

# Wastewater, Drinking Water, Subdivisions, and Town Records: How do they all flow together



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Drinking Water and Groundwater Protection Division  
Department of Environmental Conservation  
Agency of Natural Resources

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# WW Workshop



**1. WHAT WE DO AND  
WHY WE DO IT**



**2. WASTEWATER SYSTEM  
& WATER SUPPLY RULES**



**3. WHERE TO GO FOR  
MORE INFORMATION**



**QUESTIONS AND  
DISCUSSION**

# Regional Office Program

Soil-based wastewater systems and water supplies

Wastewater flows of less than 6,500 gallons per day

Potable water supplies (water supplies that are not public water supplies)

Municipal water and sewer connections

Subdivision of lands

Testing and education services for the Licensed Designer Program and the Public

Review and approval of Innovative and Alternative wastewater products



State of Vermont  
Department of Environmental Conservation

Agency of Natural Resources  
Drinking Water and Groundwater Protection Division

## WASTEWATER SYSTEM AND POTABLE WATER SUPPLY PERMIT

### LAWS/REGULATIONS INVOLVED

10 V.S.A. Chapter 64, Potable Water Supply and Wastewater System Permit  
Wastewater System and Potable Water Supply Rules, Effective April 12, 2019

Permittee(s): Donald Schroeder  
825 Poor Farm Road  
Colchester, VT 05446

Permit Number: WW-5-8527

This permit affects the following property/properties in Belvidere, Vermont:

Lot	Parcel	SPAN	Acres	Book(s)/Page(s)#
Lot 3	109-075.300	048-014-10317	53.50	Book:16 Page(s):224

This application, consisting of improving Lot 3 with a 2-bedroom single-family residence and a detached 2-bedroom accessory apartment that are to be served by individual wastewater systems and a shared potable water supply from a drilled well, located at Bog Road in Belvidere, Vermont, is hereby approved under the requirements of the regulations named above subject to the following conditions. Any person aggrieved by this permit may appeal to the Environmental Court within 30 days of the date of issuance of this permit in accordance with 10 V.S.A. Chapter 220 and the Vermont Rules of Environmental Court Proceedings.

### 1. GENERAL

- The permittee is responsible to record this permit in the Belvidere Land Records within 30 days of issuance of this permit and prior to the conveyance of any lot subject to the jurisdiction of this permit.
- The permittee is responsible to record the design and installation certifications and other documents that are required to be filed under these Rules or under a permit condition in the Belvidere Land Records.
- Each assign or successor in interest shall be shown a copy of the Wastewater System and Potable Water Supply Permit and the stamped plan(s) prior to the conveyance of a lot.
- By acceptance of this permit, the permittee agrees to allow representatives of the State of Vermont access to the property covered by the permit, at reasonable times, for the purpose of ascertaining compliance with the Vermont environmental and health statutes and regulations, and permit conditions.
- This permit does not relieve the landowner from obtaining all other approvals and permits from other State Agencies or Departments, or local officials prior to construction.

### 2. CONSTRUCTION

- Construction shall be completed as shown on the plans and/or documents prepared by Graham Tidman, with the stamped plans listed as follows:

Title	Sheet #	Plan Date	Revision
Wastewater Disposal And Water Supply Plan	1	03/19/2021	None.
Wastewater Disposal Details and Specifications	2	03/19/2021	None.

- Construction of wastewater systems or potable water supplies, or buildings or structures (as defined by the Wastewater System and Potable Water Supply Rules), or campgrounds, not depicted on the stamped plans, or identified in this permit, is not allowed without prior approval by the Drinking Water and Groundwater Protection Division.



# Regional Office Program

Soil-based wastewater systems and water supply

Wastewater flows of less than 6,500 gallons per

Potable water supplies (water supplies that are not public water)

This applies to almost every property in the State of Vermont and every Vermonter! This translates to issuing ~3000 permits each year.

