



CIVIL ENGINEERING ASSOCIATES, INC.

10 Mansfield View Lane
South Burlington, VT 05403

Phone: 802-864-2323
Fax: 802-864-2271
E-Mail: mail@cea-vt.com

July 6, 2012

Mr. Tom Mansfield, Zoning Administrator
Town of Charlotte Offices
PO Box 119
Charlotte, Vermont 05445

**Re: Chartrand Wastewater Disposal System & Potable Water Supply
100 State Park Road, Charlotte
State Wastewater & Potable Water Supply Permit Application**

Dear Mr. Mansfield:

Mr. Benjamin Chartrand is seeking approval to construct a mound wastewater disposal system at the undeveloped property located at 100 State park Road to support a proposed 4-bedroom house and detached garage and 1-bedroom apartment.

The isolation distance for the proposed mound system does extend southerly across State Park Road to the Jackson/Jenkins property. An abutter notification has been sent to them prior to the submittal of this application package in conformance with the notification requirements of Act 145.

This completes our summary of the proposed wastewater system and potable water supply components for the property at 100 State Park Road. If you should have any questions, please feel free to contact me at 864-2323 x310.

Respectfully,

David S. Marshall, P.E.
Project Engineer

\dsm

Enclosures

Application and Application Fee (\$500)
Two sets of full size plans, one set of 11x17
Field and Pump Station Basis of Design, Pump cut sheets
Abutter Certification
CD of PDF's of application

cc: B. Chartrand (w/ enclosures (2 sets full size plans and 1 set 11x17)
CEA File 12173.00 (w/ enclosures 1 set 11x17 plans)



Drinking Water & Groundwater Protection Division - Permit Application Wastewater System & Potable Water Supply

For Office Use Only:

| | | |
|------------------------------------|------|------------------------------------|
| Application# WW-138-1217 | PIN# | Date Complete Application Received |
|------------------------------------|------|------------------------------------|

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 Chartrand | | 2 First Name (and Middle Initial if appropriate) Ben | |
| 3 Mailing Address Line 1 3371 Mount Philo Road | | 4 Mailing Address Line 2 | |
| 5 Town/City Charlotte | 6 State/Province Vermont | 7 Country United States | 8 Zip/Postal Code 05445 |
| 9 Email Address | | 10 Telephone | |

Remove This Applicant

| | | | |
|---|-----------------------------|--|----------------------------|
| 1 Last Name Chartrand | | 2 First Name (and Middle Initial if appropriate) Donald | |
| 3 Mailing Address Line 1 3371 Mount Philo Road | | 4 Mailing Address Line 2 | |
| 5 Town/City Charlotte | 6 State/Province Vermont | 7 Country United States | 8 Zip/Postal Code 05445 |
| 9 Email Address | | 10 Telephone | |

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"/> |
| <input type="button" value="Remove This Applicant"/> | |

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

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

| | | | |
|---|------------------------------------|---|--------------------|
| Part II Certifying Designer(s) Information | | | |
| 1 Designer Last Name | | 2 Designer First Name (and Middle Initial if appropriate) | |
| Marshall | | David | |
| 3 Designer License# | 4 Company Name | | |
| 6019 | Civil Engineering Associates, Inc. | | |
| 5 Mailing Address Line 1 | | 6 Mailing Address Line 2 | |
| 10 Mansfield View Lane | | <input type="text"/> | |
| 7 Town/City | 8 State/Province | 9 Country | 10 Zip/Postal Code |
| South Burlington | Vermont | United States | 05403 |
| 11 Email Address | | | 12 Telephone |
| dmarshall@cea-vt.com | | | 864-2323 x310 |

13 Designer Role(s) (check all that apply)

Water Supply Designer

Wastewater Disposal System Designer

Remove This Designer

Add Another Designer

Part III Property Location Information

Section A - Property Location

1 Please provide the property Town and the property address or a brief description of the location.

| | |
|------------------|-----------------------------|
| (a) Town or City | (b) Street or Road Location |
| Charlotte | 100 State Park Road |

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 type="text" value="44.27616"/> ° | W (-) <input type="text" value="73.23252"/> ° |

