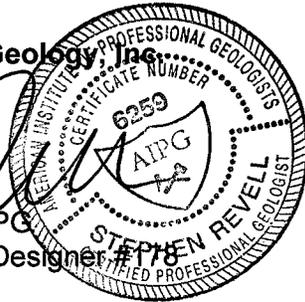
Accompanying this letter is a signed Wastewater Permit Application with a permit fee of \$1,500.00, a signed Act 145 certification statement, 2 full size copies of the Plan Sheets 1 through 7, 1 reduced (11" x 17") copy of Plan Sheets 1 through 7, one copy of this letter and the Attachments, and 1 CD of the complete package. We look forward to your review, concurrence and issuance of the requested permit. Mr. Trono would like to proceed with the proposed three lot subdivision and the installation of the subject water supply and wastewater disposal systems in the not to distant future.

If you have any questions or if we can provide additional information regarding the content of this permit application, please contact me directly at (800) 477-4384.

Respectfully,

Lincoln Applied Geology, Inc.


Stephen Revell, CPG
Licensed Class B Designer #1178



EE/SR/SK:kg

Enclosures

Cc: Peter Trono
David Miskell

F:\CLIENTS\2010\10077\WWW Permit\State Summary Letter.doc



Lincoln Applied Geology, Inc.
Environmental Consultants

Trono Property
Bingham Brook Road
Charlotte, Vermont

Attachment A

Soil Profile Description, Lot 1 Percolation Test Results,
Lot 2 & 3 Percolation Test Results, Lot 2 & 3 Shared Mound
Pressure Distribution & Mound Dimension Details,
Lot 2 Effluent Pump Specifications and Lot 3
Effluent Pump Specifications

**Trono Property
Bingham Brook Road
Soil Profile Descriptions**

**By: Stephen Revell, LCBD #178 and Senior Hydrogeologist
October 22, 2010 and January 18, 2011**

Test Pit #100 (TP-100)

- 0-6" Dark brown sandy loam, loose, strong granular structure, well drained
- 6-20" Red-brown to orange-brown slightly stony loamy medium sand to medium sandy loam, loose, strong granular to fine blocky structure, well drained
- 20-36" Red-brown gravelly, slightly loamy sand, loose, strong granular structure, well drained
- 36-90" Salt and pepper mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth

Test Pit #101 (TP-101)

- 0-10" Dark brown sandy loam, loose, strong granular structure, well drained
- 10-30" Red-brown to orange-brown slightly stony loamy medium sand to medium sandy loam, loose, strong granular to fine blocky structure, well drained
- 30-50" Tan to yellow-brown fine to medium sand to loamy medium sand, loose to friable, strong granular structure, well drained
- 50-66" Brown-tan fine to medium sand, loose, strong granular structure, well drained
- 66-96" Salt and pepper mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth

Test Pit #102 (TP-102)

- 0-12" Dark brown sandy loam, loose, strong granular structure, well drained
- 12-30" Red-brown to orange-brown slightly stony loamy medium sand to medium sandy loam, loose, strong granular to fine blocky structure, well drained



Lincoln Applied Geology, Inc.
Environmental Consultants

- 30-48" Tan to yellow-brown fine to medium sand to loamy medium sand, loose to friable, strong granular structure, well drained
- 48-96" Salt and pepper mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth

Test Pit #103 (TP-103)

- 0-10" Dark brown sandy loam, loose, strong granular structure, well drained
- 10-42" Tan slightly gravelly loamy sand, loose, strong granular structure, well drained
- 42-86" Salt and pepper mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth

Test Pit #104 (TP-104)

- 0-8" Dark brown sandy loam, loose, strong granular structure, well drained
- 8-40" Orange-brown stony, loamy fine to medium sand, loose, strong granular structure, well drained
- 40-60" Brown to gray gravelly loamy fine sand, friable, strong fine blocky structure, well drained
- 60-100" Salt and pepper mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth

Test Pit #105 (TP-105)

- 0-8" Dark brown sandy loam, loose, strong granular structure, well drained
- 8-30" Orange-brown gravelly sandy loam, loose, strong granular, well drained
- 30-48" Tan medium sand, loose, strong granular, well drained
- 48-90" Salt and pepper bouldery mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth



Lincoln Applied Geology, Inc.
Environmental Consultants

Test Pit #106 (TP-106)

- 0-8" Dark brown sandy loam, loose, strong granular structure, well drained
- 8-36" Orange-brown stony, loamy medium sand, loose, strongly developed granular structure, well drained
- 36-84" Salt and pepper mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth

Test Pit #107 (TP-107)

- 0-12" Dark brown sandy loam, loose, strong granular structure, well drained
- 12-42" Orange-brown gravelly sandy loam, some boulders, loose, granular, well drained
- 42-84" Salt and pepper mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth

Test Pit #108 (TP-108)

- 0-8" Dark brown sandy loam, loose, strong granular structure, well drained
- 8-42" Orange-brown gravelly medium to coarse sandy loam, loose, strong granular to fine blocky structure, well drained
- 42-72" Salt and pepper mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth

Test Pit #109 (TP-109)

- 0-16 Dark brown sandy loam, loose, strong granular structure, well drained
- 12-54" Orange-brown gravelly medium to coarse sandy loam, loose, strong granular to fine blocky structure, well drained
- 54-72" Tan slightly gravelly medium sand, loose, strong granular, well drained, no mottles, water or ledge

Test Pit #200 (TP-200)

- 0-6" Dark brown sandy loam, strongly developed crumb structure, loose, well drained



Lincoln Applied Geology, Inc.
Environmental Consultants

- 6-36" Orange-brown stony, loamy medium sand, loose, strongly developed granular structure, well drained
- 36-84" Brown-gray to salt and pepper mixed sand and gravel with medium to coarse gravel, minor cobbles, medium to coarse sand, loose, strong granular structure, well drained, no mottles, water or ledge to depth

Test Pit #201 (TP-201)

- 0-8" Dark brown sandy loam, strong crumb to granular structure, loose, well drained
- 8-42" Orange-brown stony, loamy medium sand, loose, strongly developed granular structure, well drained
- 42-84" Brown-gray to salt and pepper mixed sand and gravel, some cobbles, minor boulders, mostly medium sand, well drained, no mottles, water or ledge to depth

Test Pit #202 (TP-202)

- 0-6" Dark brown sandy loam, strongly developed, crumb structure, loose, well drained
- 8-42" Orange-brown stony, loamy medium sand, loose, strongly developed granular structure, well drained
- 42-84" Brown-gray mixed sand and gravel, medium to coarse sand and fine to medium gravel, loose, strong granular, well drained, no mottles, water or ledge to depth

Test Pit #203 (TP-203)

- 0-6" Dark brown sandy loam, strongly developed, crumb structure, loose, well drained
- 6-36" Orange-brown stony, loamy medium sand, loose, strongly developed granular structure, well drained
- 36-60" Brown-gray silty loam, moderate fine blocky structure, friable, mottled, no water or ledge to depth



Lincoln Applied Geology, Inc.
Environmental Consultants

Test Pit #204 (TP-204)

- 0-6" Dark brown sandy loam, strongly developed, crumb structure, loose, well drained
- 6-36" Orange-brown stony, loamy medium sand, loose, strongly developed granular structure, well drained
- 24-84" Tan to yellow-brown medium sand, loose, strong granular, well drained, no mottles, water or ledge to depth

Test Pit #205 (TP-205)

- 0-8" Dark brown sandy loam, loose, strong granular, well drained
- 8-36" Orange-brown to red-brown somewhat stony medium sand to loamy, medium sand, loose, strong granular to crumb structure, well drained, no mottles, or ledge
- 36-60" Brown-gray silt loam, friable, moderate to weak structure, mottled, no water or ledge to depth

Test Pit #206 (TP-206)

- 0-8" Dark brown sandy loam, loose, strong granular, well drained
- 8-36" Orange-brown to red-brown somewhat stony medium sand to loamy, medium sand, loose, strong granular to crumb structure, well drained, no mottles, or ledge
- 30-36" Tan loamy fine to medium sand, loose, strong granular to fine blocky, well drained, no mottles, water or ledge to 36"
- +36" Quartzite type ledge

Test Pit #207 (TP-207)

- 0-8" Dark brown sandy loam, loose, strong granular, well drained
- 8-36" Orange-brown to red-brown somewhat stony medium sand to loamy, medium sand, loose, strong granular to crumb structure, well drained, no mottles, or ledge
- 30-40" Tan loamy fine to medium sand, loose, strong granular to fine blocky, well drained, no mottles, water or ledge to 40"
- +40" Ledge – Quartzite



Lincoln Applied Geology, Inc.
Environmental Consultants

Test Pit #208 (TP-208)

- 0-8" Dark brown sandy loam, loose, strong granular, well drained
- 8-42" Orange-brown to red-brown somewhat stony medium sand to loamy, medium sand, loose, strong granular to crumb structure, well drained, no mottles, or ledge
- +42 Ledge – Quartzite

Test Pit #209 (TP-209)

- 0-6" Dark brown sandy loam, loose, strong granular, well drained
- 6-20" Orange-brown to brown fine sandy loam, loose to friable, moderate blocky structure, well drained
- 20-36" Brown very fine sandy loam, friable, moderate blocky structure, mottled at 26", no water or ledge
- +36" Ledge – Quartzite

Test Pit #210 (TP-210)

- 0-8" Dark brown sandy loam, loose, strong granular, well drained
- 8-22" Red-brown fine to medium sandy loam, loose to friable, strong fine blocky structure, well drained
- 22-50" Tan loamy fine to medium sand, loose to friable, strong to moderate fine blocky structure, well drained
- 50-60" Gray very fine sandy loam to silt loam, friable, moderate blocky structure, mottled, no water or ledge

Test Pit #211 (TP-211)

- 0-6" Dark brown sandy loam, loose, strong granular, well drained
- 6-28" Orange-brown to red-brown somewhat stony medium sand to loamy, medium sand, loose, strong granular to crumb structure, well drained, no mottles, or ledge
- +28 Ledge – Quartzite



Lincoln Applied Geology, Inc.
Environmental Consultants

Test Pit #212 (TP-212)

- 0-8" Dark brown sandy loam, loose, strong granular, well drained
- 8-36" Orange-brown to red-brown somewhat stony medium sand to loamy, medium sand, loose, strong granular to crumb structure, well drained, no mottles, or ledge
- 25-37" Brown slightly gravelly fine sandy loam, friable, moderate blocky structure, well drained
- +37" Ledge – Quartzite

Test Pit #213 (TP-213)

- 0-8" Dark brown sandy loam, loose, strong granular, well drained
- 8-24" Red-brown slightly gravelly sandy loam, loose to friable, strong blocky structure, well drained
- 24-66" Tan loamy fine to medium sand, loose, strong granular to fine blocky, well drained, no mottles, water or ledge to 66"
- +66" Ledge – Quartzite

Test Pit #214 (TP-214)

- 0-6" Dark brown sandy loam, loose, strong granular, well drained
- 6-36" Red-brown slightly gravelly sandy loam, loose to friable, strong blocky structure, well drained
- 36-48" Tan loamy fine to medium sand, loose, strong granular to fine blocky, well drained, no mottles, water or ledge to 48"
- +48" Ledge - Quartzite

Test Pit #215 (TP-215)

- 0-8" Dark brown sandy loam, loose, strong granular, well drained
- 8-35" Orange-brown to red-brown somewhat stony medium sand to loamy, medium sand, loose, strong granular to crumb structure, well drained, no mottles, or ledge



Lincoln Applied Geology, Inc.
Environmental Consultants

35-48" Salt and pepper mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth

+48" Ledge – Quartzite

Test Pit #216 (TP-216)

0-8" Dark brown sandy loam, loose, strong granular, well drained

8-40" Orange-brown to red-brown somewhat stony medium sand to loamy, medium sand, loose, strong granular to crumb structure, well drained, no mottles, or ledge

40-60" Salt and pepper mixed sand and gravel with medium to coarse sand and fine to medium gravel, loose, strong granular to single grain, well drained, no mottles, water or ledge to depth

F:\CLIENTS\2010\10077\Peter Trono Soil Profile Descriptions.docx



Lincoln Applied Geology, Inc.
Environmental Consultants

163 Revell Drive • Lincoln, VT 05443 • (802) 453-4384 • FAX (802) 453-5399

**Trono Property - Lot 1
Bingham Brook Road
Charlotte, Vermont**

Percolation Test Results

All tests were performed on January 18, 2011 at a depth of 18" - 24"

PT-1	Drop Time (min)	Total Drop Time (min)	Total Drop (inches)	Drop Rate (min/inch)
	4.6	4.6	1	4.6
	5.8	10.4	2	5.2
	6.3	16.7	3	5.6
	6.6	23.2	4	5.8
	6.8	30.0	5	6.0
	6.9	36.9	6	6.2
	7.1	44.0	7	6.3
	---	1440.0	---	9.0

PT-2	Drop Time (min)	Total Drop Time (min)	Total Drop (inches)	Drop Rate (min/inch)
	3.8	3.8	1	3.8
	5.1	8.9	2	4.4
	5.5	14.4	3	4.8
	5.9	20.3	4	5.1
	6.1	26.4	5	5.3
	6.3	32.6	6	5.4
	6.4	39.1	7	5.6
	---	1440.0	---	8.5