Municipal water and sewer connections

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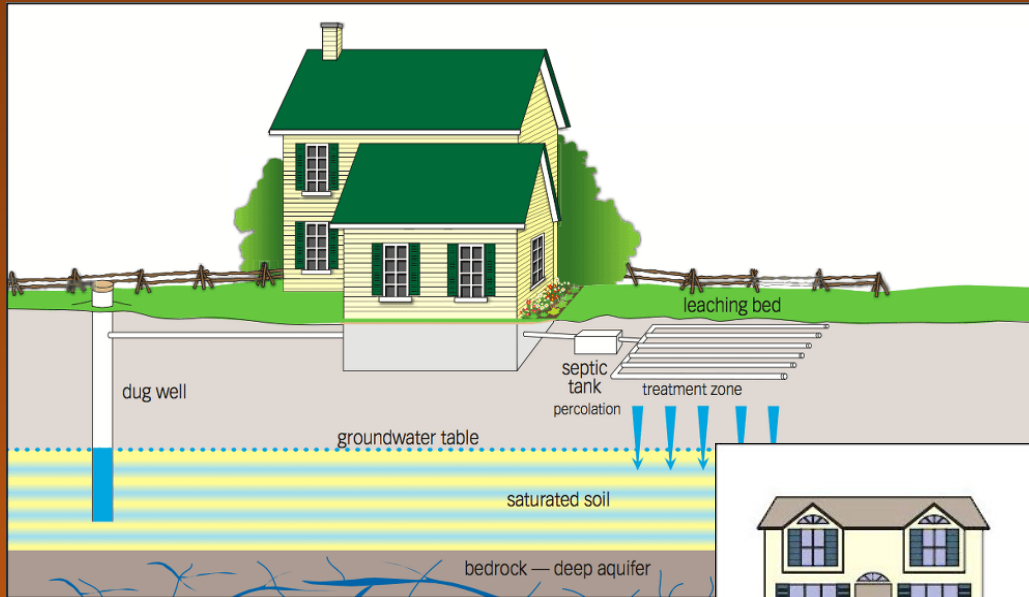
Title	Sheet #	Plan Date	Revision
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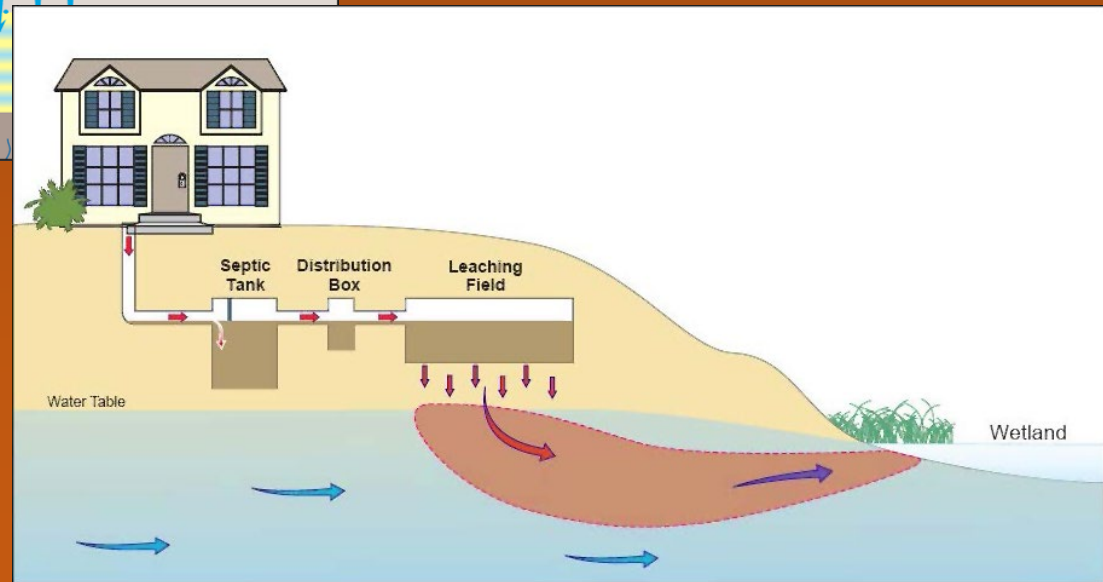


# Why care about wastewater treatment?

## Human Health & the Environment



**Pathogens:** bacteria, viruses, and other microorganisms that can cause disease



**Excess nutrients:** Nitrogen, Phosphorus, other limiting nutrients

# Purpose of the Rules

1. Protect **human health & the environment**
2. Regulate **design, construction, modification, operation, & maintenance** of wastewater systems
3. Increase **accountability** of designers & installers
4. Ensure **owners** know **responsibilities** & have **knowledge** of system's design, operation & maintenance
5. Establish **performance criteria**:
  - I. wastewater not exposed to air or backed-up in building
  - II. no direct discharge to surface waters (streams, lakes etc.)
  - III. does not contaminate potable water supply
6. Encourage **innovation & flexibility** of design