Part IV Project Information

Section A - General Project Information & Questions

| | |
|--|------------------------------|
| 1 Project Name (if applicable) | 2 Total Acreage of Property |
| Chartrand Property | 5.09 |
| 3 Business Name (if applicable) | |
| 4 Detailed Project Description | |
| Creation of a 4-bedroom home and detached 1-bedroom apartment served by a common mound type wastewater disposal system and common well. | |
| 5 (a) Were all existing buildings or structures, campgrounds, and their associated potable water supplies and wastewater systems substantially completed before January 1, 2007? <input checked="" type="radio"/> Yes <input type="radio"/> No | |
| (b) Were all existing improved and unimproved lots in existence before January 1, 2007? <input checked="" type="radio"/> Yes <input type="radio"/> No | |
| 6 Does this application include subdividing the property? <input type="radio"/> Yes <input checked="" type="radio"/> No | |
| 7 Has anyone from the Drinking Water & Groundwater Protection Division's Regional Office been to the property?..... <input checked="" type="radio"/> Yes <input type="radio"/> No | |
| If Yes, enter the staff person's name and the date of the visit. | |
| (a) Name of Staff Person | (b) Date of Visit (m/d/yyyy) |
| Spencer Harris | 5/29/2012 |
| 8 Will any construction occur within 50 feet of a wetland boundary, mapped or designated? <input type="radio"/> Yes <input checked="" type="radio"/> No | |
| If Yes, contact the Wetlands Program of the Watershed Management Division at (802) 338-4835. | |
| 9 Will more than one acre be disturbed during the entire course of construction, including all lots and phases? <input checked="" type="radio"/> Yes <input type="radio"/> No | |
| If Yes, contact the Stormwater Program of the Watershed Management 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 Watershed Management 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 | | |

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, Parcel ID, Book, and Page reference for the current landowner's deed(s) to this property:

| | (a) Town | (b) Parcel ID | (c) Book | (d) Page(s) |
|---|-----------|---------------|----------|-------------|
| X | Charlotte | 0005-0100 | 145 | 195 |

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 | C1 | Overall Site Plan | 7/1/2012 | |
| X | C2 | Proposed Site Plan | 7/1/2012 | |
| X | C3 | Wastewater Details | 7/1/2012 | |
| X | C3.1 | Wastewater Details | 7/1/2012 | |

Add Another Plan Reference

Section D - Existing Project Lot/Building Details

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 | 5.09 | 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 | None | | | | <input type="radio"/> Yes <input type="radio"/> No |

Add Another Building

Remove This Lot

Add Another Lot

Section E - Proposed Project Lot/Building Details

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 | 5.09 | Residential and Home Occupation |

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 | Proposed Home | | <input checked="" type="checkbox"/> | 4-BR Residential |
| X | Proposed Garage/Apt | | <input checked="" type="checkbox"/> | 1-BR Apartment |

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 or water service line or changes to a permitted but not constructed water supply or water service line for this project? Yes No

2 Are you proposing changes to an existing water supply or water service for this project (including changes to location, design flows, or operational change)? Yes No

3 Is there an existing connection to a water supply or water service line for this project? Yes No

Complete Part V if you answered Yes to any of the above questions. A project with no existing or proposed water supply may skip to Part VI.

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 Drinking Water & Groundwater Protection Division at (802) 241-3400 for source, construction and an operating permit.

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 Drinking Water & Groundwater Protection 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 Drinking Water & Groundwater Protection 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 Drinking Water & Groundwater Protection Division? Yes No

If in areas of known interference issues, contact the Drinking Water & Groundwater Protection 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 Proposed 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) Change | (f) Total | |
| X | 1 | Prop. House | Connection to New System | 0 | 490 | 490 | Rule-based |
| X | 1 | Prop. Apt. | Connection to New System | 0 | 140 | 140 | Rule-based |
| Add Another Lot/Building Served by this Supply | | | | 6 | 7 | 8 | |
| | | | | 0 | 630 | 630 | |

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) Change | (d) Total |
| X | Proposed Well | 0 | 630 | 630 |

Add Another Water Supply

| | | |
|---|-----|-----|
| 2 | 3 | 4 |
| 0 | 630 | 630 |

Part VI Wastewater Disposal System Information

Section A - Wastewater Disposal System Screening Questions

- 1 Are you proposing a new or replacement wastewater disposal system, a new wastewater service line, or changes to a permitted but not constructed wastewater disposal system or wastewater service line for this project? Yes No
- 2 Are you proposing changes to an existing wastewater disposal system, replacement wastewater disposal system, replacement area, or wastewater service line for this project (including changes to location, design flows, or operational change)? Yes No
- 3 Is there an existing connection to a wastewater disposal system or wastewater service line for this project?..... Yes No

*Complete Part VI if you answered Yes to any of the above questions.
A project with no existing or proposed wastewater disposal systems may skip to Part VII.*