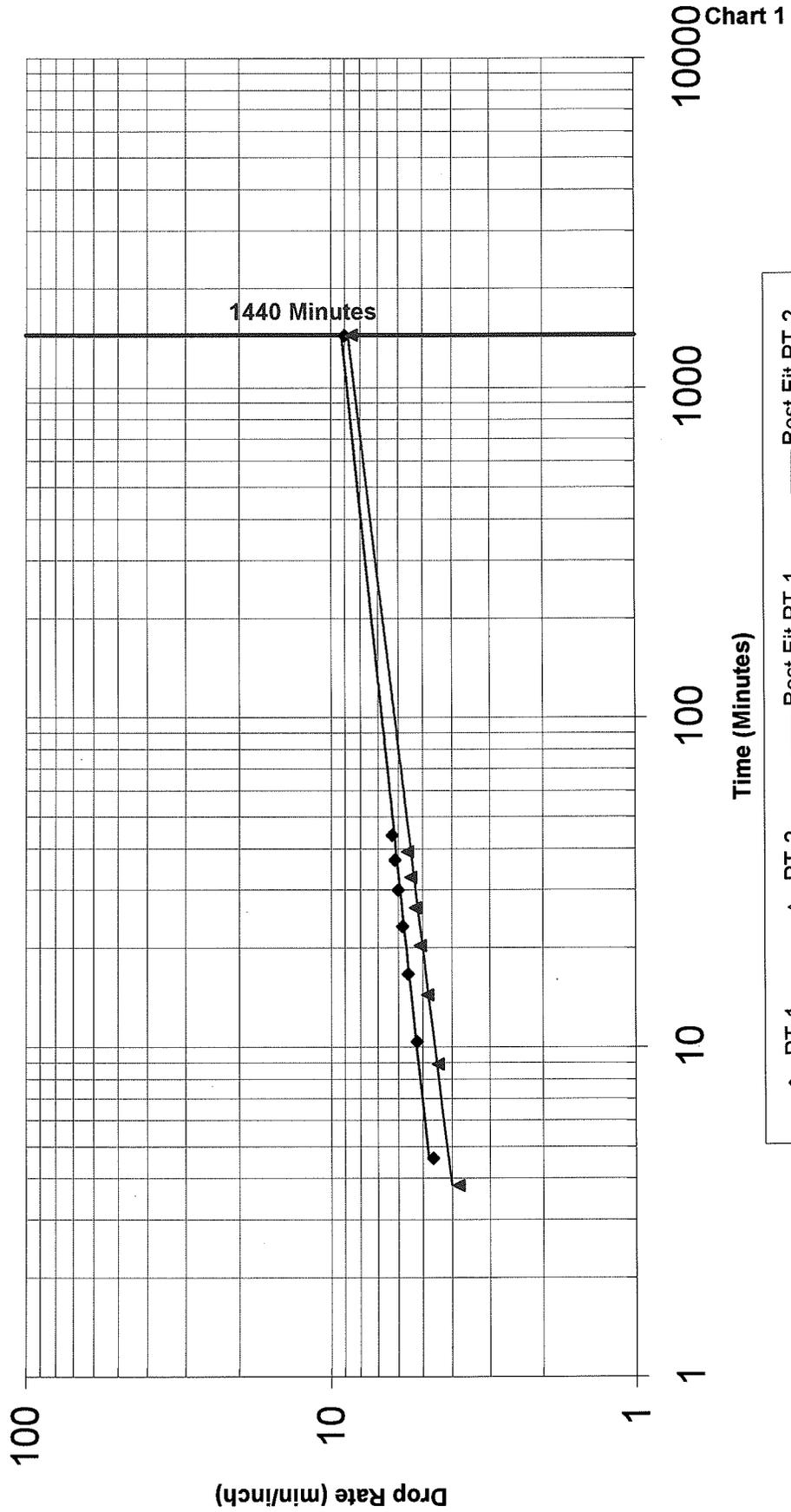
*NOTE:
Drop time includes fill time for each of the seven runs.

Trono Property - Lot 1

Bingham Brook Road
Charlotte, Vermont

Percolation Test Results

All tests were performed on October 22, 2010 and January 18, 2011 at a depth of 18" - 24"



**Trono Property - Lots 2 and 3
Bingham Brook Road
Charlotte, Vermont**

Percolation Test Results

All tests were performed on October 22, 2010 and January 18, 2011 at a depth of 18" - 24"

PT-1	Drop Time (min)	Total Drop Time (min)	Total Drop (inches)	Drop Rate (min/inch)
	4.6	4.6	1	4.6
	6.0	10.6	2	5.3
	6.5	17.0	3	5.7
	6.8	23.8	4	6.0
	7.0	30.9	5	6.2
	7.2	38.1	6	6.3
	7.4	45.5	7	6.5
	---	1440.0	---	9.5

PT-2	Drop Time (min)	Total Drop Time (min)	Total Drop (inches)	Drop Rate (min/inch)
	4.8	4.8	1	4.8
	6.3	11.1	2	5.5
	6.8	17.8	3	5.9
	7.2	25.0	4	6.3
	7.4	32.4	5	6.5
	7.6	40.0	6	6.7
	7.8	47.9	7	6.8
	---	1440.0	---	10.0

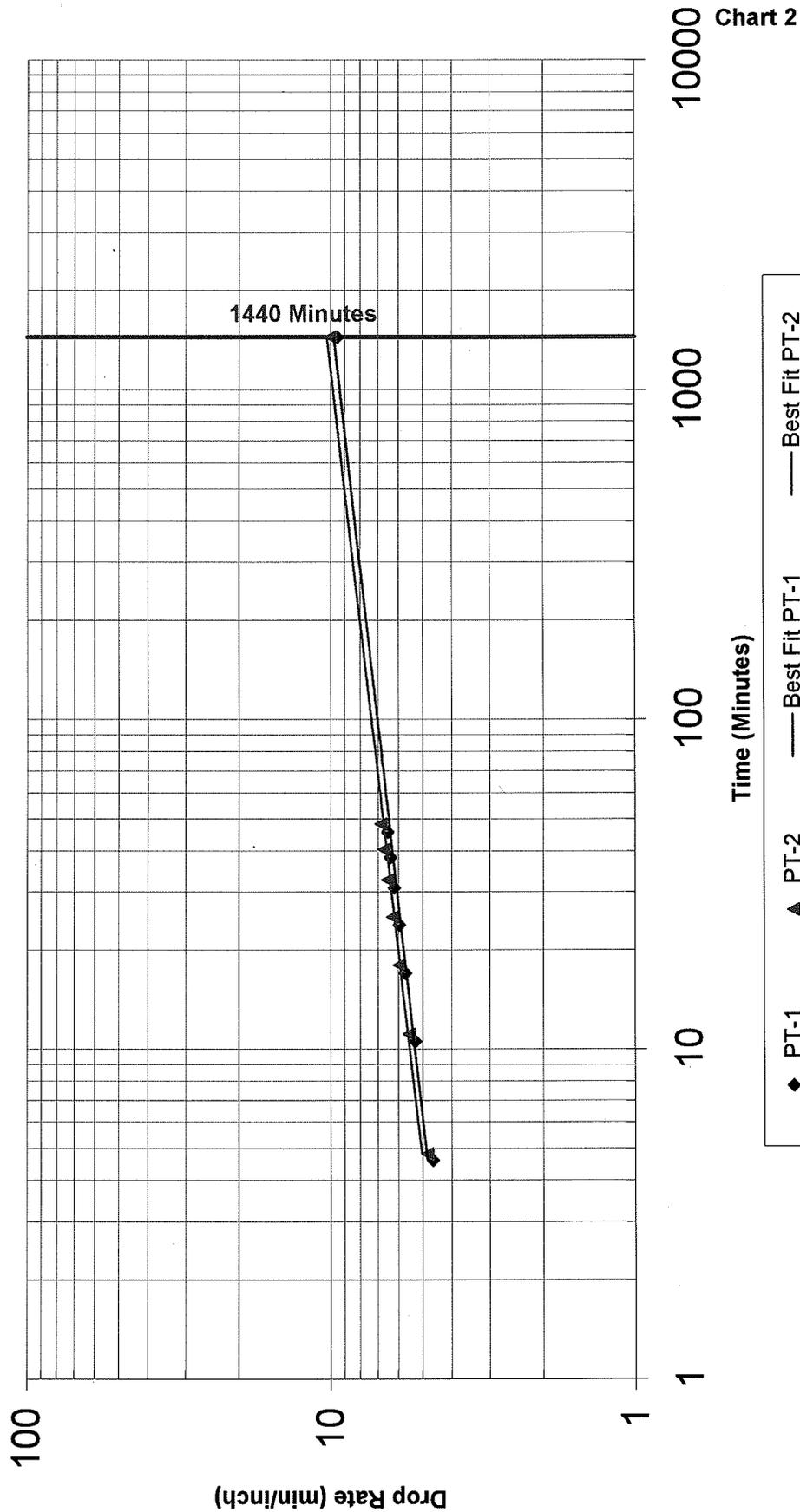
*NOTE:
Drop time includes fill time for each of the seven runs.

Trono Property - Lots 2 and 3

Bingham Brook Road
Charlotte, Vermont

Percolation Test Results

All tests were performed on October 22, 2010 and January 18, 2011 at a depth of 18" - 24"



PRESSURE DISTRIBUTION & MOUND DIMENSION DETAILS

CLIENT'S NAME: Trono - Lots 2 and 3 Shared System
 DATE: 2/2/2011 PERFORMED BY: S. Revell LAG Project #: 10077

Design Flow Rate	980	GPD
Width of Distribution Stone Bed/Trench	10	FEET
Length of Distribution Stone Bed/Trench	100	FEET
Thickness of Sand Beneath Distribution Stone Bed/Trench	1	FEET
Thickness of Stone Beneath Laterals	6	INCHES
Soil Cover Thickness at Edge of Level Area	12	INCHES
Front Slope of Finished Mound	33	PERCENT
Side and Rear Slope of Finished Mound	33	PERCENT
Percolation Rate	10	MPI
Natural Ground Slope	12	PERCENT
Thickness of Sand on Upper Side of Level Area	1.63	FEET
Thickness of Sand on Lower Side of Level Area	3.07	FEET
Width of Level Area	12	FEET
Length of Level Area	102	FEET
Area of Distribution Stone Bed/Trench	1000	SQUARE FT
Volume of Stone Required	23	CUBIC YARDS
Proposed Basal Area	2762	SQUARE FEET
Volume of Mound Sand Required	324.2	CUBIC YARDS
Number of Laterals	4	
Length of Each Lateral	47.5	FEET
Number of Orifices in the Manifold	0	
Number of Orifices in Each Lateral	10	
Distance Between Manifold and First Orifice	2.5	FEET
Distance Between Orifices (on center)	5	FEET
Distribution Area per Orifice	25.00	SQ. FT.
Design Pressure Head	3	FEET
Diameter of Orifices (enter as fraction)	0.188	INCHES
Elevation From Pump Intake to Laterals (0 if siphon)	20	FEET
Diameter of Force Main	2	INCHES
Length of Force Main	100	FEET
Length of Manifold to Lateral	2.5	FEET
Diameter of Manifold Pipe	2	INCH
Diameter of Lateral Pipe	2	INCH
Friction Loss in Force Main	1.68	FEET
Friction Loss in Manifold	0.01	FEET
Friction Loss in Section 1	0.00	FEET
Friction Loss in Entire Lateral	0.02	FEET
Discharge Rate at First Orifice	0.72	GPM
Discharge Rate at Last Orifice	0.72	GPM
Percent Difference in Flow Rate First to Last Orifice	0.25	PERCENT
Total Dynamic Head Loss	24.763	FEET
Total Distribution System Flow	28.70	GPM
Volume of Distribution System	31.01	GALLONS
Pump Capacity	28.70 GPM vs	28.700 FEET OF HEAD
Volume per Dose	245	GALLONS
On/Off Float Swing (1,000 gal. Tank)	8.2	INCHES

PRESSURE DISTRIBUTION & MOUND DIMENSION DETAILS

CLIENT'S NAME: Trono - Lots 2 and 3 Shared System
 DATE: 2/2/2011 PERFORMED BY: S. Revell LAG Project #: 10077

DIMENSIONS OF MOUND SYSTEM

Dimensions of Mound Sand

3.6 feet from level area to uphill sand toe	5.1 ft corner of level area to upper toe corner
12 ft wide level area	4.9 ft to side toe from upper edge of level area
10 ft wide stone bed/trench 100 ft long stone bed/trench	9.3 ft to side toe from lower edge of level area
102 ft long level area	20.7 ft corner of level area to lower toe corner
14.6 feet from level area to downhill sand toe	

Dimensions of Final Cover

5.8 feet from level area to uphill toe	8.3 ft corner of level area to upper fill toe
	8.0 ft to side toe from upper edge of level area
12 ft wide level area	
102 ft long level area	12.3 ft to side toe from lower edge of level area
	27.4 ft corner of level area to lower fill toe
19.4 feet from level area to downhill toe	

PLOW AREA LAYOUT MEASUREMENTS

Center of Bed/Trench to Downslope Toe	74.8 feet
End of Level Area @ Midpoint to Downslope Toe	31.9 feet
Center of Bed/Trench to Upslope Toe	58.1 feet
End of Level Area @ Midpoint to Upslope Toe	13.2 feet

Treno - Lot 2

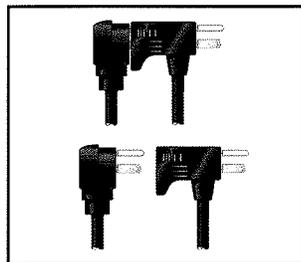
HYDROMATIC®

SHEF30

Submersible Effluent Pump

- Effluent Septic Tank

Automatic operation features easily adjustable, wide-angle float switch with a piggyback plug-in arrangement that allows for simple conversion to manual operation. Special inlet design allows pump to handle 3/4" solids. Cast iron body and an oil-filled motor provide superior cooling characteristics for longer pump life. Motor windings contain automatic thermal overload protection. Energy efficient .3 HP motor pumps up to 35 GPM at 10' total dynamic head. Discharge is 1-1/2" N.P.T.



