LINCOLN
APPLIED GEOLOGY, INC.
ENVIRONMENTAL CONSULTANTS

1984 - 2015
31
YEARS OF
EXCELLENCE
LINCOLN APPLIED
GEOLOGY, INC.

September 23, 2015

Ms. Jeannine McCrumb, Septic Officer
Mr. Brian Tremback, Septic Consultant
Town of Charlotte
P.O. Box 119
Charlotte, VT 05445

RE: Tegatz Family Trust Property, 1000 Guinea Road, Charlotte, VT, WW-138-0925, Lot 1/Lot 2 Subdivision of An Improved Property Water/Wastewater Submittal

Dear Jeannine and Brian:

The Tegatz Family Trust (the Trust) currently owns a 306.84 acre property (Lot 1) improved with a 5 bedroom single family residence served by on-site water and wastewater systems which was compliantly developed under WW-138-0925. The Trust is proposing to subdivide the property into Lot 1, the 186.84 acre improved property and Lot 2, a 120 acre property to be sold (to Jason Harvey) and developed with a 4 bedroom single family residence served by on-site water and wastewater systems. The overall property showing the Lot 1/Lot 2 subdivision and the Lot 2 Site Development Plan are shown on Figure 1.

A site and soil evaluation was conducted by myself on August 3, 2015 with Brian Tremback in attendance and a percolation test was conducted on August 9, 2015 after the topographic site plan with test pit locations was compiled. The soil profile descriptions are attached which indicate the presence of 12" of well drained silt loam with a percolation rate of 41.50 minutes/inch is available for a performance based mound disposal area. Various application areas were layed out and a 136' long application area was chosen for a site specific effluent mounding analysis. The results of the mounding analysis are attached which indicate a 0.48' effluent mound will form while leaving 0.52' of unsaturated soil beneath the mound. To meet the regulations, 2.48' of mound sand is required to achieve the 3' isolation. The attached pressure distribution and mound dimension details were generated using 2.5' of mound sand beneath the application area. The proposed 3.61' x 136' application area and overall mound were properly dimensioned and plotted with its isolation zone on Figure 1and the wastewater system design details are presented on Figure 2.

The formally sited mound was then related to a possible house location with a 1500 gallon STEP tank to define the hydraulics and the attached pressure distribution details. Based on the calculated head/capacity requirement of 24.40 gpm versus 11.08 feet of total dynamic head a suitable effluent pump was specified. The details of an effluent pump which meets this specification is attached.

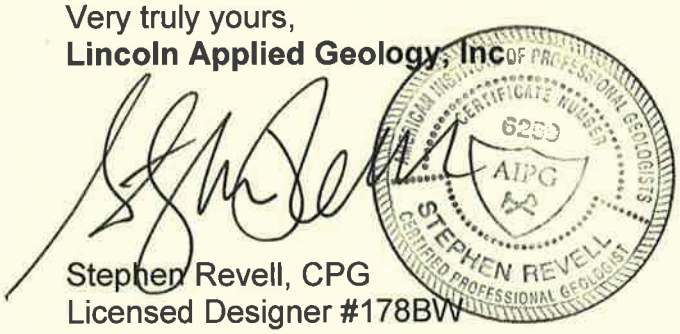
Water for the 4 bedroom residence will be supplied by a drilled bedrock well. The proposed location of the well and its related isolation zone are shown on Figure 1 and the water system design details are shown on Figure 3.

Relative to Act 145 overshadowing, both the mound and the well isolation zones are contained on the subject property. In this regard, no notification of overshadowing is required.

I believe the Tegatz Family Trust's subdivision of an improved property application package is complete with a signed application and ANR Form 5, an application fee of $500.00 payable to the Town of Charlotte, 2 signed copies of Figure 1, 2 and 3, 1 signed 11' x 17' copy of Figure 1, 2 and 3, 1 copy of this letter and the attachments and 1 CD of the complete application. Fritz, Betsey and I look forward to your satisfactory review and issuance of the requested water and wastewater permit.