# Permit Application Requirements

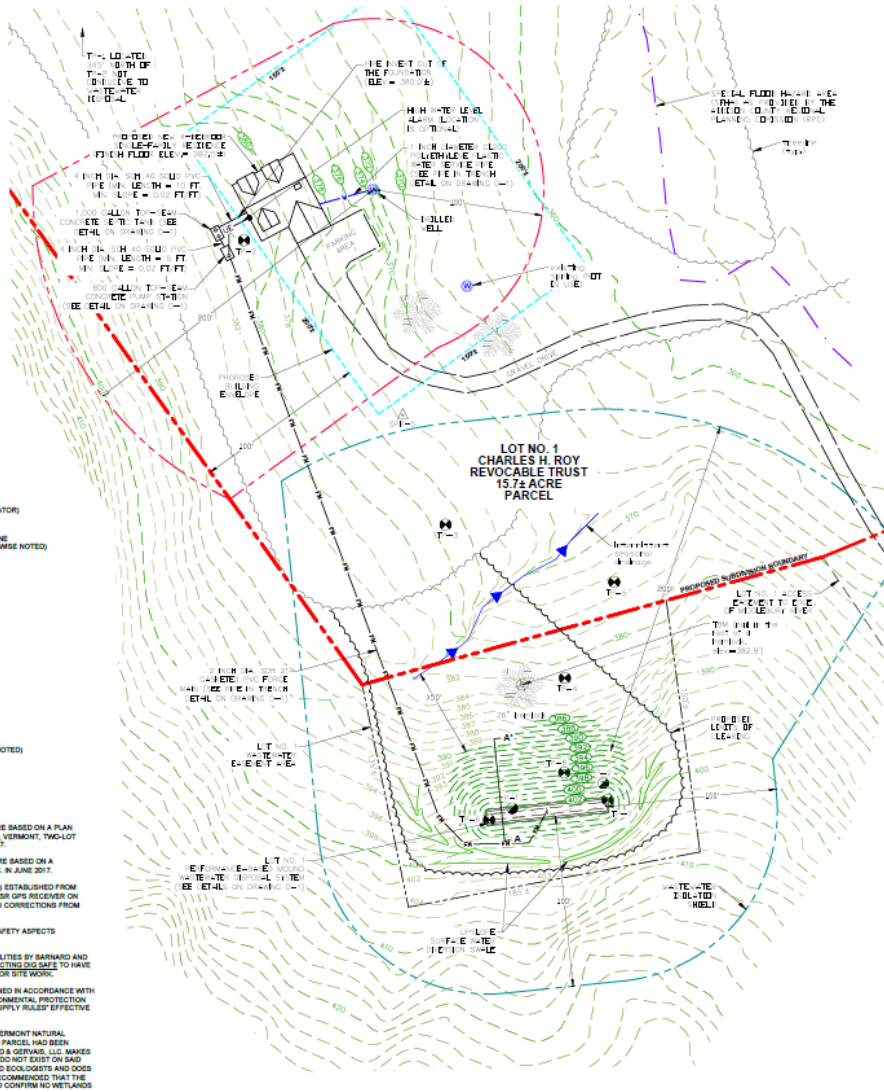
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- **Soil Descriptions** – Where is water table? What is soil absorption capacity? Where is ledge?
- **Wastewater System Design** – Loading rates (gallons per square foot per day), system type, system size calculations, and component details
- **Plans and Detailed Drawings** –
  - a) contours; b) water features; c) flood plain;
  - d) engineered features; e) existing/approved wells & wastewater systems; f) easements or rights of way; g) test pit & well locations; h) construction details; i) isolation distances & presumptive zones.