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 For projects using soil-based wastewater systems having a total design flow that exceeds 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 Drinking Water & Groundwater Protection 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 Drinking Water & Groundwater Protection Division? Yes No

If Yes, contact the Drinking Water & Groundwater Protection 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.

| | |
|---|---|
| <p>1 Wastewater Disposal System Name/Identifier</p> <input style="width: 95%; height: 25px;" type="text" value="Proposed Mound Disposal System"/> | <p>2 Wastewater Disposal System Owner (if not Applicant)</p> <input style="width: 95%; height: 25px;" type="text"/> |
| <p>3 Wastewater Disposal System Type</p> <input style="width: 95%; height: 25px;" type="text" value="Mound"/> | <p>4 Type of Change to System</p> <input style="width: 95%; height: 25px;" type="text" value="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) Change | (f) Infiltration | | |
| X | 1 | Proposed Home | Connection to New System | 0 | 490 | 0 | 490 | Rule-based |
| X | 1 | Proposed Apt. | Connection to New System | 0 | 140 | 0 | 140 | Rule-based |

Add Another Lot/Building Served by this System

| | | | |
|---|-----|---|-----|
| 6 | 7 | 8 | 9 |
| 0 | 630 | 0 | 630 |

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

16 For soil-based systems, please check all that apply (Note: Store and dose does not apply to standard pump/pump chamber systems).
 Storage and Dose Filtrate Constructed Wetlands

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

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.

| | (a) Wastewater Disposal System Name/Identifier | Design Flows (Gallons Per Day) | | | |
|---|--|--------------------------------|------------|------------------|-----------|
| | | (b) Existing | (c) Change | (d) Infiltration | (e) Total |
| X | Proposed Mound | 0 | 630 | 0 | 630 |
| | <input type="button" value="Add Another Wastewater System"/> | 2 | 3 | 4 | 5 |
| | | 0 | 630 | 0 | 630 |

Part VII Application Fees

1 Fee Amount

2 Fee Calculation Details

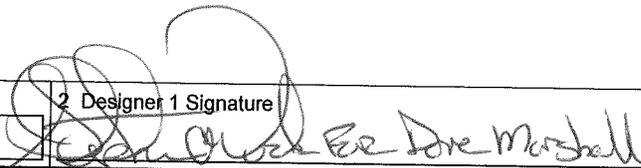
Part VIII Designer Certification & Copyright License

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 | 2 Designer 1 Signature | 3 Signature Date |
| David S. Marshall |  | 7-6-12 |

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 | 2 Designer 2 Signature | 3 Signature Date |
| | | |

Part IX Applicant(s) Signature & Acknowledgements

In order to insure compliance with the requirements of the regulations administered by the Department of Environmental Conservation, Drinking Water & Groundwater Protection 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.

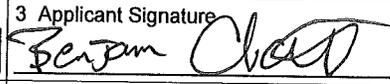
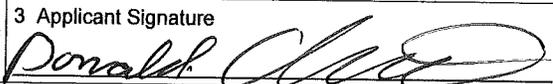
1 If we do visit your property, do you have any special instructions?

"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 Drinking Water & Groundwater Protection 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."

| | | | |
|-------------------------------------|------------------------|--|------------------|
| <input checked="" type="checkbox"/> | 2 Print Applicant Name | 3 Applicant Signature | 4 Signature Date |
| | Benjamin Chartrand |  | |
| <input checked="" type="checkbox"/> | 2 Print Applicant Name | 3 Applicant Signature | 4 Signature Date |
| | Donald Chartrand |  | 9-25-12 |

Add Applicant Signature Block

Perc Tests Field Form

Client: Chartrand

Date: July 7, 2012

Field Technicians: Becca Gilson
Anders F.

Perc Test West

Depth (in) = 24

Drop (in) = 3

| Run # | Start Time | | | End Time | | | Elapsed Time | Total Time | Drop |
|-------|------------|------|------|----------|------|------|--------------|------------|----------|
| | hr. | min. | sec. | hr. | min. | sec. | min. | min. | min./in. |
| 1 | 0 | 10 | 27 | 0 | 12 | 59 | 2.53 | 2.53 | 0.84 |
| 2 | 0 | 16 | 1 | 0 | 19 | 15 | 3.23 | 5.77 | 1.08 |
| 3 | 0 | 19 | 50 | 0 | 23 | 34 | 3.73 | 9.50 | 1.24 |
| 4 | 0 | 24 | 16 | 0 | 28 | 13 | 3.95 | 13.45 | 1.32 |
| 5 | 0 | 28 | 52 | 0 | 33 | 1 | 4.15 | 17.60 | 1.38 |
| 6 | 0 | 33 | 37 | 0 | 37 | 59 | 4.37 | 21.97 | 1.46 |
| 7 | 0 | 38 | 50 | 0 | 43 | 22 | 4.53 | 26.50 | 1.51 |