If you have any questions, please let me know.

Very truly yours,
Lincoln Applied Geology, Inc



Stephen Revell, CPG
Licensed Designer #178BW
Senior Hydrogeologist

SR/ih

Enclosure

CC: Tegatz Family Trust
Jason Harvey

F:\CLIENTS\2015\15083\Submittal Letter.docx

LINCOLN APPLIED GEOLOGY, INC.
163 Revell Drive • Lincoln, VT 05443 • (802) 453-4384 • Fax (802) 453-5399 • www.lagvt.com

Drinking Water & Groundwater Protection Division - Permit Application

Wastewater System & Potable Water Supply

VERMONT
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

For Office Use Only:

Application#	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	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

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
Tegatz Family Trust	425-5564

3 Mailing Address Line 1	4 Mailing Address Line 2
1000 Guinea Road	

5 Town/City	6 State/Province	7 Country	8 Zip/Postal Code
Charlotte	VT	United States	05445

Certifying Official
The Certifying Official must be a person who has signatory authority for the legal entity or organization that is the Applicant.

9 Certifying Official Last Name	10 Certifying Official First Name (and MI if appropriate)
Tegatz	Frederick R. & Betsey R.

11 Certifying Official Title
Trustees

12 Certifying Official Email Address	13 Telephone
	425-5564

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		
178	Lincoln Applied Geology, Inc.		
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	VT	United States	05443
11 Email Address			12 Telephone
srevell@gmail.com			453-4384

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	Guinea 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°)

N 43.30656 °

(b) Longitude
(in decimal degrees to five decimal places, ex. -72.31392 °)

W (-) 73.21724 °

Part IV Project Information

Section A - General Project Information & Questions

1 Project Name (if applicable)
Harvey Proposed Property

2 Total Acreage of Property
306.84

3 Business Name (if applicable)

4 Detailed Project Description
Subdivision of a 306.84 acre property, improved with a 5 bedroom residence served by on-site water and wastewater systems. The improved property, Lot 1 is a 186.84 acres in size. Lot 2, the proposed 120 acre parcel will be developed with a 4 bedroom residence served by on-site water and wastewater systems.

5 (a) Were all existing buildings or structures, campgrounds, and their associated potable water supplies and wastewater systems substantially completed before January 1, 2007? ◉ Yes ○ No

(b) Were all existing 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 Drinking Water & Groundwater Protection 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
Brian Tremback

(b) Date of Visit (m/d/yyyy)
8/3/2015

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 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? ○ Yes ◉ 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

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	00017-1000	170	439-445

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	Figure 1	Lot 2 Site Development Plan	9/21/2015	
X	Figure 2	Wastewater System Design Details	9/21/2015	
X	Figure 3	Water System Design Details	9/21/2015	

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	306.84	Residential

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 with existing permits?
X	1	Residential	1/1/2012	WW-138-0925	(•) Yes ( ) 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	186.84	No Change

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		☐	No Change

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	2 Water Supply Owner (if not Applicant)
Lot 1 Well	
3 Water Source Type	**4 Type of Change to Supply**
Non-Public Drilled Bedrock Well	No Change

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) (d) Existing	(e) Change	(f) Total	(g) Rule or Meter Based Flows
X	1	1	No Change	560	0	560	Rule-based
				6 560	7 0	8 560	

Add Another Lot/Building Served by this Supply

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	2 Water Supply Owner (if not Applicant)
Lot 2 Well	
3 Water Source Type	**4 Type of Change to Supply**
Non-Public Drilled Bedrock Well	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) (d) Existing	(e) Change	(f) Total	(g) Rule or Meter Based Flows
X	1	1	Connection to New System	0	490	490	Rule-based
				6	7	8	
				0	490	490	

Add Another Lot/Building Served by this Supply

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	Lot 1 Well	560	0	560
X	Lot 2 Well	0	490	490
		2	3	4
		560	490	1,050

Add Another Water Supply

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.