May be operated manually or automatically with a piggyback switch.



SHEF30 - Submersible Effluent Pump

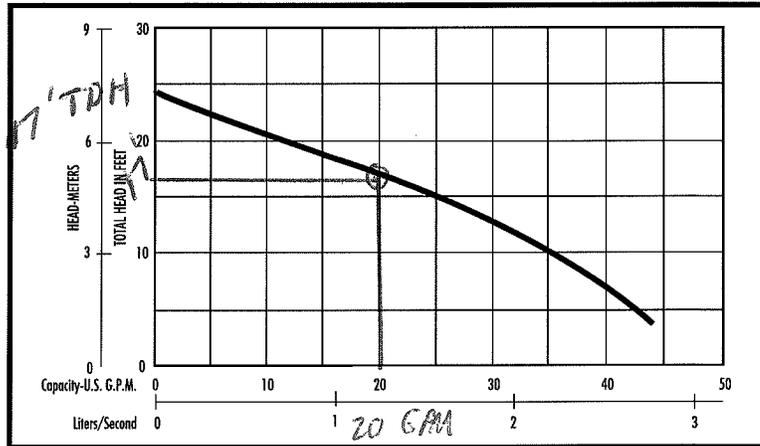
Details

Trans - List 2

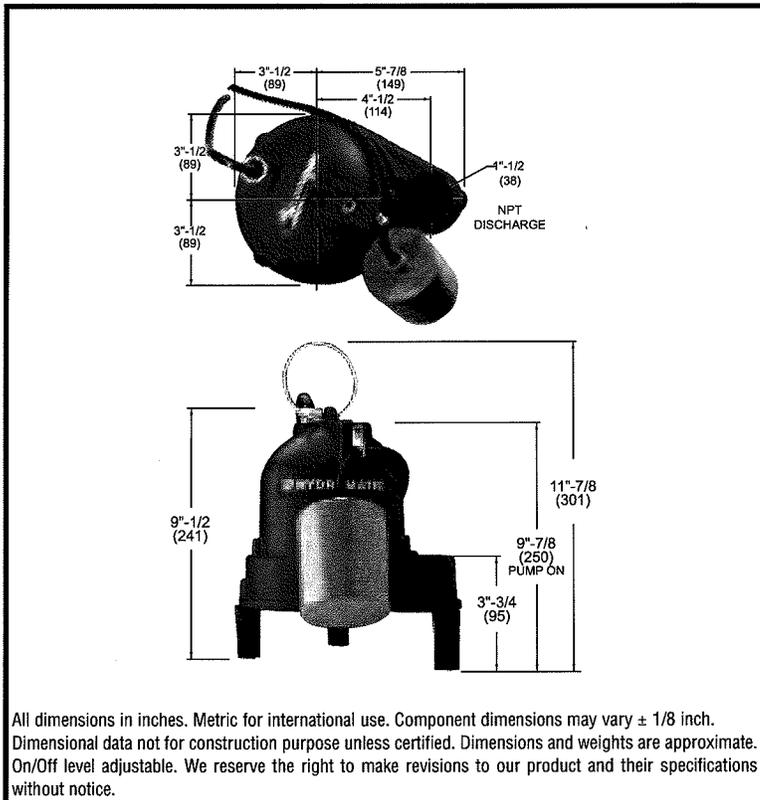
Pump Characteristics

Pump/Motor Unit	Submersible
Automatic Model	SHEF30A1
Horsepower	.30
Full Load Amps	8.0
Motor Type	Shaded Pole (4 pole)
R.P.M.	1550
Phase Ø	1
Voltage	115
Hertz	60
Temperature	120°F Ambient
NEMA Design	A
Insulation	Class A
Discharge Size	1-1/2" NPT (38mm)
Solids Handling	3/4" (19mm)
Unit Weight	30 lbs.
Power Cord	18/3, SJTW, 20' std.

Performance Data



Dimensional Data



Materials of Construction

Handle	Stainless Steel
Lubricating Oil	Dielectric Oil
Motor Housing	Cast Iron
Pump Volute	Cast Iron
Shaft	Steel
Mechanical Shaft Seal	Seal Faces: Carbon/Ceramic Seal Body: Anodized Steel Spring: Stainless Steel Bellows: Buna-N
Impeller	Engineered Thermoplastic
Upper Bearing	Cast Iron Sleeve
Lower Bearing	Single Row Ball Bearing
Legs	Engineered Thermoplastic
Fastener	Stainless Steel

IHP HYDRAMATIC®
Pentair Pump Group

USA

1840 Baney Road Ashland, Ohio 44805
Tel: 419-289-3042 Fax: 419-281-4087

www.hydromatic.com

—Your Authorized Local Distributor—

CANADA

269 Trillium Drive Kitchener, Ontario, Canada N2G 4W5
Tel: 519-896-2163 Fax: 519-896-6337

Tono - lot 3

HYDROMATIC®

SHEF50/100

Submersible High Head Effluent Pumps

Applications:

- Septic Tank Effluent
- High Head Sump
- Dewatering

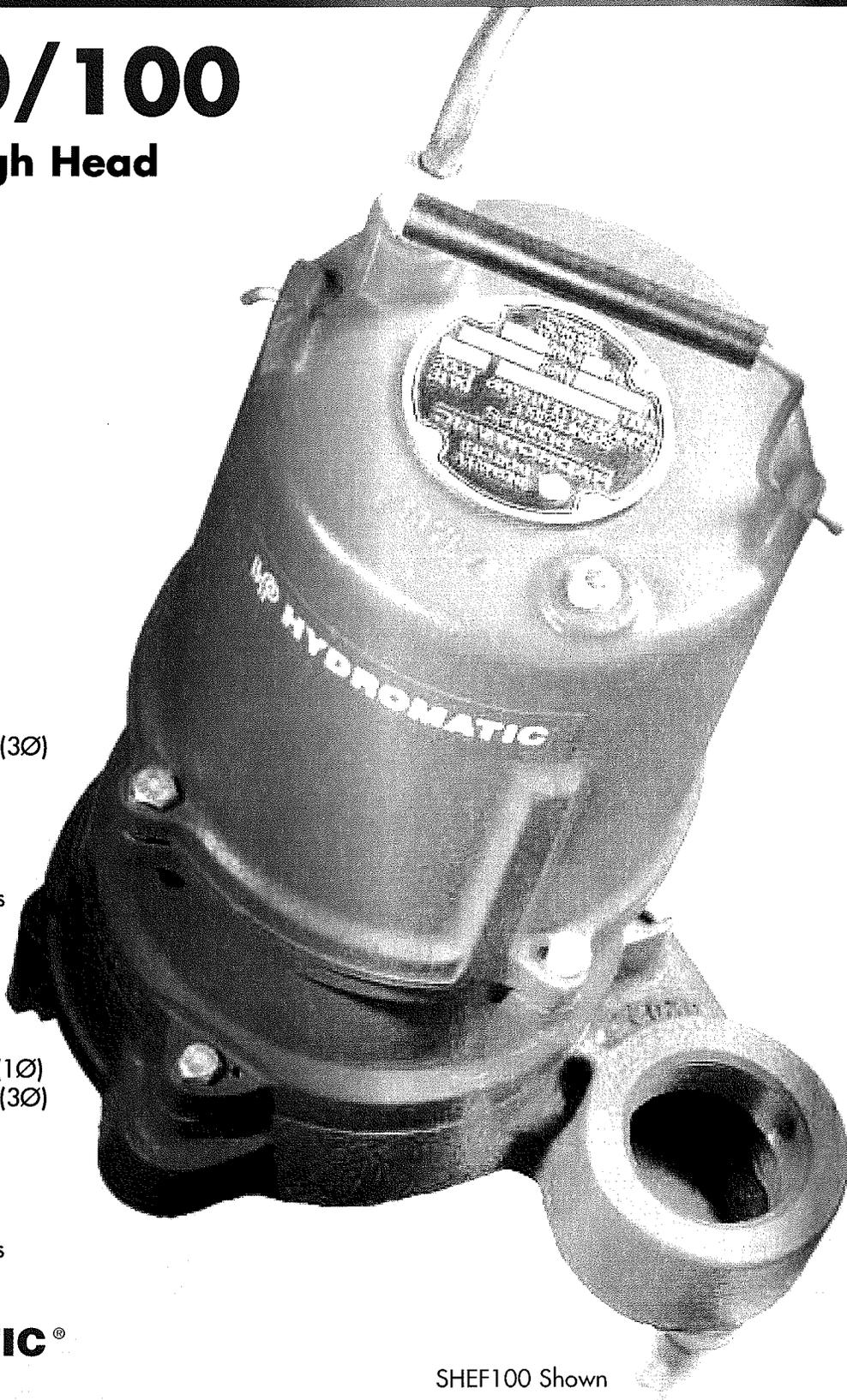


SHEF100 Features:

- 1 HP
- 208-230 voltage (1Ø)
208-230/460, 575 voltage (3Ø)
- 2" Discharge
- 3/4" solids handling
- Capacities to 87 GPM
- Heads to 90 Feet
- Automatic or Manual Models

SHEF50 Features:

- 1/2 HP
- 115/208-230 dual voltage (1Ø)
208-230/460, 575 voltage (3Ø)
- 2" Discharge
- 3/4" solids handling
- Capacities to 63 GPM
- Heads to 63 Feet
- Automatic or Manual Models



HYDROMATIC®
Pentair Pump Group

SHEF100 Shown

SHEF50/100 Submersible Effluent Pumps

FEATURES

Line - lot 3

The Hydromatic SHEF50/100 submersible pumps are specifically designed to meet the demands of residential high head septic tank effluent or sump applications. The 2 inch NPT discharge pumps feature an energy-efficient 1/2 or 1 horsepower motor, automatic and manual versions, and a wide variety of voltages including dual voltage 208-230 volt single and three phase. The SHEF50 can handle capacities up to 63 gallons per minute and heads to 63 feet. The SHEF100 can handle capacities up to 87 gallons per minute and heads to 90 feet.

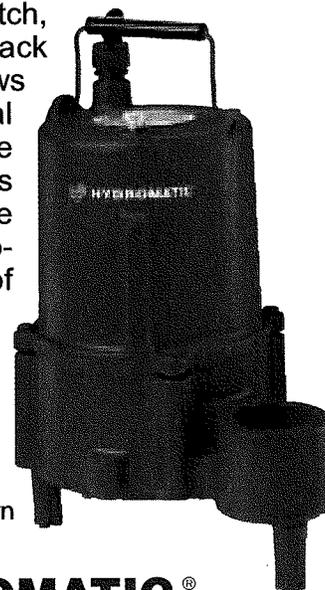
The SHEF50/100 features a heavy-duty cast iron construction that provides durability for a long service life, as well as dissipating heat from the motor for cooler operation. All fasteners are stainless steel for corrosion resistance. The pump's semi-open, non-clog design impeller passes 3/4" (spherical) solids and is made from a super tough engineered plastic that provides the highest level of corrosion resistance and the toughness to withstand the impact of solid materials. The impeller, molded to a bronze insert, also features pump-out vanes to preclude material from building up around the shaft and seal. The pump's unique (patent pending) non-clog design baseplate has an electrostatically applied polyester coating for corrosion resistance and provides a strainer-free inlet capable of passing two (2), 3/4" (spherical) solids simultaneously. The inlet area is raised off the bottom of the septic tank or sump basin by the pump's 2" high legs constructed of Engineered Thermoplastic material for maximum corrosion resistance.

The SHEF50/100's oil filled motor provides superior cooling characteristics, allowing the motor to run cool and quiet. The oil filled design also provides permanent lubrication of the shaft bearings, minimizing maintenance and extending the service life of the pump. The oil filled motor design allows for even heat dissipation. On single phase models the windings feature a built-in thermal overload that resets automatically.

Automatic models feature an easily adjustable wide-angle float switch, incorporating a unique piggyback plug arrangement. This plug allows for simple conversion to manual operation by simply removing the switch plug and inserting the pump's motor plug into the electrical outlet. This feature provides an easy way of periodically cycling the pump to ensure it is operating properly.