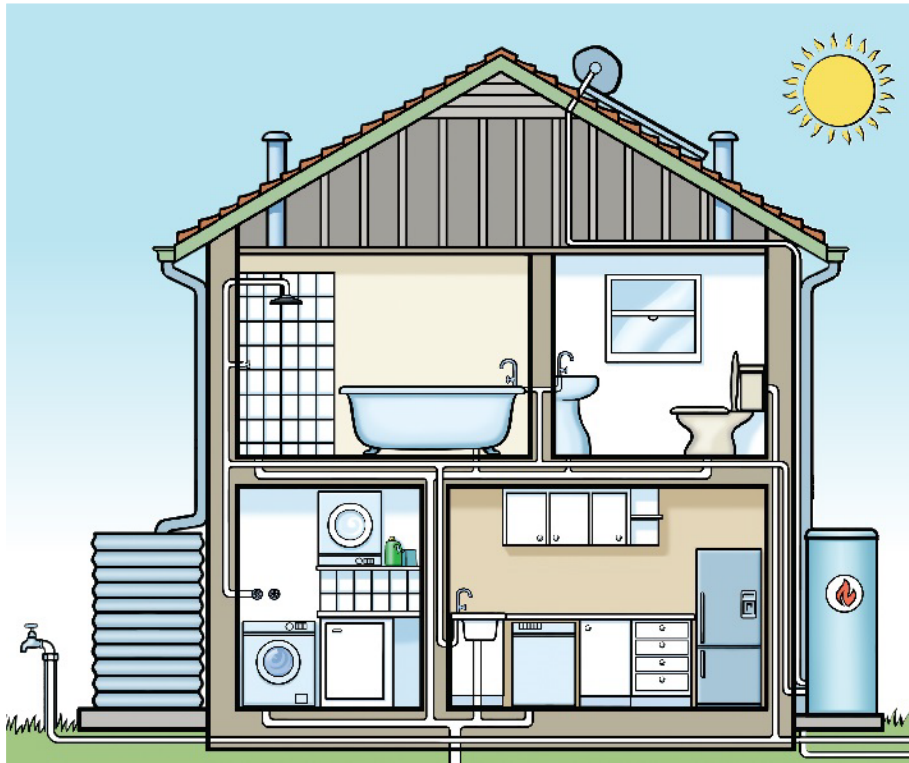
Project Location Map  
Not to Scale

- LEGEND**
- BOUNDARY LINE/ROW
  - SIDELINE OF EASEMENT
  - EDGE OF ROAD (SURFACE LABELED)
  - EDGE OF DRIVE (SURFACE LABELED)
  - 1 FOOT GROUND SURFACE CONTOUR
  - FRESH GRADE
  - INTERPOLATED GROUND CONTOUR (BASED ON UGGS DATA FROM THE AVE AND ENVIRONMENTAL INTEREST LOCATOR)
  - GRAVITY SEWER
  - 1-INCH DIAMETER CL200 POLYETHYLENE PLASTIC WATER LINE (UNLESS OTHERWISE NOTED)
  - WELL ISOLATION
  - WASTEWATER ISOLATION
  - ZONING SETBACKS
  - SF SILT FENCE
  - UE ELECTRICAL CONDUIT
  - TREE LINE
  - PROPOSED LIMITS OF CLEARING
  - UTILITY POLE
  - SURVEY TRANSIRE STATION
  - TEMPORARY BENCH MARK (TYPE AND ELEVATION NOTED)
  - TEST PIT (TP-0)
  - SOIL BORING (SB-0)
  - PERCOLATION TEST (PT-0)
  - DRILLED WELL (UNLESS OTHERWISE NOTED)

- PROJECT NOTES**
1. THIS IS NOT A BOUNDARY SURVEY. PROJECT PERIMETER LINES ARE BASED ON A PLAN ENTITLED "LANDS OF CHARLES ROY, BLAKE ROY ROAD, MIDDLEBURY, VERMONT, TWO-LOT SUBDIVISION PLAN BY BARNARD AND GERVAIS, LLC, DATED JULY 2017.
  2. THE LOCATION OF EXISTING PHYSICAL FEATURES ON THIS PLAN ARE BASED ON A TOPOGRAPHIC SURVEY COMPLETED BY BARNARD AND GERVAIS, LLC IN JUNE 2017.
  3. THE ELEVATIONS ON THIS PLAN ARE BASED ON NAVD83 (GEOID12) ESTABLISHED FROM SURVEY GRADE GPS READINGS COLLECTED WITH A TOPCON HYPER 9K GPS RECEIVER ON RANDOM CONTROL POINTS USING REAL TIME KINEMATICS (RTK) WITH CORRECTIONS FROM CORRECTION STATION WTM.
  4. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL HEALTH AND SAFETY ASPECTS ASSOCIATED WITH THIS PROJECT.
  5. NO ATTEMPT HAS BEEN MADE TO LOCATE ANY UNDERGROUND UTILITIES BY BARNARD AND GERVAIS, LLC. THE CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING DIG SAFE TO HAVE ANY UNDERGROUND UTILITIES MARKED PRIOR TO ANY EXCAVATION OR SITE WORK.
  6. THE LOT NO. 1 WASTEWATER DISPOSAL SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH THE STATE OF VERMONT AGENCY OF NATURAL RESOURCES, ENVIRONMENTAL PROTECTION RULES, CHAPTER 1, WASTEWATER SYSTEM AND POTABLE WATER SUPPLY RULES' EFFECTIVE SEPTEMBER 29, 2007.
  7. NO WETLANDS WERE SHOWN ON THE SUBJECT PARCEL ON THE "VERMONT NATURAL RESOURCES AT-RISK AND NO OTHER WETLAND DELINEATION OF SAID PARCEL, HAS BEEN CONDUCTED THAT BARNARD & GERVAIS, LLC IS AWARE OF. BARNARD & GERVAIS, LLC MAKES NO WARRANTIES THAT WETLANDS OR ASSOCIATED BUFFERS DO OR DO NOT EXIST ON SAID PARCEL. BARNARD & GERVAIS, LLC DOES NOT CLAIM TO BE WETLAND ECOLOGISTS AND DOES NOT HAVE A WETLAND ECOLOGIST OR SPECIALIST ON STAFF. IT IS RECOMMENDED THAT THE LAND OWNER OR CONTRACTOR CONTACT A WETLAND SPECIALIST TO CONFIRM NO WETLANDS EXIST PRIOR TO ANY EARTH WORK OR CONSTRUCTION.
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# How much water per home?