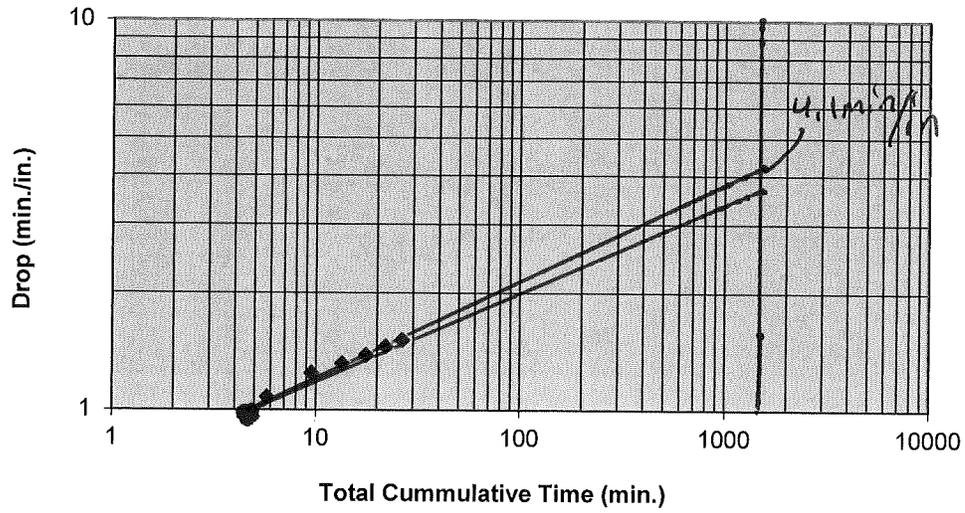
Perc Test East

Depth (in) = 24

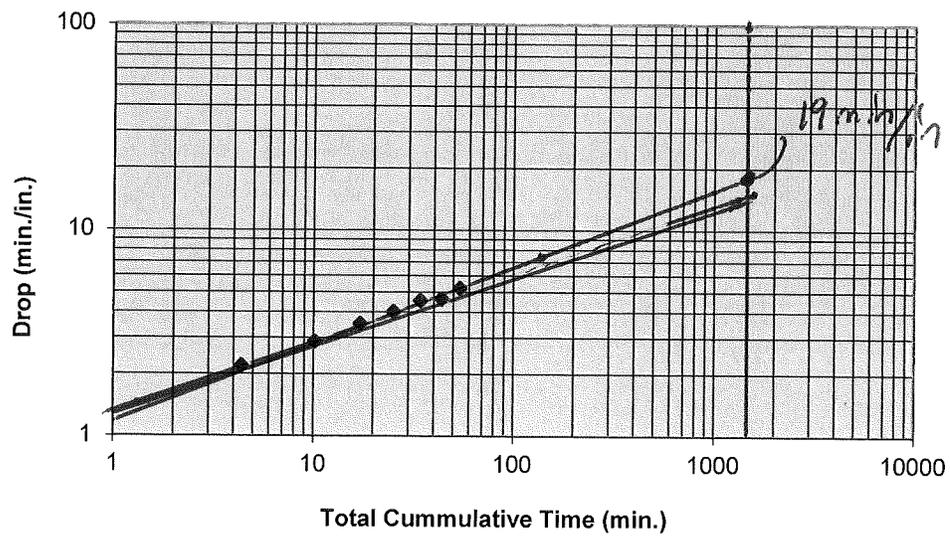
Drop (in) = 2

| Run # | Start Time | | | End Time | | | Elapsed Time | Total Time | Drop |
|-------|------------|------|------|----------|------|------|--------------|------------|----------|
| | hr. | min. | sec. | hr. | min. | sec. | min. | min. | min./in. |
| 1 | 0 | 0 | 13 | 0 | 4 | 35 | 4.37 | 4.37 | 2.18 |
| 2 | 0 | 5 | 38 | 0 | 11 | 22 | 5.73 | 10.10 | 2.87 |
| 3 | 0 | 12 | 31 | 0 | 19 | 30 | 6.98 | 17.08 | 3.49 |
| 4 | 0 | 20 | 7 | 0 | 28 | 7 | 8.00 | 25.08 | 4.00 |
| 5 | 0 | 29 | 13 | 0 | 38 | 16 | 9.05 | 34.13 | 4.53 |
| 6 | 0 | 39 | 12 | 0 | 48 | 27 | 9.25 | 43.38 | 4.63 |
| 7 | 0 | 49 | 9 | 0 | 59 | 33 | 10.40 | 53.78 | 5.20 |