1 Wastewater Disposal System Name/Identifier	2 Wastewater Disposal System Owner (if not Applicant)
Lot 1 Mound	
3 Wastewater Disposal System Type	**4 Type of Change to System**
Mound	No Change

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) (d) Existing	(e) Change	(f) Infiltration	(g) Total	(h) Rule or Meter Based Flows
X			No Change	560	0	0	560	Rule-based
				6 560	7 0	8 0	9 560	

Add Another Lot/Building Served by this System

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

Performance Based

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

Remove This Wastewater System

1 Wastewater Disposal System Name/Identifier	2 Wastewater Disposal System Owner (if not Applicant)
Lot 2 Mound	
3 Wastewater Disposal System Type	**4 Type of Change to System**
Mound	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) (d) Existing	(e) Change	(f) Infiltration	(g) Total	(h) Rule or Meter Based Flows
X	2	1	Connection to New System	0	490	0	490	Rule-based
				6 0	7 490	8 0	9 490	

Add Another Lot/Building Served by this System

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

Performance Based

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

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) Change	(d) Infiltration	(e) Total
X	Lot 1 Mound	560	0	0	560
X	Lot 2 Mound	0	490	0	490
		2	3	4	5
		560	490	0	1,050

Add Another Wastewater System

Part VII Application Fees

1 Fee Amount $500.00

2 Fee Calculation Details

New Water/Wastewater System = $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	2 Designer 1 Signature	3 Signature Date
Stephen Revell		9/23/15

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."

	2 Print Applicant Name	3 Applicant Signature	4 Signature Date
X	Frederick R. Tegatz		9/29/15
X	Betsey R. Tegatz		9/29/15

Add Applicant Signature Block

ANR Form 5: Certification Statement for Wastewater System and Potable Water Supply Permits when there is no Required Notification of Overshadowed Property Owner(s)

A person submitting an application to the Secretary for a Wastewater System and Potable Water Supply Permit shall use this statement whenever overshadowing notification of affected landowners is not required (see guidance and instructions for examples).

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

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

Signature _____

Name (Printed) Frederick R. Tegatz

Property Address or Property Tax ID # Guinea Road

Date of this certification 9/29/17

(To Comply with Act 145 and Act 117 - 8-24-12 Last Revised 9-11-12)

Tegatz Lot 2 Property
Soil Profile Descriptions
August 3, 2015
By Stephen Revell, Licensed Designer #178BW
Senior Hydrogeologist
with Brian Tremback, Town Septic Consultant in attendance

Test Pit #1 (TP-1)

0-12"	Brown silt loam, loose, strong blocky structure, well drained
12-36"	Brown clay loam to clay, friable to firm, moderate to weak blocky structure, redoximorphic features throughout, permeability boundary, shallow seasonal groundwater system at 12", suitable for a performance based mound
+36"	Brown-gray clay, firm, massive, redox, no water or rock to depth

Test Pit #2 (TP-2)

0-12"	Brown silt loam, loose, strong blocky structure, well drained
12-38"	Brown clay loam to clay, friable to firm, moderate to weak blocky structure, redoximorphic features throughout, permeability boundary, shallow seasonal groundwater system at 12", suitable for a performance based mound
+38"	Brown-gray clay, firm, massive, redox, no water or rock to depth

Test Pit #3 (TP-3)

0-12"	Brown silt loam, loose, strong blocky structure, well drained
12-36"	Brown clay loam to clay, friable to firm, moderate to weak blocky structure, redoximorphic features throughout, permeability boundary, shallow seasonal groundwater system at 12", suitable for a performance based mound
+36"	Brown-gray clay, firm, massive, redox, no water or rock to depth

LINCOLN APPLIED GEOLOGY, INC.
163 Revell Drive • Lincoln, VT 05443 • (802) 453-4384 • Fax (802) 453-5399 • www.lagvt.com