SHEF100 Shown



SHEF50 Shown

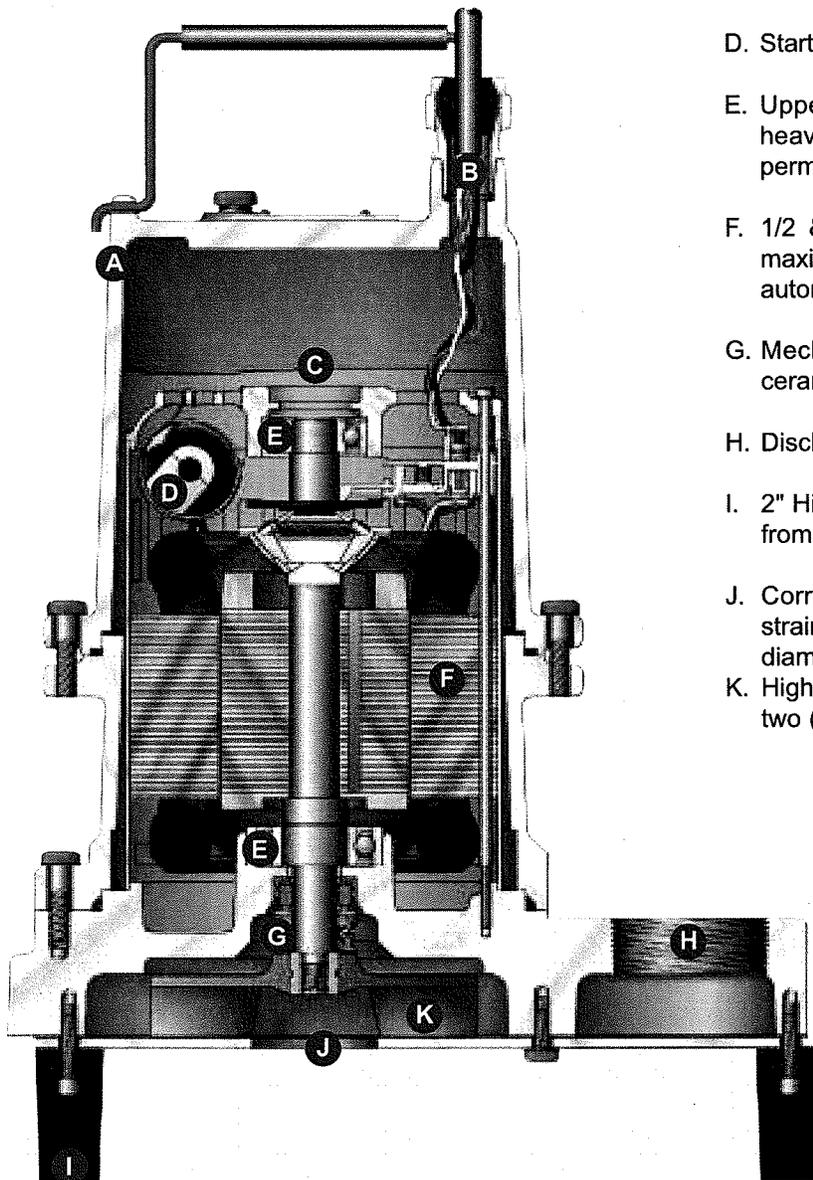
 **HYDROMATIC**[®]
Pentair Pump Group

SHEF50/100 Submersible Effluent Pumps

Trow - Lot 3

BENEFITS

The SHEF50/100 are completely submersible "high head" pumps for use in residential septic tank effluent pumping applications and are available in automatic and manual configuration. Automatic models feature a wide-angle float switch with piggyback plug-in arrangements. Switch is adjustable, easy to service and allows for simple conversion to manual operations.



- A. High quality cast iron construction of pump volute, motor housing and seal housing provide long life.
- B. Water resistant power cord has a compression fit connection and an epoxy potting for double protection against water entry. Lengths of 20 and 30 feet are available with molded plugs, depending on model variations.
- C. Oil-filled motor provides superior cooling and permanent lubrication of bearings minimizing maintenance and extending service life.
- D. Start Capacitor 1 \emptyset models only.
- E. Upper radial- and lower thrust-bearings are heavy-duty, single-row ball bearings that are permanently lubricated for service-free life.
- F. 1/2 & 1 HP capacitor-start (1 \emptyset) motors provide maximum starting torque. Motor windings contain automatic thermal overload protection (1 \emptyset).
- G. Mechanical Shaft Seal is carbon and ceramic-faced for long leakproof life.
- H. Discharge is standard 2 inch NPT.
- I. 2" High corrosion resistant legs raise pump's inlet from bottom of septic tank pump chamber.
- J. Corrosion -resistant non-clog base with strainer-free inlet capable of passing two (2), 3/4" diameter spherical solids simultaneously.
- K. High corrosion resistant, non-clog impeller passes two (2), 3/4" spherical solids.

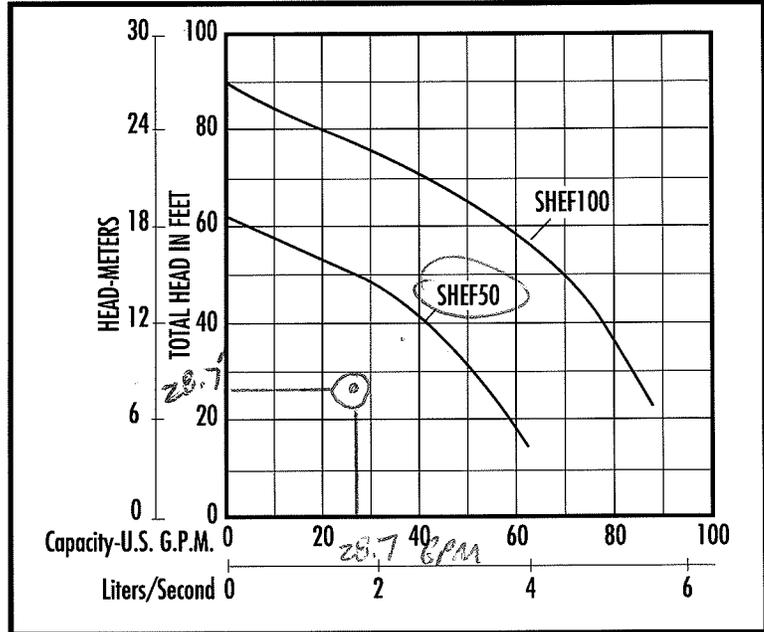
SHEF50/100 Submersible Effluent Pumps

Details *Tromo - Lot 3*

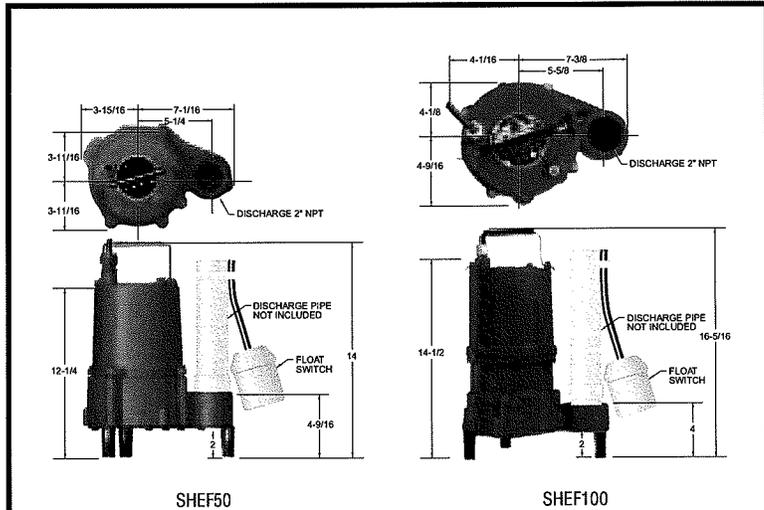
Pump Characteristics

Pump/Motor Unit	Submersible				
Manual Models (50)	M1	M2	M3	M4	M5
Automatic Models	A1	A2	-	-	-
Horsepower	1/2				
Full Load Amps	15.0	7.6/7.1	3.2/3.1	1.6	1.2
Motor Type	Capacitor Start				
R.P.M.	3450				
Phase Ø	1 Ø		3 Ø		
Voltage	115	208-230	208-230	460	575
Manual Models (100)		M2	M3	M4	M5
Automatic Models		A2	-	-	-
Horsepower	1				
Full Load Amps	13.6/12.1	6.0/5.8	2.8	1.9	
Motor Type	Capacitor Start		3 Ø		
R.P.M.	3450				
Phase Ø	1 Ø		3 Ø		
Voltage	208-230	208-230	460	575	
Hertz	60				
Temperature	140°F Max Fluid Temp.				
NEMA Design	L		B		
Insulation	Class B				
Discharge Size	2" NPT std.				
Solids Handling	3/4"				
Unit Weight	58 lbs. (50)		65 lbs. (100)		
Power Cord	115V, 14/3, SJTW-A; 230V, 1ø, 16/3 SWT-A; 3ø, 16/4, STW-A, All cords 20' std. with 30' opt.				

Performance Data



Dimensional Data



All dimensions in inches. Metric for international use. Component dimensions may vary $\pm 1/8$ inch. Dimensional data not for construction purpose unless certified. Dimensions and weights are approximate. On/Off level adjustable. We reserve the right to make revisions to our product and their specifications without notice.

Materials of Construction

Handle	Stainless Steel
Lubricating Oil	Dielectric Oil
Motor Housing	Cast Iron
Pump Casing	Cast Iron
Shaft	Stainless Steel
Mechanical Shaft Seal	Seal Faces: Carbon/Ceramic Seal Body: Brass Spring: Stainless Steel Bellows: Buna-N
Impeller	Engineered Thermoplastic
Upper Bearing	Single Row Ball Bearing
Lower Bearing	Single Row Ball Bearing
Bottom Plate	Single Row Ball Bearing
Fasteners	Stainless Steel
Legs	Engineered Thermoplastic



HYDROMATIC®
Pentair Pump Group

USA

1840 Baney Road Ashland, Ohio 44805
Tel: 419-289-3042 Fax: 419-281-4087

www.hydromatic.com

—Your Authorized Local Distributor—

CANADA

269 Trillium Drive Kitchener, Ontario, Canada N2G 4W5
Tel: 519-896-2163 Fax: 519-896-6337

Item #: W-02-6370 12/99 10M

Trono Property
Bingham Brook Road
Charlotte, Vermont

Attachment B

Well Completion Report, Instantaneous Peak Demand
Pump Test Design Basis & Results, Chart 1-Water
Level vs Elapsed Time Graph, and Water Quality Results
And Lot 2 & 3 Shared Well System Water System Analysis

- Critical Infrastructure Protection Information
- Permit, Certification & License Application Forms & Information
- Water System Capacity Development & DWSRF
- Well Driller & Well Location Program
- Source Water Protection
- Water System Operators
- Drinking Water Quality
- The TNC Handbook
- Rules and Regulations
- Staff Directory
- News
- Other Links of Interest
- Agency of Natural Resources GIS Internet Mapping

Well Details

Date Completed	10/18/2010
Date Received	11/29/2010
Driller	256 Nick Manosh H A Manosh Corp
Well Report Number	43447
Tag	43447
Comments	371-376=3gpm
Town	Charlotte
Map Cell	
Tax Map	
E911 Address	brighton rd
SubDivision	
Lot Number	
Owners First Name	peter
Owners Last Name	trono
Purchaser First Name	
Purchaser Last Name	
Well Use	Domestic
Well Reason	New Supply
Drilling Method	
Well Depth	642.00 feet
Yield Gallons Per Minute	12.00
Yield Test Tested For Hours	1.00
Static Water Level	0.00 feet
Over Flowing	0
OverBurden Thickness	5 feet
Casing Length	60.80 feet
Casing Diameter	6.00 inches
Casing Length Below Land Surface	59.30 feet
Casing Length Exposed	1.50
Casing Material	Steel
Casing Weight	19.00 lbs/foot
Casing Finish	
Liner Length	0.00 feet
Liner Diameter	0.00 inches
Liner Material	
Liner Weight	0.00 lbs/foot
Grout Type	
Seal Type	
Diameter Drilled In Bedrock	0.00 inches
Depth Drilled in Bedrock	0.00 feet
Screen Make Type	
Screen Material	
Screen Length	0.00 feet
Screen Diameter	0.00 inches
Screen Slot Size	0.000 inches
Depth of Screen	0.00 feet
Gravel Size Type	

Quick Links

- » [List of Vermont Licensed Well Drillers](#)
- » [Well Driller Licensing Rule PDF](#)
- » [Well Driller License forms](#)

- » [Current Nationwide Threat Level: Yellow](#)

Casing Sealing Method Drive shoe only
 Yield Test Method
 Well Development
 Not Steel Casing 0
 Water Analysis 0
 Well Screen 0
 AW Partial 0
 Unique GIS Name CI43447
 Lat Degree 44
 Lat Minutes 17
 Lat Seconds 40.3000
 Long Degree 73
 Long Minutes 11
 Long Seconds 28.0000
 Location DeterminationMethod GPS location
 Well Type bedrock
 Depth To Liner Top 0.00
 Hydro Fractured 0
 Hydro Fractured Resulting Flow 0.00
 Well Location Submitted As A Dot On A Map

Starting Depth	Ending Depth	Water Bearing	Lithology Code	Lithology Description
0.00	5.00		C	
5.00	12.00		R	
12.00	370.00			light and dark red limestone
370.00	371.00			white limestone
371.00	576.00			red limestone
576.00	578.00			soft spot with ?
578.00	642.00			red limestone

If you would like search for a well or wells in a specific area the following link will relocate you to the ANR GIS Internet Mapping Program.
<http://www.anr.state.vt.us/site/html/maps.htm>

www.VermontDrinkingWater.org
 VT DEC Water Supply Division 103 South Main Street, Old Pantry Building Waterbury, VT 05671-0403
 Telephone toll-free in VT: 800-823-6500 or call 802-241-3400 Fax: 802-241-3284

DEC home * dec calendar * contact dec * topic index * site map * search
 about dec * assistance * divisions & programs * dec permits * dec regulations * dec publications
 dec grants & loans * dec maps & GIS * hotline numbers * related links * privacy policy * ANR home

[State of Vermont Agencies & Depts.](#) * [Access Government 24/7](#) * [About Vermont.Gov](#) * [Privacy Policy](#) * [Ask a State Librarian a ?](#)

A Vermont Government Website Copyright 2004-2006 State of Vermont - All rights reserved