## Design Flow

- 70 gallons per person per day
- Based on number of bedrooms (min. 2-bedrooms)
- 2 people in first three bedrooms
- 1 person in further bedrooms
- ADU's may be sized to 1-bedroom

Five Bedroom House:  $(3\text{br}(2\text{ppl}\times 70\text{gpd})+(2\text{br}(1\text{psn}\times 70\text{gpd})) = 560\text{ gpd}$



# Permit Application Requirements

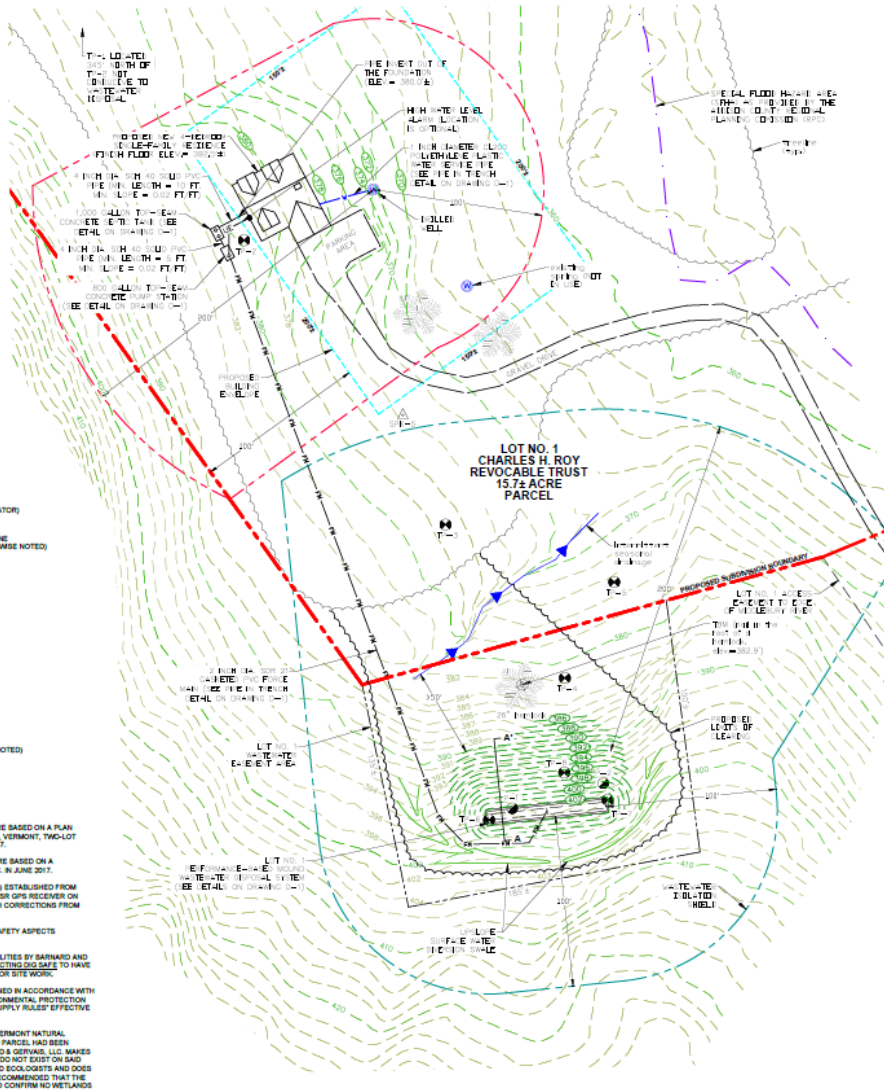
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# Permit Requirements for Landowners