Test Pit #4 (TP-4)

0-12"	Brown silt loam, loose, strong blocky structure, well drained
12-32"	Brown clay loam to clay, friable to firm, moderate to weak blocky structure, redoximorphic features throughout, permeability boundary, shallow seasonal groundwater system at 12", suitable for a performance based mound
32-36"	Brown-gray clay, firm, massive, redox, no water or rock to depth

Test Pit #5 (TP-5)

0-12"	Brown silt loam, loose, strong blocky structure, well drained
12-36"	Brown clay loam to clay, friable to firm, moderate to weak blocky structure, redoximorphic features throughout, permeability boundary, shallow seasonal groundwater system at 12", suitable for a performance based mound
+36"	Brown-gray clay, firm, massive, redox, no water or rock to depth

Test Pit #6 (TP-6)

0-12"	Brown silt loam, loose, strong blocky structure, well drained
12-36"	Brown clay loam to clay, friable to firm, moderate to weak blocky structure, redoximorphic features throughout, permeability boundary, shallow seasonal groundwater system at 12", suitable for a performance based mound
+36"	Brown-gray clay, firm, massive, redox, no water or rock to depth

Test Pit #7 (TP-7)

0-12"	Brown silt loam, loose, strong blocky structure, well drained
12-32"	Brown clay loam to clay, friable to firm, moderate to weak blocky structure, redoximorphic features throughout, permeability boundary, shallow seasonal groundwater system at 12", suitable for a performance based mound

32-36"	Brown-gray clay, firm, massive, redox, no water or rock to depth

Test Pit #8 (TP-8)

0-12"	Brown silt loam, loose, strong blocky structure, well drained
12-34"	Brown clay loam to clay, friable to firm, moderate to weak blocky structure, redoximorphic features throughout, permeability boundary, shallow seasonal groundwater system at 12", suitable for a performance based mound
34-38"	Brown-gray clay, firm, massive, redox, no water or rock to depth

Test Pit #9 (TP-9)

0-12"	Brown silt loam, loose, strong blocky structure, well drained
12-36"	Brown clay loam to clay, friable to firm, moderate to weak blocky structure, redoximorphic features throughout, permeability boundary, shallow seasonal groundwater system at 12", suitable for a performance based mound
+36"	Brown-gray clay, firm, massive, redox, no water or rock to depth