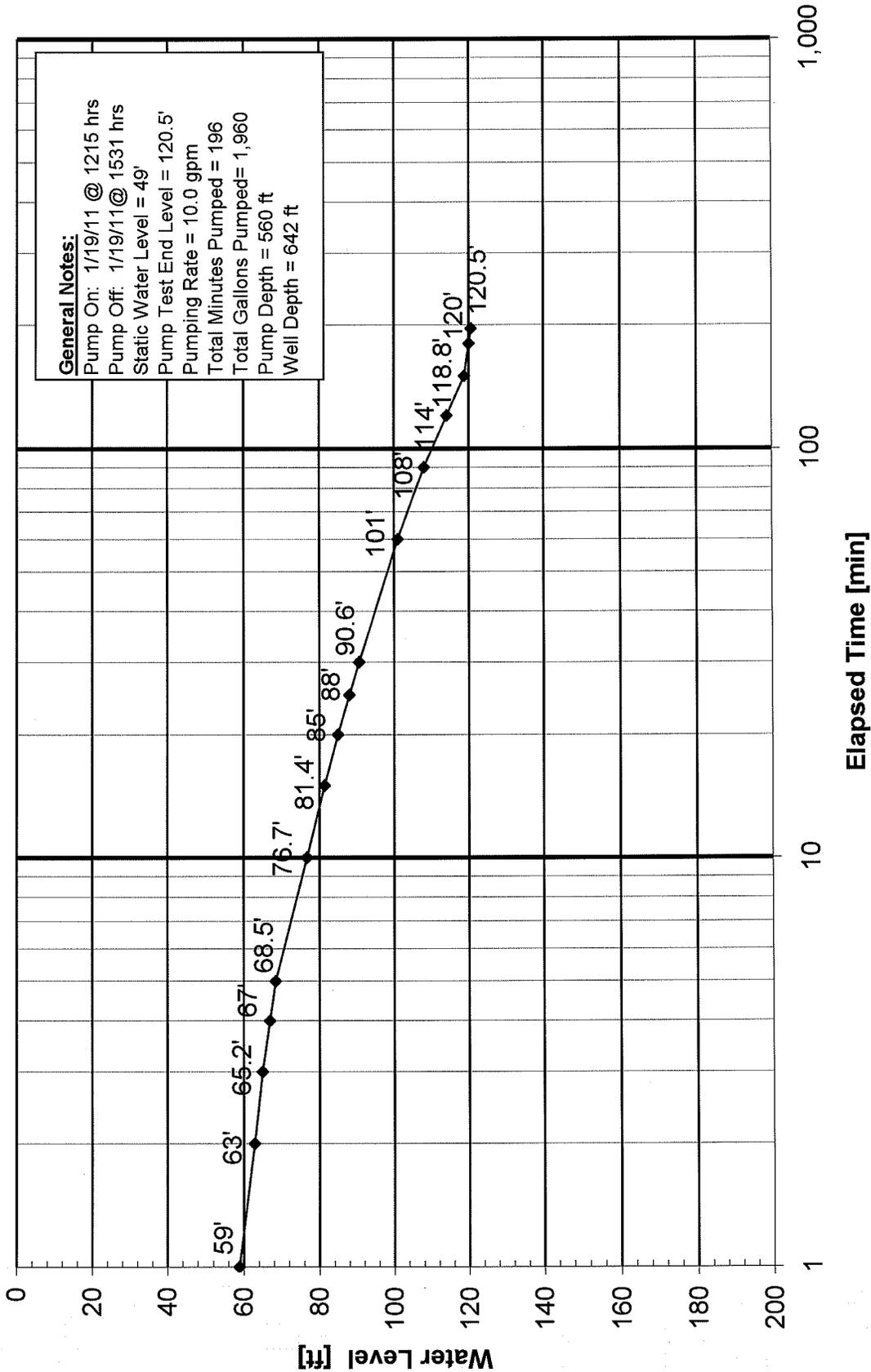


Instantaneous Peak Demand

Pump Test Design Basis & Results

1. Instantaneous Peak Demand = 5 gpm/lot X 2 lots = 10 gpm
2. Avery Daily Demand (ADD) = 490 gpd/lot X 2 lots = 980 gpd
3. Pump Test Volume = 980 gallons X = 1,960 gallons
4. Pump Test Time = 1,960 gallons/10 gpm = 196 minutes
5. Summary = 1,960 gallons must be pumped from the shared well at 10 gpm for 196 minutes with regular water level measurements.
6. Pump Test Results = Presented on Chart 1, indicating that the water level drawdown took place between a static level of 49.2' to a level of 120.5'. A total of 71.3' of drawdown took place in response to pumping 1,960 gallons at 10 gpm from a pump setting of 560'. 438.5' of drawdown is available which indicates that the well can easily support the instantaneous peak demand requirements associated with 2 single family residences.

Trono Property
Charlotte, Vermont
Instantaneous Peak Demand Pump Test
Water Level vs. Elapsed Time





Lincoln Applied Geology
163 Revell Drive 100332
Lincoln, VT 05443

PROJECT: Trono Shared Well
WORK ORDER: 1101-00746
DATE RECEIVED: January 19, 2011
DATE REPORTED: February 01, 2011
SAMPLER: Steve Revell

Laboratory Report

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. All required method quality control elements including instrument calibration were performed in accordance with method requirements and determined to be acceptable unless otherwise noted.

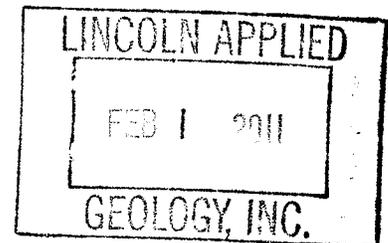
The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Lebanon, NH facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

The NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Harry B. Locker, Ph.D.
Laboratory Director



www.endynelabs.com



160 James Brown Dr., Williston, VT 05495
Ph 802-879-4333 Fax 802-879-7103

56 Etna Road, Lebanon, NH 03766
Ph 603-678-4891 Fax 603-678-4893



Laboratory Report

DATE REPORTED: 02/01/2011

CLIENT: Lincoln Applied Geology
PROJECT: Trono Shared WellWORK ORDER: 1101-00746
DATE RECEIVED 01/19/2011

001

Site: Supply Well

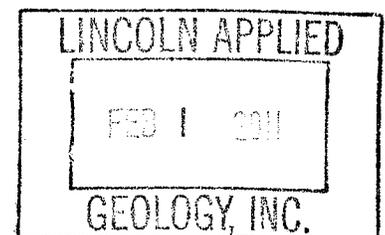
Date Sampled: 1/18/11 Time: 14:45

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
Total Coliform	2	MPN/100mls	SM18 9223B	1/19/11 15:20	W KMB	A	
e. coli	< 1	MPN/100mls	SM18 9223B	1/19/11 15:20	W KMB	A	
Uranium	0.00102	mg/L	EPA 200.8	1/28/11	SWSUB	A	SBK
Chloride	2.7	mg/L	EPA 300.0	1/19/11	W CM	A	
Nitrate as N	0.04	mg/L	EPA 300.0	1/19/11 13:39	W CM	A	
Nitrite as N	< 0.02	mg/L	EPA 300.0	1/19/11 13:39	W CM	A	
pH	7.53	SU	SM 4500-H B	1/19/11 15:40	W JSS	A	
Arsenic, Total	< 0.001	mg/L	SM19 3113B	1/25/11	W MMW	A	
Iron, Total	0.097	mg/L	EPA 200.7	1/26/11	W RJL	A	
Manganese, Total	< 0.020	mg/L	EPA 200.7	1/26/11	W RJL	A	
Sodium, Total	3.3	mg/L	EPA 200.7	1/26/11	W RJL	A	

Report Summary of Qualifiers and Notes

Samples received in this project required pH. The EPA hold time for this analysis is 15 minutes and should be performed at the time of collection. Analysis was performed as soon as possible upon arrival at the laboratory.

SBK: Analysis performed by subcontracted laboratory, Katahdin Analytical Services, Inc. The complete subcontracted report has been appended to this report.



January 31, 2011

Mr. Mark Westover
Endyne, Inc.
160 James Brown Drive
Williston, VT 05495

RE: Katahdin Lab Number: SE0282
Project ID: 1101-00746W
Project Manager: Ms. Shelly Brown
Sample Receipt Date(s): January 20, 2011

Dear Mr. Westover:

Please find enclosed the following information:

- * Report of Analysis (Analytical and/or Field)
- * Quality Control Data Summary
- * Chain of Custody (COC)
- * Login Report

A copy of the Chain of Custody is included in the paginated report. The original COC is attached as an addendum to this report.

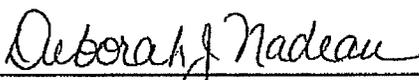
Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact the project manager listed above. The results contained in this report relate only to the submitted samples. This cover letter is an integral part of the ROA.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in an attached technical narrative or in the Report of Analysis.

We appreciate your continued use of our laboratory and look forward to working with you in the future. The following signature indicates technical review and acceptance of the data.

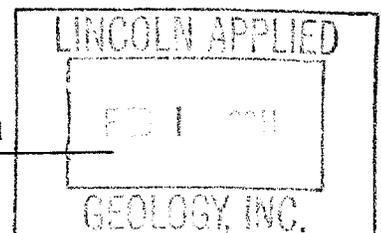
Please go to <http://www.katahdinlab.com/cert.html> for copies of Katahdin Analytical Services Inc. current certificates and analyte lists.

Sincerely,
KATAHDIN ANALYTICAL SERVICES



Authorized Signature

01/31/2011
Date



KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS
(Refer to BOD Qualifiers Page for BOD footnotes)

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a greater rate for false negatives, i.e. greater than 1%, than those results reported as "U" PQL/LOQ or "U" LOD.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

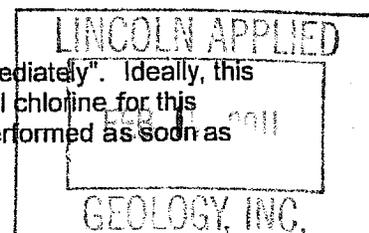
TON Threshold Odor Number

H1 Please note that the regulatory holding time for pH is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. pH for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H2 Please note that the regulatory holding time for DO is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. DO for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H3 Please note that the regulatory holding time for sulfite is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. Sulfite for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H4 Please note that the regulatory holding time for residual chlorine is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. Residual chlorine for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.





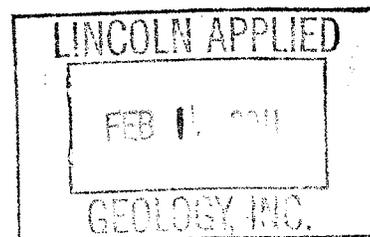
REPORT OF ANALYTICAL RESULTS

Client: Mark Westover
 Endyne, Inc.
 160 James Brown Drive
 Williston, VT 05495

Lab Sample ID: SE0282-001
Report Date: 1/31/2011
PO No.:
Project: 1101-00746W

Sample Description	Matrix	Filtered	Date Sampled	Date Received
1101-00746-001	AQ	No(Total)	01/18/2011	01/20/2011

Parameter	Result	Units	Adjusted PQL	Dilution Factor	PQL	Analytical Method	Analysis Date	By	Prep Method	Prepped Date	By	QC	Notes
URANIUM	0.00102	mg/L	0.000200	1	0.0002	EPA 200.8	1/28/11	EAM	EPA 200.8	1/21/11	DWM	BA21IMW0	



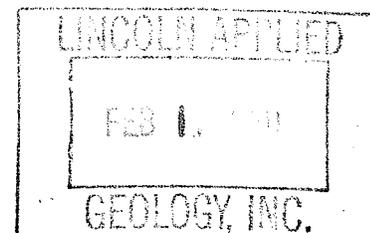
PREPARATION BLANK REPORT

Sample ID: PBWBA211MW0

Batch ID: BA211MW0

Element Name	Result	Units	Flag	PQL	File
ALUMINUM	0.006	mg/L	J	0.060	JBA28C
ANTIMONY	0.000007	mg/L	U	0.000200	JBA28C
ARSENIC	0.0002	mg/L	U	0.0010	JBA28C
BARIUM	0.00068	mg/L	H	0.00040	JBA28C
CADMIUM	0.000006	mg/L	U	0.000200	JBA28C
CALCIUM	0.092	mg/L	H	0.020	JBA28C
COBALT	0.000008	mg/L	J	0.000200	JBA28C
COPPER	0.00067	mg/L	H	0.00060	JBA28C
IRON	0.007	mg/L	J	0.020	JBA28C
LEAD	0.00007	mg/L	J	0.00020	JBA28C
MAGNESIUM	0.0399	mg/L	H	0.0200	JBA28C
MANGANESE	0.00048	mg/L	H	0.00040	JBA28C
MOLYBDENUM	0.000019	mg/L	J	0.00100	JBA28C
NICKEL	0.00016	mg/L	J	0.00040	JBA28C
POTASSIUM	0.006	mg/L	U	0.200	JBA28C
SELENIUM	0.0002	mg/L	U	0.0010	JBA28C
SILICON	0.019	mg/L	J	0.100	JBA28C
SILVER	0.00001	mg/L	U	0.00020	JBA28C
SODIUM	0.064	mg/L	J	0.200	JBA28C
STRONTIUM	0.00049	mg/L	J	0.00100	JBA28C
THALLIUM	0.000009	mg/L	U	0.000200	JBA28C
TIN	0.00028	mg/L	J	0.00100	JBA28C
URANIUM	0.000002	mg/L	U	0.000200	JBA28C
VANADIUM	0.0001	mg/L	U	0.0010	JBA28C
ZINC	0.00278	mg/L	H	0.00200	JBA28C

- U The analyte was not detected in the sample at a level greater than the instrument detection limit.
- J The analyte was detected in the sample at a concentration greater than the instrument detection limit, but less than the laboratory's Practical Quantitation Level.
- H The analyte was detected in the sample at a concentration greater than the laboratory's acceptance limit.