- Project shall be completed as shown in Permit Application plans
- **Permit runs with land. Enforceable against Landowner & Successors**
- Landowner shall record Permit in local town records with 30 days
- No permit is valid for completed project **until Installation Certificate** is on file with the DWGPD from the Licensed Designer
- Permit is only valid for conditions described in the Application
- **Purchaser shall be shown the Permit & I/A Approval if applicable**
- Landowner agrees to allow State representative to access property to ascertain compliance with Statutes, Rules, and Permit
- Wastewater System shall be operated to prevent surface discharge and Water Supply shall be operated to prevent its contamination

# When is Permit required for Existing System?

- **January 1st, 2007** – “Clean Slate”
  - Wastewater systems & potable water supplies associated buildings and campgrounds built before this date are exempt from Permit requirements provided there have been no modifications that alter flow (“you get what you got, but you don’t get more without meeting the Rules”)
  - It is important that listers cards match the clean slate flows, unless a WW Permit with Installation Certification is on file that grants more.
- **July 1st, 2007** – Introduction of Universal Jurisdiction
  - After this date all Permits issued are by the State, unless authority delegated to municipality (Charlotte)
  - Prior to this date, some Towns had their own regulatory requirements. Contact Town authority or Regional Engineer. It may still legally apply to the older systems.

# When is a new Permit required?

- **Subdivision** of a lot or lots
- **Construction, Modification, or Replacement** of wastewater system or potable water supply
- **Construction, Modification, or Change in Use** of building or structure that changes Design Flow, or seasonal to year-round
- **Connection** of existing wastewater system or potable water supply to new or modified building of structure
- **New** campground, or modification that changes Design Flow
- Failed wastewater system or potable water supply
- “If water is going to flow in, water is going to need to flow out, and you will need a permit”

# When has a wastewater system failed?

- A wastewater system is failed when:
  - Exposed on ground surface
  - Discharged to surface water
  - Backed up in building
- \* May qualify as a minor repair



# Potable Water Supply – Private Wells

- Permit not required to replace a water supply for a single-family residence
  - Includes installing well to disconnect from municipal or shared supply
  - Exemption forms must be placed in land records to qualify
- Landowners to provide prospective purchasers with educational material on benefits of water testing



[http://www.healthvermont.gov/sites/default/files/documents/pdf/ENV\\_DW\\_testing\\_wells\\_factsheet.pdf](http://www.healthvermont.gov/sites/default/files/documents/pdf/ENV_DW_testing_wells_factsheet.pdf)

- Water from private wells shall be tested prior to new use. If out of compliance, test prior to conveyance.



# Municipal Delegation

- From July 1, 2007, all Vermont land under the State’s “Wastewater System and Potable Water Supply Rules”
- Municipalities may elect to receive delegation to issue State permits for:
  - on-site wastewater systems
  - potable water supplies, and
  - connections to municipal water distribution
  - connections to municipal wastewater collection systems
- The municipality that currently has elected to have delegation is Charlotte.
- Towns may grant allocation and connection permission to municipal connections, without delegation municipalities may not duplicate State permitting or set technical standards.

# How do I find out if valid Permit exists?

- Permits go with the property
- Permits do not “expire”
  - If Permit issued but wastewater system or potable water supply not installed, it may be built exactly as Permitted
  - Permits for failed systems and seasonal conversions do “time out” if not installed
  - Installation Certifications must be on file to make a Permit valid
- Find State issued WW Permits with on-line search:
- <http://dec.vermont.gov/water/forms/ww-systems-permits>
- Find out if a pre-2007 Town Permit exists by contacting the Town
- Permit may include easements.
- Find Innovative / Alternative Technology Approvals for inspection and maintenance requirements