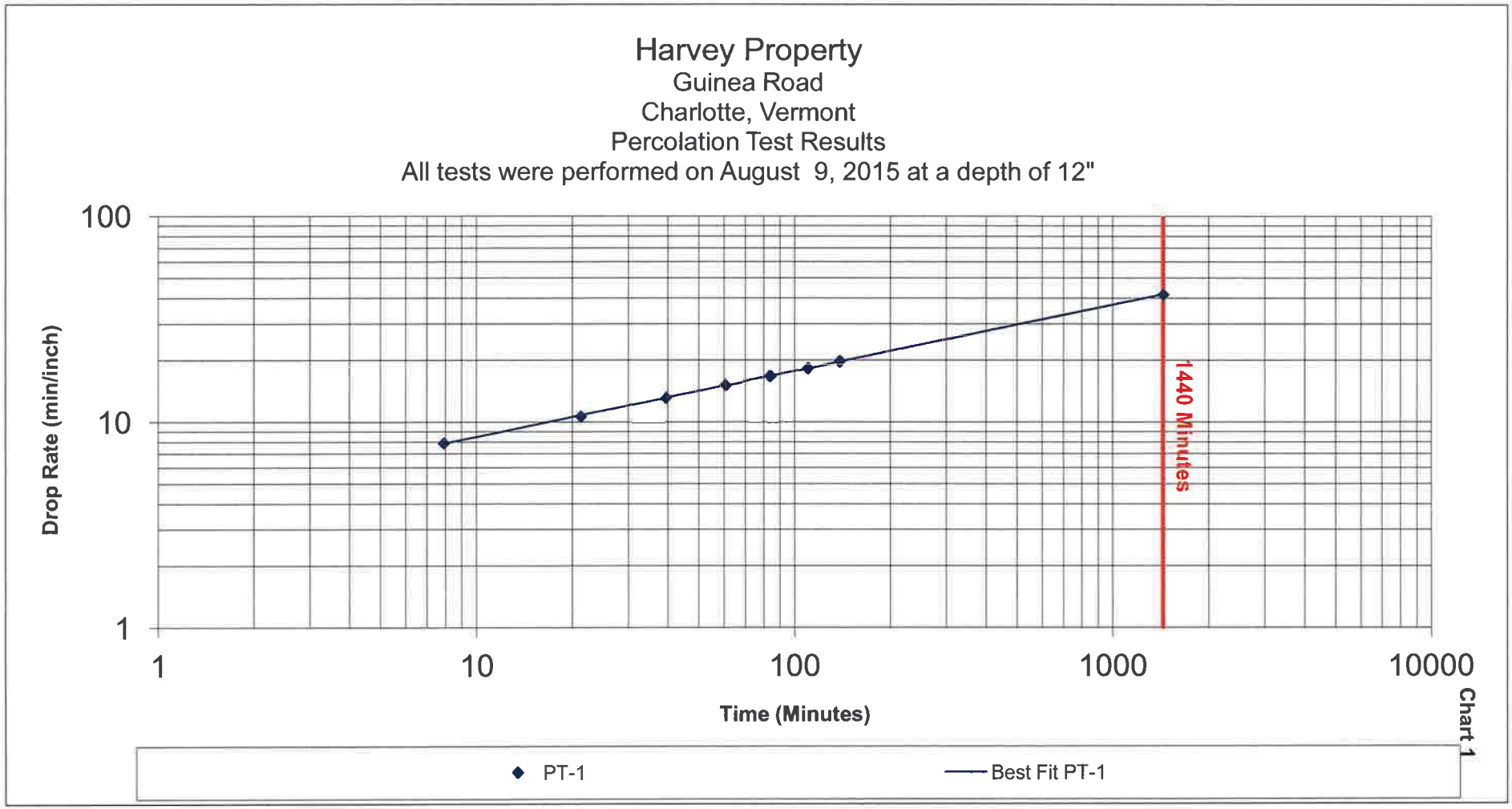
F:\CLIENTS\2015\15083\Soil Profile Descriptions Lot 2.docx

Harvey Property
Guinea Road
Charlotte, Vermont
Percolation Test Results
All tests were performed on August 9, 2015 at a depth of 12"

PT-1	Drop Time (min)	Total Drop Time (min)	Total Drop (inches)	Drop Rate (min/inch)
	7.9	7.9	1	7.9
	13.4	21.3	2	10.7
	18.1	39.4	3	13.1
	21.3	60.7	4	15.2
	23.0	83.7	5	16.7
	26.6	110.3	6	18.4
	28.5	138.8	7	19.8
	---	**1440.0**	---	**41.5**

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

Table 1


Harvey Property
Guinea Road
Charlotte, Vermont
Percolation Test Results
All tests were performed on August 9, 2015 at a depth of 12"
100
10
1
Drop Rate (min/inch)
1
10
100
1000
10000
Time (Minutes)
1440 Minutes
Chart 1
PT-1
Best Fit PT-1

Site Specific Effluent Mounding Analysis
Tegatz Lot 2 Property
Guinea Road, Charlotte, VT

In order to support the proposed performance based mound-type disposal system design and show that the soils can accommodate the design flow rate associated with a year-round four-bedroom residence, a site specific hydrogeologic analysis using Darcy's Law was conducted. The following formula was used to determine the ability of the soil to accept the proposed amount of wastewater and determine its impact on the shallow seasonal ground water system.