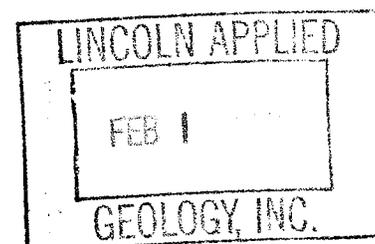


LABORATORY CONTROL SAMPLE REPORT

Sample ID: LCSWBA21IMW0

Batch ID: BA21IMW0

Element Name	True Value	Result	Units	Recovery(%)	Flag	Limits (%)	File
ALUMINUM	2.00	2.13	mg/L	106.5%		80. 120.	JBA28C
ANTIMONY	0.100	0.0993	mg/L	99.3%		80. 120.	JBA28C
ARSENIC	0.100	0.0962	mg/L	96.2%		80. 120.	JBA28C
BARIUM	2.00	1.99	mg/L	99.5%		80. 120.	JBA28C
BERYLLIUM	0.0500	0.0470	mg/L	94.0%		80. 120.	JBA28C
CADMIUM	0.250	0.243	mg/L	97.2%		80. 120.	JBA28C
CALCIUM	2.50	2.19	mg/L	87.6%		80. 120.	JBA28C
COBALT	0.500	0.428	mg/L	85.6%		80. 120.	JBA28C
COPPER	0.250	0.251	mg/L	100.4%		80. 120.	JBA28C
IRON	1.00	0.996	mg/L	99.6%		80. 120.	JBA28C
LEAD	0.100	0.0962	mg/L	96.2%		80. 120.	JBA28C
MAGNESIUM	5.00	5.32	mg/L	106.4%		80. 120.	JBA28C
MANGANESE	0.500	0.493	mg/L	98.6%		80. 120.	JBA28C
MOLYBDENUM	0.300	0.280	mg/L	93.3%		80. 120.	JBA28C
NICKEL	0.500	0.487	mg/L	97.4%		80. 120.	JBA28C
POTASSIUM	10.0	10.3	mg/L	103.0%		80. 120.	JBA28C
SELENIUM	0.100	0.0977	mg/L	97.7%		80. 120.	JBA28C
SILICON	5.00	5.00	mg/L	100.0%		80. 120.	JBA28C
SILVER	0.0500	0.0485	mg/L	97.0%		80. 120.	JBA28C
SODIUM	7.50	8.30	mg/L	110.7%		80. 120.	JBA28C
STRONTIUM	0.500	0.503	mg/L	100.6%		80. 120.	JBA28C
THALLIUM	0.100	0.0950	mg/L	95.0%		80. 120.	JBA28C
TIN	0.500	0.498	mg/L	99.6%		80. 120.	JBA28C
URANIUM	0.100	0.104	mg/L	104.0%		80. 120.	JBA28C
VANADIUM	0.500	0.487	mg/L	97.4%		80. 120.	JBA28C
ZINC	0.500	0.486	mg/L	97.2%		80. 120.	JBA28C



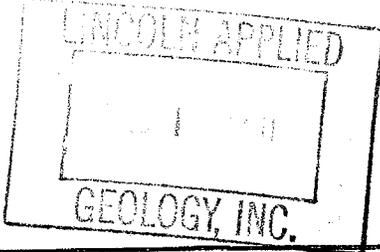
H Laboratory control sample recovery is greater than the laboratory's acceptance limit.

L Laboratory control sample recovery is less than the laboratory's acceptance limit.

Client: <i>Endyne</i>	KAS PM: <i>SMB</i>	Sampled By: <i>Client</i>
Project:	KIMS Entry By: <i>GN</i>	Delivered By: <i>UPS</i>
KAS Work Order#: <i>SE 0281/SE0282/SE0283</i>	KIMS Review By: <i>[Signature]</i>	Received By: <i>GN</i>
SDG #:	Cooler: <i>—</i> of <i>—</i>	Date/Time Rec.: <i>1-20-11/11:15</i>

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		✓			
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR.gun.				✓	Temp (°C): <i>NA</i>
Samples received at <6 °C w/o freezing?				✓	Note: Not required for <u>metals</u> analysis.
Ice packs or ice present?				✓	The lack of ice or ice packs (i.e. no attempt to begin cooling process) may not meet certain regulatory requirements and may invalidate certain data.
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles free of headspace: Aqueous: No bubble larger than a pea Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2 Sulfide - >9 Cyanide – pH >12	✓			✓	<i>preserved w/HNO3 6f J3803 9 @ login</i>

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments



Jan. 20, 2011

02:17 PM

Quote/Incoming: ENDYNE001

Login Number: SE0282

Account: ENDYNE001

Endyne, Inc.

NoWeb

Project:

Login Information

ANALYSIS INSTRUCTIONS :
 CHECK NO. :
 CLIENT PO# :
 CLIENT PROJECT MANAGE :
 CONTRACT :
 COOLER TEMPERATURE : n/a
 DELIVERY SERVICES : UPS
 EDD FORMAT :
 LOGIN INITIALS : GN
 PM : SMB
 PROJECT NAME : 1101-00746W
 QC LEVEL : II
 REGULATORY LIST :
 REPORT INSTRUCTIONS : Email pdf and invoice to Mark Westover, no HC,
 email pdf also to etoomney@endyne.com
 SDG ID :
 SDG STATUS :

Primary Report Address:

Mark Westover
 Endyne, Inc.
 160 James Brown Drive

Williston, VT 05495

mywestover@endynelabs.com

Primary Invoice Address:

Mark Westover
 Endyne, Inc.
 160 James Brown Drive

Williston, VT 05495

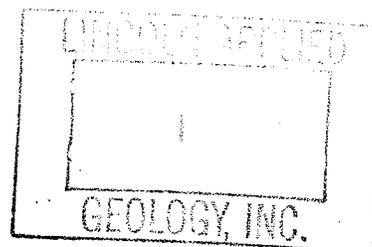
Report CC Addresses:

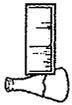
Invoice CC Addresses:

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SE0282-1	1101-00746-001	18-JAN-11 14:45	20-JAN-11			30-JAN-11	
Matrix	Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments		
Aqueous	S E200.8-PREP	17-JUL-11	250mL Plastic+HNO3				
Aqueous	S E200.8-URANIUM	17-JUL-11	250mL Plastic+HNO3				

Total Samples: 1

Total Analyses: 2





CHAIN-OF-CUSTODY-RECORD

ENDYNE, INC.
160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333

42092

Special Reporting Instructions/PO#:

Project Name: Tono Shared Well	Client/Contact Name: LAG Inc.	Sampler Name: Steve Revelle
State of Origin: VT <input checked="" type="checkbox"/> NY <input type="checkbox"/> NH <input type="checkbox"/> Other <input type="checkbox"/>	Phone #: 802-453-4384	Phone #: 802-453-4384
Endyne WO # 1101-00746	Mailing Address: LAG, Inc	Billing Address: LAG Inc

Sample Location	Matrix	C K B	C W P	Date/Time Sampled	Sample Containers		Sample Preservation	Analysis Required	Field Results/Remarks	Date
					No.	Type/Size				
Supply Well	W	X		1/18/11 2:45 PM	2	QUART	None	37/38	TABLE A11-5	
Supply Well	W	X		1/18/11 3 PM	1	BACT	Yes	38	TABLE A11-7 (Coliform)	

Relinquished by: <i>[Signature]</i>	Date/Time: 1/17/11 9:08 AM	Received by: <i>[Signature]</i>	Date/Time: 1/19/11 9:00 AM	Received by: <i>[Signature]</i>	Date/Time: 1/19/11 @ 9:30
1 pH	6 TKN	11 Total Solids	16 Sulfate	21 1664 TPH/FOG	26 8270 PAH Only
2 Chloride	7 Total P	12 TSS	17 Coliform (Specify)	22 8015 GRO	27 8081 Pest
3 Ammonia N	8 Total Diss. P	13 TDS	18 COD	23 8015 DRO	28 8082 PCB
4 Nitrite N	9 BOD	14 Turbidity	19 VT PCF	24 8260B	29 PP13 Metals
5 Nitrate N	10 Alkalinity	15 Conductivity	20 VOC Halocarbons	25 8270 B/N or Acid	30 Total RCRA8
31 Metals (Total, Diss.) Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Tl, U, V, Zn					
32 TCLP (volatiles, semi-volatiles, metals, pesticides, herbicides)			33 Other		
34 Corrosivity	35 Ignitability	36 Reactivity	37 Other	TABLE A11-5	
38 Other	TABLE A11-7				

LAB USE ONLY
 Delivery: *Client*
 Temp: *0.9*
 Comment: *did not send glass for odor. Called Client. May sample later.*



Lincoln Applied Geology
163 Revell Drive 100332
Lincoln, VT 05443

PROJECT: Trono Water Supply
WORK ORDER: 1101-01163
DATE RECEIVED: January 28, 2011
DATE REPORTED: February 01, 2011
SAMPLER: S. Revell

Laboratory Report

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. All required method quality control elements including instrument calibration were performed in accordance with method requirements and determined to be acceptable unless otherwise noted.

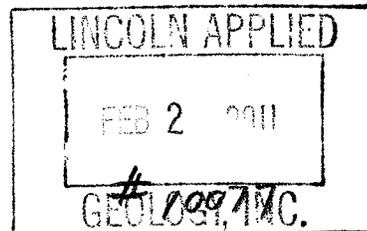
The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Lebanon, NH facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

The NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Harry B. Locker, Ph.D.
Laboratory Director



www.endynelabs.com



160 James Brown Dr., Williston, VT 05495
Ph 802-879-4333 Fax 802-879-7103

56 Etna Road, Lebanon, NH 03766
Ph 603-678-4891 Fax 603-678-4893



Laboratory Report

DATE REPORTED: 02/01/2011

CLIENT: Lincoln Applied Geology
PROJECT: Trono Water Supply

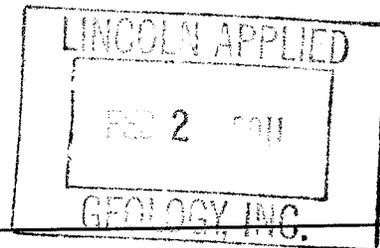
WORK ORDER: 1101-01163
DATE RECEIVED 01/28/2011

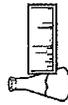
001

Site: Trono Well

Date Sampled: 1/28/11 Time: 12:10

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Method</u>	<u>Analysis Date/Time</u>	<u>Lab/Tech</u>	<u>NELAC</u>	<u>Qual.</u>
Odor	< 1	TON	EPA 140.1	1/28/11 9:13	W JSS	A	





ENDYNE, INC.

160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333

CHAIN-OF-CUSTODY-RECORD

42091

Special Reporting Instructions/PO#:

Project Name: Trono Water Supply Client/Contact Name: Steve Ravel Sampler Name: S. Ravel

State of Origin: VT NY NH Other Phone #: 453-4384 Phone #: 453-4384 Billing Address:

Endyne WO # 1101-0163 Mailing Address: LAC

Sample Location	Matrix	Sample Containers			Date/Time Sampled	Sample Preservation	Analysis Required	Field Results/Remarks	Due Date
		No.	Type/Size	Initials					
<u>Trono Well</u>	<u>W</u>	<u>X</u>	<u>1</u>	<u>1 liter</u>	<u>12:10/1/28/11</u>	<u>None</u>	<u>Odor</u>	<u>Odor Only</u>	

Relinquishing to: [Signature] Date/Time: 1/28/11 2:30p Received by: [Signature] Date/Time: 1/28/11 2:30p

1	pH	6	TKN	11	Total Solids	16	Sulfate	21	1664 TPH/FOG	26	8270 PPH Only
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	8015 GRO	27	8081 Pest
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	8015 DRO	28	8082 PCB
4	Nitrite N	9	BOD	14	Turbidity	19	VT PCF	24	8260B	29	PP13 Metals
5	Nitrate N	10	Alkalinity	15	Conductivity	20	VOC Halocarbons	25	8270 B/N or Acid	30	Total RCRA8
31	Metals (Total, Diss.) Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Ti, U, V, Zn										
32	TCPLP (volatiles, semi-volatiles, metals, pesticides, herbicides) <u>33</u> Other <u>Odor</u>										
34	Corrosivity	35	Ignitability	36	Reactivity	37	Other				
38	Other										

Delivery: OK Temp: 1.9°C Comment:

**Trono Property
Lot 2 & 3 Shared Well System
Water System Analysis**

1. Average Daily Demand (ADD) = 2-4 Bedroom Residences = 980 gallons/day (gpd)
2. Maximum Daily Demand (MDD) = 980 gpd/720 minutes = 1.36 gallons/minute (gpm)
3. Instantaneous Peak Demand (IPD) = 5 gpm/residence X 2 residence = 10 gpm
4. Well Specifications (see attached well completion report)

- Well Diameter = 6"
- Casing Length = 60.80' (59.30' in the ground)
- Well Depth = 642'
- Well Yield = 12gpm (Drillers Yield)
- Pump Setting = 560'
- Static Water Level = 49'

5. IPD Pump Test

- 2 times the ADD (1960 gallons) pumped at 10 gpm for 196 minutes against 60 psi of back pressure
- Results are attached as Chart 1 and indicate 71.5' of drawdown to a pumping level of 120.5'
- Results indicate that the well easily achieves IPD requirements of 10 gpm with 439.5' of available drawdown above the pump.
- Results also indicate that the well yield is much greater than 12 gpm
- Results further indicate that the well can easily pump 10 gpm versus 60 psi without increasing the variable speed setting of the pump.