# What flows into the Town Records?

- WW Permits
- Installation Certifications
- Replacement Well Exemption forms



Agency of Natural Resources  
Drinking Water and Groundwater Protection Division

## WASTEWATER SYSTEM AND POTABLE WATER SUPPLY INSTALLATION CERTIFICATION

**LAWS/REGULATIONS INVOLVED**  
10 V.S.A. Chapter 64, Potable Water Supply and Wastewater System Permit  
Wastewater System and Potable Water Supply Rules, Effective April 12, 2019

### System Identification

Permit Number: WW-7-4000 Lot Number: 1

### Certification

*I hereby certify that, in the exercise of my reasonable professional judgement, the installation-related information submitted is true and correct and that the potable water supply was installed in accordance with record drawings and such record drawings are in compliance with the applicable rules, were filed with the Secretary, and are in accordance with all other permit conditions; that the wastewater system was installed in accordance with the permitted design and all the permit conditions; and that the the wastewater system and water supply were inspected, were properly tested, and have successfully met those performance tests.*

*This document was digitally signed by Cristin Ashmankas, Designer, on 6/26/2023 3:15:17 PM through the submission of ANROnline Installation Certification Form.*

*This certification is based on an inspection of the related systems on 06/13/2023.*

### Required Information for Town Records

Parcel ID: 002-002-026.000

SPAN: 012-123-12345

Town: Saint Johnsbury

Landowner's Name(s): Joe and Jane Smith

911 Address: 123 Main Street

Place Town Recording Stamp Here

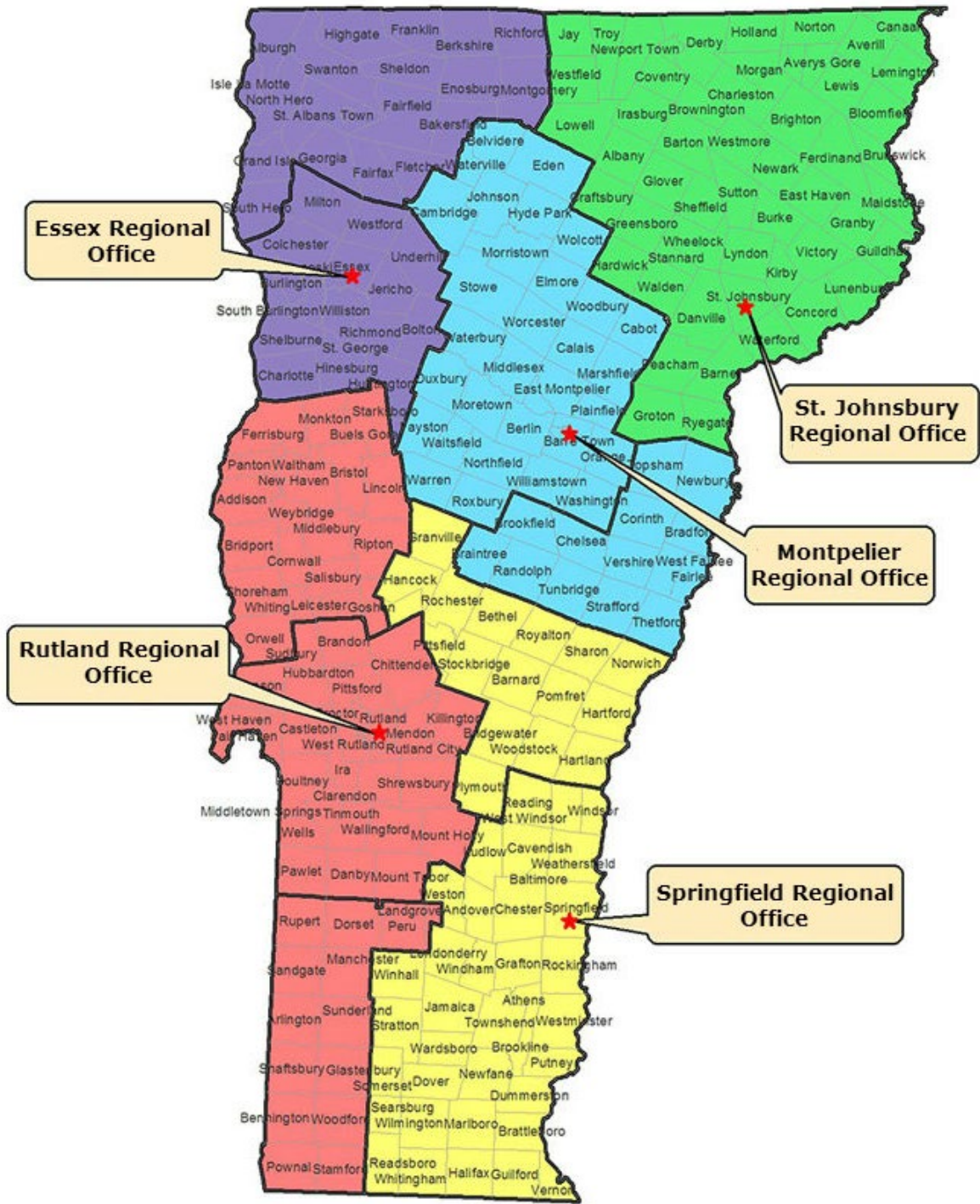
# What flows out of the Town?