Using the equation:

$Q = k \cdot i \cdot h \cdot l$ Where: Q= Volume= 490 gallons/ day = 65.5 ft^3/ day;
k= Hydraulic Conductivity = 20 ft./ day (approved k value for silt loam with strong blocky structure);
i= Gradient = 5% = 0.05 ft./ ft.;
h= effluent mound height in feet;
l= 136' mound length.

When solving this equation for h, an effluent mound of 0.48' was calculated. Since evidence of a seasonal high ground water system was identified at 12" or 1.00' with an induced mound of 0.48', 0.52' feet of unsaturated soil will remain. To maintain the required 3' separation to the induced mound, 3' – 0.52' or 2.48' of state approved mound sand is required beneath the application area.

F:\CLIENTS\2015\15083\Site Specific Effluent Mounding Analysis.doc

LINCOLN APPLIED GEOLOGY, INC.
163 Revell Drive • Lincoln, VT 05443 • (802) 453-4384 • Fax (802) 453-5399 • www.lagvt.com

PRESSURE DISTRIBUTION & MOUND DIMENSION DETAILS

CLIENT'S NAME: Harvey Mound
DATE: 9/22/2015 PERFORMED BY: S. Revell LAG Project #: 15083

Design Flow Rate	490	GPD
Width of Distribution Stone Bed/Trench	3.61	FEET
Length of Distribution Stone Bed/Trench	136	FEET
Thickness of Sand Beneath Distribution Stone Bed/Trench	2.5	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	40	MPI
Natural Ground Slope	5	PERCENT
Thickness of Sand on Upper Side of Level Area	3.20	FEET
Thickness of Sand on Lower Side of Level Area	3.48	FEET
Width of Level Area	5.61	FEET
Length of Level Area	138	FEET
Area of Distribution Stone Bed/Trench	491	SQUARE FT
Volume of Stone Required	11	CUBIC YARDS
Proposed Basal Area	2589	SQUARE FEET
Volume of Mound Sand Required	436.4	CUBIC YARDS
Number of Laterals	2	
Length of Each Lateral	66	FEET
Number of Orifices in the Manifold	0	
Number of Orifices in Each Lateral	17	
Distance Between Manifold and First Orifice	2	FEET
Distance Between Orifices (on center)	4	FEET
Distribution Area per Orifice	14.44	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)	6	FEET
Diameter of Force Main	2	INCHES
Length of Force Main	160	FEET
Length of Manifold to Lateral	0	FEET
Diameter of Manifold Pipe	2	INCH
Diameter of Lateral Pipe	2	INCH
Friction Loss in Force Main	1.94	FEET
Friction Loss in Manifold	0.00	FEET
Friction Loss in Section 1	0.01	FEET
Friction Loss in Entire Lateral	0.07	FEET
Discharge Rate at First Orifice	0.72	GPM
Discharge Rate at Last Orifice	0.71	GPM
Percent Difference in Flow Rate First to Last Orifice	1.05	PERCENT
Total Dynamic Head Loss	11.082	FEET
Total Distribution System Flow	24.40	GPM
Volume of Distribution System	21.54	GALLONS
Pump Capacity 24.40 GPM vs	11.082	FEET OF HEAD
Volume per Dose	122.5	GALLONS
On/Off Float Swing (1,000 gal. Tank)	4.1	INCHES

PRESSURE DISTRIBUTION & MOUND DIMENSION DETAILS

CLIENT'S NAME: Harvey Mound
DATE: 9/22/2015 PERFORMED BY: S. Revell LAG Project #: 15083