6. Water Service Analysis (Lot 2 & 3)

- 635' of 1 ¼" Class 160 Polyethylene Water Service
- 10 gpm pumping rate
- Friction Type Head Loss = 1.4 psi head loss per 100' of water service or 0.4 psi X 6.35 = 2.54 psi
- Elevation Type Head Loss = 34' or 14.72 psi
- Total Head Loss = 17.26 psi
- Current Well Head Pressure at 10 gpm – 60 psi
- Pressure in 2nd Story of Each Residences = 60 psi – 17.26 psi
= 42.74 psi

- As a safety factor to ensure adequate pressure of at least 50 psi to each residence, the variable speed pump should be set for a well head pressure of 70 psi.

First Revision Issued 6-18-2010

Certification Statement for use in compliance with Act 145 of the 2010 Legislative Session

One of the two following certification statements shall be included with any application for a Wastewater System and Potable Water Supply Permit that is filed on or after June 2, 2010

Note: When the property subject to the permit application is owned by more than one person, only one of the landowners must sign the certification statement even though all landowners must sign the permit application itself.

When there are affected property owners, the applicant shall use this statement:

I hereby certify that the attached list of names and addresses includes all those whose property may be affected by the proposed water and wastewater systems, and their associated isolation distances and zones, and that all those listed have been sent a copy of the application and any associated plans.

Signature _____

Name (Printed) _____

Date of this certification _____

Note: It will be helpful for future property transfer work if the physical address of the property or property tax ID number is included with the certification.

When there are no affected landowners, the applicant shall use this statement:

I hereby certify that notification is not required either because there is an exemption or there are no landowners who may be affected by the proposed water and wastewater systems.

Signature _____

Name (Printed) _____

Date of this certification _____

Wastewater Management Division - Permit Application Wastewater System & Potable Water Supply



For Office Use Only:

Application#	PIN#	Date Complete Application Received
<input type="text"/>	<input type="text"/>	<input type="text"/>

Authority:

10 V.S.A. Chapter 64, the Environmental Protection Rules, Chapter 1, Wastewater System & Potable Water Supply Rules, and Chapter 21, Water Supply Rules, Appendix A. Part 11 - Small Scale Water Systems.

General Information:

The organization and/or content of this form may not be altered, however, the form is designed to expand to allow additional information to be entered. Changes in the organization and/or content of the form may result in an invalid application or permit.

In most cases a licensed designer will be required for your project and to help complete this application form. There are also line-by-line instructions available to assist with completing this form.

NOTE: We strongly suggest referring to the application instructions while completing this application form.

Part I Applicant (Landowner) & Project Contact Information

Section A - Applicant Details (if Landowner is an Individual or Individuals)

1 Last Name Trono		2 First Name (and Middle Initial if appropriate) Peter (J.)	
3 Mailing Address Line 1 Trono Oil and Gas Company		4 Mailing Address Line 2 8 Chase Lane	
5 Town/City Burlington	6 State/Province VT	7 Country United States	8 Zip/Postal Code 05401
9 Email Address tronovt@tronofuels.comcastbiz.net			10 Telephone (802) 864-7828

Remove This Applicant

Add Another Applicant

Section B - Applicant Details (if Landowner is other than an individual or individuals, e.g. Corporations, Homeowner's Associations, etc.)

1 Registered Legal Entity or Organization Name			2 Telephone
3 Mailing Address Line 1			4 Mailing Address Line 2
5 Town/City	6 State/Province	7 Country United States	8 Zip/Postal Code

Certifying Official

The Certifying Official must be a person who has signatory authority for the legal entity or organization that is the Applicant. A copy of the document authorizing this person to act as a signatory authority must be attached to this application.

9 Certifying Official Last Name	10 Certifying Official First Name (and MI if appropriate)
<input type="text"/>	<input type="text"/>
11 Certifying Official Title	
<input type="text"/>	
12 Certifying Official Email Address	13 Telephone
<input type="text"/>	<input type="text"/>

Remove This Applicant

Add Another Applicant

Section C - Primary Contact Information (if other than Applicant)			
1 Last Name		2 First Name (and Middle Initial if appropriate)	
3 Mailing Address Line 1		4 Mailing Address Line 2	
5 Town/City	6 State/Province	7 Country	8 Zip/Postal Code
		United States	
9 Email Address			10 Telephone

Section D - Building/Business Owner Information			
1 Last Name		2 First Name (and Middle Initial if appropriate)	
3 Mailing Address Line 1		4 Mailing Address Line 2	
5 Town/City	6 State/Province	7 Country	8 Zip/Postal Code
		United States	
9 Email Address			10 Telephone

Part II Certifying Designer(s) Information			
1 Designer Last Name		2 Designer First Name (and Middle Initial if appropriate)	
Revell		Stephen	
3 Designer License#	4 Company Name		
00178	Lincoln Applied Geology		
5 Mailing Address Line 1		6 Mailing Address Line 2	
163 Revell Drive			
7 Town/City	8 State/Province	9 Country	10 Zip/Postal Code
Lincoln	Vermont	United States	05443
11 Email Address			12 Telephone
srevell@lagvt.com			(802) 453-4384
13 Designer Role(s) (check all that apply)			
<input checked="" type="checkbox"/> Water Supply Designer			
<input checked="" type="checkbox"/> Wastewater Disposal System Designer			
Remove This Designer			

Add Another Designer

Part III Property Location Information			
Section A - Property Parcel ID#(s) and Location(s)			
1 Please provide the property location information including Town or City Parcel ID#, Town/City, and Street or Road location in the table below:			
	(a) Town/City Parcel ID#	(b) Town or City	(c) Street or Road Location
X	0021-0800	Charlotte	800 Bingham Brook Road
Add Another Property			

Section B - Center of Property GPS Coordinates	
1 Enter the approximate center of property coordinates using GPS set for NAD83 or as derived from a map (map must be based on NAD83).	
(a) Latitude (in decimal degrees to five decimal places, ex. 44.38181°)	(b) Longitude (in decimal degrees to five decimal places, ex. -72.31392 °)
N <input style="width: 80px;" type="text" value="44.30047"/> °	W (-) <input style="width: 80px;" type="text" value="73.18731"/> °

Part IV Project Information

Section A - General Project Information & Questions

1 Project Name (if applicable) <input style="width: 95%;" type="text" value="Trono Property"/>	2 Total Acreage of Property <input style="width: 95%;" type="text" value="49"/>
---	--

3 Business Name (if applicable)

4 Detailed Project Description

Mr. Trono currently owns an unimproved +/-49.0 acre parcel located at 800 Bingham Brook Road in Charlotte, VT. Our client is proposing to subdivide the property into three separate lots with Lot 1 equalling +/- 45.0 acres, and Lots 2 and 3 equalling +/- 2.0 acres each. The proposed Lots 1, 2, and 3 will each be developed with year-round four bedroom single family residences (SFR). Lot 1 will be served by an on-site drilled bedrock water supply well and an in-ground absorption trench wastewater disposal system. Lots 2 and 3 will be served by a shared drilled bedrock water supply well and a shared prescriptive mound-type wastewater disposal system. Both the well and disposal system serving Lots 2 and 3 are located on Lot 1.

5 Were all buildings or structures, campgrounds, and their associated potable water supplies and wastewater systems substantially completed before January 1, 2007 and all improved and unimproved lots in existence before January 1, 2007? Yes No

6 Does this application include subdividing the property? Yes No

7 Has anyone from the Wastewater Management Division's Regional Office been to the property?..... Yes No

If Yes, enter the staff person's name and the date of the visit.

(a) Name of Staff Person <input style="width: 95%;" type="text" value="Spencer Harris"/>	(b) Date of Visit <input style="width: 95%;" type="text" value="8-9-10 & 8-23-10"/>
---	--

8 Will any construction occur within 50 feet of a wetland boundary, mapped or designated? Yes No

If Yes, contact the Wetlands Program of the Water Quality Division at (802) 241-3770.

9 Will more than one acre be disturbed during the entire course of construction, including all lots and phases? Yes No

If Yes, contact the Stormwater Program of the Water Quality Division at (802) 241-4320.

10 Will there be any stream crossings by roads, utilities, or other construction? Yes No

If Yes, contact the River Corridor Mgmt. Program of the Water Quality Division at:

Central & Northwest Vermont	(802) 879-5631
Southern Vermont	(802) 786-5906
Northeastern Vermont	(802) 751-0129

11 Is the project located in a special flood hazard area as designated on the flood insurance maps prepared for a municipality by the Federal Emergency Management Agency? Yes No

If Yes, show the special flood hazard area limits on the site plan.

12 Act 250: Has the Applicant (Landowner) subdivided any other lots of any size within a five mile radius of this subdivision, or within the environmental district within the last five years ? Yes No

If Yes, enter the town(s) and the associated number of lots in the table below:

	(a) Town	(b) Number of Lots
X	<input style="width: 95%;" type="text"/>	<input style="width: 95%;" type="text"/>
<input type="button" value="Add Another Town/Lot"/>		

13 Is there any prior Act 250 jurisdiction on the tract of land?..... Yes No

If Yes, enter the Act 250 permit number:

(a) Act 250 Permit Number

Section B - Project Deed Reference

1 Please provide the Town, Book, and Page reference for the current landowner's deed(s) to this property in the table below:

	(a) Town	(b) Book	(c) Page(s)
X	Charlotte	189	618

Add Another Deed Reference

Section C - Project Plan Reference

1 Please provide the following information for all water supply and wastewater disposal system plans being submitted.

	(a) Sheet#	(b) Title	(c) Plan Date	(d) Plan Revision Date
X	1 of 7	Trono Property - Overall Property Site Plan	02-10-2011	
X	2 of 7	Trono Lot 1 Site Plan with Proposed Water and Wastewater System Layout	02-10-2011	
X	3 of 7	Trono Lot 2 and 3 Site Plan with Proposed Water and Wastewater System Layout	02-10-2011	
X	4 of 7	Lot 1 Wastewater System Design Details	02-10-2011	
X	5 of 7	Lot 2 and 3 Wastewater System Design Details	02-10-2011	
X	6 of 7	Lot 1 Water Supply System Design Details	02-10-2011	
X	7 of 7	Lot 2 and 3 Water Supply System Design Details	02-10-2011	

Add Another Plan Reference

Section D - Existing Project Lot/BuildingDetails

Please provide the existing project details. This section is used to describe what is existing for the project. For example, if you are subdividing an undeveloped 21-acre parcel, you would list the existing parcel. If you are revising the boundary lines of two commercial lots in an industrial park, and constructing an addition to an existing building you would list the existing lot numbers, existing acres, existing buildings, existing uses, construction date(s), prior permits, and answer the compliance questions.

1 Lot#	2 Lot Size (acres)	3 Existing Use of the Lot
1	49	Undeveloped

4 Provide the following information for each building on the lot:

	(a) Building ID	(b) Existing Use	(c) Date Construction of Building Substantially Complete	(d) Prior Permits	(e) In compliance with existing permits?
X	0	Undeveloped	NA		<input checked="" type="radio"/> Yes <input type="radio"/> No

Add Another Building

Remove This Lot

Add Another Lot

Section E - Proposed Project Lot/BuildingDetails

This section is used to describe what you are proposing to do in this project. For example, if you were going to create 4 lots for construction of single family residences, you would list each lot, proposed acreage, proposed buildings, and proposed use.

1 Lot#	2 Lot Size (acres)	3 Proposed Use of the Lot
1	45	Residential - Year-round four bedroom SFR

4 Is the lot being created as part of a subdivision? Yes No

5 Are you requesting that the Blood, Marriage, or Civil Union special fee be applied to this lot? Yes No

6 If the lot is exempt, please indicate the specific exemption from the Wastewater System and Potable Water Supply Rules?

7 Provide the following information for each building on the lot:

	(a) Building ID	(b) If building is exempt, indicate exemption	(c) Construction or increased flow?	(d) Proposed Use
X	1		<input checked="" type="checkbox"/>	Residential - Year-round four bedroom SFR

Add Another Building

Remove This Lot

1 Lot#	2 Lot Size (acres)	3 Proposed Use of the Lot
2	2	Residential - Year-round four bedroom SFR

4 Is the lot being created as part of a subdivision? Yes No

5 Are you requesting that the Blood, Marriage, or Civil Union special fee be applied to this lot? Yes No

6 If the lot is exempt, please indicate the specific exemption from the Wastewater System and Potable Water Supply Rules?

7 Provide the following information for each building on the lot:

	(a) Building ID	(b) If building is exempt, indicate exemption	(c) Construction or increased flow?	(d) Proposed Use
X	1		<input checked="" type="checkbox"/>	Residential - Year-round four bedroom SFR

Add Another Building

Remove This Lot

1 Lot#	2 Lot Size (acres)	3 Proposed Use of the Lot
3	2	Residential - Year-round four bedroom SFR

4 Is the lot being created as part of a subdivision? Yes No

5 Are you requesting that the Blood, Marriage, or Civil Union special fee be applied to this lot? Yes No

6 If the lot is exempt, please indicate the specific exemption from the Wastewater System and Potable Water Supply Rules?

7 Provide the following information for each building on the lot:

	(a) Building ID	(b) If building is exempt, indicate exemption	(c) Construction or increased flow?	(d) Proposed Use
X	1		<input checked="" type="checkbox"/>	Residential - Year-round four bedroom SFR

Add Another Building

Remove This Lot

Add Another Lot

Part V Water Supply Information

Section A - Water Supply Screening Questions

1 Are you proposing a new water supply for this project? Yes No

2 Are you proposing changes to an existing water supply for this project? Yes No

3 Is there a connection to an existing water supply for the project? Yes No

If you answered No to all three of the above questions, skip to Part VI. Otherwise, proceed with Part V.