Chartrand
Project #12173
Perc Test West



Chartrand
Project #12173
Perc Test East



Wastewater Disposal System Design

Proposed Mound

13-Jul-12

630 Design Flow (GPD)
0.66 Average Daily Flow (GPM)

10 Allowable application per linear foot (GPD/LF)
63 Linear feet of Trench Required (FT)
63 Equivalent Linear feet of Trench Proposed (FT)

Dosing Requirements

1.5 Diameter of Distribution Pipe (Inches)
118 Length of Distribution Pipe (FT)
11 Distribution System Volume (Gallons)
5.00 Required Dose Volume Factor
54 Required Minimum Dose Volume (Gallons)
4.00 Minimum Required Doses per Day
158 Maximum Dose Allowed (Gallons)
100.00 Chosen Dose Volume (Gallons)
5.00 Recommended Pumping Duration per Dose (Minutes)
20.00 Recommended Pumping Rate w/o Inflow (GPM)
20.66 Recommended Pumping Rate with Inflow (GPM)

Distribution Requirements

10 Trench width (FT)
630 Total Trench Area (SF)
25 Maximum Area per orifice Hole (SF)
25 Required Number of Orifice Holes
26 Number of Orifice Holes Proposed
0.77 Avg. Flow per Orifice (GPM)

287.63 Effluent Elevation Head

TRENCH 1

32 Total # of orifices
22.97 Total Flow (GPM)
630 Total Design Flow (GPD)
63 Total Length of Trench (FT)

23.0 Chosen Design Flow (GPM)
22.97 Total Actual Design Flow (GPM)
0.13% Percent Delta from Design
4.35 Actual Duration of Pumping Cycle (minutes)

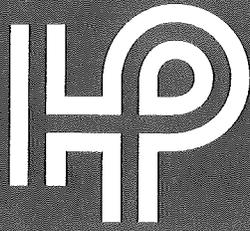
Chartrand Wastewater Disposal System Charlotte, Vermont

Pump Station Basis of Design 13-Jul-12

| | |
|---------------------------|----------------|
| Design Flow | 630 GPD |
| Infiltration | 0 GPD |
| 20% Municipal Credit | 0 |
| Total Design Flow | 630 GPD |
| Average Daily Flow | 0.66 GPM |
| Peaking Factor | 5.00 |
| Peak Flow | 3.28 GPM |
| Required Storage | 630 gallons |
| Storage Provided | 630 gallons |
| Force Main Dia. | 2.00 Inches |
| Min. Cleansing Velocity | 2.00 FPS |
| Min. Pumping Rate | 19.57 GPM |
| Chosen Pumping rate | 23.00 GPM |
| Length of FM to Mound | 270.00 feet |
| Friction Losses to Mound | 3.03 feet |
| High Point of FM in Mound | 284.63 feet |
| Low Elevation in PS | 270.00 feet |
| Elevation Change | 14.63 feet |
| Minor headlosses | 3.00 feet |
| Residual | 3.00 feet |
| TDH | 23.66 feet |
| Pump Cycle Storage | 100 Gallons |
| Run Cycle | 6.49 Minutes |
| Wet Well Detention Time | 152.38 Minutes |
| System Curve | GPM TDH |
| | 15 22.00 |
| | 20 23.00 |
| | 25 24.20 |
| | 30 25.60 |
| | 35 27.20 |