DIMENSIONS OF MOUND SYSTEM

Dimensions of Mound Sand

8.4 feet from level area to uphill sand toe

11.9 ft corner of level area to upper toe corner

5.61 ft wide level area

9.7 ft to side toe from upper edge of level area

3.61 ft wide stone bed/trench
136 ft long stone bed/trench

10.5 ft to side toe from lower edge of level area

138 ft long level area

17.6 ft corner of level area to lower toe corner

12.4 feet from level area to downhill sand toe

Dimensions of Final Cover

11.1 feet from level area to uphill toe

15.6 ft corner of level area to upper fill toe

12.7 ft to side toe from upper edge of level area

5.61 ft wide level area

138 ft long level area

13.6 ft to side toe from lower edge of level area

22.6 ft corner of level area to lower fill toe

16.0 feet from level area to downhill toe

PLOW AREA LAYOUT MEASUREMENTS

Center of Bed/Trench to Downslope Toe	87.1 feet
End of Level Area @ Midpoint to Downslope Toe	24.7 feet
Center of Bed/Trench to Upslope Toe	81.2 feet
End of Level Area @ Midpoint to Upslope Toe	17.7 feet

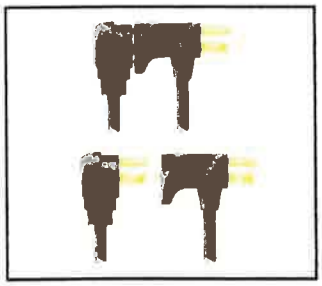
HYDROMATIC®

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.

HYDROMATIC®
Pentair Pump Group

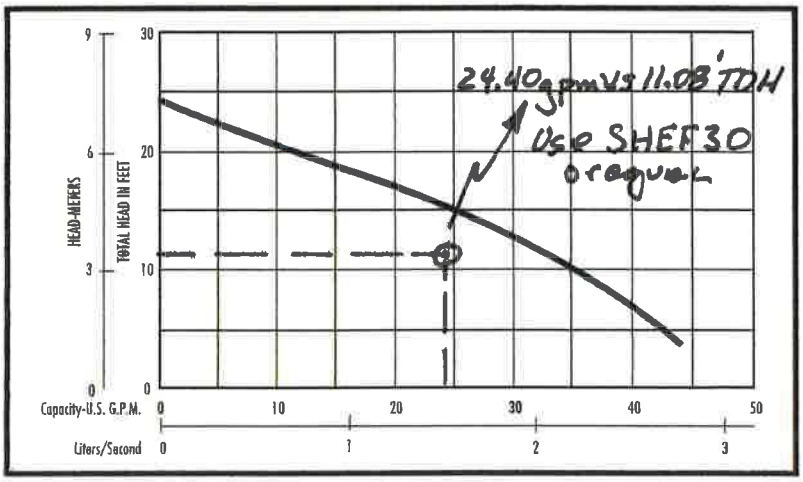
SHEF30 - Submersible Effluent Pump

Details

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.

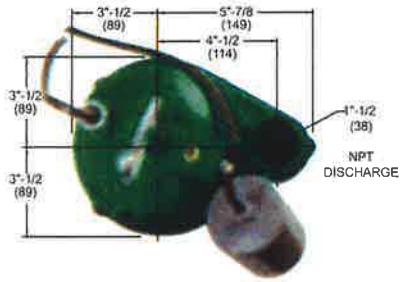
Performance Data

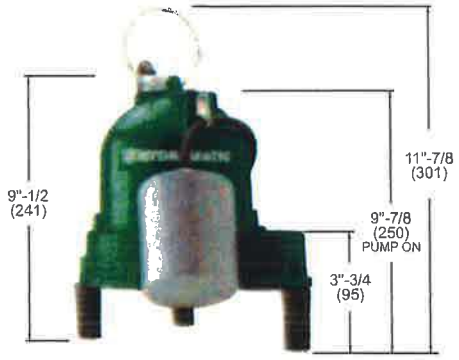


Materials of Construction

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

Dimensional Data





All dimensions in inches. Metric for international use. Component dimensions may vary ± 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.

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

© 2000 Hydromatic® Ashland, Ohio. All Rights Reserved.

Item #: W-02-6350 7/00 8M