Section B - General Water Supply Questions

1 Does this project involve a failed water supply? Yes No

2 Will any of the proposed water sources serve 25 or more people or have 15 or more service connections? Yes No

If Yes, the applicant must contact the Water Supply Division at (802) 241-3400 for source, construction and operating

3 Are any of the existing or proposed water sources located within a special flood hazard area? Yes No

4 Are any of the existing or proposed water sources located within a floodway? Yes No

5 Are any of the proposed water sources located within 1 mile of a hazardous waste site as designated by the Waste Management Division and identified on the Agency mapping website? Yes No

If Yes, please submit additional information on the site. The Waste Management Division can be reached at (802) 241-3888.

6 Does this project require an approval letter from the Water Supply Division for the construction of a public water system, municipal water line extension over 500 feet, or hydrants or sprinkler systems? Yes No

If Yes, please submit a copy of the approval letter from the Water Supply Division.

7 Does the proposed or existing water supply(ies) use a water treatment device to obtain compliance with the quality requirements in the Water Supply Rule? Yes No

If Yes, please submit additional information regarding the constituent(s) that exceeds the standards and plans, details, and specifications of the treatment device.

8 Is any portion of the proposed water supply located in or near a Water Source Protection Area as designated by the Water Supply Division? Yes No

If in areas of known interference issues, please contact the Water Supply Division at (802) 241-3400.

Section C - Individual Water Supply Details

Please provide the following information for each of the existing and proposed water supply(ies) serving a building or structure, or campground on the property.

1 Water Supply Name/Identifier Lot 1 - Proposed Water Supply Well	2 Water Supply Owner (if not Applicant)
3 Water Source Type Non-Public Drilled Bedrock Well	4 Type of Change to Supply New System

5 Lots/Buildings Served by this Water Supply System

(a) Lot#	(b) Building ID	(c) Type of Change to the Building's Supply	Design Flows (Gallons Per Day)			(g) Rule or Meter Based Flows
			(d) Existing	(e) Increase	(f) Total	
X 1	1	Connection to New System	0	490	490	Rule-based
Add Another Lot/Building Served by this Supply			6	7	8	
			0	490	490	

9 Is this water supply located off-lot? Yes No

10 Is this water supply shared? Yes No

If the water supply is located off-lot or shared, submit a copy of the agreement to provide an easement prior to construction.

11 Is a variance being requested for this water supply? Yes No

If Yes, please submit additional details related to the variance request.

Remove This Water Supply

1 Water Supply Name/Identifier Lot 2 and 3 - Shared Water Supply Well	2 Water Supply Owner (if not Applicant)
3 Water Source Type Non-Public Drilled Bedrock Well	4 Type of Change to Supply New System

5 Lots/Buildings Served by this Water Supply System

	(a) Lot#	(b) Building ID	(c) Type of Change to the Building's Supply	Design Flows (Gallons Per Day)			(g) Rule or Meter Based Flows
				(d) Existing	(e) Increase	(f) Total	
X	2	1	Connection to New System	0	490	490	Rule-based
X	3	1	Connection to New System	0	490	490	Rule-based
Add Another Lot/Building Served by this Supply				6	7	8	
				0	980	980	

9 Is this water supply located off-lot? Yes No

10 Is this water supply shared? Yes No

If the water supply is located off-lot or shared, submit a copy of the agreement to provide an easement prior to construction.

11 Is a variance being requested for this water supply? Yes No

If Yes, please submit additional details related to the variance request.

Remove This Water Supply

Add Another Water Supply

Section D - Water Supply Design Flows Summary Table

1 If the project includes more than one water supply, please list each water supply system and provide the total water supply design flows for the project. **IMPORTANT:** Please don't include systems that were identified in this Part on Section C, Line 4 as a "Replacement Area Designation" in this summary table.

	(a) Water Supply Name/Identifier	Design Flows (Gallons Per Day)		
		(b) Existing	(c) Increase	(d) Total
X	Lot 1 - Water Supply Well	0	490	490
X	Lot 2 and 3-Shared Supply Well	0	980	980
Add Another Water Supply		2	3	4
		0	1,470	1,470

Part VI Wastewater Disposal System Information

Section A - Wastewater Disposal System Screening Questions

1 Are you proposing a new wastewater disposal system or replacement area for this project? Yes No

2 Are you proposing changes to an existing wastewater disposal system for this project? Yes No

3 Is there a connection to an existing wastewater disposal system for the project? Yes No

If you answered No to all three of the above questions, skip to Part VII. Otherwise, proceed with Part VI.

Section B - General Wastewater Disposal System Questions

- 1 Does this project involve a failed wastewater disposal system? Yes No
- 2 Do any of the systems require a curtain or dewatering drain as part of the design? Yes No
- 3 Is a hydrogeologic study required for this project? Yes No
- 4 If the project has a soil-based wastewater disposal system with design flows that exceed 1,000 GPD, is this project located in a Class A Watershed?..... Yes No NA
- If Yes, indicate the Class A Watershed in which the system(s) is located:
- (a) Class A Watershed Name
-
- 5 Are there any existing or proposed floor drains as part of this project?..... Yes No
- If Yes, indicate where the floor drains will discharge:
- (a) Floor Drain Discharge Point
-
- 6 If the project utilizes an Innovative/Alternative System or Product, has the applicant received a copy of the Wastewater Management Division's approval letter? Yes No NA
- 7 Is any portion of the proposed wastewater disposal system located in or near a Water Source Protection Area as designated by the Water Supply Division? Yes No
- If Yes, contact the Water Supply Division at (802) 241-3400.

Section C - Individual Wastewater Disposal System Details

Please provide the following information for each of the existing and proposed wastewater disposal systems serving a building or structure, or campground on the property.

1 Wastewater Disposal System Name/Identifier <div style="border: 1px solid black; padding: 2px;">Lot 1 - Wastewater Disposal System</div>	2 Wastewater Disposal System Owner (if not Applicant) <div style="border: 1px solid black; height: 20px;"></div>
3 Wastewater Disposal System Type <div style="border: 1px solid black; padding: 2px;">In-ground</div>	4 Type of Change to System <div style="border: 1px solid black; padding: 2px;">New System</div>

5 Lots/Buildings Served by this Wastewater Disposal System

(a) Lot#	(b) Building ID	(c) Type of Change to the Building's System	Design Flows (Gallons Per Day)				(h) Rule or Meter Based Flows
			(d) Existing	(e) Increase	(f) Infiltration	(g) Total	
X	1	Connection to New System	0	490		490	Rule-based
Add Another Lot/Building Served by this System			6	7	8	9	
			0	490		490	

- 10 Is this wastewater disposal system located off-lot? Yes No
- 11 Is this wastewater disposal system shared? Yes No
- If the wastewater disposal system is located off-lot or shared, submit a copy of the agreement to provide an easement prior to initiation of construction.*
- 12 Is a variance being requested for this wastewater disposal system? Yes No
- If Yes, please submit additional details related to the variance request.*
- 13 If this wastewater disposal system type is a connection to an Indirect Discharge System, please provide the Indirect Discharge System ID number.
- Indirect Discharge System ID Number
-

14 If this wastewater disposal system type is a connection to a municipal system, please select the town.

Town

15 If this wastewater disposal system is a soil-based system, please select the design approach used.

Design Approach Used

Prescriptive

16 For soil-based systems, please check all that apply.

Storage and Dose Filtrate

17 If this is an Innovative/Alternative soil-based system, please select the system use type.

Innovative/Alternative System Use Type

18 If this is an Innovative/Alternative soil-based system, please select the Innovative/Alternative system or product.

Innovative/Alternative System or Product

Remove This Wastewater System

1 Wastewater Disposal System Name/Identifier

Lot 2 and 3 - Shared Disposal System

2 Wastewater Disposal System Owner (if not Applicant)

3 Wastewater Disposal System Type

Mound

4 Type of Change to System

New System

5 Lots/Buildings Served by this Wastewater Disposal System

	(a) Lot#	(b) Building ID	(c) Type of Change to the Building's System	Design Flows (Gallons Per Day)			(g) Total	(h) Rule or Meter Based Flows
				(d) Existing	(e) Increase	(f) Infiltration		
X	2	1	Connection to New System	0	490	0	490	Rule-based
X	3	1	Connection to New System	0	490	0	490	Rule-based
Add Another Lot/Building Served by this System				6	7	8	9	
				0	980	0	980	

10 Is this wastewater disposal system located off-lot? Yes No

11 Is this wastewater disposal system shared? Yes No
If the wastewater disposal system is located off-lot or shared, submit a copy of the agreement to provide an easement prior to initiation of construction.

12 Is a variance being requested for this wastewater disposal system? Yes No
If Yes, please submit additional details related to the variance request.

13 If this wastewater disposal system type is a connection to an Indirect Discharge System, please provide the Indirect Discharge System ID number.
 Indirect Discharge System ID Number

14 If this wastewater disposal system type is a connection to a municipal system, please select the town.
 Town

15 If this wastewater disposal system is a soil-based system, please select the design approach used.

Design Approach Used

Prescriptive

16 For soil-based systems, please check all that apply.

Storage and Dose Filtrate

17 If this is an Innovative/Alternative soil-based system, please select the system use type.

Innovative/Alternative System Use Type

[Empty text box]

18 If this is an Innovative/Alternative soil-based system, please select the Innovative/Alternative system or product.

Innovative/Alternative System or Product

[Empty text box]

Remove This Wastewater System

Add Another Wastewater System

Section D - Wastewater Disposal Systems Design Flows Summary Table

1 If the project includes more than one wastewater disposal system, please list each system on this page and provide the total wastewater disposal design flows for the project. **IMPORTANT:** Please don't include systems that were identified in this Part on Section C, Line 4 as a "Replacement Area Designation" in this summary table.

		Design Flows (Gallons Per Day)			
(a) Wastewater Disposal System Name/Identifier	(b) Existing	(c) Increase	(d) Infiltration	(e) Total	
X Lot 1 - WW Disposal System		490	0	490	
X Lot 2+3-Shared WW Disposal	0	980	0	980	
Add Another Wastewater System	2	3	4	5	
	0	1,470	0	1,470	

Part VII Application Fees

1 Fee Amount \$1,500.00

2 Fee Calculation Details

Fee calculations based upon Town of Charlotte Planning and Zoning Fee Schedule (Adopted June 16, 2008).

\$500.00/SFR x 3 = \$1,500.00

Part VIII Designer Certification & Copyright License

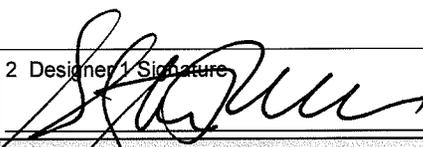
Section A - Certifying Designer 1 Certification & Copyright License

"I hereby certify that in the exercise of my reasonable professional judgment, the design-related information submitted with this application is true and correct, and that the design included in this application for a permit complies with the Vermont Wastewater System and Potable Water Supply Rules and the Vermont Water Supply Rules.

As the individual who prepared this application, including all documents that are marked as copyrighted, I hereby grant a non-exclusive, limited license to the State to allow the documents to be made available for public review and copying in order to properly implement and operate the permitting programs for Wastewater Systems and Potable Water Supplies, and for no other purposes. As a condition to this license, the State agrees that it will not make any changes to such documents, nor will the State delete any copyright notices on such documents."

1 Check the design(s) you are certifying. This should be the same as the Designer Role(s) you selected in Part II, Section A, Line 13.

- Water Supply Designer
- Wastewater Disposal System Designer

1 Designer 1 Name Stephen Revell	2 Designer 1 Signature 	3 Signature Date 2/10/11
-------------------------------------	--	-----------------------------

Section B - Certifying Designer 2 Certification & Copyright License

"I hereby certify that in the exercise of my reasonable professional judgment, the design-related information submitted with this application is true and correct, and that the design included in this application for a permit complies with the Vermont Wastewater System and Potable Water Supply Rules and the Vermont Water Supply Rules.

As the individual who prepared this application, including all documents that are marked as copyrighted, I hereby grant a non-exclusive, limited license to the State to allow the documents to be made available for public review and copying in order to properly implement and operate the permitting programs for Wastewater Systems and Potable Water Supplies, and for no other purposes. As a condition to this license, the State agrees that it will not make any changes to such documents, nor will the State delete any copyright notices on such documents."

1 Check the design(s) you are certifying. This should be the same as the Designer Role(s) you selected in Part II, Section B, Line 13.

- Water Supply Designer
- Wastewater Disposal System Designer

1 Designer 2 Name <input style="width: 95%;" type="text"/>	2 Designer 2 Signature <input style="width: 95%;" type="text"/>	3 Signature Date <input style="width: 95%;" type="text"/>
---	--	--

Part IX Applicant(s) Signature & Acknowledgements

In order to insure compliance with the requirements of the regulations administered by the Department of Environmental Conservation, Wastewater Management Division, it may be necessary to visit the property. As this would involve a Department employee entering private property, we request your approval to do so.

1 If we do visit your property, do you have any special instructions?

"As landowner of the property for which I am requesting a permit from the Department of Environmental Conservation, I understand that by signing this application I am granting permission for the Department employees to enter the property, during normal working hours, to insure compliance of the property with the applicable rules of the Department.

I also understand that I am not allowed to commence any site work or construction on this project without written approval from the Department of Environmental Conservation.

If my project utilizes an Innovative/Alternative System or Product, I have received a copy of the Wastewater Management Division's approval letter and agree to abide by the conditions of the approval.

I also certify that to the best of my knowledge and belief the information submitted above is true, accurate and complete."

<div style="border: 1px solid black; padding: 2px;"> <input checked="" type="checkbox"/> 2 Print Applicant Name Peter J. Trono </div>	3 Applicant Signature <div style="border: 1px solid black; height: 20px;"></div>	4 Signature Date <div style="border: 1px solid black; height: 20px;"></div>
--	---	--

Add Applicant Signature Block