- Updates to Lister's cards post Installation Certs
- New SPANs post subdivision sales with updates to the Grand List
- Parcel Ids, SPANs, and book and page for WW permit applications

# Regional Office Program

<http://dec.vermont.gov/water/ww-systems>

<http://dec.vermont.gov/water/contacts>



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Air Quality and Climate

Drinking Water and Groundwater

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## PROGRAM EDUCATION, OUTREACH AND RESOURCES

*This is a simplified overview of how a septic system works.*

Water runs out of your house from one main drainage pipe into a septic tank.

The septic tank is a buried, water-tight container usually made of concrete, fiberglass or polyethylene. Its job is to hold the wastewater long enough to allow solids to settle down to the bottom (forming sludge), while the oil and grease floats to the top (as scum). Compartments and a T-shaped outlet prevent the sludge and scum from leaving the tank and traveling into the drainfield area.



The liquid wastewater then exits the tank into the drainfield. If the drainfield is overloaded with too much liquid, it will flood, causing sewage to flow to the ground surface or create backups in toilets and sinks.

Finally, the wastewater percolates into the soil, naturally removing harmful bacteria, viruses and nutrients.

The Regional Office Program issues [water/wastewater permits](#) (WW Permits) for soil based wastewater systems with flows of less than 6500 gallons per day, for potable water supplies (water supplies that are not public water supplies), and for municipal water and sewer connections. Permitting staff are located in five Regional Offices. Staff also administers the licensed designer program and reviews innovative and alternative systems for potential use in VT.

The [regional offices map](#) provides office, program and contact information for each region.

[Licensed Designer Program information.](#)

### WHAT'S NEW?

#### Be Septic Smart!

Over half the households in Vermont depend on septic systems or other types of onsite systems to treat their wastewater. Failure to maintain a septic system can lead to backups and overflows, which can result in costly repairs.

Even if you do not own an on-site septic system you are likely to use one at a friend's house or camp, a business or a park facility. During Septic Smart Week, EPA provides septic system use and maintenance tips, including:

- **Keep it clean!** Maintain your septic system to protect the cleanliness of your water well.
- **Don't Strain Your Drain:** Use water efficiently and stagger use of water-based appliances. This can improve septic system operation and reduce risk of failure.
- **Think at the sink!** What goes down the drain has a big impact on your septic system.
- **Don't overload the commode!** A toilet is not a trash can. Disposable diapers and wipes, feminine hygiene products, cigarette butts and cat litter can damage septic systems.
- **Protect it and inspect it!** Regular septic maintenance can save homeowners thousands of dollars.



# Where do I find answers to questions?

## Digging deep into the DEC web site

<http://dec.vermont.gov/water/programs/ww-systems/program-education>

# Where do I find answers to my questions?

- A licensed designer may be able to answer questions:  
<http://dec.vermont.gov/water/licensed-designers>
  - For WW Permit questions contact Regional Engineer:  
<http://dec.vermont.gov/environmental-assistance/permits>
  - For compliance questions contact compliance manager:  
Cristin Ashmankas –  
[Cristin.Ashmankas@vermont.gov](mailto:Cristin.Ashmankas@vermont.gov) (802) 522-3257
- I am also available to come to Towns for Public Outreach Presentations
- If still unsure or unhappy, contact Program Manager:  
Bruce Douglas – [Bruce.Douglas@vermont.gov](mailto:Bruce.Douglas@vermont.gov)  
(802) 636-7545
  - To Report Violations in your Communities:  
<https://dec.vermont.gov/enforcement/reporting>





Engineered wastewater systems and the protection of potable water supplies is considered the single greatest human achievement, saving more human lives than all of medical science.

Questions?

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