Pump Selection

Hydromatic SHEF40, 1 Ph, 230 v, 60 Hz, 0.4 HP



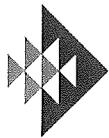
HYDROMATIC®

SHEF40

Submersible High Head Effluent Pump

Applications

- Septic Tank Effluent
- High Head Sump
- Dewatering



**Pentair
Water™**

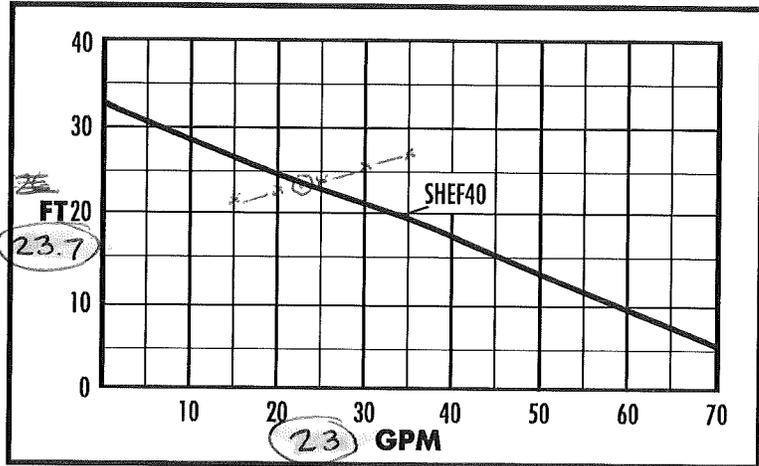
SHEF40 - Submersible Effluent Pump

DETAILS

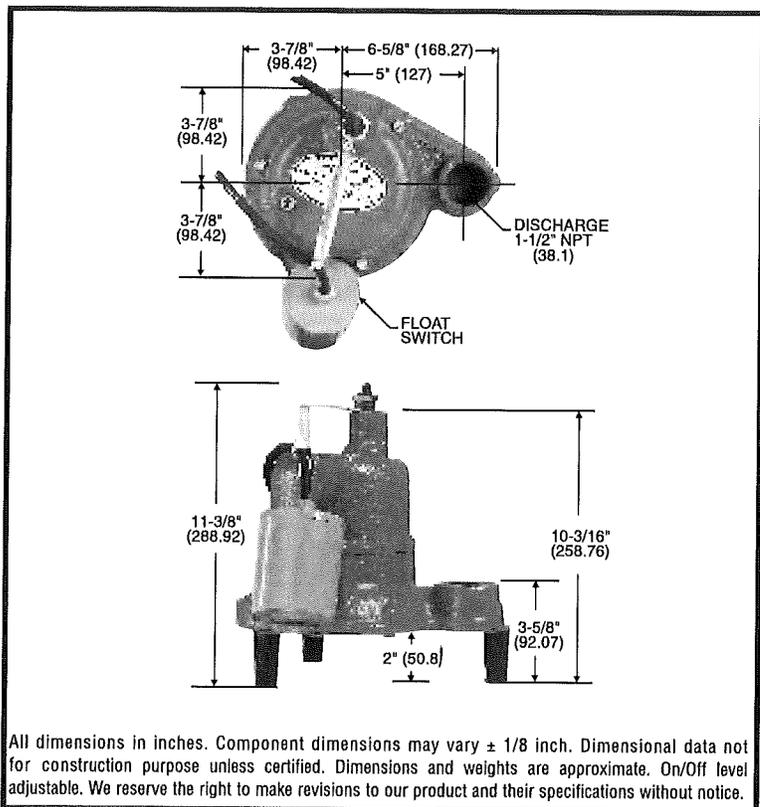
Pump Characteristics

| Pump/Motor Unit | Submersible | |
|------------------|--|----------|
| Manual Models | SHEF40M1 | SHEF40M2 |
| Automatic Models | SHEF40A1 | SHEF40A2 |
| Horsepower | 4/10 | |
| Full Load Amps | 12 | 6.5 |
| Motor Type | Shaded Pole (4 Pole) | |
| R.P.M. | 1550 | |
| Phase | 1Ø | |
| Voltage | 115 | 230 |
| Hertz | 60 | |
| Temperature | 120°F Max. Fluid Temp. | |
| NEMA Design | A | |
| Insulation | Class B | |
| Discharge Size | 1 1/2" NPT | |
| Solids Handling | 3/4" | |
| Weight | 28 lbs. | |
| Power Cord | 18/3, SJTW, 20' std. (30' optional) | |

Performance Data



Dimensional Data



Materials of Construction

| | |
|-----------------------|---|
| Handle | Stainless Steel |
| Lubricating Oil | Dielectric Oil |
| Motor Housing | Cast Iron |
| Pump Casing | 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 | Bronze Sleeve Bearing |
| Lower Bearing | Single Row Ball Bearing |
| Bottom Plate | Polyester Coated Steel |
| Fasteners | Stainless Steel |
| Legs | Engineered Thermoplastic |

IHP **HYDROMATIC**[®]
Pentair Water



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